



New Horizons:

Multinational Company Investment in Developing Economies

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McKinsey Global Institute

With assistance from our Advisory Committee, including:
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San Francisco

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McKinsey Global Institute

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The institute's staff members are drawn primarily from McKinsey's consultants. They serve 6- to 12-month assignments and then return to client work. MGI also commissions leading academics to participate in its research. The institute's director is Diana Farrell, a McKinsey partner. MGI has locations in Washington, D.C., and San Francisco, California.

Preface

This report is the product of a year-long project by the McKinsey Global Institute, working in collaboration with our McKinsey partners in multiple office and industry practices around the world. The inquiry spanned five sectors, including auto, consumer electronics, retail, retail banking, and information technology/business process offshoring (IT/BPO), and four developing economies – Brazil, Mexico, China and India. We sought to shed light on the oft-debated question of who benefits from multinational company investment in the developing world and how.

The release of this report is part of the fulfillment of MGI's mission to help global leaders: 1) understand the forces transforming the global economy; 2) improve the performance of their corporations; and 3) work for better national and international policies.

The fully dedicated project team consisted primarily of McKinsey Global Institute Fellows, top-performing consultants who rotate into MGI typically for a year and work on critical pieces of the project. Additional consultants from relevant local offices joined the team for shorter time periods, typically 2 to 6 months, working closely with the Fellows.

Jaana Remes, an Engagement Manager from the San Francisco office, joined as a special MGI Fellow, led the project during the critical stages of cross-country and cross-sector comparisons and synthesis. She contributed particularly to all the summary and synthesis work and to the retail sector cases. The team worked closely and all the individuals contributed to multiple portions of the effort, but each had a particular contribution that could not have been possible without them. In alphabetical order, with their primary areas of contribution, the team included: Vivek Agrawal, Fellow from the San Francisco office (IT/BPO in India, auto sector in India, overall summary and synthesis), Nelly Aguilera from the Mexico office (retail in Mexico), Angelique Augereau, Fellow in the San Francisco office (auto in Brazil and retail in Brazil and Mexico), Dino Asvaintra from the Shanghai office (consumer electronics in China), Vivek Bansal from the Business Technology Office in London (IT/BPO in India), Dan Devroye, Fellow from the Miami office (auto in Brazil and Mexico), Maggie Durant, Fellow from the Chicago office (retail in Brazil and Mexico), Antonio Farini from the São Paulo office (retail, consumer electronics and auto in Brazil), Thomas-Anton Heinzl, Fellow from the Zurich office (overall project management), Lan Kang from the Shanghai office (auto in China), Ashish Kotecha from the San Francisco office (auto in India), Martha Laboissiere from the São Paulo office (retail banking in Brazil), Enrique Lopez from the Mexico City office (food retail in Mexico), Maria McClay, Fellow from the New York office (global industry restructuring and company implications, overall summary and synthesis, consumer electronics and auto, all countries), Jaeson Rosenfeld, Fellow from the Boston office (consumer electronics in China, Mexico, Brazil and India; auto in China), Julio Rodriguez from the Mexico office (consumer electronics in Mexico), Heiner Schulz, Fellow from the London office (retail banking in Mexico and Brazil, policy implications, overall summary and synthesis). Moreover, Tim Beacom, our dedicated research and information specialist, Jennifer Larsen, the MGI Practice Administrator, and Terry Gatto, our Executive Assistant, supported the effort throughout.

This project was conducted under my direction, working closely with several partners and colleagues around the world, especially Vincent Palmade also from the McKinsey Global Institute. In the host countries studied, Heinz-Peter Elstrodt from Brazil, Gordon Orr from China, Noshir Kaka and Ranjit Pandit from India, as well as Antonio Purón and Rodrigo Rubio from Mexico held the project flag, gave generously of their time and knowledge, and made it possible for us to make this bold effort. We also benefited from the input of many of our industry leaders and experts in each of the sectors studied. Given the importance of the auto sector to the topic at hand, we were particularly fortunate to have Glenn Mercer, an expert partner in the auto practice, play a very active role on the project. As always, the findings and conclusions draw from the unique worldwide perspectives and knowledge that our partners and consultants bring to bear on the industries and countries researched in our projects. Their knowledge is a product of intensive client work and deep investment in understanding the structure, dynamics, and performance of industries to support our client work.

Over the course of the entire project, we benefited beyond measure from the extensive and detailed input received from our Academic Advisory Board members. While building upon the extensive methodologies developed by the McKinsey Global Institute over the past decade, this project tackled whole new approaches and issues as well. We are heavily indebted to our advisors for their excellent contributions in developing our approach and synthesizing our conclusions. The Board included: Richard Cooper of the Department of Economics at Harvard University, Dani Rodrik at the Kennedy School of Government at Harvard University, and Martin Baily Senior Fellow at the Institute for International Economics. Beyond his participation in the Advisory Board, Martin Baily is a Senior Advisor to the McKinsey Global Institute and played a principal advisory role with the team from the inception of the project.

Before concluding, I would like to emphasize that this work is independent and has not been commissioned or sponsored in any way by any business, government, or other institution.

Diana Farrell
Director of the McKinsey Global Institute
October 2003

Additional Acknowledgements

Beyond the project directors already mentioned in the preface, we would also like to acknowledge explicitly some of our colleagues who contributed specifically their industry and local market insights and knowledge and provided us with access to executives and experts around the world. McKinsey & Company's unparalleled network is an essential component of any McKinsey Global Institute effort.

Brazil

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We also want to recognize the contribution of the many consultants of the Mexico Office who collaborated in this effort under the coordination of Antonio Purón and Rodrigo Rubio.

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Executive Summary

1

Who benefits from multinational company activity in the developing world, and how? Few topics are more intensely debated or generate more contrasting emotions than the merits and costs of global economic integration. And few topics are more in need of a robust set of facts on which to base assessments. To provide insight, the McKinsey Global Institute launched an in-depth inquiry into multinational company investment in developing countries. A key finding is that the overall economic impact of multinational investment on developing economies has been overwhelmingly positive despite the persistence of host-country policies that can lead to negative, unintended consequences. Moreover, companies have only started to capture the large cost savings and revenue gains possible from operating in these markets. Multinational company investment in the developing world opens up new horizons for economic development and for company strategy.

For this study, MGI developed a set of case studies focusing on five sectors: automotive, consumer electronics, retail, retail banking, and information technology/business process offshoring in four major developing economies: China, India, Brazil and Mexico. These case studies shed new light on two sets of related questions:

- ¶ What impact has multinational company investment had on the economies of the developing world? What are meaningful implications for governments and policymakers?
- ¶ How has multinational company investment in the developing world impacted industry structure and competition globally? What are the implications for companies making decisions about global sourcing, investments and expansion?

MULTINATIONAL COMPANY INVESTMENT IMPROVES LIVING STANDARDS IN DEVELOPING ECONOMIES

1) **Most economies clearly benefit.** Through the application of capital, technology and a range of skills, multinational companies' overseas investments have created positive economic value in host countries, across different industries and within different policy regimes. In 13 out of 14 case studies, we found the impact overall to be positive or very positive (Exhibit 1).

2) **Improved standards of living and muted impact on employment.** The single biggest impact of multinational company investment in developing economies is the improvement in the standards of living of the country's population, with consumers directly benefitting from lower prices, higher-quality goods and more choice. Improved productivity and output in the sector and its suppliers indirectly contributed to increasing national income. And despite often-cited worries, the impact on employment was either neutral or positive in two-thirds of the cases. In China, since 1995, global auto companies have driven down prices by 31 percent, while improving the quality and selection of cars in the market. Both labor productivity and output in the sector have increased by at least 30 percent annually and employment has increased moderately over the same period.

3) Impact on host countries differs depending on whether investment is motivated by search for lower-cost locations or for new markets. Investment by companies seeking lower wage costs consistently improved sector productivity, output, employment, and standards of living in the host countries, all without much downside. For example, companies in the information technology/business process offshoring sector have created a new, rapidly growing industry in India that already employs nearly half a million people. Similarly, the activities of companies seeking to expand their market in the host country also had a generally positive economic impact. In these cases, however, the benefits often came at a cost to incumbent, less productive companies, and the impact on employment was mixed. Wal-Mart's entry into the Mexican food retail market has driven down prices to consumers, but also driven down average margins in the industry.

4) The banking sector is the exception. While foreign investment in the banking sector was important to sector capitalization and contributed to productivity, it failed to have a clear positive impact on consumers or on competition.

INVESTMENT POLICIES MOSTLY INEFFECTIVE BUT COSTLY

1) Popular incentives to foreign investments are not the primary drivers of multinational company investment and instead have negative and unintended consequences. Without materially affecting the volume of investment in most cases, popular incentives such as tax holidays, subsidized financing, or free land serve only to detract value from those investments that would likely be made in any case. Many of these policies result in direct fiscal and administrative costs, as well as indirect costs, particularly reduced productivity. For example, government incentives in Brazil's automotive industry contributed to overinvestment and thus low capacity utilization, which reduced productivity performance. Similarly, import barriers and trade-related investment measures such as local content or joint venture requirements did not have clear positive impact, but did limit competition, and protect subscale operations, thereby dampening productivity performance. In the consumer electronics sector in India, high import tariffs limited competition and kept prices higher, which led to significantly lower consumption and output in the sector relative to China. In most cases, these policies did not achieve their objectives and they typically incurred significant costs.

2) Foundations for economic development are critical. Our case evidence suggests that the most value from foreign direct investments can be achieved if policy strengthens the foundations of economic development, through, for example, ensuring macroeconomic stability; promoting a competitive environment; evenly enforcing laws, taxes, and other regulations, and building a strong physical and legal infrastructure. In the Brazilian food retail sector, for example, we found that discriminatory and inconsistent tax collection in the sector provided strong protection to underproductive operations and slowed the transition to higher productivity formats. By contrast, regulatory reform that ushered in a reliable power and telecommunications infrastructure in India was an

important precondition to the rapid development of the information technology/business process offshoring sector in the country.

3) **Corruption is not a determining factor.** Notably, while we did not explore the issue explicitly or in-depth, we did not find that corruption played an important role in reducing the value from investments made or explaining differences in economic outcomes.

LARGE VALUE POTENTIAL FROM NEW HORIZONS OF INDUSTRY RESTRUCTURING

1) **New horizons for large cost savings and revenue generation are opening up.** The integration of developing economies into global sectors sets the stage for whole new sets of activities beyond expanding markets and seeking low-cost facilities. Instead of simply locating full production across the value chain in lower-cost regions, companies can disaggregate individual steps of the value chain and locate each step to the lowest-cost location. And rather than simply replicating the production process within each step, companies can capture further savings by substituting lower-cost labor for capital. These two steps can reduce costs by 50 percent, which in turn allows new market entry at significantly lower price points in old and new markets alike.

2) **Most companies have only scratched the surface of the opportunity.** Multinational companies have been well positioned to transfer their competitive products and processes, but less equipped to tailor them appropriately to local conditions. Strong local players have been well positioned to understand local market conditions but often lack capital, product or process technologies. Until recently, the interplay of industry characteristics, legal or regulatory restrictions, and organizational limitations has acted as a brake on industry restructuring. However, as a result of greater competition, regulatory liberalization and new technologies, many of these seemingly immutable characteristics are now undergoing major change. These changes are opening new possibilities, making a greater degree of specialization likely. For companies that capitalize on these changes, the opportunities are large.

HIGHER STAKES, HIGHER PERFORMANCE STANDARDS

1) **The stakes are high.** The global auto sector, for example, could create over \$150 billion in cost savings and another \$170 billion in revenue. Together, these opportunities represent 27 percent of the \$1.2 trillion global auto industry. Our sector findings suggest that there are very large opportunities for companies to create value by taking full advantage of falling barriers in regulation, transportation cost, communications costs, and infrastructure. This implies far more than lowest-cost sourcing. It involves rethinking a firm's entire business processes to optimize production or service delivery.

2) **Aggressive companies will set radically new performance standards.** They will not accept the status quo, but instead push down the barriers or operate around them. Incremental performance mandates will be increasingly inappropriate as bolder targets come within reach. Already, a few companies in consumer electronics, auto, and the information technology/business process offshoring sector are leading the charge. For followers, change will be a matter of survival.

3) **Success requires good strategy and execution against new tradeoffs in new market environments.** Finding the optimal location and choice of capital and labor inputs in each production step, effectively balancing a company's global capabilities with local knowledge of markets, and shifting to more nuanced global management are just some of the new challenges facing companies.

ABOUT THE STUDY

Like all McKinsey Global Institute initiatives, this study merged detailed, company-level insights with macroeconomic data to produce a unique synthesis and new perspectives. We conducted detailed analysis and extensive interviews with client executives, external experts, and McKinsey experts over the course of more than a year. Nearly 20 fully dedicated team members from around the world invested more than 20,000 hours to produce 14 detailed case studies that form the basis of our more broadly stated conclusions (Exhibit 2). In this effort we benefited from the advice of a team of eminent economists, including Martin Baily, Dick Cooper and Dani Rodrik.

Exhibit 1

FDI TYPOLOGY AND OVERALL FDI IMPACT ASSESSMENT

Overall FDI impact	Very positive	• Consumer electronics, China	• Auto, India	• Auto, Mexico • Consumer electronics, Mexico • Consumer electronics, China • BPO	<ul style="list-style-type: none"> • Efficiency seeking FDI is overwhelmingly positive • For market seeking, impact ranges from neutral to very positive
	Positive	• Food retail, Mexico • Food retail, Brazil • Retail banking, Mexico	• Auto, China • Consumer electronics, Brazil • Consumer electronics, India • Auto, Brazil	• IT	
	Neutral	• Retail banking, Brazil			
	Negative				
		Pure market seeking	Tariff jumping	Efficiency seeking	
Motive for entry					

Source: McKinsey Global Institute

Exhibit 2

FDI IMPACT IN HOST COUNTRY

Overall positive impact ++ Very positive - Negative
 Mixed + Positive -- Very negative
 Negative 0 Neutral [] Estimate

Level of FDI relative to sector*	Auto				Consumer electronics				Food retail		Retail banking		IT	BPO
	Brazil	Mexico	China	India	Brazil	Mexico	China	India	Brazil	Mexico	Brazil	Mexico		
Economic impact	52%	6.5%	33%	n/a	30%	15%	29%	35%	4.2%	2.4%	n/a	6.9%		←-2.2%→
• Sector productivity	+	++	+	++	+	+	+	[+]	+	[+]	0/+	+	[+]	[++]
• Sector output	0	++	+	++	+	++	++	+	[0]	[+]	0	[+]	[+]	[++]
• Sector employment	0	+	+	0	[-]	++	+	[0]	0	[-]	-	-	[+]	[++]
• Suppliers	0	+	+	++	[0]	0	++	[0]	[0]	[+]	n/a	n/a	+	+
Impact on competitive intensity	+	+	+	++	+	[+]	+	+	+	++	0	0	[+]	[+]
Distributional impact														
• Companies														
- Companies with FDI	-	[+]	++	--	[+/-]	[+]	+/-	+/-	+/-	++/-	+	++	[0]	[0]
- Companies without FDI	n/a	n/a	0	-	-	[0/-]	+	0/-	[0/-]	-	0	0	[-]	[++]
• Employees														
- Level	0	+	+	0	[0]	++	+	[+]	0	[-]	-	-	[+]	[++]
- Wages	+	++	+	+	[0]	[0]	[0]	[0]	[0]	[0]	[0]	0	[+]	[++]
• Consumers														
- Reduced prices	++	+	+	+	+	[0]	0	+	[0]	++	0	0	n/a	n/a
- Selection	+	+	+	++	[+]	[+]	+	[+]	[0/+]	[+]	0	0	n/a	n/a
• Government														
- Taxes/other	-	+	+	++	[0]	[0]	[+]	[0]	++	[0]	[0]	+	0	[+]
Overall assessment	+	++	+	++	+	++	++	+	+	+	0	+	+	++

* Average annual FDI/sector value added in last year of focus period

Introduction

THE TRANSITION TO A GLOBAL ECONOMY

A surge in multinational company activity in the developing world has opened a new chapter in globalization. As companies in search of lower costs and new markets step-up their direct investments in developing countries, economies are becoming ever more interdependent and the pace of economic change is accelerating. Once marginal to most firms' core business, operations in developing countries are becoming essential to their competitiveness and growth.

Few topics are more intensely debated or create more contrasting emotions than the merits and costs of global economic integration. And few are more in need of a robust set of facts on which to base assessments.¹

In light of these developments, the McKinsey Global Institute launched an in-depth inquiry into the cross-border activities of multinational companies. We focused on five sectors – automotive, consumer electronics, retail, retail banking and information technology/business process offshoring – in four major developing economies – China, India, Brazil, and Mexico. These sector case studies shed light on two sets of related questions:²

- ¶ What impact has multinational company activity had on the economies of the developing world? What are meaningful implications for governments and policymakers?
- ¶ What has been the impact on global industry structure of multinational company activity in the developing world? What are the implications for companies making decisions about global sourcing, investments and expansion?

PROJECT APPROACH

Like all McKinsey Global Institute studies, this study merged detailed, company-level insights with macroeconomic data to produce a unique synthesis and new perspectives. Detailed analysis and extensive interviews with client executives, external experts, and McKinsey experts were conducted over the course of several months. Eighteen fully dedicated team members from around the world invested

1. The heated debate about the benefits and costs of globalization has been enriched recently by a set of surveys of the economic evidence available – including, to mention two prominent ones, CEPRs "Making Sense of Globalization" sponsored by the European Commission (2002), and Stanley Fisher's "Globalization and Its Challenges" (2003). These have been attempts by economists, trained to appreciate the benefits of well functioning markets, to take a hard look at the evidence on issues of poverty and global standards of living and address some of the challenges raised by critics of globalization. Yet a survey by CEPR of the very extensive literature on the impact of globalization on growth and poverty reduction concludes that it "is difficult to be sure whether the poor economic performance of some countries . . . is due to their having been insufficiently open to the world economy, or whether they lacked the institutions and capacities . . . that would have enabled them to benefit from the opportunities."
2. We have addressed a third question, the impact of offshoring on the U.S. economy, in a separate article, "Off-Shoring: Is It a Win-Win Game?", available at the McKinsey Global Institute Web site.

over 20,000 hours to produce 14 detailed case studies that form the basis of our conclusions, which are more generally applicable (Exhibit 1).

Case study focus

Given the traditional difficulty of isolating the impact of foreign direct investments (FDI) from all other factors affecting economic development, the case study approach allows us to take a very detailed look at the specific components of economic impact and the way the impact comes about. This approach is especially needed in developing economies. Indeed, in the context of the impact multinational companies (MNCs) have on industry dynamics, the Organization of Economic Co-Operation and Development (OECD), stated that "ideally, an analysis of competitive effects would rely on case studies, but in the past 20 years, no case studies on MNCs' impact on competition have focused on developing countries."

One of the benefits of the case study approach is that it allows us to make distinctions among different kinds of foreign direct investments. We find three distinctions particularly useful:

- ¶ **Motive of FDI** – whether MNCs invest in developing countries to gain access to their domestic markets (market-seeking investments), or to produce goods for exports (efficiency-seeking investments).
- ¶ **Type of investments made** – whether they involve new plants or operations (greenfield investments), transfer of ownership of existing assets (acquisitions), or investments expanding already existing operations of multinational companies.
- ¶ **Stage of investment** – whether MNCs have entered recently with early stage investments or have been established in a country and their capital outlays can be considered mature investments, or whether investments in the period were largely incremental advances on an established asset base in the host country.

Another benefit of the case study approach is that it allows us to complement the hard economic data – by its nature always dated – with interviews and observations which reveal more recent operational changes and current plans. The combination of these different sources of information helps us understand how the impact of foreign investments is felt at the microeconomic level.

Sample of large developing economies

We have focused on four of the most important large developing countries – China, India, Brazil, and Mexico. They provide a very good sample for studying the impact of FDI because each one has gone through some form of liberalization toward foreign investments in the past 15 years, and has received significant new FDI inflows since 1995 as a result. The choice of two Latin American and two Asian countries provide an additional set of contrasts that enrich the analysis.

Exhibit 1**OVERVIEW OF COUNTRIES/SECTORS STUDIED**

	China	India	Brazil	Mexico
Auto	✓ Mature FDI 1998-2001	✓ Mature FDI 1993-2003	✓ Incremental FDI 1995-2000	✓ Incremental FDI 1994-2000
Consumer electronics	✓ Mature FDI 1995-2001	✓ Early FDI 1994-2001	✓ Mature FDI 1994-2001	✓ Mature FDI 1990-2001
Retail			✓ Mature FDI 1995-2001	✓ Early FDI 1996-2001
Retail banking			✓ Early FDI 1996-2002	✓ Early FDI 1996-2002
IT/BPO*		✓ Early FDI 1998-2002		

* Information technology/business process offshoring

All the case countries have very large domestic economies, with gross domestic products ranging from \$477 billion in India to \$1,159 billion in China (Exhibit 2). They are at somewhat different stages of economic development, as Brazil and Mexico have roughly twice the GDP per capita (at PPP) of China and India (Exhibit 3). And while they have all received significant FDI inflows since 1995, China has attracted more than \$200 billion in investments – more than all the others combined (Exhibit 4).

The four countries had very different macroeconomic environments during our study periods (Exhibit 5). The 1990s was a period of very rapid growth in China, with annual GDP growth consistently above 7 percent, making it a very attractive market for foreign investors. India was also growing throughout the decade at a more modest rate, while a steady rate of currency devaluation in real terms reduced the cost of production there relative to the rest of the world. In Brazil and Mexico, the 1990s were much more volatile. Brazil's hyperinflationary period in the mid-1990s was followed by deep economic downturns in both 1998 and 2001. Mexico in turn went through a deep devaluation and recession in 1995, followed by a rapid recovery and a period of slow revaluation of the peso. In all four countries, the interplay of two variables – domestic market growth and exchange rate determining the cost of domestic production relative to the rest of the world – fundamentally affected the level of foreign investments, as well as the returns and impact of those investments.

The regulatory and policy contexts for foreign investments were also very different in the four countries (Exhibit 6). At the starting point in the early 1990s state-owned enterprises played a dominant role in large parts of the Chinese economy, Brazil had its import substitution policies, there was a highly regulated environment in India, and in Mexico the policies were being rapidly liberalized in a process that culminated in NAFTA in 1994. All countries relaxed some constraints on foreign investors during this time, and provided specific tax holidays or other incentives to export-oriented foreign investments (Exhibit 7).

Range of different sectors

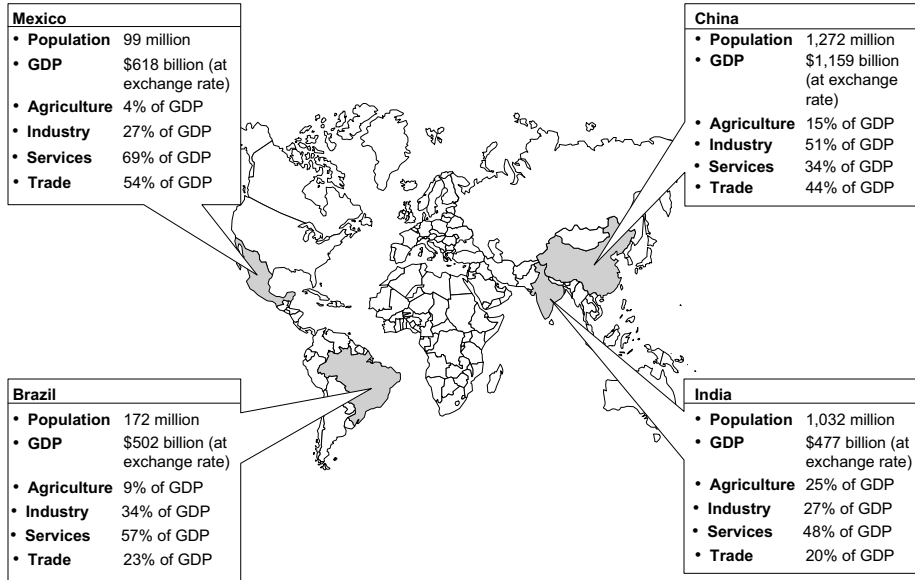
Our cases cover five industry sectors: automotive, consumer electronics, food retail, retail banking, and information technology/business process offshoring (IT/BPO). The mix of both manufacturing and service sectors with very different characteristics provides a good platform for drawing cross-sector conclusions that can be generalized more broadly (Exhibit 8). However, we do not include any natural resource-intensive sectors (e.g., oil and gas), or regulated utilities (e.g., telecommunications), since idiosyncratic characteristics make these and other similar sectors sufficiently different that they would require separate analyses.

Country and company perspectives

We have explicitly taken into account both the country and company perspectives in our analyses. Company decisions about how much and where to invest and what kind of production and managerial methods to use are the fundamental

Exhibit 2

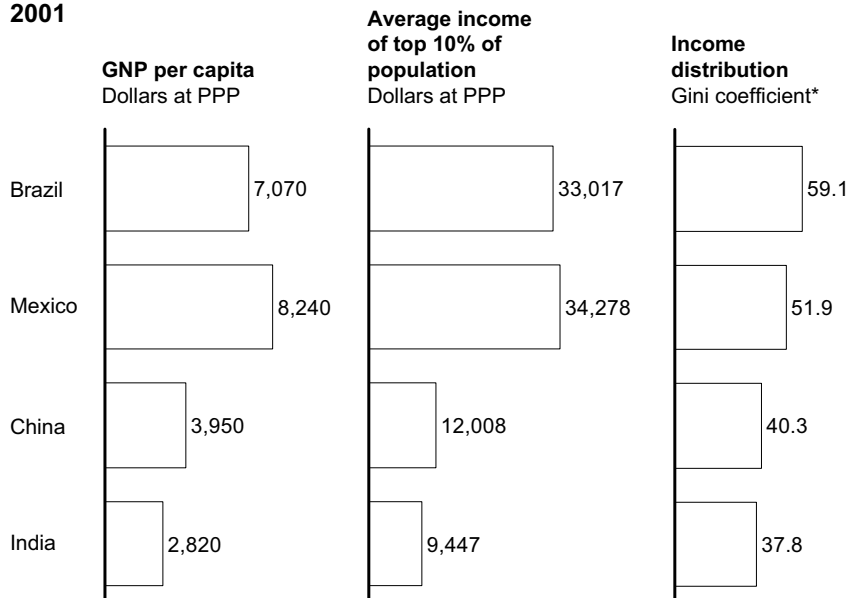
CASE COUNTRIES AT A GLANCE – 2001



Source: WDI 2003

Exhibit 3

COUNTRIES AT DIFFERENT STAGES OF ECONOMIC DEVELOPMENT – 2001

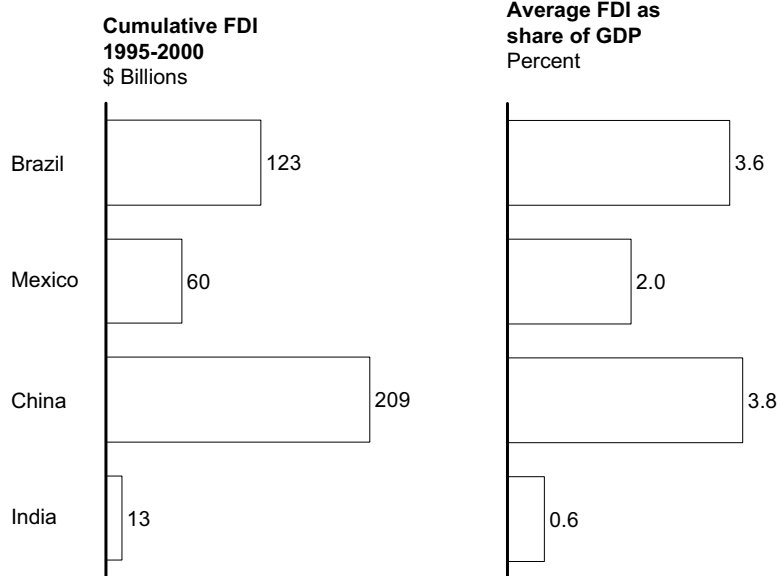


* Measure of income inequality ranging from 0 (perfect equality) to 1 (extreme inequality).

Source: WDI 2003

Exhibit 4

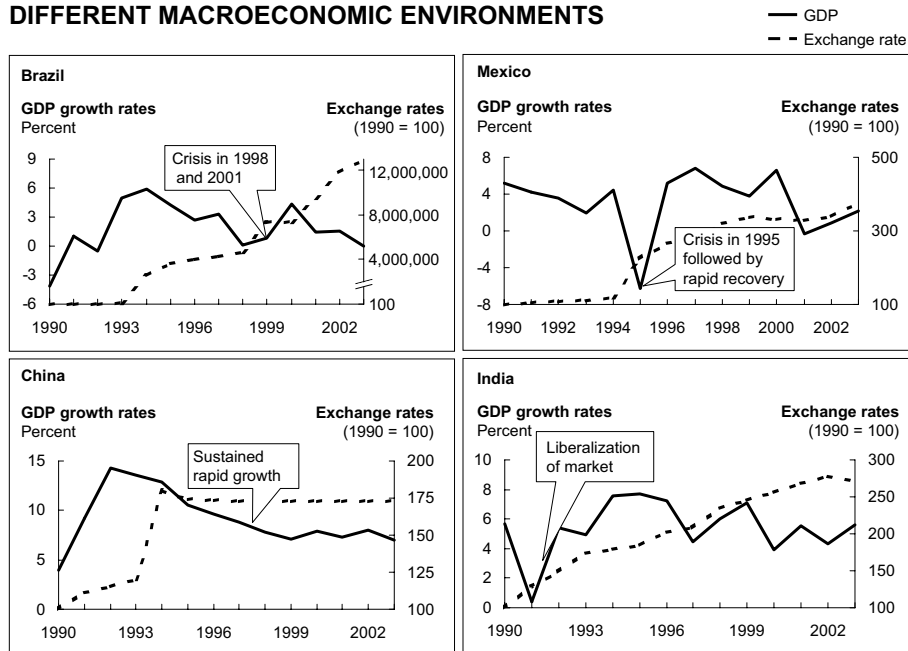
COUNTRIES WITH DIFFERENT LEVELS OF FDI INFLOWS



Source: UN

Exhibit 5





DIFFERENT MACROECONOMIC ENVIRONMENTS



Source: Global insight

Exhibit 6





RANGE OF POLICY ENVIRONMENTS

<p>Brazil </p> <ul style="list-style-type: none"> Historically, government imposed high level of tariffs to protect local production Liberalization phase opening up country for increased FDI began in the early 1990s To increase investment in the Amazon, the government offered special incentives in Manaus (e.g., income tax exemptions) Other state governments offered tax breaks in order to compete with Manaus and attract investment to their regions creating "tax wars", particularly in the auto sector 	<p>Mexico </p> <ul style="list-style-type: none"> Overall rapid decline of barriers since the 1990s that culminated to the signing of NAFTA in 1994 which will remove all tariffs on North American industrial products traded between Canada, Mexico, and the US within 10 years By 1999, 65% of all industrial US exports entered Mexico tariff free Trade policies give <i>maquiladoras</i>* special advantages (e.g., lower tariffs) in exporting to the US market, the largest importer of Mexican goods
<p>China </p> <ul style="list-style-type: none"> Historically, very high trade barriers (e.g., import tariffs, JV requirements) and restrictions to foreign investments The government created Special Economic Zones (SEZs) to encourage greater FDI for export by offering financial incentives (e.g., national and local tax breaks and holidays) for foreign companies Liberalization increased with the 2001 entrance into the WTO 	<p>India </p> <ul style="list-style-type: none"> Liberalization phase opening up country for increased FDI began in 1991 Significant incentives offered to IT/BPO companies in India, including tax holidays, in order to attract FDI and develop industry Special Economic Zones (SEZs) with significant tax breaks and holidays created to increase investment in select states in India

* Plants that import parts and components from abroad, assemble the inputs into final goods, and then export their output; they are most active in electronics, auto parts, and the apparel industries
 Source: Literature searches; McKinsey Global Institute

Exhibit 7

TARGETED FDI POLICIES AND INCENTIVES

<p>Brazil: Manaus Free Trade Zone </p> <ul style="list-style-type: none"> To increase investment in the Amazon, the government created a Free Trade Zone in Manaus. Select incentives include: <ul style="list-style-type: none"> Income tax exemption for setting up or modernizing businesses Subsidized financing from the Amazon Investment Fund Import tax exemption for sectors Sudam considers priorities and for consumption within the Free Trade Zone Export tax exemption for sales to other countries Exemption from tax on manufactured products (IPI) Reduction and credit of ICMS (equivalent to a state VAT) Reduced tariffs on products shipped from Manaus Exemption from import license fees 	<p>Mexico: <i>Maquiladoras</i> </p> <ul style="list-style-type: none"> <i>Maquiladoras</i> are plants that import parts and components from abroad, assemble the inputs into final goods, and then export their output; they are most active in electronics, auto parts, and the apparel industries Many are Mexican-owned facilities that deal with multinationals through arms-length transactions Initially, trade policies in the Mexico and the US gave <i>maquiladoras</i> special advantages in exporting to the US market; companies also benefited from Mexico's low labor costs The US is the primary destination for the finished products
<p>China: SEZs </p> <ul style="list-style-type: none"> The government created Special Economic Zones (SEZs) to encourage greater FDI by offering financial incentives for foreign companies including: <ul style="list-style-type: none"> National income tax breaks: If located in Shenzhen, Zhuhai, Shantou, Xiamen, and Hainan Island, companies pay 15% rather than 30% Tax holiday: Production FIEs* operating for more than 10 years get a 2-year tax exemption starting from the first profit-making year, followed by a 3-year 50% tax rate reduction Local income tax: Local authorities can reduce from 3% to 0% 	<p>India: Tax holidays </p> <ul style="list-style-type: none"> 90% of the profits derived by many technology companies in India will be deductible from their total income Any infrastructure undertaking that develops, develops and operates, or maintains and operates a Special Economic Zone (SEZs), will be entitled to a tax holiday for 10 consecutive assessment years out of 15 years

* Foreign Investment Enterprise with its head office in China
 Source: Literature searches

Exhibit 8

BROAD RANGE OF SECTORS IN OUR SAMPLE

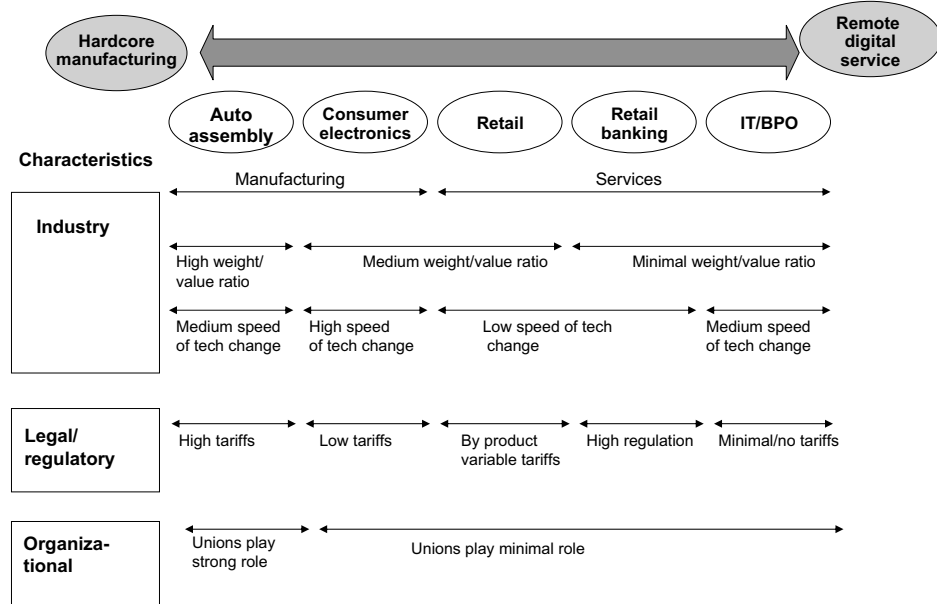
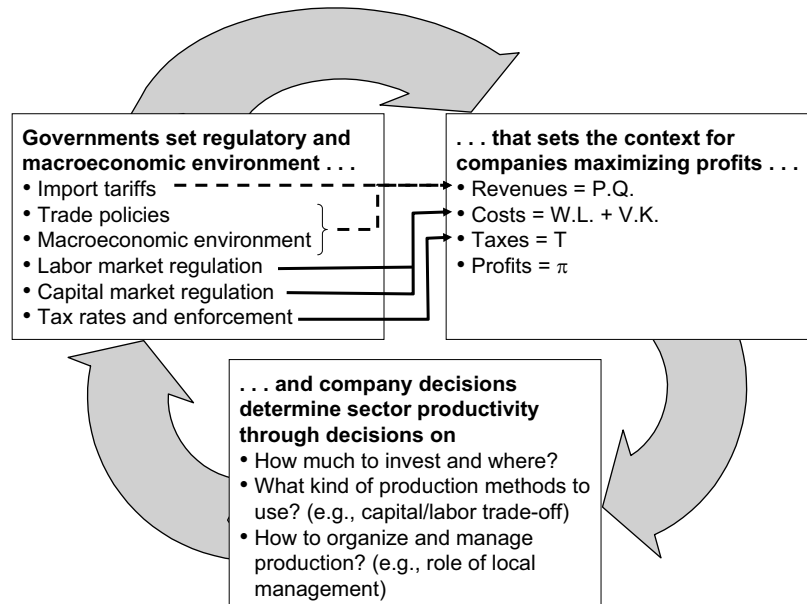


Exhibit 9

INTERTWINED COMPANY AND COUNTRY PERSPECTIVES



drivers of sector productivity and MNC impact on host countries. We put special emphasis on understanding the interplay between the policy environment set by governments and their impact on company behavior and the competitive environment within the industry and, ultimately, back to sector economic performance (Exhibit 9).

PART I: IMPACT ON DEVELOPING ECONOMIES AND POLICY IMPLICATIONS

Part I synthesizes our findings on the economic impact of multinational company investments on developing countries and how the impact radiates across the different stakeholders within the host country. We also draw overall conclusions on how multinational companies achieve impact either by introducing operational changes or changing industry dynamics within the sectors. Based on the case evidence, we derive implications of economic policy for host countries.

PART II: IMPACT ON GLOBAL INDUSTRY RESTRUCTURING AND IMPLICATIONS FOR COMPANIES

Part II builds on the case evidence to characterize the patterns of global industry restructuring as the large developing economies become increasingly integrated into the global economy. The purpose of the synthesis is both descriptive – to add insight on the patterns of global industry expansion observed today – and prescriptive – to help companies identify and capture global opportunities. We then draw on the pool of company experiences in our cases to derive implications for companies seeking to capture value from the global opportunities.

PART III: THE FACT BASE OF SECTOR CASE STUDIES

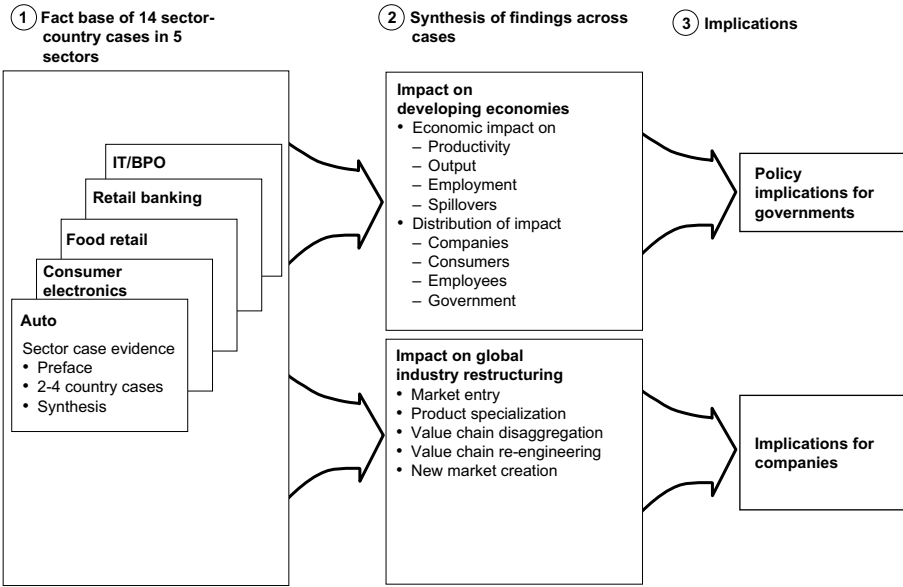
The fundamental fact base for our research is a set of 14 sector-country case studies that look at MNC investments, measured by FDI, in developing countries at a microeconomic level, assessing the impact of these investments on sector performance and different host country constituencies. We then identify the benefits and costs of FDI to both countries and firms by looking at common patterns across our industry case studies. We synthesize these findings in summary assessments of MNC impact on developing countries, and of patterns of global industry restructuring, and derive implications for both companies and policymakers (Exhibit 10).

We have organized the case findings into industry summaries, and each summary includes the following sections:

- ¶ **Preface to each sector** includes very brief background on the industry, characterization of FDI flows in the sector, and any definitions that are needed for the reader to navigate through the sector-country summaries.

Exhibit 10

FINDINGS BASED ON CASE STUDY FACT BASE



-
- ¶ **Sector synthesis** provides a brief overview of the global sector as context for the investments made by multinational companies in our cases, and synthesizes the findings and explains the variances in FDI impact between the cases.
 - ¶ **Individual sector-country summaries** provide the core content of our research and findings. Each summary starts with an overview of the sector and FDI inflows during our focus period, explaining the external factors that influenced the level of foreign investments. At the heart of each analysis is an assessment of the economic impact of FDI on the host country, measured by sector output, employment, and productivity, as well as of spillover impact on supplier employment and productivity. The distribution of economic impact is measured by assessing the way FDI has affected different stakeholders: MNCs and domestic companies through impact on profitability; employees through level of employment and wages; consumers through impact on prices and product selection/quality; and government through mainly tax impact.³ We then describe the mechanisms – both direct and through changes in industry dynamics – by which FDI achieved impact, as well as the external factors that influenced FDI impact in each case.⁴

3. Our focus is exclusively on national government, not on state governments, which can differ when states use incentives to compete with one another in attracting foreign investments.
4. See the appendix on methodology at the end of the document for more details on the approach.

Multinational company investment: impact on developing economies

1

As developing countries increasingly open up their domestic economies to foreign players, we assessed the impact of multinational company investment on four large developing countries (China, India, Brazil, and Mexico). Each of these countries has gone through some form of liberalization toward foreign direct investment (FDI) in the past 15 years. We conducted 14 in-depth sector case studies in five sectors (automotive, consumer electronics, food retail, retail banking, and information technology/business process offshoring (IT/BPO)). The studies provide a rich fact base for understanding the more detailed pattern of FDI's impact on host countries and shed light on the process by which FDI has impact. (Exhibit 1).

FDI INTEGRATING DEVELOPING COUNTRIES INTO THE GLOBAL ECONOMY

Developing countries are being integrated into the global economy through growing foreign investments (Exhibit 2). While foreign investment during the "first great globalization era" at the end of the 19th century¹ were largely driven by search for natural resources, companies today are increasingly either seeking growth by entering developing markets or reducing cost by relocating parts of the production process to countries with lower labor costs. Two trends have enabled this evolution: removal of policy barriers limiting foreign trade or investment in many large economies; and continuing reductions in transactions costs that enable multinational companies to relocate labor-intensive steps of the production process across countries in an economic way.

- ¶ **Policy barriers limiting foreign investments have been removed** in a number of large developing economies. India's selective removal of prohibitions for FDI entry; Mexico's entry to NAFTA and Brazil's more liberal policies toward FDI in sectors like consumer electronics are just a few examples (Exhibit 3).
- ¶ **Transactions costs have declined** rapidly as physical transactions costs have been reduced and telecommunications costs have gone to a fraction of what they used to be (exhibits 4 and 5). This has enabled companies to disaggregate production value chains and relocate labor-intensive steps in the production process to lower labor cost economies – increasing efficiency-seeking FDI.

FIVE HORIZONS OF GLOBAL INDUSTRY RESTRUCTURING

The process of globalization is not uniform across all industries, and there are large differences in the extent to which developed and developing countries have been integrated into a single global market. We define five horizons that describe the different ways in which industry value chain can be restructured across locations. (Exhibit 6). These horizons are not exclusive of one another, nor necessarily sequential, and can often be mutually reinforcing.

1. Among others, Jeffrey Williamson (2002): "Winners and Losers Over Two Centuries of Globalization". NBER Working Paper #9161.

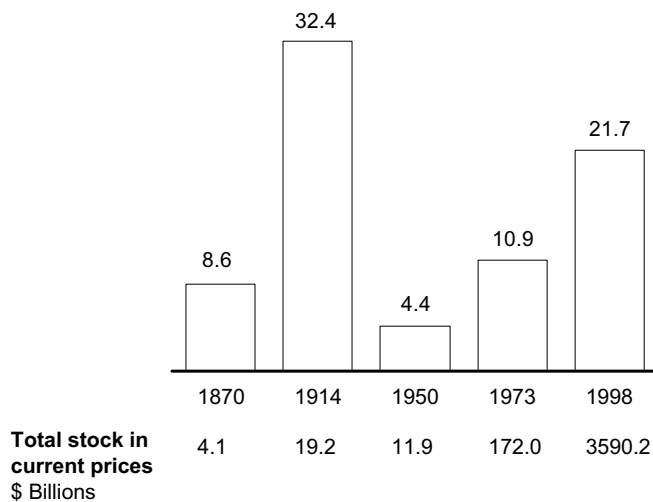
Exhibit 1**OVERVIEW OF COUNTRIES/SECTORS STUDIED**

	China	India	Brazil	Mexico
Auto	✓ Mature FDI 1998-2001	✓ Mature FDI 1993-2003	✓ Incremental FDI 1995-2000	✓ Incremental FDI 1994-2000
Consumer electronics	✓ Mature FDI 1995-2001	✓ Early FDI 1994-2001	✓ Mature FDI 1994-2001	✓ Mature FDI 1990-2001
Retail			✓ Mature FDI 1995-2001	✓ Early FDI 1996-2001
Retail banking			✓ Early FDI 1996-2002	✓ Early FDI 1996-2002
IT/BPO*		✓ Early FDI 1998-2002		

* Information technology/business process offshoring





Exhibit 2**FOREIGN CAPITAL IS ONCE AGAIN PLAYING AN INCREASINGLY IMPORTANT ROLE IN DEVELOPING COUNTRIES**

Gross value of foreign capital stock in developing countries
Percent of developing world GDP



Source: "The World Economy: A Millennial Perspective," Angus Maddison

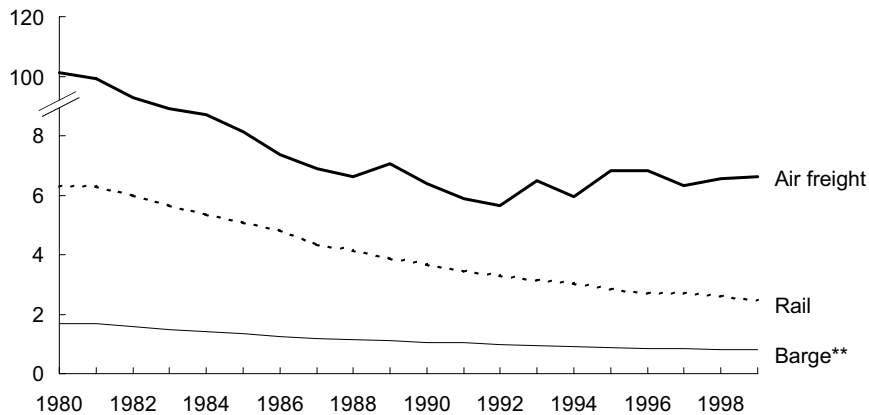
Exhibit 3**MANY DEVELOPING COUNTRIES HAVE REMOVED OR LESSENERED TRADE BARRIERS OVER THE LAST 10 YEARS**

<p>Brazil </p> <ul style="list-style-type: none"> • In 2000, Brazil decreased most tariff rates by 3% • The government offered large concessions including land, infrastructure, tax breaks, and low-interest loans in order to attract FDI in the auto sector 	<p>Mexico </p> <ul style="list-style-type: none"> • The government entered NAFTA in 1994 which will remove all tariffs on North American industrial products traded between Canada, Mexico, and the U.S. within 10 years; by 1999, 65% of all industrial US exports entered Mexico tariff free
<p>China </p> <ul style="list-style-type: none"> • The weighted average import tariff decreased from 43% in 1991 to 20.1% in 1997 • China entered the WTO in 2001 • The 40% local content requirements in the auto sector were removed in 2001 • The government funded various infrastructure projects to attract FDI 	<p>India </p> <ul style="list-style-type: none"> • Auto licensing was abolished in 1991 • The weighed average import tariff decreased over 60% from 87% in 1991 to 20.3% in 1997 • In 2001, the government removed auto import quotas and permitted 100% FDI investment in the sector

Source: Literature searches

Exhibit 4**TRANSPORTATION COSTS HAVE DECLINED OVER TIME**

Revenue per ton mile, cents*



* Revenue decreases used as a proxy for price decreases; adjusted for inflation

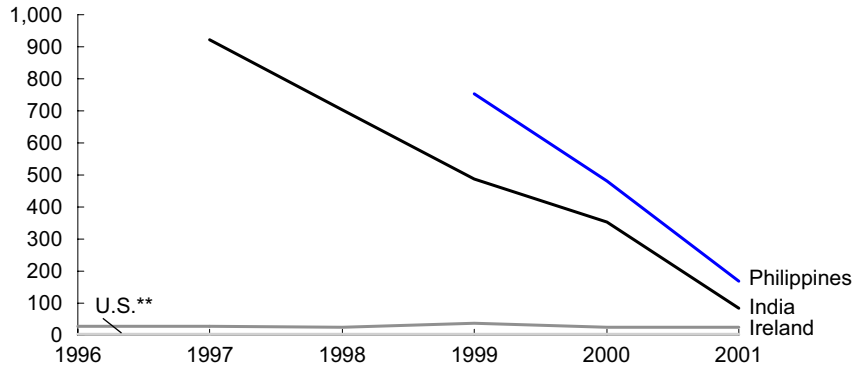
** For inland waterways shipping (e.g., Mississippi River)

Source: ENO Transportation Foundation

Exhibit 5

TELECOM COSTS HAVE FALLEN DRAMATICALLY, PARTICULARLY IN DEVELOPING COUNTRIES

\$ Thousand/year for 2 Mbps fiber leased line, half circuit*



* Cost of international leased line for India; cost of long distance domestic leased line in the U.S.; costs are for January each year; for India, based on Mumbai or Cochin

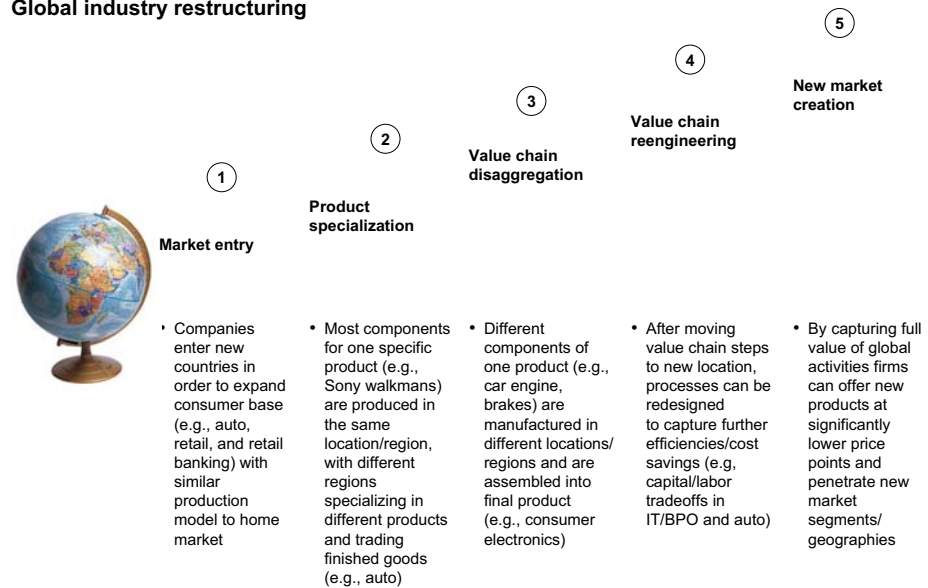
** U.S. half circuit data is derived by dividing full circuit data by half

Source: VSNL press releases; literature search; Lynx; Goldman Sachs estimates; McKinsey Global Institute

Exhibit 6

5 MAIN TYPES OF GLOBAL INDUSTRY RESTRUCTURING

Global industry restructuring



Source: McKinsey Global Institute

- ¶ **Market entry.** Companies have entered new countries in order to expand their consumer base, using a very similar production model in the foreign country to the one they operate at home (e.g., global expansion strategies of multinational companies in food retail, auto, and retail banking; Exhibit 7).
- ¶ **Product specialization.** Companies have located the entire production process of a product (components to final assembly) to a single location or region, with different locations specializing in different products and trading finished goods (e.g., in auto assembly within NAFTA, Mexico produces all Pontiac Aztecs and trades them for Chevrolet TrailBlazers produced in the U.S.; Exhibit 7).
- ¶ **Value chain disaggregation.** Different components of one product are manufactured in different locations/regions and are assembled into final product elsewhere (e.g., Mexico has focused on final assembly for the North American market, using mostly components manufactured in Asia; BPO investments in India can be very narrowly defined parts of broader business operations in the U.S.; Exhibit 8).
- ¶ **Value chain reengineering.** After moving value chain steps to new location, processes can be redesigned to capture further efficiencies/cost savings – most importantly, to take advantage of lower labor costs in developing countries through more labor-intensive methods in (e.g., increasing shifts in IT/BPO and reducing automation in auto assembly; Exhibit 8).
- ¶ **New market creation.** By capturing full value of global activities, firms can offer new products at significantly lower price points and penetrate new market segments/geographies (e.g., increased service level through phone for bank customers in developed economies; offering lower cost products in developing countries, such as cars in India and PCs/air conditioners in China; Exhibit 9).

MARKET SEEKING AND EFFICIENCY SEEKING INVESTMENTS

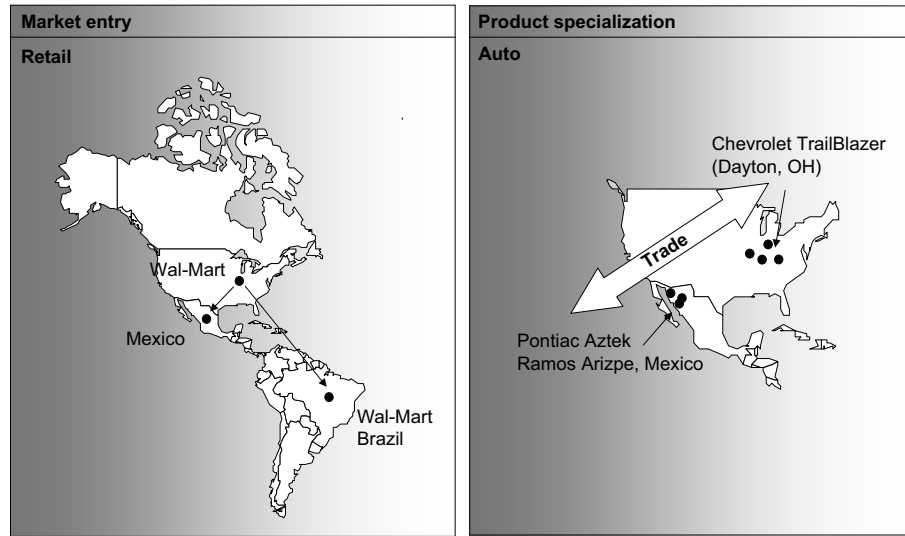
The 1990s saw a real boom in multinational company investment in developing countries (Exhibit 10). This boom included both market-seeking investments made in order to gain access to the host country markets – still the dominant motive for international expansion for companies; and efficiency-seeking investments made to reduce global production costs of multinational companies.² We make a further distinction within market-seeking FDI depending on whether government policy barriers preventing imports created an incentive for investing within the host country (Exhibit 11).

- ¶ **Efficiency-seeking FDI** is motivated by multinational companies seeking to reduce costs by locating production to countries with lower factor costs. Among our sectors, consumer electronics in Mexico and partly in China, auto in Mexico, and IT/BPO sectors in India were motivated by MNCs looking for more efficient production locations for products and services sold mostly

2. An additional major factor contributing to large FDI inflows to developing countries in 1990s were large-scale privatizations in many developing countries (e.g., Brazil, Mexico). We did not have cases directly related to privatization in our sample and have excluded them from our scope. Similarly for the two other motives for foreign direct investments: resource-seeking or technology-seeking investments.

Exhibit 7

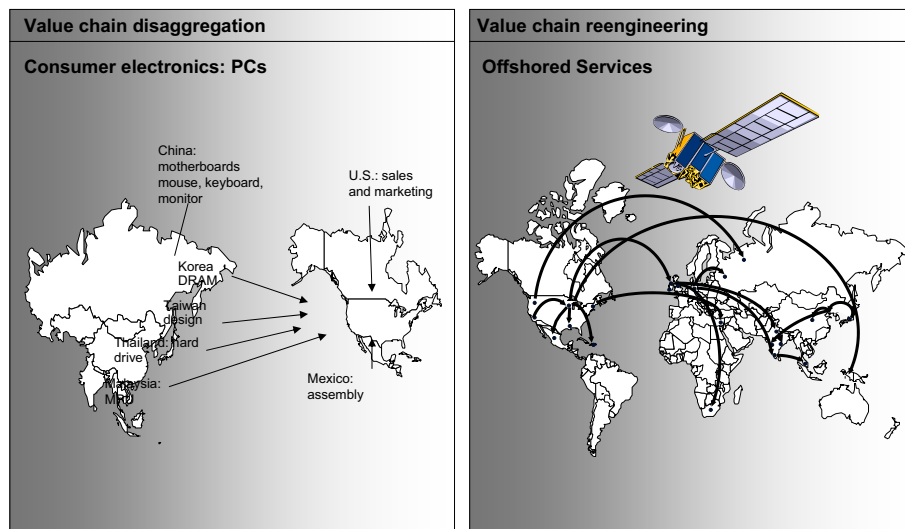
GRAPHICAL DEPICTIONS OF STAGES OF GLOBAL INDUSTRY RESTRUCTURING



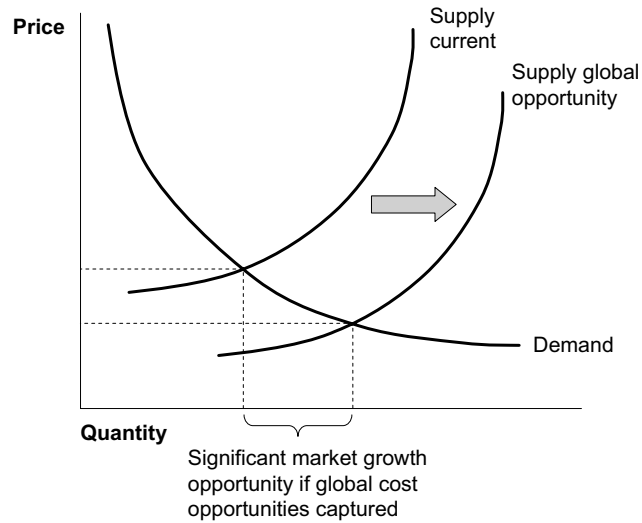
Source: Interviews; McKinsey analysis

Exhibit 8

GRAPHICAL DEPICTIONS OF STAGES OF GLOBAL INDUSTRY RESTRUCTURING (CONTINUED)



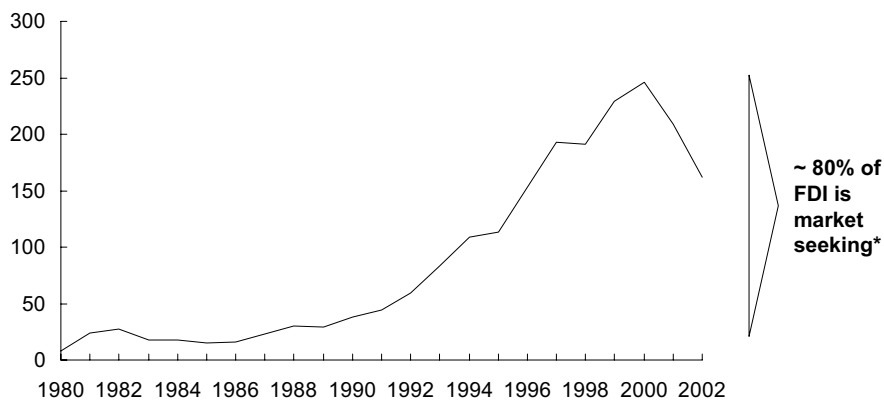
Source: Interviews; McKinsey analysis

Exhibit 9**OPPORTUNITY TO DEVELOP NEW MARKETS AFTER GLOBAL COST OPPORTUNITY CAPTURE**

Source: Interviews; McKinsey analysis

Exhibit 10**FDI INVESTMENT IN DEVELOPING COUNTRIES HAS RAPIDLY INCREASED AND IS MAINLY MARKET SEEKING**

Inflows
U.S. \$ Billions



* Based on estimates from OECD 2000 segmentation of total FDI (developed and developing countries); excludes "resource seeking" FDI (e.g., for petroleum); with this category, FDI is 84% market seeking
Source: OECD; McKinsey Global Institute; WDI

Exhibit 11

FDI TYPOLOGY BY MOTIVE OF INVESTMENT

Sector type	Manufacturing	<ul style="list-style-type: none"> • Consumer electronics, China 	<ul style="list-style-type: none"> • Auto, Brazil • Auto, China • Auto, India • Consumer electronics, Brazil • Consumer electronics, India 	<ul style="list-style-type: none"> • Auto, Mexico • Consumer electronics, Mexico • Consumer electronics, China
	Services	<ul style="list-style-type: none"> • Food retail, Brazil • Food retail, Mexico • Retail banking, Mexico • Retail banking, Brazil 		<ul style="list-style-type: none"> • IT • BPO
		Pure market seeking	Tariff-jumping	Efficiency seeking

Motive for entry

Exhibit 12

FDI TYPOLOGY AND OVERALL FDI IMPACT ASSESSMENT

Overall FDI impact	Very positive	<ul style="list-style-type: none"> • Consumer electronics, China 	<ul style="list-style-type: none"> • Auto, India 	<ul style="list-style-type: none"> • Auto, Mexico • Consumer electronics, Mexico • Consumer electronics, China • BPO
	Positive	<ul style="list-style-type: none"> • Food retail, Mexico • Food retail, Brazil • Retail banking, Mexico 	<ul style="list-style-type: none"> • Auto, China • Consumer electronics, Brazil • Consumer electronics, India • Auto, Brazil 	<ul style="list-style-type: none"> • IT
	Neutral	<ul style="list-style-type: none"> • Retail banking, Brazil 		
	Negative			
		Pure market seeking	Tariff jumping	Efficiency seeking

Motive for entry

- Efficiency seeking FDI is overwhelmingly positive
- For market seeking, impact ranges from neutral to very positive

Note: Exhibit 23 provides the background on each component of FDI impact in each case study.
 Source: McKinsey Global Institute

outside of the host country.

- ¶ **Pure market-seeking FDI** is motivated by MNCs looking for revenue growth by expanding their operations in other countries. Both food retail and retail banking cases belong to this category. In addition, the rapidly growing domestic market in China adds market-seeking motive to FDI in China consumer electronics sector, so that both motives are driving the current investment boom.
- ¶ **Market seeking FDI to overcome policy barriers – or tariff-jumping FDI** refers to cases where import barriers limit foreign companies' capacity to supply local demand through imports, and as a result they end up investing in plants for domestic production only. The auto sector cases fit this category, except Mexico, as do the highly protected consumer electronics sectors in India and Brazil.

LARGE ECONOMIC VALUE CREATION THROUGH FDI

In our sample, we found FDI to have created substantial economic value within host countries. In 13 out of our 14 case studies, we found FDI to have had an overall positive or very positive economic impact. This finding strongly suggests that many of the criticisms directed at foreign operations in developing countries – e.g., that they act as monopolies, lay off workers, without generating spillover effects on the rest of the economy – are not broadly warranted. And while we found a positive impact across the different sectors and varying policy regimes, we found a clear pattern by type of FDI (Exhibit 12).

- ¶ **Efficiency-seeking FDI overwhelmingly had a positive impact on the host countries.** It consistently had a positive or very positive impact on sector productivity, output, and employment. At the same time, focus on exports meant that these investments did not have significant costs to incumbent domestic companies. This explains the focus of many developing country policy makers on boosting export-oriented FDI – even while keeping domestic services closed to foreign investors (e.g., India).

Two typical examples of efficiency-seeking FDI are consumer electronics in Mexico and business process offshoring (BPO) in India. In both cases, foreign companies serving the U.S. market have located a specific part of their value chain in a lower labor cost country (final assembly for white goods and audio-video equipment in Mexico; labor-intensive data management and customer support in India), and created a new, rapidly growing sector with large employment within their host countries.

This overwhelmingly positive impact goes against the view that efficiency-seeking multinational companies are exploiting their host countries because they pay low wages and provide fewer benefits than they would at their home markets. In fact, beyond the positive economic impact, we found that in almost all of cases – both efficiency and market seeking ones – foreign players paid a wage premium above their domestic competitors, and they were more

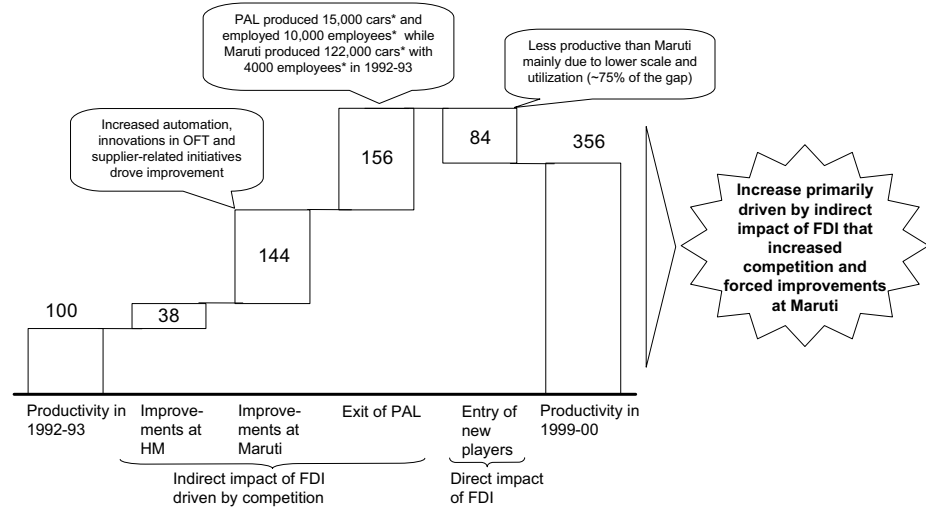
Exhibit 13

Auto India

POSITIVE FDI IMPACT ON PRODUCTIVITY CAEM THROUGH INCREASED COMPETITIVE INTENSITY

Labor productivity

Equivalent cars per equivalent employee; indexed to 1992-93 (100)



* Actual cars and employment (not adjusted)

Source: MG; McKinsey Global Institute; team analysis

likely to comply with labor regulations than domestic companies within the same sector.

¶ **Market-seeking FDI also had a generally positive impact on sector productivity and output, the improvement coming in most cases at a cost to domestic incumbent companies.** We saw some differences in outcomes depending on the policy and competitive environment of the sector however:

- In pure market-seeking cases, FDI tended to improve sector productivity. Our food retail cases are examples where foreign player entry had a positive impact on the domestic sector performance – although the impact came in very different ways. In Brazil, MNCs took equity positions in 90 percent of modern retailers, and provided the capital that allowed them to improve productivity in distribution and marketing, and seek to gain share by acquiring modern informal players. In Mexico, Wal-Mart acquired a leading modern retailer and introduced aggressive pricing and best practice transfer in operations and supply chain management. This change in competitive dynamics has led other leading domestic food retailers to similar operational improvements that are likely to improve sector productivity going forward. In both food retail cases, the productivity improvements come at a cost to the domestic incumbents who saw their margins decline as foreign player entry increased competition. And while the impact of foreign players on employment has been neutral until now, we expect the productivity improvements to lead to decline in employment going forward as larger formats continue to gain market share.
- In cases where FDI was motivated by tariff jumping, we found FDI also to have a consistently positive impact on sector performance. Given the protection provided to the sector, a very low level of performance was typical, allowing for significant positive impact even when the tariffs or other regulations limited FDI's full potential impact. As a result of tariffs or unique standards limiting trade, and barriers to foreign player entry, sectors like Brazilian consumer electronics or Indian auto were starting from a very low productivity base and had consumer prices significantly above world prices. When policies to FDI were liberalized and foreign players entered to supply the protected domestic market, increased competition led to improved productivity of the sector. This impact came both directly – as in the case of productivity improvements in Brazilian consumer electronics companies that were acquired by foreign players – and indirectly, as in the case of the Indian auto sector where increased competitive pressure led to player exit and productivity improvements in the leading domestic player, Maruti-Suzuki (Exhibit 13).

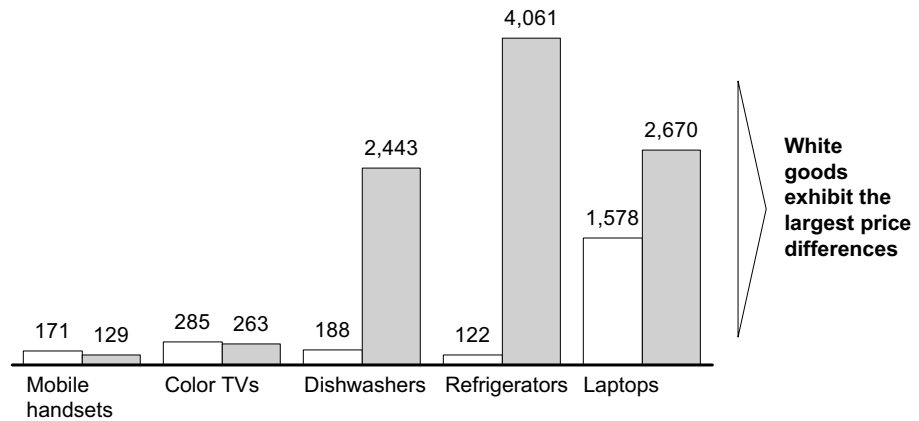
The biggest beneficiaries of foreign players' entry into the protected markets were consumers who saw declining prices, broader selection, and increasing domestic consumption. As a result of output growth, the impact on employment was neutral in most cases, as sector growth helped keep employment levels stable despite increases in labor productivity. However, the remaining protected policies kept prices higher and domestic sales lower than they would be with more liberal policies. A good example of the cost of the remaining policy barriers is the case of consumer electronics in India,

Exhibit 14

RETAIL PRICES FOR MANY CE GOODS ARE SIGNIFICANTLY LESS EXPENSIVE IN CHINA THAN IN INDIA

U.S. Dollars, 2002

□ China
 ■ India



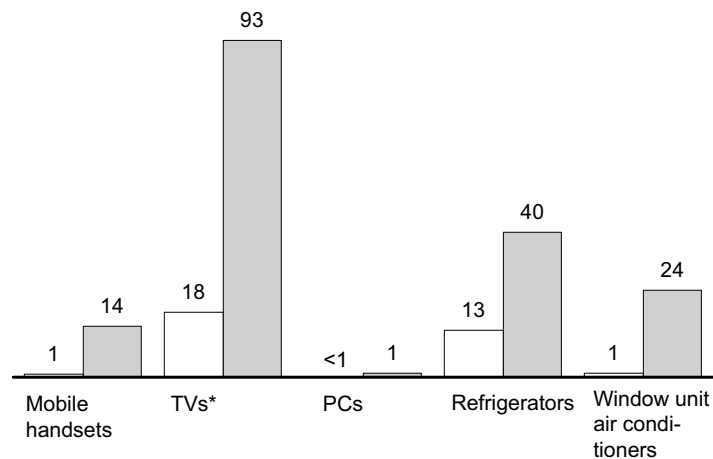
Source: Euromonitor; McKinsey Global Institute

Exhibit 15

CONSUMER ELECTRONICS PENETRATION RATE IS MUCH HIGHER IN CHINA THAN IN INDIA

Percent of total population

□ India
 ■ China



* Black and white

Source: Literature searches

where higher prices have kept penetration rates of refrigerators and TVs significantly below the rates in China (exhibits 14, 15).

- The one exception to the rule was retail banking, where the nature of retail banking limited the potential impact of FDI to capitalization of the sector and some productivity gains.³ While in Mexico foreign capital played a key role in capitalizing and stabilizing the local financial system, direct benefits to consumers or local companies have been limited in both Mexico and Brazil, because of the nature of the sector and the market conditions in the two countries:
 - First, retail banking in general tends to limit competition because of high switching costs for consumers and high entry barriers like the need to develop large branch networks – and this applies to both foreign and domestic players.
 - Second, two characteristics further reduced incentives for competition in Brazil and Mexico: high interest rates made it very profitable for banks to lend to the government rather than to consumers, while lack of a long-term debt market has made mortgage lending a segment with relatively low switching cost very difficult; and there were no significant non-bank players like money market mutual funds to induce competition (as in the U.S. banking sector in the 1980s).
 - And last, leading Brazilian private banks like Itau, Unibanco, and Bradesco were well capitalized, profitable, and already above the average productivity level of U.S. banks⁴, leaving less room for large FDI impact on the sector stability than in Mexico.

FDI ENTRY LEADS TO POSITIVE SUPPLIER SPILLOVERS

In addition to the clear positive impact on sector performance, we found foreign player entry to have positive or very positive impact on suppliers in 7 cases, and neutral in 5 cases.⁵ The stage of industry restructuring of the sector determined the potential supplier impact, with some variance on outcomes depending on sector initial conditions.

¶ **In the case of new-market entry FDI – when companies need to build a full value chain within host country to operate – we found FDI to lead to significant supplier spillovers.** The one exception was when informality isolated the informal supply chain from FDI impact. These spillover effects are illustrated by the food retail cases in Brazil and Mexico and auto cases in India and China.

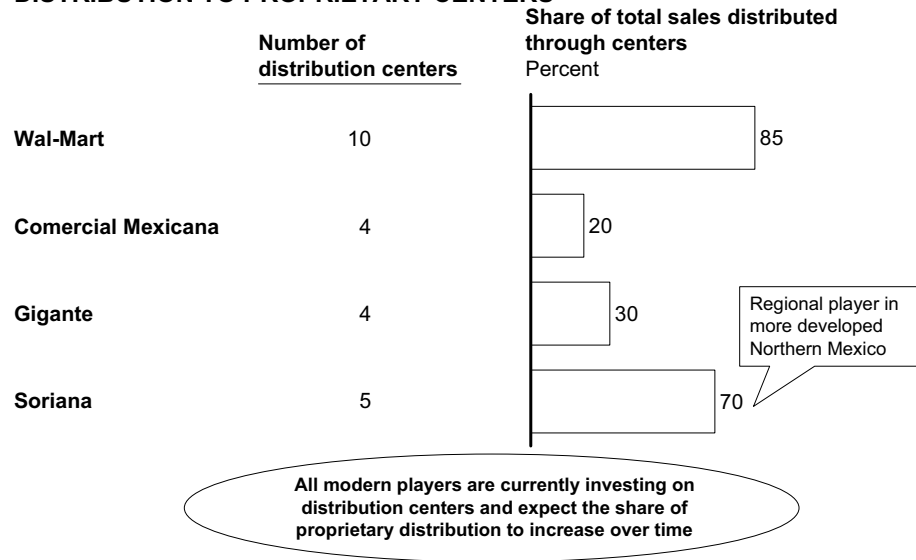
- Our Mexico food retail case and previous MGI work on retail show the very
3. Other sectors like public utilities and telecommunications need similarly to be treated differently because their nature – very high economies of scale leading to monopolistic market dynamics, critical role of regulation – make them very different from competitive markets. As a result, the impact of FDI on the sector dynamics is also likely to be different than that for most other sectors. As mentioned previously, we do not have studies these sectors and exclude them from our scope.
 4. McKinsey Global Institute. Productivity, The Key to an Accelerated Development Path for Brazil, Washington D.C.:1998.
 5. We do not discuss retail banking where there are no significant suppliers.

Exhibit 16

Food retail Mexico

ROUGH ESTIMATES

WAL-MART HAS SUCCEEDED IN CONCENTRATING DISTRIBUTION TO PROPRIETARY CENTERS

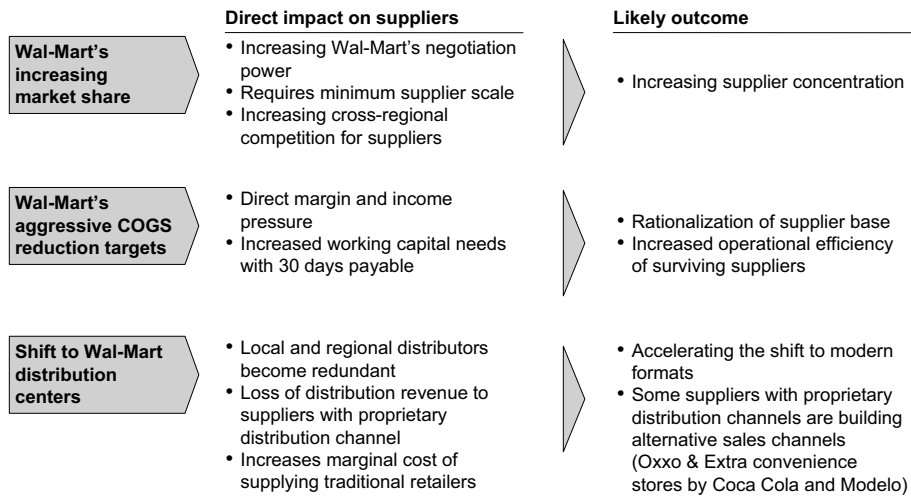


Source: Interviews

Exhibit 17

Food retail Mexico

SPILL-OVER EFFECTS TO WAL-MART SUPPLIERS ARE ALREADY SIGNIFICANT AND LIKELY TO INCREASE



Source: Interviews

large spillover potential through supplier productivity improvements in food processing and distribution. In Mexico, a Wal-Mart-led transition to proprietary distribution and aggressive supplier price targets increased competitive pressure among suppliers and led to productivity improvements through increased scale and productivity-improving investments (exhibits 16 and 17).

- The reason these potential benefits were not realized in Brazil food retail was the high level of informality in food processing, isolating more than 50 percent of the market into an informal market operating under significant cost benefits from tax avoidance (Exhibit 18).
- In the India and China auto sectors, import tariffs and FDI barriers contributed to the adoption of capital-intensive production methods by foreign OEMs and rapid localization of the full auto value chain. Indeed, in China, some OEM investments in parts suppliers actually preceded the entry of the OEMs themselves. While this has led to rapid growth and productivity improvements in domestic parts production, the full welfare impact of policy-induced localization is mitigated by the increased costs to domestic consumers.

¶ **FDI in the Mexico and Brazil auto sectors was characterized by product specialization. Here, the potential supplier impact is again very large as full value chain production is located within host country, with further scale benefits from specialization.** In Mexico auto, we saw a positive impact that has created a large sector (more than 7 times the number of employees than among OEMs themselves), yet with significant further potential for productivity growth. In Brazil, there has been significant productivity growth among parts suppliers – despite the negative impact on employment caused by the macroeconomic downturn.

¶ **In the case of FDI under a disaggregated value chain, the potential for supplier spillovers is significantly more limited, as very specific activities can be located in different parts of the globe – with the exception of the few locations that become global supply basis for key components.** Among our cases consumer electronics illustrates this well. While China has been able to become the global hub for some electronics parts, Mexico is very focused on assembly using parts imported from the U.S. or Asia – with very limited backward linkages to local suppliers (Exhibit 19). And while policy barriers have created final electronics product assembly operations in India and China, they have not led to significant supplier spillovers there either.

CONSUMERS HAVE BEEN THE BIG WINNERS

Among all the constituencies within the host country, consumers are the major beneficiaries as foreign player entry leads to direct improvements in their standards of living. Consumers saw positive impact through price reductions, improved selection, or both, and these led to increased output or domestic consumption in most cases. These benefits were present across both market-seeking and efficiency-seeking cases, and in all sectors except retail banking.

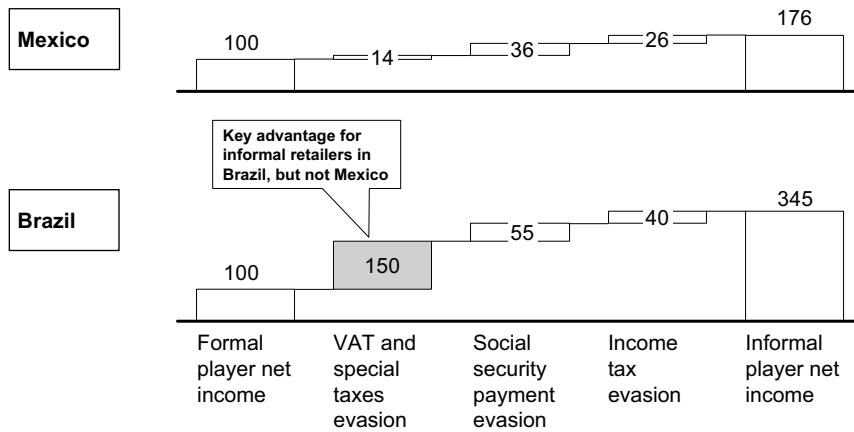
Exhibit 18

Food retail Brazil and Mexico

BENEFITS FROM INFORMALITY ARE LOWER IN MEXICO THAN IN BRAZIL

ROUGH ESTIMATE

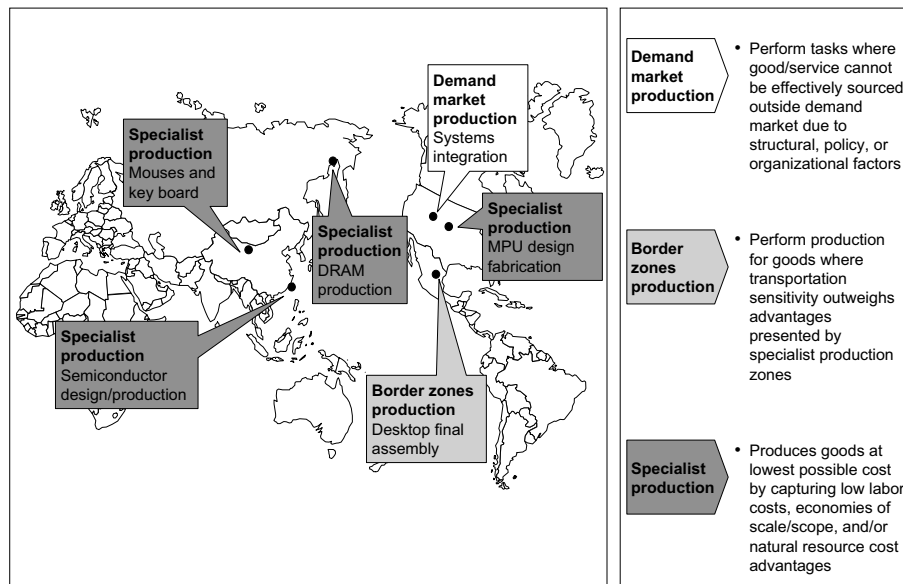
Indexed to formal sector net margin = 100



Note: Analysis modeled for a representative supermarket – informal sector assumption is that 30% net sales and employee costs go unreported
 Source: McKinsey analysis

Exhibit 19

ROLES COUNTRIES PLAY IN GLOBAL CONSUMER ELECTRONICS VALUE CHAIN



This impact on domestic standards of living is the great success story of FDI – but one that is seldom heard because of the fact that consumers are a fragmented, less vocal political body than, say, incumbent domestic companies.

¶ **In market-seeking FDI cases, prices to consumers declined in 7 out of 10 cases, and selection available to consumers grew in all but the retail banking cases.**⁶ In pure market-seeking cases like Mexico food retail, there were strong consumer benefits from lower and more transparent prices early on as foreign player entry increased competitive intensity. Similarly in the case of tariff jumping FDI: consumers saw declining prices and improved selection as a result of foreign investments in the protected auto assembly markets in India, Brazil, and China, as well as in Indian and Brazilian consumer electronics cases. This price impact was very large in some cases: for example, Chinese consumers saw passenger car prices drop by more than 30 percent between 1995 and 2001, while consumer prices more broadly grew by 10 percent during the same time period (Exhibit 20). And sector output and penetration of sector products (consumer durables in these cases) increased with declining prices, with the exception of Brazilian auto, where macroeconomic downturn caused the domestic market to collapse during our analysis period.

¶ **As we would expect, we found efficiency-seeking FDI cases to have a more limited impact on host country consumers as most production is for export and benefits global consumers.** Furthermore, many countries have imposed policy barriers that prohibit export-oriented FDI players from participating in the domestic market, e.g., tax incentives tied to exports kept some consumer electronics companies in Mexico (prior to NAFTA) or kept Indian IT/BPO companies from supplying their host country markets. But even in these conditions, we found the presence of foreign players benefits domestic consumers – either in the form of broader selection enabled by local production, or as in the case of Mexican auto sector, by FDI players introducing innovative financing options in the Mexican market that they probably would not have done without having local production facilities.

FOREIGN INVESTMENTS BRING CAPITAL, TECHNOLOGY, AND SKILLS

We attribute the positive impact of foreign direct investments in developing countries to the combination of three things that foreign players bring in tandem to the domestic markets: capital, technology, and skills. In many cases, the three are closely integrated – as in automotive plant investments that combine the capital, technology, and operational and managerial skills needed. In most successful cases however, these MNC global capabilities were complemented

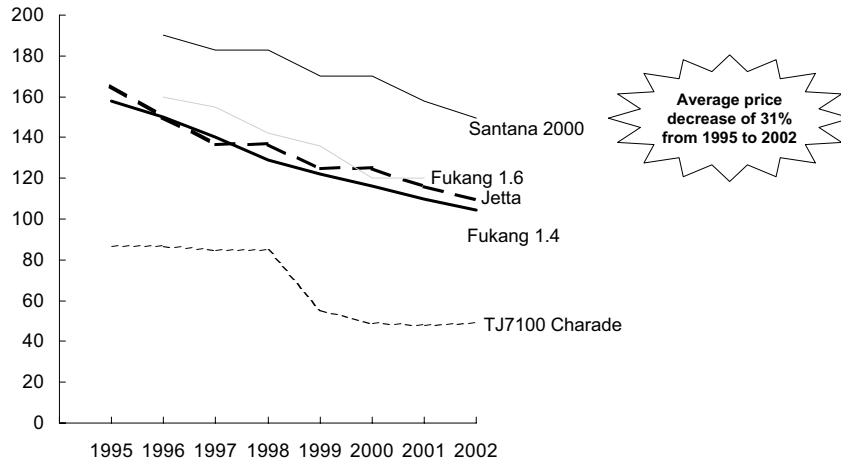
6. Outside the case of retail banking discussed above, there were two market-seeking cases where we did not attribute lower prices to consumers as the impact of FDI. First is the case of China consumer electronics, where cut-throat competition has led to rapid price declines not only to Chinese but also global consumers. However, given that the competitive dynamics were driven largely by Chinese domestic players, we have not attributed that as FDI impact. The second case is food retail in Brazil, where the benefits of productivity improvements were passed on to the government in higher taxes rather than to consumers. This occurred because the MNCs paid high value-added taxes whereas the domestic informal players did not. But even in this case consumers benefited from broadened product selection.

Exhibit 20

Auto China

PRICE EVOLUTION FOR DIFFERENT MODELS IN CHINA

Thousand RMB (nominal values)



Note: List price does not necessarily reflect transaction price; incentives have to be investigated further; other possible methodological issues include change in car quality
 Source: Access Asia; Press Search

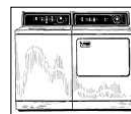
Exhibit 21

Consumer electronics

UNIQUE WHITE GOODS CHARACTERISTICS DRIVEN BY TOTAL NEEDS

Local need/condition

India
 Scarcity of water, with high-cost water supply



Product characteristics

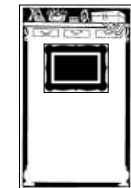
“Double basin” clothes washer, which allows for reuse of water

Europe
 Heightened environmental concern and more frequent trips for food shopping



Smaller, more efficient refrigerators than American counterparts

China
 Because many families live in one-room apartments, refrigerators are often in the living room; they are often given as wedding gifts



Refrigerators styled towards living room decor; picture frame integrated for wedding picture

Source: McKinsey Analysis

with deep local market expertise provided either by local partners or locally hired managers.

¶ **Capital.** Capital inflow from foreign investors was critical for sector performance in four of our cases. In Brazil food retail, formal domestic players were cash constrained and needed foreign capital for the productivity-improvements that would enable them to be more competitive against the low cost informal players; In Mexican banking, domestic banks had been severely undercapitalized after the financial crisis of 1997, and foreign capital infusion was critical for capitalizing and maintaining the stability of the Mexican financial system; in Indian auto and IT/BPO cases, foreign capital was needed to finance the investments required for sector growth. In addition, supplier spillover effect in many cases was driven by foreign player financing: auto OEMs are a main source of financing for local parts suppliers in all country cases, and in China consumer electronics, financing from Taiwanese entrepreneurs were a significant source for Chinese companies supplying to or competing with other foreign investors. Yet the need for capital (either for investments or operations) was not a necessary condition for foreign player entry – there were cases like Wal-Mart's Cifra acquisition in Mexico food retail that were pure transfer of equity from a domestic owner to a foreign one.

¶ **Technology.** Access to proprietary or foreign technologies and design capabilities was a key factor that foreign OEMs provided in all auto and consumer electronics cases. The more complex and rapidly evolving the technology required, the more difficult it is for domestic companies to acquire without foreign investments. So within consumer electronics, access to foreign technology was most important in mobile phones and least important in white goods like refrigerators and stoves.

¶ **Skills.** Foreign investors brought a broad range of skills that enabled them to improve domestic sector productivity and grow output. We have grouped these skills into four categories:

- **Operations/organization of functions and tasks (OFT).** Large foreign players coming from more competitive home markets brought with them global capabilities in operations in most of our sectors: examples include supply chain processes and inventory management in food retail; plant operations and distribution in auto; business operations in BPO; and credit work-out skills in retail banking in Mexico.
- **Marketing and product tailoring.** Foreign players also introduced improvements in marketing: for example, in food retail, foreign players introduced competitive pricing practices in Mexico and improved in-store marketing and merchandizing in Brazil; in consumer electronics China and India, some MNCs tailored products to suit the domestic market (Exhibit 21).

Interestingly, the most successful examples combined the global capabilities of foreign players with deep local knowledge provided by their domestic partners (e.g., Cifra management in Mexican food retail, Maruti in Indian auto), and where we saw some failures among foreign players as a result of insufficient local knowledge (e.g., OEMs targeting high-end segments in India auto, or attempts of foreign retailers to sell ski boots in São Paulo or sit-on lawn-mowers in Mexico).

Exhibit 22

Retail banking Mexico

MNCS ADOPTED BROAD RANGE OF MANAGEMENT APPROACHES IN THEIR MEXICAN OPERATIONS

	Execution focus	Performance pressure	Mentoring approach
Example	BBVA – Bancomer	Santander – Serfin	Citigroup – Banamex
Description	<ul style="list-style-type: none"> Local management executes decisions made by parent company Little focus on independent thinking and initiative by local management 	<ul style="list-style-type: none"> Local management is given performance targets based on group benchmarks Up to local management to decide how to meet top-down targets 	<ul style="list-style-type: none"> Local management is given autonomy under guidance of parent company executives Local management encouraged to adopt best practice developed in other parts of the organization
Internal organization	<ul style="list-style-type: none"> Top management in subsidiary replaced by senior managers from parent company Key management decisions taken by parent company 	<ul style="list-style-type: none"> Subsidiary run by a combination of local and parent company executives Operational control by parent company with clear line authority over local management 	<ul style="list-style-type: none"> Subsidiary run mostly by local executives Multiple reporting lines within matrix-like structure
Skill transfer	<ul style="list-style-type: none"> Clear and direct transfer of best practice through central line of command Approach favours best practice over local content 	<ul style="list-style-type: none"> Model emphasizes local content rather than best practice Santander fosters best practice transfer through internal consulting unit 	<ul style="list-style-type: none"> Mentoring approach tries to strike balance between local content and best practice
Source: Interviews			

- **Managerial and organizational skills.** In all our cases, foreign players brought new organizational and managerial skills to the domestic market. These ranged from introducing more professionalism in company culture and increasing accountability, to more specific management tools like performance measurement or wage structures and other incentives. Again, we saw examples of MNCs benefiting from local knowledge through employment of local managers and supervisors particularly on the customer service segments of Indian BPO.

We found broad variance in the specific management approaches, as we do among high-performing companies within any developed economy, and did not find a correlation between, say, level of de-centralization and MNC performance. The example of Mexican retail banking illustrates the case: after acquiring domestic banks, MNCs have chosen a broad range of management approaches ranging from Banco Bilbao Vizcaya Argentaria's (BBVA) strictly top-down approach to Citigroup's decentralized approach through management mentoring (Exhibit 22).

- **Global market access.** In efficiency-seeking cases, foreign players provided access to the export market through their global distribution networks, market position, and brands. This was the case for all consumer electronics export segments in Mexico, China, and Brazil, as well as in automotive in Mexico and Brazil, where foreign OEMs were able to increase exports to compensate declining domestic sales during economic crises. This can often be a major barrier for domestic players – yet they can potentially benefit from FDI entry as well: in Indian IT/BPO case, the example of leading global players like IBM locating their off-shoring operations to India established the credibility of the Indian sector, opening the door for India companies to follow suit.

ADDITIONAL IMPACT COMES THROUGH COMPETITION

We found competition within the host country sector to be a critical driver of improvements in sector performance as a result of FDI. The impact mechanism, therefore, was not very different from any domestic economy. However, FDI's potential for impact can be greater because of the combination of scale, capital, and global capabilities that allowed MNCs more aggressively to close existing large productivity gaps. And this potential of FDI impact was demonstrated in three ways:

- ¶ **FDI can be a powerful catalyst to spur competition in industries characterized by low competition and poor productivity.** Examples include the cases of consumer electronics in Brazil and India, food retail in Mexico, and auto in China, India, and Brazil.
- ¶ **Competition is also key to diffusing FDI-introduced innovation across an industry.** In Brazilian food retail, high competitive intensity caused by informal players forced all modern retailers to rapidly increase productivity; in Mexican and Brazilian auto cases, increasing competition from imports induced foreign players themselves to increase their productivity.

¶ **And last, competition is critical for ensuring that the economic benefits from improved productivity are passed on to consumers through lower prices.** The best example of this is the case of consumer electronics in China, where aggressive competition has kept supplier margins razor thin and brought rapidly declining prices to both Chinese and global consumers.

* * *

Increasingly, foreign direct investment are integrating developing countries into the global economy, creating large economic benefits to both the global economy and to the developing countries themselves. Industry restructuring enables global growth as companies reduce production costs and create new markets. For the large developing countries, integrating into the global economy through foreign direct investments improves standards of living by improving productivity and creating output growth. The biggest beneficiaries from this transition are consumers - both global consumers that reap the benefits from global industry restructuring, and consumers in the host countries that see their purchasing power and standards of living improve. The more competitive the environment, the more benefits FDI can bring - and the more benefits that are passed directly on to consumers.

Exhibit 23

FDI IMPACT IN HOST COUNTRY

Overall positive impact	++ Very positive	- Negative
Mixed	+ Positive	-- Very negative
Negative	0 Neutral	[] Estimate

	Auto				Consumer electronics				Food retail		Retail banking		IT	BPO
	Brazil	Mexico	China	India	Brazil	Mexico	China	India	Brazil	Mexico	Brazil	Mexico		
Level of FDI relative to sector*	52%	6.5%	33%	n/a	30%	15%	29%	35%	4.2%	2.4%	n/a	7.5%		←-2.2%→
Economic impact														
• Sector productivity	+	++	+	++	+	+	+	[+]	+	[+]	0/+	+	[+]	[++]
• Sector output	0	++	+	++	+	++	++	+	[0]	[+]	0	[+]	[+]	[++]
• Sector employment	0	+	+	0	[-]	++	+	[0]	0	[-]	-	-	[+]	[++]
• Suppliers	0	+	+	++	[0]	0	++	[0]	[0]	[+]	n/a	n/a	+	+
Impact on competitive intensity	+	+	+	++	+	[+]	+	+	+	++	0	0	[+]	[+]
Distributional impact														
• Companies														
- Companies with FDI	-	[+]	++	--	[+/-]	[+]	+/-	+/-	+/-	++/-	+	++	[0]	[0]
- Companies without FDI	n/a	n/a	0	-	-	[0/-]	+	0/-	[0/-]	-	0	0	[-]	[++]
• Employees														
- Level	0	+	+	0	[0]	++	+	[+]	0	[-]	-	-	[+]	[++]
- Wages	+	++	+	+	[0]	[0]	[0]	[0]	[0]	[0]	[0]	0	[+]	[++]
• Consumers														
- Reduced prices	++	+	+	+	+	[0]	0	+	[0]	++	0	0	n/a	n/a
- Selection	+	+	+	++	[+]	[+]	+	[+]	[0/+]	[+]	0	0	n/a	n/a
• Government														
- Taxes/other	-	+	+	++	[0]	[0]	[+]	[0]	++	[0]	[0]	+	0	[+]
Overall assessment	+	++	+	++	+	++	++	+	+	+	0	+	+	++

* Average annual FDI/sector value added in last year of focus period

Policy Implications

We did not find evidence that policies targeted at foreign direct investment (FDI), such as incentives, import barriers, and trade-related investment measures, are useful tools for economic value creation. In many cases, these policies did not achieve their objective and they often incurred significant costs. Our case evidence suggests that governments can increase the value of FDI not by focusing on targeted FDI policies, but by strengthening the foundations of economic development, including a competitive environment, an even enforcement of laws and regulations, and a strong physical and legal infrastructure.

Government policies affect both FDI flow and impact of a given level of FDI. The goal of targeted FDI policies is to increase FDI flows, but in our sample of cases, these policies often did not achieve their objective. Rather, FDI flows were driven by sector market size potential and macroeconomic stability. In addition, targeted FDI policies reduced the impact of a given level of FDI. By contrast, the main effect of foundation-strengthening policies is to increase the impact of a given level of FDI. In our sample of cases, these policies did not have a negative effect on FDI flows. Rather, because they strengthen the foundations for economic development, they contributed to creating an attractive environment for FDI.

TARGETED FDI POLICIES DO NOT CREATE ECONOMIC VALUE

In our sample of large developing countries, direct incentives to FDI did not have a major impact on FDI flows. These incentives did, however, come with significant costs, including a negative impact on productivity and "race-to-the-bottom" dynamics. Import barriers reduced FDI impact by limiting competition and protecting subscale local operations. Trade-related investment measures likewise failed to create economic value: local content requirements created significant costs by protecting low productivity players, but they were not necessary for the development of strong supplier industries. Finally, we found no compelling evidence in favor of joint-venture (JV) requirements. Where JVs provided benefits, they tended to emerge naturally rather than through JV requirements.

Direct incentives are not justified as a tool to attract FDI

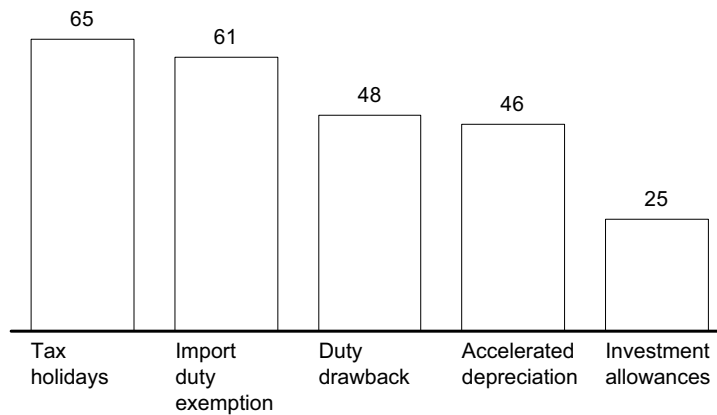
Incentives, such as tax holidays, import duty exemptions, and investment allowances are popular tools for attracting FDI (Exhibit 1). However, our case evidence suggests that their popularity is not justified. They were not the primary drivers of FDI flow and have significant costs that are often ignored by policy makers.

Incentives are not the primary drivers of FDI flows. In 7 of 14 cases, governments used incentives to attract FDI. In only 3 cases did the incentives have a positive effect on the level of FDI (Auto Brazil and India, Business Process Offshoring (BPO)); in 4 cases they did not influence FDI levels (Auto China, Consumer Electronics Brazil and China, Banking Brazil; Exhibit 2). But even where incentives did have a positive effect on the level of FDI, they were not the most

Exhibit 1

INCENTIVES ARE A POPULAR MECHANISM FOR ATTRACTING FDI

Type of incentive used, 1995
Percent of 103 countries surveyed



Source: UNCTAD 1995; McKinsey Global Institute

Exhibit 2

INCENTIVES INCREASED LEVEL OF FDI IN THREE OUT OF SEVEN CASES

++ Highly positive
+ Positive
○ Neutral
- Negative
-- Highly negative

	Incentive	Effect on level of FDI	Effect on FDI impact	Comment
Auto	• Brazil • Significant tax incentives, financing and free land offered by state governments in competition for auto plants	++	--	• Incentives induced overinvestment leading to reduced sector productivity • Brazilian states bid away enormous value in competing for FDI
	• China • Tax holidays offered for FDI players	0	0	• Incentives not necessary to attract FDI to China
	• India • Government incentives at state levels included subsidies of power roads, sales tax deferrals	+	-	• States bid away enormous value in competing for FDI
Consumer Electronics	• Brazil • Several tax rebates/reductions on tariffs and indirect taxes for locating production in Manaus • Tariff/indirect tax rebates/reductions in certain products in other states (e.g., mobile phones in São Paulo)	0	-	• Inefficient industry structure with expensive production in Manaus • Expensive bureaucracy associated with recovery rebates
	• China • For standard CE companies, 2 year tax free, 3 years half tax after first profitable year • Long-term half-tax (15%) for "high-tech" companies	0	0	• Given China's very attractive market, labor costs, agglomeration economics, incentives not necessary to attract FDI
Retail Banking	• Brazil • Tax subsidies to FDI players	0	0	• Incentives not necessary to attract FDI
IT/BPO	• India • Tax holidays and zero import tariff on imported equipment from federal government • Subsidies on power, land, cash payment for job creation, stamp tax reduction from state government	+	-	• Incentives not a key driver of decision to locate in India • Interviews show that CEOs prefer that the government withdraw incentives and invest in upgrading infrastructure

Note: No incentives were offered in Auto Mexico, Consumer Electronics India and Mexico, Food Retail Brazil and Mexico, and Retail Banking Mexico
Source: McKinsey Global Institute

important factors driving location decisions of multinational companies (MNCs), suggesting that most of the FDI would have been attracted without the incentives. For example, in both Auto India and BPO, MNCs ranked quality of infrastructure and availability of skilled labor as more important than government incentives (exhibits 3 and 4).

Incentives have significant costs that are often ignored by policy makers.

In addition to direct fiscal and administrative costs, incentives had large indirect costs that rendered them ineffective as tools for economic value creation in the cases we studied (Exhibit 5).

¶ **Direct costs** include both fiscal and administrative costs. The fiscal costs of incentives vary by type of FDI. For efficiency-seeking FDI, incentives constitute economic costs only if the FDI player would have invested in the country even without the incentive. For market-seeking FDI, fiscal costs occur whenever an entrant receives incentives for an investment that would have otherwise been made by a domestic player. Administrative costs are generated because bureaucracies are created to administer the incentive programs.

¶ **Indirect costs** include a negative impact on productivity, "race-to-the-bottom" dynamics, and the possibility of corruption.

- **Negative impact on productivity.** Incentives may encourage overinvestment, inefficient production, or crowding out of more efficient producers, all of which reduce sector productivity. For example, government incentives encouraged overinvestment by foreign original equipment manufacturers (OEMs) in Brazil's automotive industry, which contributed to overcapacity and significantly reduced sector productivity (exhibits 6 and 7). Tax incentives encouraged foreign consumer electronics manufacturers to locate production in remote Manaus region of Brazil, which increased costs and reduced productivity (Exhibit 8).
- **"Race-to-the-bottom" dynamics.** National or subnational governments may engage in bidding wars that transfer large amounts of value to FDI companies. For example, Brazilian state governments competed vigorously for the location of foreign automotive plants by offering large incentive packages, which transferred significant value from the Brazilian state to FDI companies (Exhibit 9). Likewise, Indian states bid away enormous value in competing for the location of foreign automobile plants. For efficiency-seeking FDI, similar bidding dynamics operate on the global level.
- **Corruption.** While we did not find evidence of widespread corruption impacting economic outcomes, the discretionary disbursement of incentives does create the risk of corrupt behavior.

Import barriers reduce FDI impact

Our case evidence shows that import barriers reduce FDI impact by limiting competition and by protecting subscale local operations. Import barriers include measures such as import tariffs, quotas, and products standards. 7 out of 8 cases in tradable goods sectors had some form of import protection during the period of our study. In all 7 cases, FDI had a positive impact, but our case evidence shows that FDI impact would have been even greater in the absence of import barriers.

Exhibit 3

Auto India

INCENTIVES WERE NOT AMONG TOP THREE FACTORS DRIVING FORD'S LOCATION DECISION IN INDIA

Ford was offered a host of incentives to locate its plant in Tamil Nadu	However, incentives were not the most important factor driving their location decision																		
<p>Cheap land</p> <ul style="list-style-type: none"> Government offered Ford 300 acres of freehold land at a subsidized cost of Rs. 300 million 	<p>Rankings of factors affecting location decision 10=highest, 1=lowest</p> <table border="1"> <thead> <tr> <th></th> <th style="text-align: right;">Rank</th> </tr> </thead> <tbody> <tr> <td>Distance from international airport</td> <td style="text-align: right;">3</td> </tr> <tr> <td>Proximity to target market</td> <td style="text-align: right;">3</td> </tr> <tr> <td>Availability of cheap land</td> <td style="text-align: right;">4</td> </tr> <tr> <td>Proximity to port/inland container terminal</td> <td style="text-align: right;">7</td> </tr> <tr> <td>Incentives</td> <td style="text-align: right;">7</td> </tr> <tr> <td>Availability of infrastructure</td> <td style="text-align: right;">8</td> </tr> <tr> <td>Availability of skilled labor</td> <td style="text-align: right;">9</td> </tr> <tr> <td>Availability of supplier base (ancillary unit)</td> <td style="text-align: right;">9</td> </tr> </tbody> </table>		Rank	Distance from international airport	3	Proximity to target market	3	Availability of cheap land	4	Proximity to port/inland container terminal	7	Incentives	7	Availability of infrastructure	8	Availability of skilled labor	9	Availability of supplier base (ancillary unit)	9
		Rank																	
Distance from international airport		3																	
Proximity to target market	3																		
Availability of cheap land	4																		
Proximity to port/inland container terminal	7																		
Incentives	7																		
Availability of infrastructure	8																		
Availability of skilled labor	9																		
Availability of supplier base (ancillary unit)	9																		
<p>Infrastructure assistance</p> <ul style="list-style-type: none"> Guaranteed power supply – plant will get power from 2 separate stations (one being a 230kV) Ford to get 40% discount on power tariff in Year 1 although this was gradually eliminated by Year 5 Adequate piped water supply assured 																			
<p>Fiscal incentives</p> <ul style="list-style-type: none"> 14-year holiday on sales tax (now 12%) on cars sold within Tamil Nadu (~9% of total production) Holiday on 4% CST on all cars sold outside Tamil Nadu Concession on sales tax levied on bought-out components in production process No import duty on capital goods (~30% at that time) as long as Ford made a commitment to export 5 times the value of the duty (subsequently changed) 																			

Note: Taken from "Study on policy competition among states in India for attracting direct investment" by R. Venkatesan et al.

Source: Interviews; NCAER

Exhibit 4

BPO

BPO COMPANIES RANK INCENTIVES LOW WHEN EVALUATING LOCATION ATTRACTIVENESS

Mean rank by companies*	Description
High-quality infrastructure	10 <ul style="list-style-type: none"> Reliable, cost-effective telecom infrastructure with multiple levels of built-in redundancy Ready-to-move-in office space Reliable, economically priced power with multiple levels of built-in redundancy Reliable public and private transport for rapid movement of employees Developed certified/recommended vendor-base
Easy availability of trained man power	9 <ul style="list-style-type: none"> Sufficient high quality people trained and certified by leading institutions Existence of institutions of learning catering specifically to offshoring industry to develop company- specific courses/modules
Rules and regulations/ease of setup	9 <ul style="list-style-type: none"> Supportive and progressive regulatory environment apart from vary attractive financial incentives Single-window interface for facilitating the setting up and running offshoring centers
Easy accessibility	7 <ul style="list-style-type: none"> World-class accessibility with good connections by air
Financial incentives by state government	5 <ul style="list-style-type: none"> Attractive financial incentives by state government to companies for setting-up and running offshoring centers Financial incentives are low on the list of criteria firms use for location decisions; however, they can be a significant determinant when all others factors are equal

* Based on a survey of 30 MNC and Indian offshored services companies. Ranking on a scale of 1-10 where 1 denotes lowest and 10 denotes highest importance

Source: McKinsey Global Institute

Exhibit 5

DIRECT AND INDIRECT COSTS OF INCENTIVES

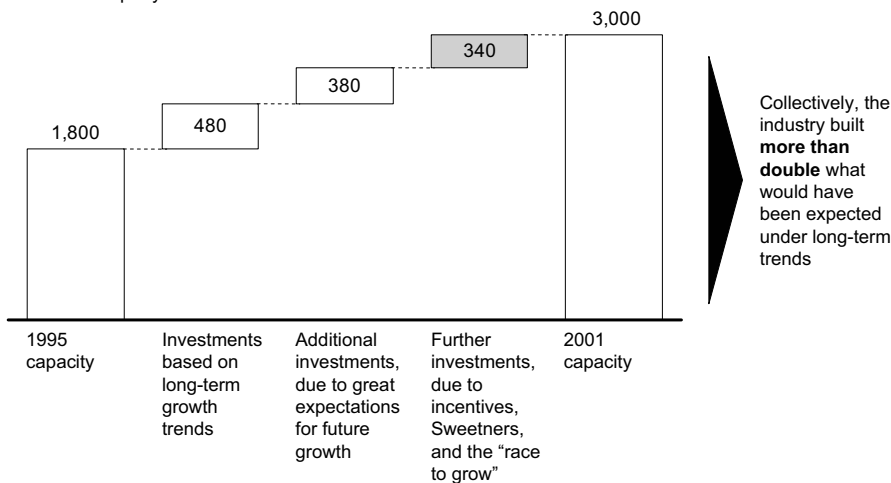
	Description	Case evidence	
Direct cost	Fiscal cost	<ul style="list-style-type: none"> Incentives erode tax base when “free-riders” who would have invested anyways receive tax breaks Often tax breaks may be extended to local players to preserve level playing field 	<ul style="list-style-type: none"> Brazil Auto India Auto China Auto India IT/BPO Brazil banking
	Administrative costs	<ul style="list-style-type: none"> Because there are many discretionary tax breaks, large bureaucracies to monitor qualification are created Enforcement can be expensive as well, as there are plenty of ways to misrepresent 	<ul style="list-style-type: none"> Brazil Consumer Electronics India IT/BPO
Indirect cost	Impact on productivity	<ul style="list-style-type: none"> Reduced productivity can occur as a result of <ul style="list-style-type: none"> Overinvestment Inefficient production Crowding out of more efficient domestic producers 	<ul style="list-style-type: none"> Brazil Auto Brazil Consumer Electronics
	“Race to the bottom”	<ul style="list-style-type: none"> Especially within regions with integrated market value destroying “incentive wars” can develop Operates both at the national and sub-national levels 	<ul style="list-style-type: none"> Brazil Auto India Auto
	Corruption	<ul style="list-style-type: none"> Discretionary disbursement of incentives creates opportunities for corruption 	<ul style="list-style-type: none"> India IT/BPO

Source: McKinsey Global Institute

Exhibit 6

Auto Brazil
INCENTIVES CONTRIBUTED TO CAPACITY BUILD-UP IN BRAZIL'S AUTO SECTOR

Capacity in Brazil Auto sector, 1995-2001
Thousand units per year



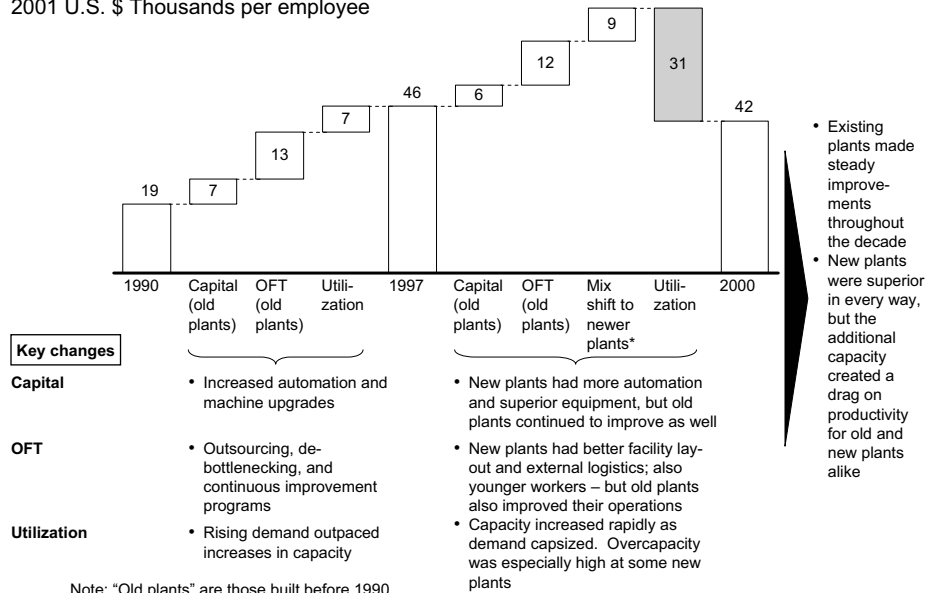
Source: McKinsey Global Institute

Exhibit 7

Auto Brazil

OVERCAPACITY SIGNIFICANTLY REDUCED SECTOR PRODUCTIVITY

2001 U.S. \$ Thousands per employee



Note: "Old plants" are those built before 1990

* Additional productivity due to new plants is weighted by the fraction of capacity in 2000 that is new

Source: Interviews; plant visits; team analysis

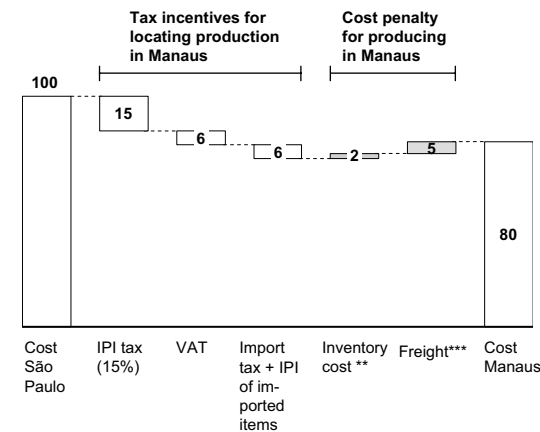
Exhibit 8

Consumer Electronics Brazil

TAX INCENTIVES ENCOURAGE PRODUCTION IN MANAUS REGION DESPITE SIGNIFICANT COST DISADVANTAGE

Cost advantage*

Percent



Location



- Manaus is located in the middle of the Amazon forest, around 2,500 miles from São Paulo, the main consumer market
- Trucks proceed to Belém by river (5 days) then by road, taking 10-20 days to get to São Paulo
- Freight cost between 3% and 7% for CE products (except white line)

* Assuming a consumer electronics product with 25% of cost as imported components and 20% margin. Labor cost differences not assumed

** Assume 2 month component stock and 18 days delivery to south-east

*** Assume only extra freight cost compared to São Paulo

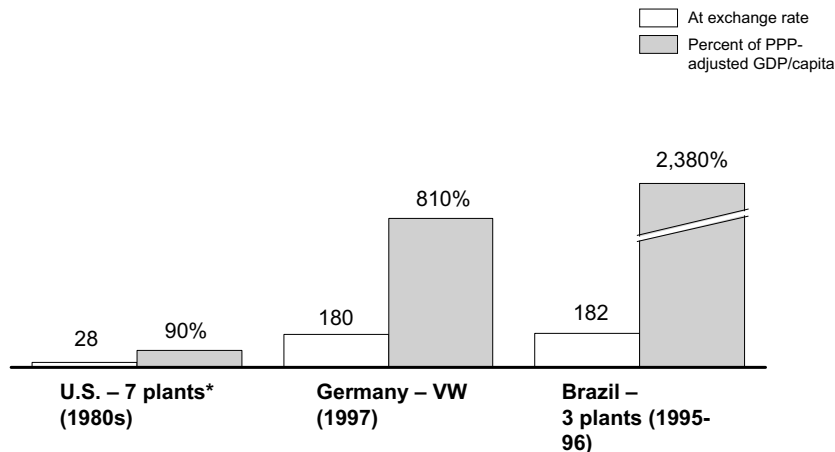
Source: Interview, McKinsey analysis

Exhibit 9

Auto Brazil

GOVERNMENT INCENTIVES TRANSFERRED LARGE AMOUNT OF VALUE TO FDI COMPANIES

NPV in \$ thousands/job, percent of GDP/capita



* Excludes a single U.S. Mercedes Benz plant with incentives of \$168,000 per job in 1994

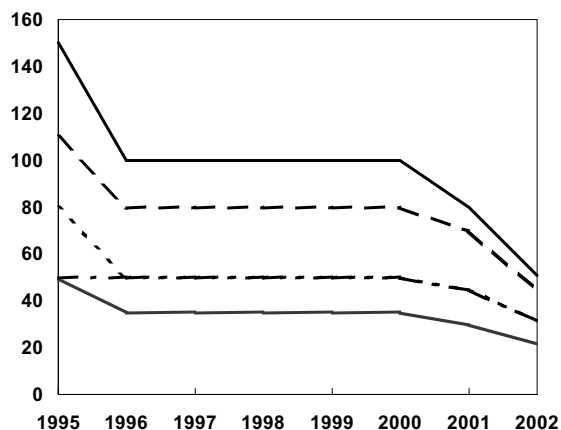
Source: Cited in Donahue (U.S.); Bachtler et. al. (Europe); Da Mota Veiga and Iglesias (Brazil), and Venkatesan et.al. (India); McKinsey Global Institute

Exhibit 10

Auto China

CHINA'S AUTO SECTOR TARIFFS ARE HIGH IN INTERNATIONAL COMPARISON

Tariffs in Chinese auto sector
Percent



- Car (displacement >3.0 L)
- - Car (displacement <3.0 L)
- Parts – Bumper and Seat Belt
- • Parts – Air Bag
- Parts – Gearbox for car

Tariffs for passenger cars

- China:**
- At WTO entry: 51.9% (<3.0L) and 61.7% (>3.0L)
 - 2006: 25% (any engine)
- Other countries:**
- Other countries studied in this report
 - India: 105%
 - Brazil: 35%
 - Mexico: 20%
 - OECD
 - Germany: 10%
 - USA: 2.5%
 - Japan: 0%

Source: China customs yearbook

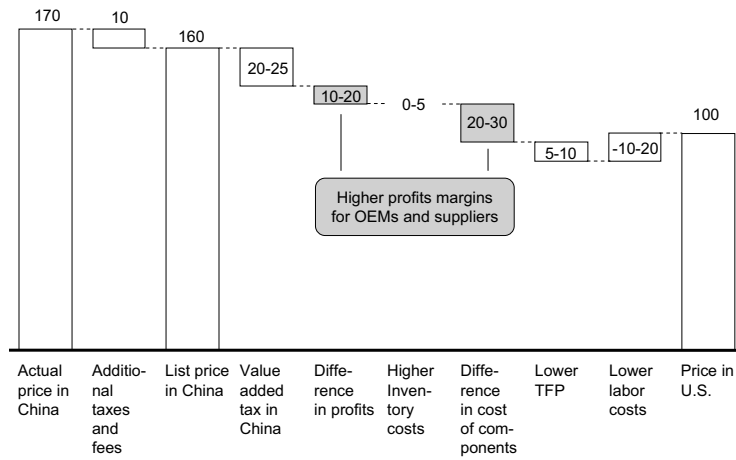
Exhibit 11

Auto China

CAR PRICES ARE HIGHER IN CHINA THAN IN THE U.S. MAINLY DUE TO HIGHER PROFIT MARGINS FOR OEMS AND SUPPLIERS

ESTIMATE

Comparison of China and U.S. passenger vehicle prices
Percent



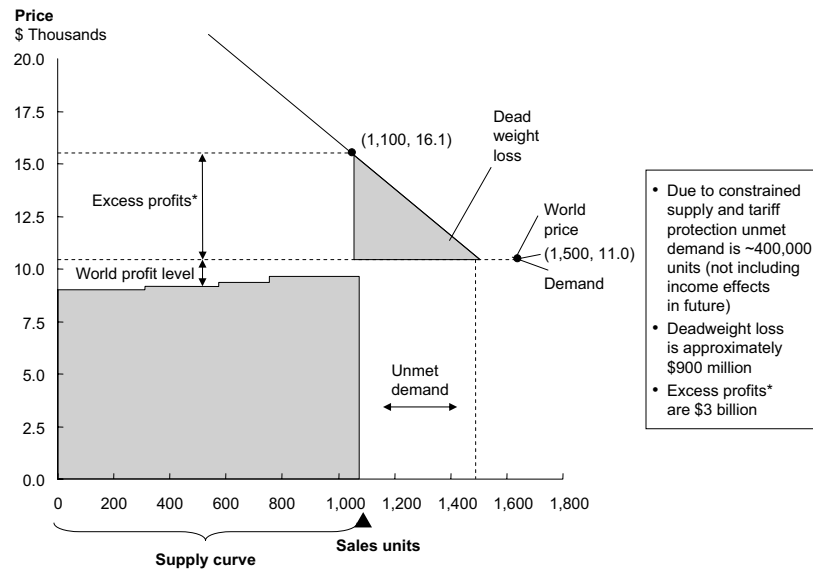
Source: Interviews; McKinsey Global Institute

Exhibit 12

Auto China

SUPPLY AND DEMAND IN CHINA AUTO SECTOR, 2001

ESTIMATE



* Includes excess profits of parts makers

Source: UBS Warburg; McKinsey analysis

- ¶ **Auto China:** Import barriers have been a key inhibitor of greater FDI impact. A combination of high import tariffs and quotas has limited competition in both auto assembly and parts, causing prices to remain nearly 70 percent above U.S. levels (exhibits 10-12).
- ¶ **Consumer Electronics India:** Import tariffs average about 30 to 40 percent for goods such as TVs, PCs, and refrigerators. The protection of domestic players has limited competition and increased prices by significantly compared to international best practice levels (exhibits 13 and 14).
- ¶ **Auto India:** High import tariffs have forced OEMs selling very small volumes (e.g., Daimler-Chrysler) to set up plants in India. Due to the small scale of these plants, OEMs produce with a significant cost-disadvantage, reducing productivity (exhibits 15-16).
- ¶ **Consumer Electronics Brazil:** Brazil-specific standards (such as the unique PAL-M TV standard) encourage low productivity, subscale local production.

Trade-related investment measures do not create economic value

We did not find compelling evidence in favor of trade-related investment measures (TRIMs). TRIMs tend to impose requirements or restrictions on company operations, which can limit their flexibility to compete effectively. Thus they should not be put in place except in the rare cases where there is strong evidence of positive outcomes from doing so. In our sample of cases, local content requirements (LCRs) created significant economic costs by protecting low-productivity players, but they were not necessary for the development of strong supplier industries. We found no compelling evidence in favor of joint-venture (JV) requirements. Where JVs provide benefits, such as access to markets or governments, they tend to emerge naturally rather than through JV requirements.

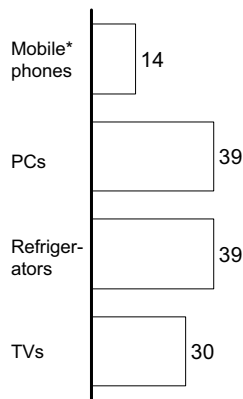
Local content requirements create significant economic costs by protecting low productivity players, but they are not necessary for the development of strong supplier industries. The primary purpose of LCRs is the development of local supplier industries. LCRs were present in 3 of 14 cases (Auto China and India and Consumer Electronics Brazil).

- ¶ **LCRs create significant costs by protecting low productivity players.** In Auto China and Consumer Electronics Brazil, most locally sourced parts are more expensive than imports due to the small scale of local operations. In Auto India, local parts were initially more expensive than imports, but, over time, the Indian parts industry developed an export platform, which reduced its scale disadvantage. LCRs may have provided a short-term catalyst for the development of a domestic supplier industry, but interviews suggest that long-term growth has been driven by sector characteristics (low-cost/high-skill labor and high competitive intensity) rather than LCRs.
- ¶ **Our case evidence suggests that LCRs are not necessary for the development of strong supplier industries.** In Auto China and India, export-oriented supplier industries have developed in the presence of LCRs, but sectors without LCRs, such as Auto Mexico and Consumer Electronics China have even more developed supplier industries. Given spillover effects from

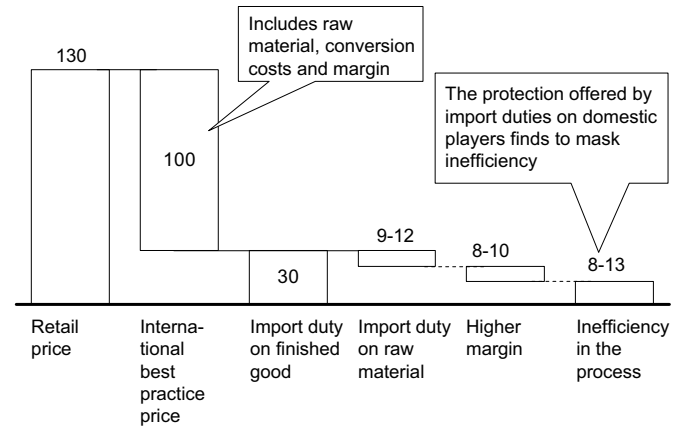
Exhibit 13

Consumer Electronics India
HIGH TARIFFS LIMIT COMPETITION AND INCREASE PRICES IN INDIA'S CONSUMER ELECTRONICS SECTOR

Average tariff/effective rate of protection on final goods
 Percent



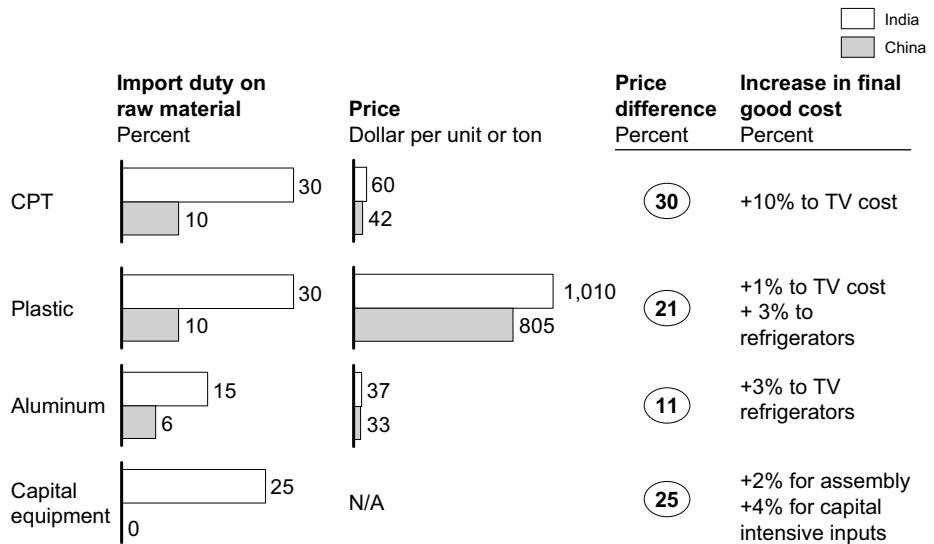
TV example – Color TV price breakdown
 Index, International Best Practice = 100



Source: McKinsey CII report

Exhibit 14

Consumer Electronics India
IMPORT DUTIES INCREASE PRICES OF INPUTS FOR INDIA'S CONSUMER ELECTRONICS INDUSTRY BY UP TO 30 PERCENT COMPARED TO CHINA

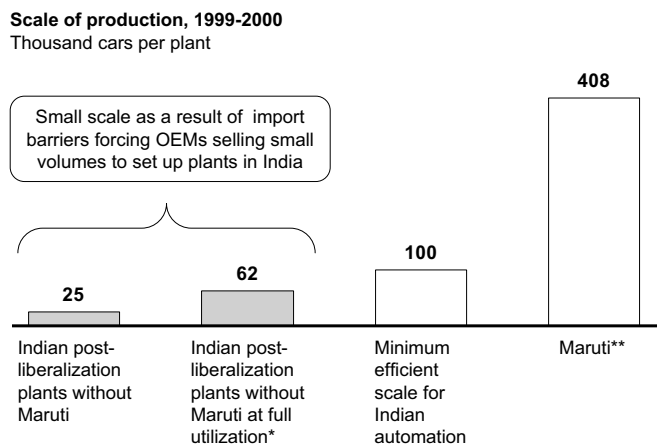


Source: McKinsey CII report; McKinsey Global Institute

Exhibit 15

Auto India

IMPORT BARRIERS FORCE SUBSCALE OEM OPERATIONS IN INDIA



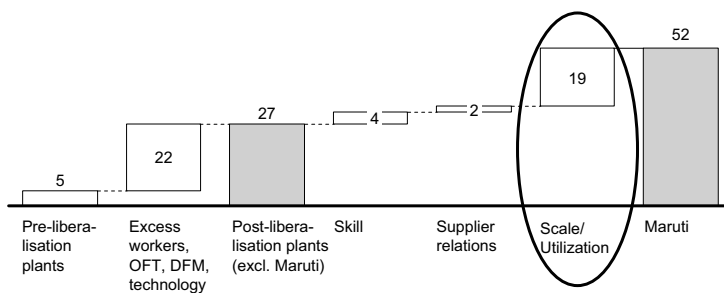
* With two shifts
 ** Including MUV
 Source: Interviews, SIAM, Harbour report

Exhibit 16

Auto India

LOWER PRODUCTIVITY OF MNCs LARGELY DRIVEN BY LACK OF SCALE AND LOW UTILIZATION

Equivalent cars per employee*, indexed to U.S. average



Causes

- Less experience
- Less JIT
- Lower product quality
- Smaller scale
- Less indirect labour per car produced
- Higher output

* Excluding sales, R&D, powertrain, etc., and adjusted for hours worked per year
 Source: Interviews, SIAM, INFAC; McKinsey Global Institute

OEMs and the inherent attractiveness of the economics, a strong supplier base would have likely developed in Auto China and India without the help of LCRs. In Consumer Electronics Brazil, by contrast, in the absence of the right economics, LCRs did not create a viable components industry. As soon as tariffs were reduced, the industry was decimated by lower price imports.

We found no compelling evidence in favor of JV requirements. Where JVs provide benefits they tend to emerge naturally, rather than through JV requirements. Governments impose JV requirements for a variety of reasons, including the desire for greater technology transfer, access to global markets, and the transfer of management know-how. JV requirements were present in 3 of 14 cases (Auto China and India and Consumer Electronics China).

- ¶ **Auto China and India:** JVs in Auto China provided FDI players with access to government purchasing and facilitated government relations more broadly. However, these JVs would likely have emerged naturally given the strong role of the state in the Chinese economy and the need for a local partner in managing that relationship. A negative consequence of JV requirements in Auto China was that they significantly reduced the total amount of FDI during the period of our study because of lengthy delays in negotiations with the government (Honda and GM spent over 4 years negotiating with the Chinese government to set up JVs). In Auto India, when the government relaxed a 50/50 JV requirement, the share of domestic partners declined to under 10 percent.
- ¶ **Consumer Electronics China:** Local companies gained technology from FDI players, either through JVs or through other forms of collaboration, particularly in mobile phones. Interviews suggest that FDI players would have entered the Chinese market through JVs even in the absence of JV requirements, given the strong role of state in the Chinese economy and the need for access to local distribution networks and market knowledge.
- ¶ **Food retail Brazil and Mexico:** In Brazil, Sonae and Ahold successfully used JVs as entry vehicles that led to acquisitions. In Mexico, Wal-Mart used a 50/50 JV with an option to acquire its domestic partner as a successful entry vehicle. There were no JV requirements in either Mexico or Brazil.

GOVERNMENTS CAN INCREASE FDI IMPACT BY PROMOTING A COMPETITIVE ENVIRONMENT, ENFORCING LAWS AND REGULATIONS, AND BUILDING A STRONG INFRASTRUCTURE

With competition in the host country sector being the most powerful factor driving FDI impact, the key policy implication for host country governments is to promote a competitive environment. Governments can further increase FDI impact by enforcing laws and regulations and by building a strong physical and legal infrastructure.

Promoting a competitive environment

Our case evidence shows that governments can increase the impact from FDI by promoting a competitive environment. Specific policies that enhance competitive intensity include:

- ¶ **Removal of FDI barriers.** Competitive intensity in the Indian auto sector increased dramatically following the removal of FDI barriers. Sector productivity increased significantly because of the entry of more productive foreign players and because incumbents were forced to adapt or exit (Exhibit 17). In Auto China, FDI barriers markedly reduced FDI inflow (each player had to negotiate a specific entry agreement with the government), which reduced competition and allowed prices to remain nearly 70 percent above U.S. levels (exhibits 11 and 12). FDI barriers were gradually reduced in the late 1990s/early 2000s, which prompted an increase in competition and a decline in prices.
- ¶ **Reduction of import barriers.** In Auto Brazil, a two-tiered tariff encouraged OEMs to build local plants. When tariffs were reduced, competitive intensity increased, resulting in higher productivity and better quality vehicles at lower prices (Exhibit 18). In Auto Mexico, reductions in import tariffs following NAFTA led to an increase in competition as Mexico-based producers were increasingly exposed to the superior quality and productivity of vehicles made in the U.S.
- ¶ **Elimination of local content requirements.** LCRs in Auto China and Consumer Electronics Brazil have limited competition from more efficient foreign suppliers, which has increased input prices for manufacturers. In Auto China, LCRs have been removed in the course of the WTO entry and industry experts expect an increase in competitive intensity as a result.
- ¶ **Promotion of new entrants.** Competition in the Mexican retail banking sector has been limited in part because of the small presence of non-bank players in core banking markets.¹ The Mexican government recently streamlined the regulation of mutual funds to increase their appeal as investment products and to increase competition with banks on the deposit side (Exhibit 19). In the U.S., growth of mutual funds in the 1980s led to a dramatic increase in banking sector competition.

Enforcing laws and regulations

Unequal enforcement of laws and regulations can have a major impact on sector performance and FDI impact. Informality – the failure of business activities to meet key legal and tax requirements – was a significant problem in many sectors, reducing productivity growth and formal player performance. Corruption, by contrast, did not surface as a main issue or barrier to FDI impact.

In countries with high taxes and low tax enforcement, informality has reduced sector performance and FDI impact. We found some form of informality in 9 of our 14 cases (Exhibit 20). Informal players reduce sector performance in three

1. Non-bank financial institutions play an important role in the Mexican financial sector. However, most of these institutions focus on lower-income segments of the population that are not served by commercial banks. The role of non-bank financial institutions in core banking segments is limited.

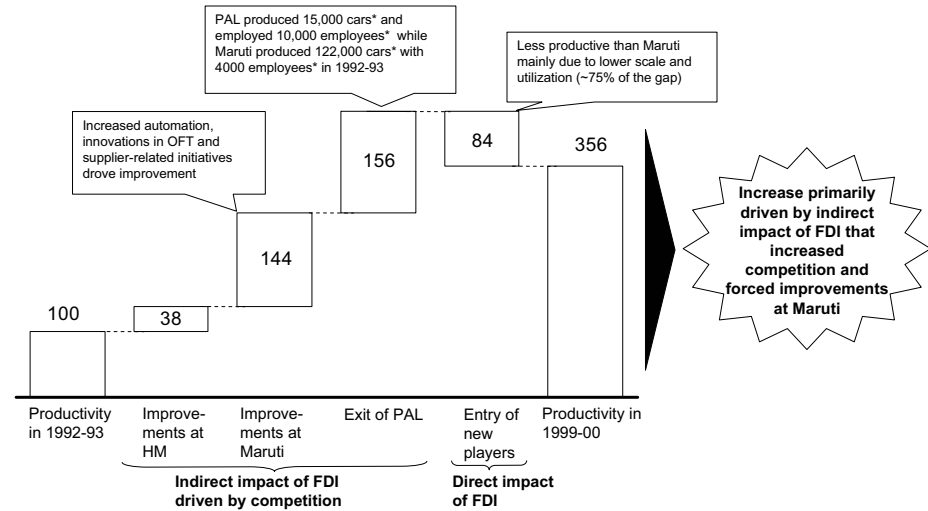
Exhibit 17

Auto India

FDI'S MOST CRUCIAL IMPACT IN INDIA WAS TO INDUCE COMPETITION

Labor productivity

Equivalent cars per equivalent employee; indexed to 1992-93 (100)



* Actual cars and employment (not adjusted)

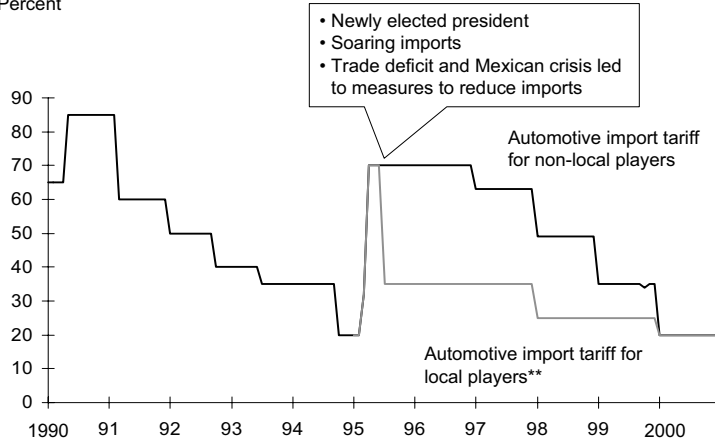
Source: MGI; McKinsey Global Institute; team analysis

Exhibit 18

Auto Brazil

IN BRAZIL A TWO-TIERED TARIFF ENCOURAGED OEMS TO BUILD LOCAL PLANTS

Import tariffs for vehicles*
Percent



* Published schedule of tariff reductions

** Only companies with confirmed investments (either expansions or new facilities). Local players have to maintain a zero or positive company trade balance to benefit from the lower tariffs. Newcomers will have to export enough to make up for those benefits within 3 years

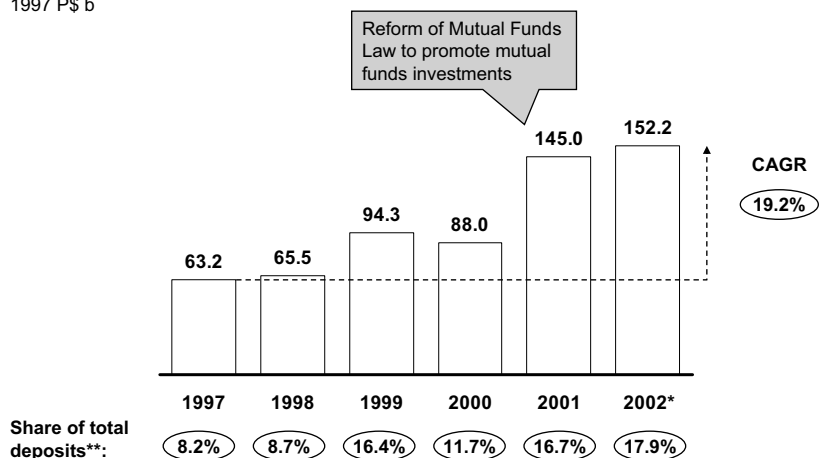
Source: Anfavea; Banco Central do Brasil; Conjuntura Econômica; Suma Econômica; Dinheiro Vivo; press clippings

Exhibit 19

Retail Banking Mexico

IN MEXICO MUTUAL FUNDS INCREASINGLY COMPETE WITH BANKS FOR RETAIL DEPOSITS

Total deposit volume of retail mutual funds, 1997-2002
1997 P\$ b



* September 2002
** Commercial banks, savings-and-loans, credit unions and retail mutual funds
Source: CNBV

Exhibit 20

PRESENCE OF INFORMALITY ACROSS SECTORS

		Characteristics of the business activity		
		Full reporting of all business revenues and employment	Registered as a business entity but partial reporting of business revenues and employment	Not registered as a business entity
Type of companies	Modern	<ul style="list-style-type: none"> All sectors 	<ul style="list-style-type: none"> Food retail: Significant in Brazil but not in Mexico Auto parts 	
	Traditional	<ul style="list-style-type: none"> Food retail: Exists in Mexico 	<ul style="list-style-type: none"> Food retail: Significant in Mexico but not Brazil Consumer Electronics: Significant in mobile handset retail in India 	<ul style="list-style-type: none"> Consumer Electronics: Significant in PC assembly in Brazil, China, and India

Legend: MGI definition of informality

Source: Interviews; McKinsey

ways: first, they retain a higher market share because of cost advantages from tax evasion, limiting the growth of higher productivity players; second, they avoid scale build-up and close relationships with financiers, reducing productivity and limiting the diffusion of best practice; finally, they distort factor costs (i.e., labor vs. capital), reducing the incentives to invest in productivity improvements.

¶ **Food Retail:** In Food Retail Brazil, high VAT on food and high indirect taxes create a significant cost advantage to modern informal players who can reduce costs both directly by avoiding taxes and indirectly by purchasing from informal suppliers (Exhibit 21). While informal players have increased competition in the food retail sector, their productivity lags significantly behind formal players. FDI players tried to eliminate some of their informal competitors by acquiring them, but these acquisitions were largely unprofitable due to the cost of full tax compliance (exhibits 22 and 23). In Mexico, by contrast, the tax burden on food retailers is much lower, giving firms in the sector minimal incentives to evade taxes. As a result, while informality remains the rule among small-scale traditional players, it has not been a factor in the competitive dynamics among modern retailers.

¶ **Consumer electronics:** Informality in PC assembly was present in Brazil, China, and India. High tax rates and ease of avoidance encourage informality to develop in this sector (Exhibit 24). Informality provided a significant advantage in selling highly price-sensitive products in low-income countries, making MNCs less competitive.

¶ **Auto:** In the fragmented auto parts sector, tax evasion is pervasive. There is considerable informality, particularly in secondary auto parts across all of our countries in the form of contraband, robbery, and piracy. In some cases, OEMs have taken measures to respond to this threat. For example, Honda in Mexico promises to replace stolen parts free of charge, reducing the incentives for trade in stolen Honda parts.

Corruption did not surface as a main issue or barrier to FDI impact. Brazil, Mexico, China, and particularly India rank in the bottom half of the 91 countries ranked for corruption by Transparency International (Exhibit 25). Yet in our sector cases, the foreign players who entered did not perceive corruption to be a key factor limiting their chances of success, nor did we find it to explain differences in economic outcomes across sectors or countries.

Building a strong infrastructure

Our case evidence shows that a strong physical and legal infrastructure is an important enabling condition for FDI impact. A high-quality infrastructure was most important for efficiency-seeking FDI, where companies base location decisions on the potential to achieve significant efficiency gains. But the quality of a country's infrastructure was likewise important in determining the impact of market-seeking FDI.

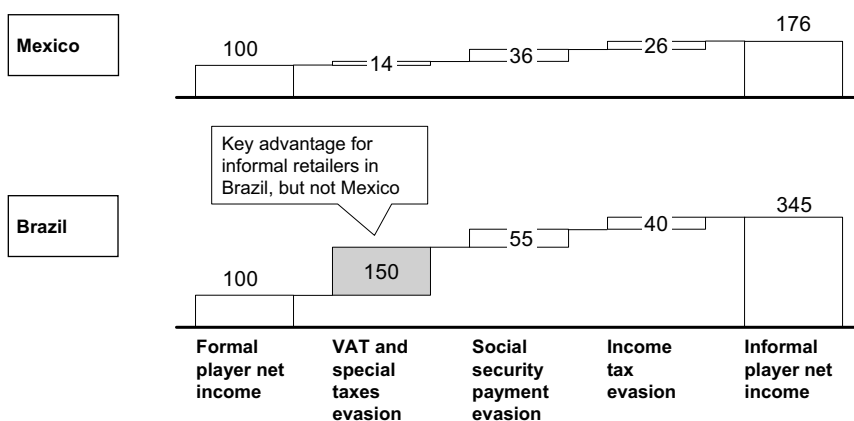
Exhibit 21

Food Retail Brazil and Mexico

IN BRAZIL HIGH TAXES PROVIDE A SIGNIFICANT COST ADVANTAGE TO INFORMAL RETAILERS

ROUGH ESTIMATE

Indexed to formal sector net margin = 100



Note: Analysis modeled for a representative supermarket – informal sector assumption is that 30% net sales and employee costs go unreported

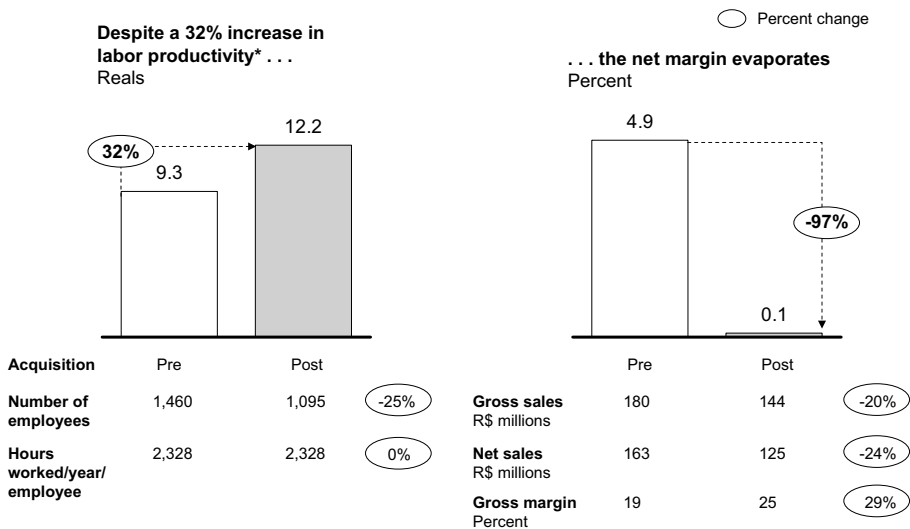
Source: McKinsey analysis

Exhibit 22

Food Retail Brazil

CHANGE IN PRODUCTIVITY AND PROFITABILITY WHEN AN INFORMAL RETAILER IS ACQUIRED BY A LARGE FORMAL RETAILER

ACTUAL EXAMPLE



Source: ABRAS; PNAD; store visits; interviews; McKinsey

Exhibit 23

Food Retail Brazil

DETAIL OF CHANGE IN PRODUCTIVITY AND PROFITABILITY WHEN AN INFORMAL RETAILER IS ACQUIRED BY A LARGE FORMAL RETAILER

	Pre acquisition	Post acquisition	Explanation
Despite a 32% increase in labor productivity ...	• Number of employees*	1,460 → 1,095 (-25%)	• Centralization and reduction of customer service employees, but small increase in employees at HQ
	• Hours worked/year/employee	2,328 → 2,328 (No change)	• Remaining employees work the same number of hours on average**
	• Labor productivity Gross margin/hour	9.3 → 12.2 (+32%)	
... sales decline and net margin evaporates	• Gross sales R \$ Millions	180 → 144 (-20%)	• Higher prices/less pricing flexibility, lower volume • Decrease in service level • Decrease in product customization
	• Net sales R \$ Millions	163 → 125 (-24%)	• Full tax compliance
	• Gross margin*** Percent	19 → 25 (+32%)	• Decreased COGS (inclusion in centralized purchasing/distribution and elimination of wholesaler) • Higher prices
	• Net margin*** Percent	4.9 → 0.1 (-97%)	• Much higher centralized and store costs (7.5%) and full tax compliance (5%); but improved COGS/deals from centralized distribution (8%)

* Estimate. Actual data not available.
 ** Undocumented "informal" hours become documented, legal overtime
 *** Based on net sales
 Note: Figures are rounded.
 Source: ABRAS; PNAD; store visits; interviews; McKinsey

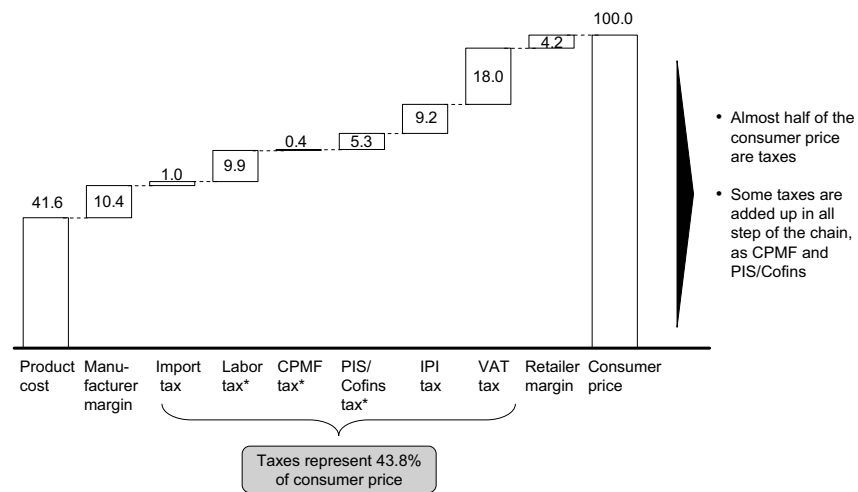
Exhibit 24

Consumer Electronics Brazil

HIGH TAX RATES ENCOURAGE INFORMALITY IN BRAZIL'S CONSUMER ELECTRONICS SECTOR

EXAMPLE


Price breakdown for a consumer electronics product in Brazil assuming full tax payment
Percent



* Consider taxes paid by both manufacturer and retailer
 Source: Interviews; McKinsey analysis

Exhibit 25**CORRUPTION PERCEIVED TO BE PREVALENT IN COUNTRIES EXAMINED,
BUT NOT A MAJOR FACTOR IN OUR CASES**

Corruption Perception Index*, 2002	
Country	Score
1. Finland	9.7
2. Denmark	9.5
New Zealand	
.	
.	
44. Greece	4.2
45. Brazil, Bulgaria, Jamaica,	4.0
Peru, Poland	
50. Ghana	3.9
51. Croatia	3.8
52. Czech Republic, Latvia,	3.7
Morocco, Slovakia, Sri Lanka	
57. Colombia, Mexico	3.6
59. China, Dominican Republic,	3.5
Ethiopia	
.	
.	
70. Argentina	2.8
71. Cote d'Ivoire, Honduras, India,	2.7
Russia, Tanzania, Zimbabwe	
77. Pakistan, Philippines,	2.6
Romania, Zambia	

 Country examined
in our case studies

**Brazil, Mexico, China, and
India rank in the bottom
half of the 91 countries
ranked for corruption;
however, corruption did
not surface as a main issue
or barrier to FDI impact**

* Based on surveys from business people, academics, and country analysts
Source: Transparency International; MGI

A high-quality infrastructure is of critical important for efficiency-seeking FDI, where companies base location decisions on the potential to achieve significant efficiency gains.

- ¶ **IT/BPO India:** The absence of a reliable power and telecom infrastructure has been a big deterrent for companies to make investments in India. The government's liberalization of these two sectors led to a significant upgrading of infrastructure quality and was an important pre-condition for many FDI players to locate in India.
- ¶ **Consumer Electronics Mexico:** Security issues and the poor quality of the transportation infrastructure have limited FDI impact. Because roadways are insecure in Mexico, one percent is added to costs to pay for security. Mexican freight prices are generally much higher than U.S. prices for similar distances.
- ¶ **Consumer Electronics China:** High-quality infrastructure was provided in business-friendly special economic zones (SEZs), which provided good access to important inputs such as electricity and telephony.

Infrastructure quality likewise influences the impact of market-seeking FDI.

- ¶ **Consumer Electronics India:** The underdeveloped export infrastructure limits opportunities for FDI-driven exports, which market seekers may otherwise pursue as a complement to their strategy.
- ¶ **Retail banking Mexico:** The underdeveloped legal infrastructure (particularly the difficulty for banks to repossess collateral assets due to enforcement problems) limits the ability of banks to develop core banking segments, such as mortgage lending.
- ¶ **Consumer Electronics Brazil:** A large share of Brazil's consumer electronics production is located in the remote region of Manaus, which incurs a 5 percent freight penalty and 2 percent inventory penalty as parts from Asia take up to 2 months to arrive, due to poor transport links (Exhibit 8).

SUMMARY

We did not find evidence that policies targeted at FDI, such as incentives, import barriers, and trade-related investment measures, are useful tools for economic value creation. In many cases, these policies did not achieve their objective and they often incurred significant costs. Rather than focusing on targeted FDI policies, our case evidence suggests that governments can increase the value from FDI by strengthening the foundations of economic development, including a competitive environment, an even enforcement of laws and regulations, and a strong physical and legal infrastructure.

Impact on global industry restructuring

1

GREATER OPPORTUNITIES FROM THE TRANSITION TO A GLOBAL ECONOMY

Two trends are shaping the global opportunities landscape for companies: many previously closed developing economies have removed or relaxed policies limiting trade and foreign investments; and transactions costs associated with global businesses – both time and money – have declined rapidly. These two trends enable developing economies to be increasingly integrated into the global economy.

- ¶ **Policy barriers limiting foreign investments have been removed** in a number of large developing economies. India's selective removal of prohibitions for FDI entry; Mexico's entry to NAFTA; and Brazil's more liberal policies toward FDI in sectors like the auto sector are just a few examples (Exhibit 1).
- ¶ **Transactions costs have declined** rapidly as physical transactions costs have been reduced, telecommunications costs have plummeted, and nearly instantaneous electronic communications have become the global standard (exhibits 2 and 3). Companies have therefore been able to reduce costs by relocating labor intensive steps in their value chain to developing countries with lower labor costs.

FIVE INCREASINGLY MORE SOPHISTICATED HORIZONS OF INDUSTRY RESTRUCTURING

Multinational companies have invested abroad for two main reasons: to expand their customer base by entering new markets (market-seeking investments); and to reduce costs by locating production to countries with lower factor costs (efficiency-seeking investments; Exhibit 4). We see the two motives as increasingly complementary, as companies are forced to reduce costs in order to be able to expand their markets. We have defined five horizons of industry restructuring that firms can progress along, ranging from market entry to value chain reengineering to new market creation. These horizons are not exclusive of one another, nor necessarily sequential, and can often be mutually reinforcing (exhibits 5-7).

- ¶ **Market entry.** Companies enter new countries to expand their consumer base, using a very similar production model in the foreign country to the one they operate at home (e.g., global expansion strategies of multinational companies in food retail, auto, and retail banking).
- ¶ **Product specialization.** Some companies locate the entire production process of a product (components to final assembly) to a single location or region, with different regions specializing in different products and trading finished goods (e.g., in auto assembly in North America: Mexico produces all Pontiac Aztecs and trades them for Chevrolet TrailBlazers produced in the U.S.).
- ¶ **Value chain disaggregation.** Different components of one product are manufactured in different locations/regions and are assembled into final product elsewhere (e.g., in consumer electronics, Mexico has focused on final assembly for the North American market, using mostly components

Exhibit 1**MANY DEVELOPING COUNTRIES HAVE REMOVED OR REDUCED TRADE BARRIERS OVER THE LAST 10 YEARS****Brazil**

- In 2000, Brazil decreased most tariff rates by 3%
- The government offered large concessions including land, infrastructure, tax breaks, and low-interest loans in order to attract FDI in the auto sector

Mexico

- The government entered NAFTA in 1994 which will remove all tariffs on North American industrial products traded between Canada, Mexico, and the U.S. within 10 years; by 1999, 65% of all industrial US exports entered Mexico tariff free

China

- The weighted average import tariff decreased from 43% in 1991 to 20.1% in 1997
- China entered the WTO in 2001
- The 40% local content requirements in the auto sector were removed in 2001
- The government funded various infrastructure projects to attract FDI

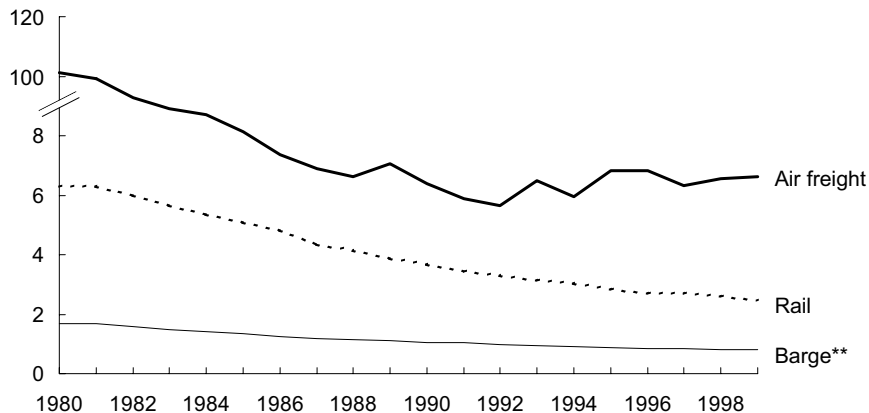
India

- Auto licensing was abolished in 1991
- The weighed average import tariff decreased over 60% from 87% in 1991 to 20.3% in 1997
- In 2001, the government removed auto import quotas and permitted 100% FDI investment in the sector

Source: Literature searches

Exhibit 2**TRANSPORTATION COSTS HAVE DECLINED OVER TIME**

Revenue per ton mile, cents*



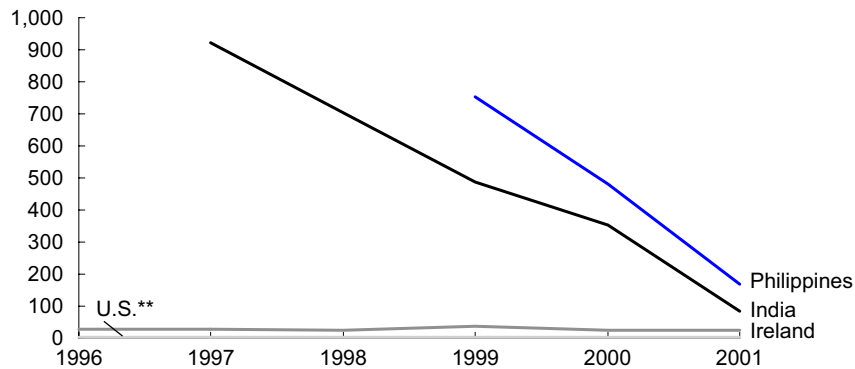
* Revenue decreases used as a proxy for price decreases; adjusted for inflation

** For inland waterways shipping (e.g., Mississippi River)

Source: ENO Transportation Foundation

Exhibit 3**TELECOM COSTS HAVE FALLEN DRAMATICALLY, PARTICULARLY IN DEVELOPING COUNTRIES**

\$ Thousand/year for 2 Mbps fiber leased line, half circuit*



* Cost of international leased line for India; cost of long distance domestic leased line in the U.S.; costs are for January each year; for India, based on Mumbai or Cochin

** U.S. half circuit data is derived by dividing full circuit data by half

Source: VSNL press releases; literature search; Lynx; Goldman Sachs estimates; McKinsey Global Institute

Exhibit 4**MOST MULTINATIONAL COMPANIES INVEST OVERSEAS FOR IMPROVED ACCESS TO MARKETS AND TO REDUCE OPERATING COSTS**

Percent of survey respondents who ranked the following as most important objective

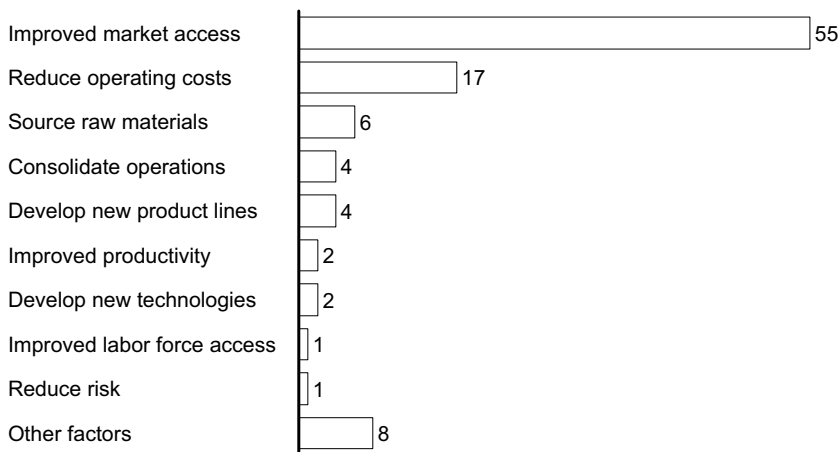
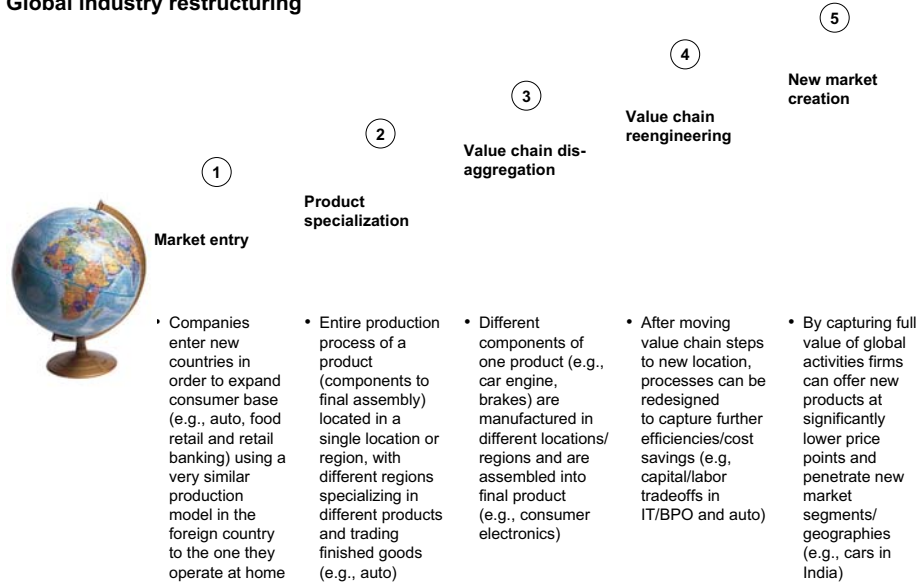


Exhibit 5

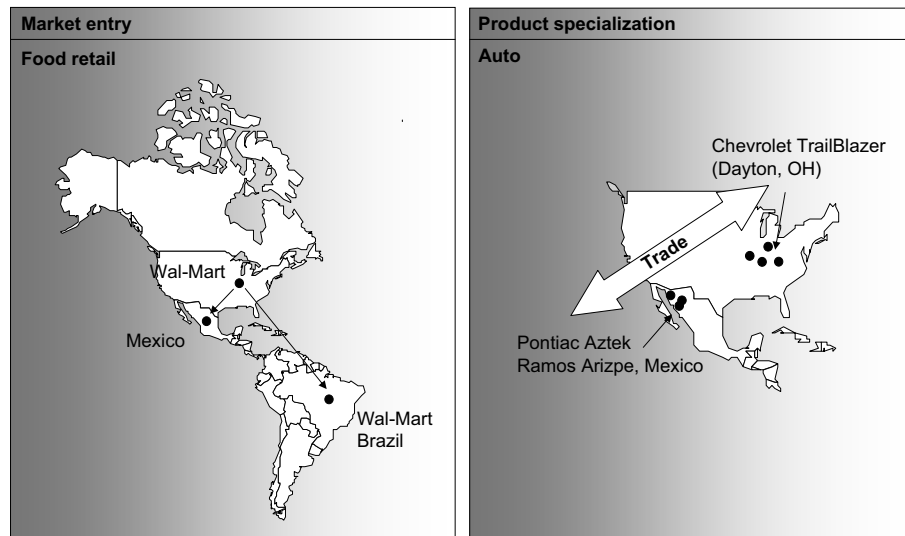
5 MAIN TYPES OF GLOBAL INDUSTRY RESTRUCTURING
Global industry restructuring



Source: McKinsey Global Institute

Exhibit 6

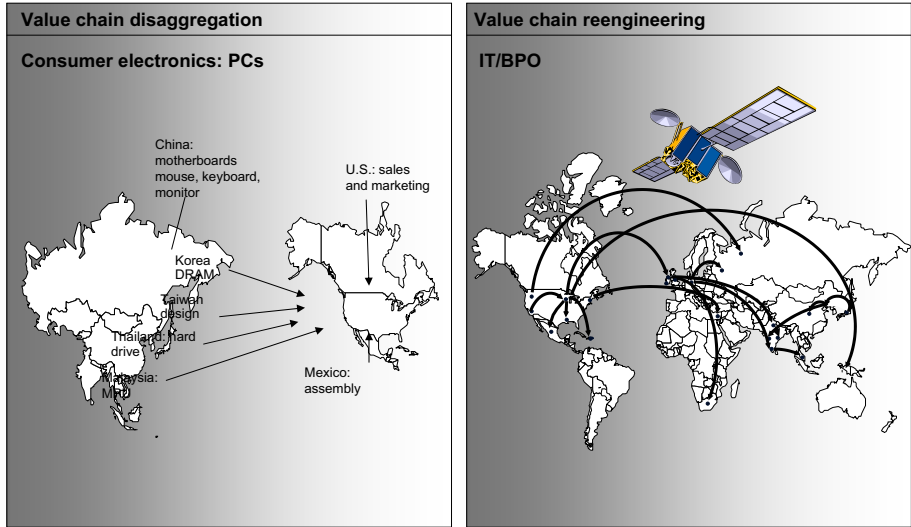
GRAPHICAL DEPICTIONS OF STAGES OF GLOBAL INDUSTRY RESTRUCTURING



Source: Interviews; McKinsey analysis

Exhibit 7

GRAPHICAL DEPICTIONS OF STAGES OF GLOBAL INDUSTRY RESTRUCTURING (CONTINUED)



Source: Interviews; McKinsey analysis

manufactured in the Asia; BPO investments in India can be very narrowly defined parts of broader business operations in the U.S.).

- ¶ **Value-chain reengineering.** After moving value-chain steps to new location, processes can be redesigned to capture further cost savings from lower labor costs (and other differences in factors costs) through more labor-intensive production methods (e.g., increasing shifts in IT/BPO and reducing automation in auto assembly).
- ¶ **New market creation.** By capturing full value of global activities, firms can offer new products at significantly lower price points and penetrate new market segments/geographies (e.g., increased service-level through phone for bank customers in developed economies; offering lower cost products in developing countries, such as cars in India and PCs/air conditioners in China).

Horizon 1: Market entry

A large majority of cross-border investments that companies make today in developing countries are market-seeking in nature. This is because the nature of some service sectors like food retail or retail banking requires local presence (pure market-seeking investments), and because of policy barriers limiting trade in manufacturing, as in auto (tariff jumping investments).

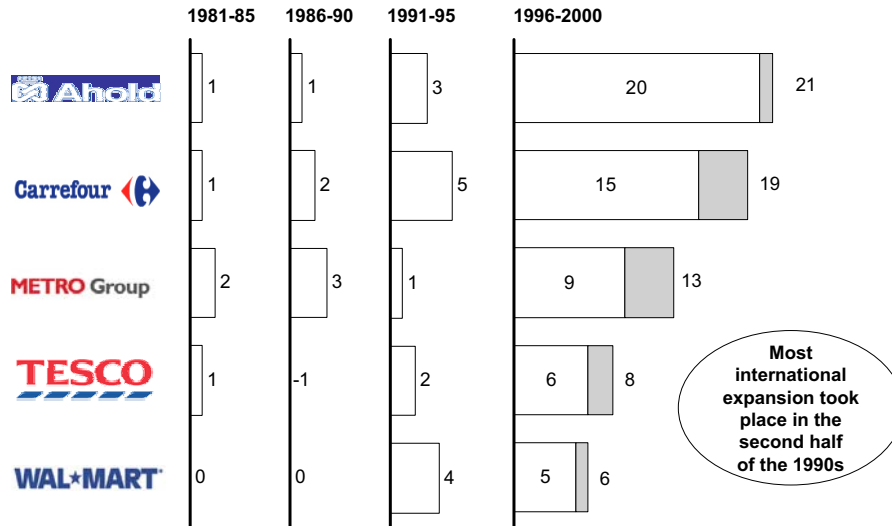
- ¶ **Pure market-seeking investments.** Both the food retail and retail banking sectors have gone through a rapid phase of globalization as leading global players expanded their operations first to other developed economies, and, in late 1990s, to developing countries as well.
 - In food retail, maturing and more competitive home markets (the result of cross-border activities within developed economies) led to an investment boom toward developing countries in the late-1990s. Companies like Carrefour, Ahold, and Wal-Mart have rapidly increased the number of countries where they are present, using a range of approaches (exhibits 8 and 9).
 - In retail banking, global banks have dramatically increased their investments in emerging markets, largely through acquisition of local bank branch networks. Spanish banks like Santander and BBV have aggressively entered Latin American markets, while HSBC and Citibank have taken a worldwide expansion strategy (exhibits 10-12). The removal of previous FDI barriers has been the key driver of the expansion to developing countries
- ¶ **Tariff jumping investments.** Many countries have maintained high import barriers and tariffs, such as those in the steel and auto sectors, and as a result, global companies who want to tap into the domestic markets have established local production facilities in many large developing economies.
 - In steel, only a few regions in the world have access to high-quality coal and iron ore or very low cost power (Exhibit 13). However, most production remains local because of high tariffs limiting trade, strong unions resisting change, and relatively high transportation costs.

Exhibit 8

INTERNATIONAL EXPANSION BY TOP GLOBAL FOOD RETAILERS

Number of new countries entered

2001-02



Source: Annual reports

Exhibit 9

ENTRY METHODS FOR INTERNATIONAL EXPANSION

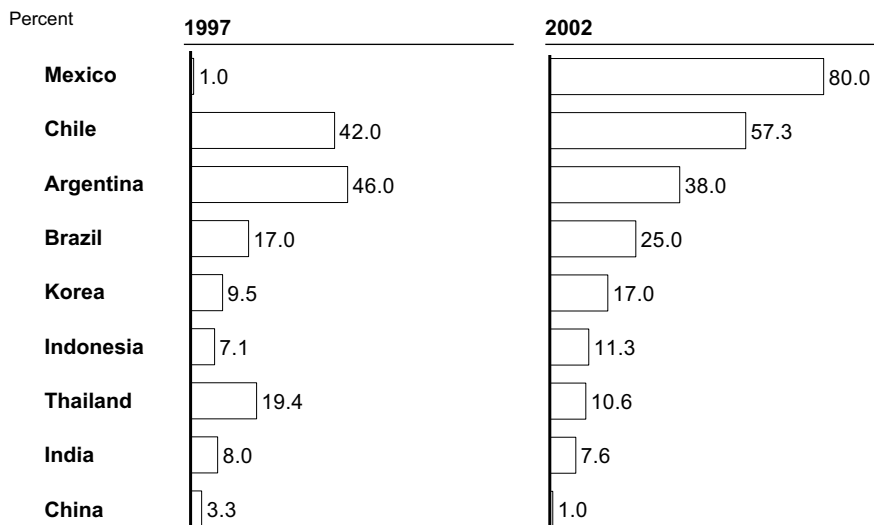
Required JV entry

Retailer	Greenfield	JV/Acquisition	Notes
WAL*MART	<ul style="list-style-type: none"> Japan 	<ul style="list-style-type: none"> Canada U.K. Germany 	Most international expansion through JV or acquisition
		<ul style="list-style-type: none"> Mexico China Brazil* 	
Carrefour	<ul style="list-style-type: none"> Portugal Singapore Japan 	<ul style="list-style-type: none"> South Korea Spain Italy 	Most international expansion through greenfield entry. Some entry into developing markets through JV and into developed market through acquisition of Promodes in 1999
	<ul style="list-style-type: none"> Brazil Poland Chile Czech Republic 	<ul style="list-style-type: none"> Switzerland Greece** Belgium** 	
Ahold		<ul style="list-style-type: none"> U.S. Denmark Norway Portugal 	Typically pursued a JV/acquisition strategy for new international market entry
	<ul style="list-style-type: none"> Czech Republic Latvia Lithuania 	<ul style="list-style-type: none"> Spain Sweden 	

* Greenfield stores with initial financial partner
 ** Entered through acquisition of Promodes
 Source: Company reports

Exhibit 10

SHARE OF FOREIGN BANKS IN BANKING SECTOR – EMERGING MARKETS

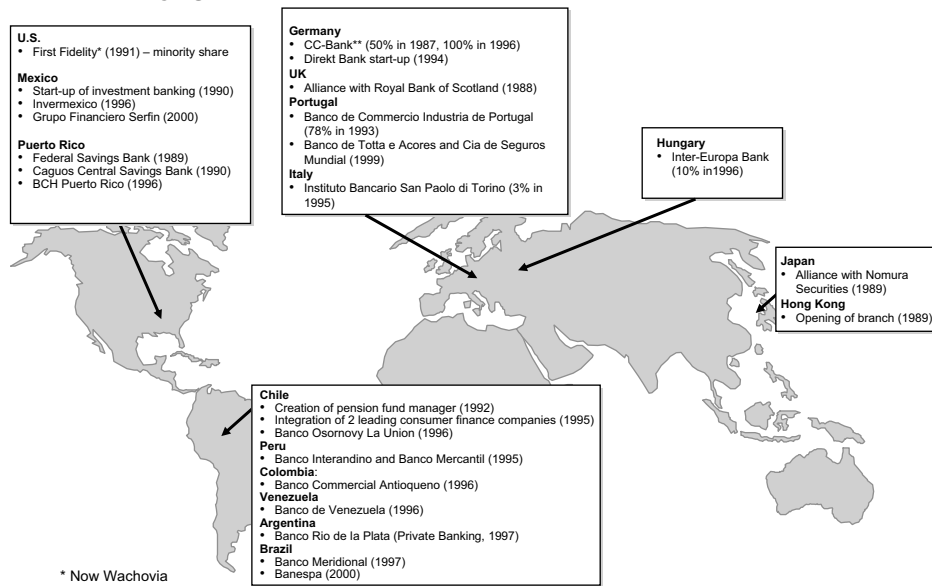


Source: TEJ Database, Central Banks, China Almanac of Banking and Finances

Exhibit 11

SANTANDER - OVERVIEW OF MAJOR ACQUISITIONS AND ALLIANCES

ILLUSTRATIVE

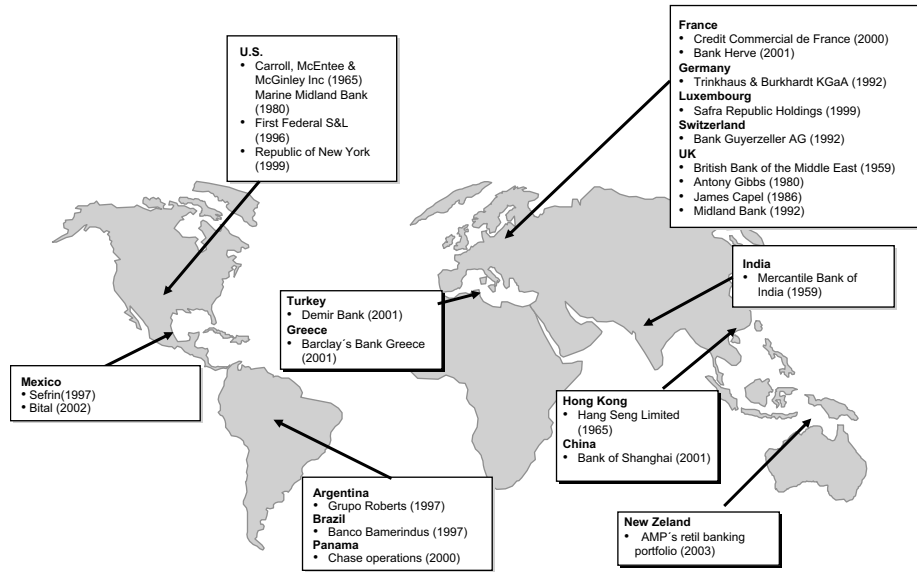


Source: Press clippings; annual reports; McKinsey analysis

Exhibit 12

HSBC – OVERVIEW OF MAJOR ACQUISITIONS

ILLUSTRATIVE

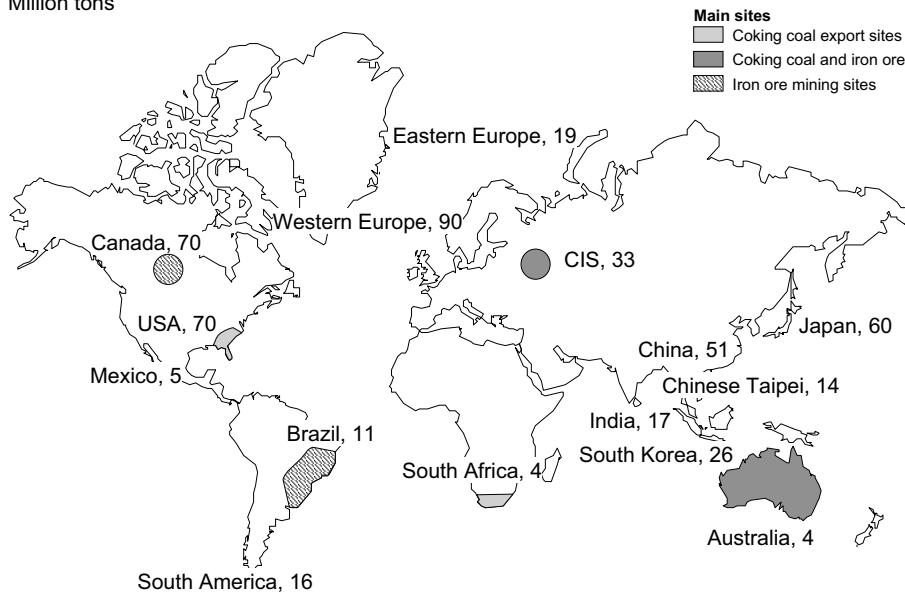


Source: Annual report; company website, Bloomberg, SDC

Exhibit 13

STEEL – DISTRIBUTION OF PRODUCTION INPUTS

Million tons



Source: Interviews; McKinsey analysis

- In the automotive sector, many developing countries have prohibited and/or imposed steep import tariffs to imports – up to 105 percent on passenger cars in India. Global OEMs have established local operations in order to be able to gain access to the large domestic markets of these countries. As a result, the global auto market is still largely regionalized (exhibits 14 and 15).

Horizon 2: Product specialization

As interaction costs decline, companies are increasingly taking advantage of global comparative advantage and economies of scale by concentrating production of a specific product in a few locations and trading final products between regions. Regional trade agreements like NAFTA have allowed auto OEMs to rationalize production across North America by concentrating production of each model in fewer sites. This has increased scale and raised capacity utilization, leading to significant improvements in labor productivity (Exhibit 16). At the same time, companies have been able to use imports to increase selection available to consumers in Mexico (Exhibit 17).





Horizon 3: Value chain disaggregation

Increasingly competitive markets in developed economies are putting strong pressure on companies to reduce their costs. Given that complete industry value chains often cover a broad range of activities, companies in some sectors have been able to significantly reduce total production costs – and increase their market share – by separating different steps in the production process and locating each step in a country or region with a comparative advantage in that specific activity. Consumer electronics, apparel, and IT/BPO provide great examples.

- ¶ In consumer electronics, final products often consist of many discrete components with clear scale benefits (e.g., large fixed cost investments in semiconductors), yet with bulky final products that are costly to transport after assembly (e.g., refrigerators, PCs). To minimize total production costs, the production process has been spread across locations where different regions specialize in different components (e.g., motherboards in China and DRAMs in Korea), or final goods assembly is close to large end markets (e.g., Mexico for sales to the U.S. market). This value chain disaggregation allows companies to optimize production by taking advantage of different factor costs across countries, not only labor but also costs like land and electricity (Exhibit 18).
- ¶ In apparel, market requirements vary by product segment demonstrated by various different patterns of disaggregation: from rapid design-production cycle for fashion-sensitive segments organized regionally (where designers close to main end-use markets work with nearby production locations to reduce turnaround time – for which they are willing to pay slightly higher labor costs); to lower-cost commodity segments optimizing production cost savings across the globe (searching for lowest cost fabric to be cut and sewn in a low-labor-cost environment; Exhibit 19).

Exhibit 14

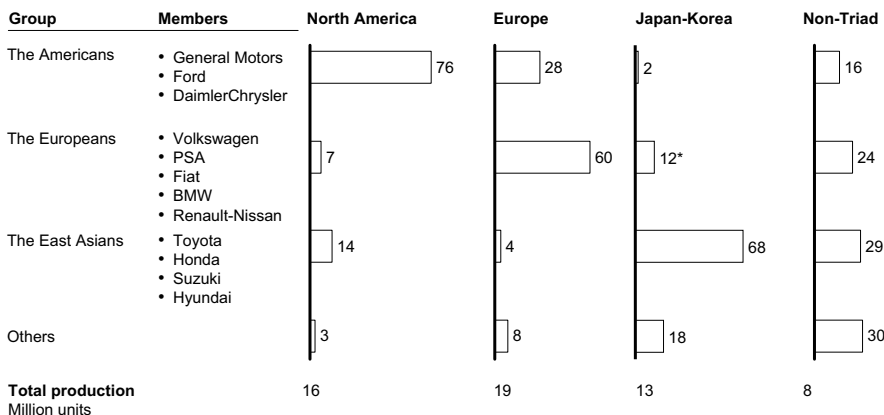
GOVERNMENT POLICIES THAT INFLUENCE GLOBAL INDUSTRY RESTRUCTURING IN AUTO

	 Brazil	 China	 India	 Mexico
Trade barriers (e.g., greater voluntary restraints, standards)	<ul style="list-style-type: none"> The Automotive Regime gave favored tariff status to domestic producers; this 2-tiered tariff created an incentive for importers to invest locally 	<ul style="list-style-type: none"> Quota on total auto imports of \$8 billion in 2002 being phased out by 2006 Local content requirements 40%, which has already been phased out as part of the WTO agreements Foreign companies are banned from car financing, a violation of 2001 WTO agreements FDIs must partner with a Chinese company and transfer its technology 	<ul style="list-style-type: none"> Licensing abolished in 1991 In March 2001, the government permitted 100% FDI in auto sector Import quotas removed in 2001 	<ul style="list-style-type: none"> Importing licensing practically prohibits the import of used vehicles Local content requirement of 34% of value-added applies to passenger cars Custom procedures and administrative procedures make importing overly cumbersome
Government incentives	<ul style="list-style-type: none"> The government has offered FDIs large concessions including land, infrastructure, tax breaks, and low-interest loans <ul style="list-style-type: none"> Parana donated 2.5 million square meters for Renault's new auto plants Parana's loans (up to \$100 million) were to be repaid in 10 years – without interest or clause regarding currency devaluations 	<ul style="list-style-type: none"> The government has funded various infrastructure projects (e.g., road construction, development of expressways) to attract more FDI Some companies have been granted a 2-year income tax deferral The government recently drafted a proposal to restrict the number of ports where foreign-made cars can be imported, which could create bottlenecks and decrease the volume of imported cars 	<ul style="list-style-type: none"> The government reduced excise duties to 24% on passenger cars and has supported infrastructure development Certain states provide FDIs with fiscal packages and capital subsidies 	<ul style="list-style-type: none"> There are no restrictions on profit, royalty, dividend, interest payment, and capital repatriation

Source: Interviews; literature searches

Exhibit 15

LIGHT VEHICLE PRODUCTION SHARES OF OEM GROUPS 2002
Percent



Observations

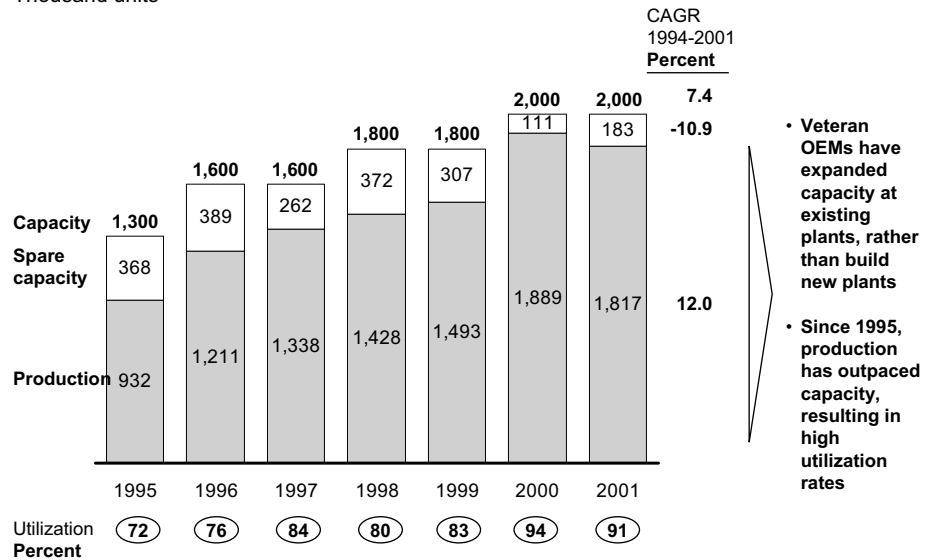
- Within the Triad, the majority of production is done by "local" firms
- In non-Triad countries, production is spread evenly across groups

* Figures for Renault-Nissan
Source: DRI WEFA; McKinsey analysis

Exhibit 16

CAPACITY AND UTILIZATION OF AUTO OEMS IN MEXICO – 1995-2001

Thousand units



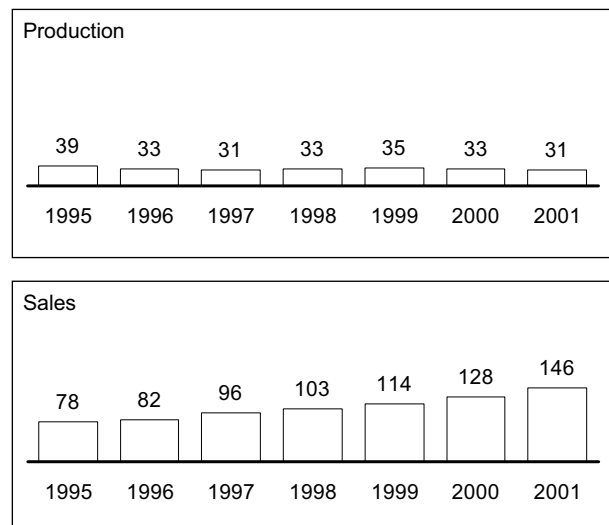
Note: Capacity figures are estimates
Source: AMIA; CSM worldwide

- Veteran OEMs have expanded capacity at existing plants, rather than build new plants
- Since 1995, production has outpaced capacity, resulting in high utilization rates

Exhibit 17

SPECIALIZATION IN PRODUCTION – DIVERSITY IN SALES

Number of models



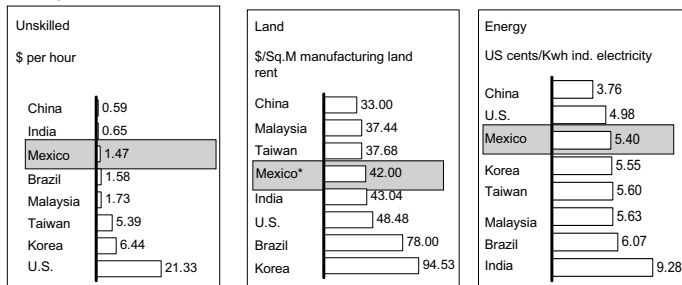
Source: Marketing Systems

- Liberalization of imports has allowed OEMs to specialize while offering more variety to domestic consumers
- Units per model produced have risen from 24,000 to 58,000 – and OEMs are benefiting from greater economies of scale

Exhibit 18

OVERALL, FACTOR COSTS ARE ACROSS THE BOARD HIGHER IN MEXICO THAN IN CHINA

Factor cost comparison Mexico

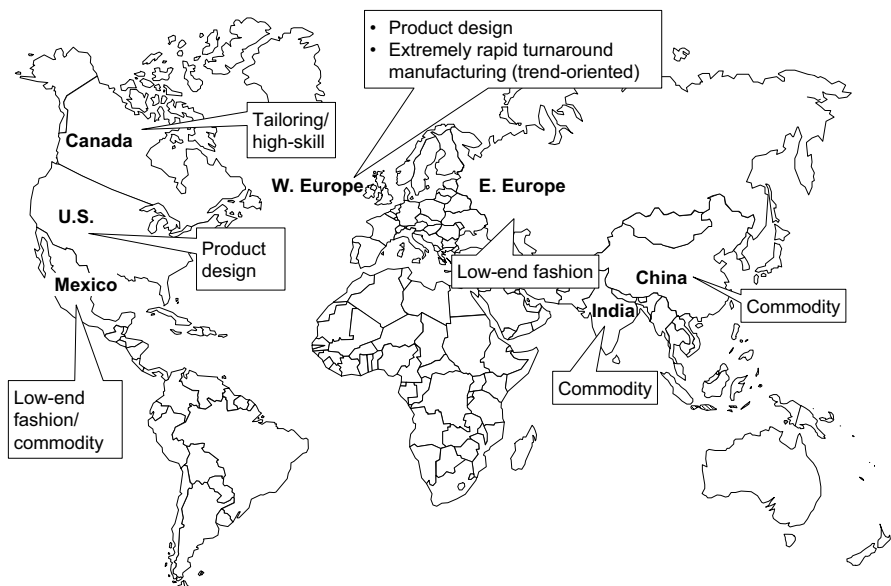


Mexico's factor costs are more expensive than China's across the board

* Average land cost in Ciudad Juarez, Chihuahua
 Source: Literature searches, EIU, ICBC, Monthly Bulletin of Earnings and Productivity Statistics (China); Taipower, WEFA WMM, DRI WEFA, Healy & Baker, ILO, Malaysian Ministry of Human Resources, Central Bank of Malaysia, State Economic Development Corporations (Malaysia), Malaysian Industrial Estates Bhd., Malaysian Statistics of Electrical Supply, Tenaga Nasional (Malaysia), Folha de SP (Brazil), Aneel (Brazil), Bancomext (Mexico), Expansion (Mexico)

Exhibit 19

APPAREL – DIFFERENT COUNTRIES SPECIALIZE IN THE PRODUCTION OF DIVERSE RETAIL GOODS



Source: Interviews; McKinsey analysis

¶ In IT/BPO, labor-intensive activities are increasingly being offshored to lower-cost locations – to India particularly, but also to Ireland and Mexico. The offshored activities range from low-skill data entry and verification activities (e.g., data-base management) to live customer support services (e.g., call centers), and increasingly highly skilled activities as well (e.g., customized software development; Exhibit 20). Depending on the share of the offshored activities in total production costs, companies can capture cost savings of up to 50 percent by offshoring.

Horizon 4: Value chain reengineering

Benefits from relocating to a lower-labor-cost location can go far beyond the savings from lower wage and components costs, which are substantial in and of themselves (Exhibit 21). Instead of simply relocating the production process designed for their home country, companies have significant opportunities to reengineer their production process to take advantage of access to low-cost labor. Some companies in IT/BPO and auto are already taking advantage of this and reaping large financial benefits.

- ¶ In IT/BPO, companies with offshored operations can increase their profits by 50 percent by moving from two to three shifts. This allows them to increase the total capacity of customers served while increasing efficiency of capital use as the largest fixed-cost buckets, computers and communications equipment, are utilized 24 hours a day. In essence, they achieve capital productivity gains at the expense of labor productivity to reduce total costs (Exhibit 22).
- ¶ In automotive, global companies in India have adopted some more labor-intensive manufacturing methods from their Indian JV partners, mainly by reducing automation throughout the manufacturing process (e.g., loading and changing dies in pressing, body welding and material handling, hand painting cars; Exhibit 23).

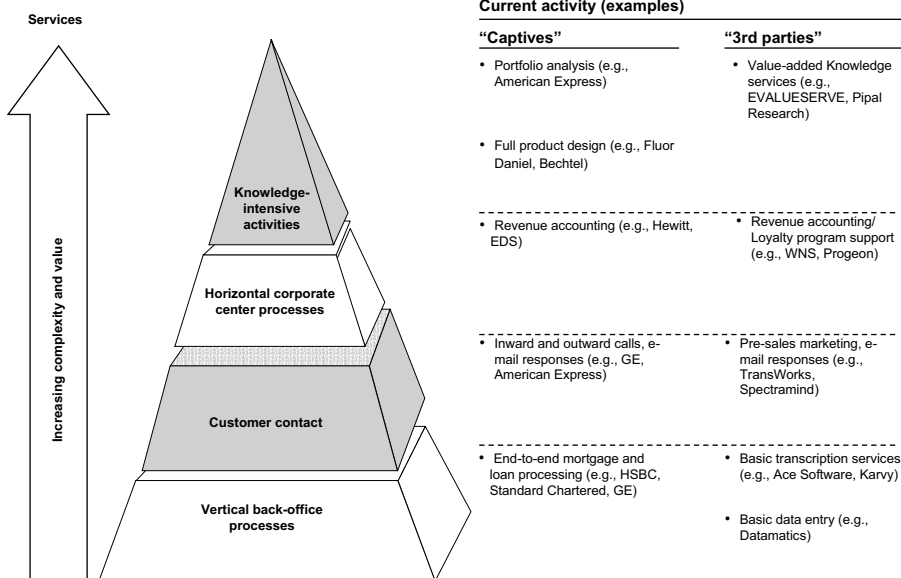
Horizon 5: New market creation

The cost-saving opportunities from value-chain disaggregation and reengineering have the potential of shaving 30 to 50 percent off the total costs for some companies. The lower cost base creates growth opportunities for companies both by increasing demand for existing products by moving down the demand curve, as well as by creating new markets by offering new, cheaper products and services to customers in both developed and developing countries (Exhibit 24).

- ¶ A lower cost structure allows companies to expand their markets by offering existing products to existing and new customer segments at lower prices – for example, U.S. financial institutions have been able to broaden the customer segments (e.g., customers with smaller accounts) to which it is financially feasible to provide personalized phone support by using lower cost off-shored locations. They can also create completely new markets with products that were not financially feasible at a higher cost structure (e.g., collection of small accounts receivable that has become economically viable as a result of lower collection costs from off-shored locations). All of this allows companies to increase their revenues and capture market share.

Exhibit 20

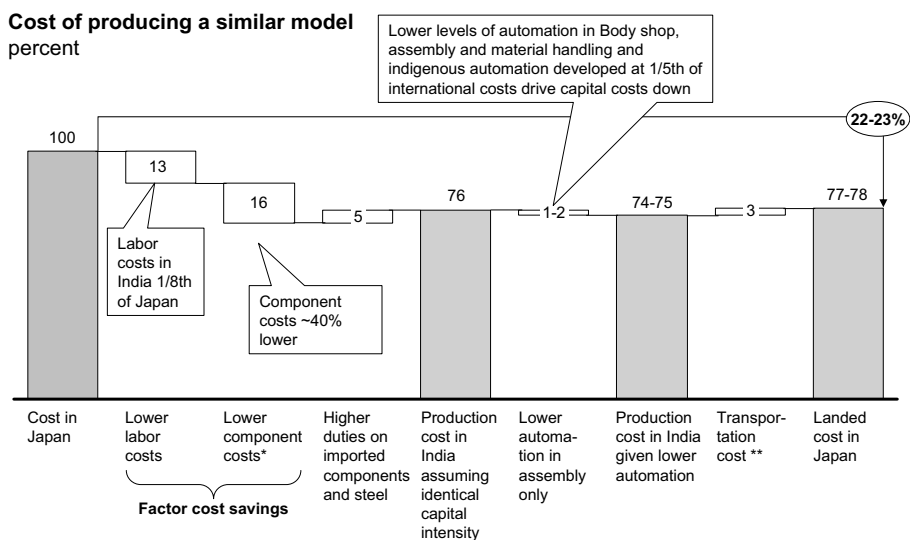
HIGHER VALUE-ADD ACTIVITIES ARE INCREASINGLY BEING OFFSHORED



Source: Interviews; press reports; McKinsey Global Institute

Exhibit 21

LOWER LABOR AND COMPONENT COSTS ARE MAKING EXPORT-ORIENTED ASSEMBLY IN INDIA MORE ATTRACTIVE

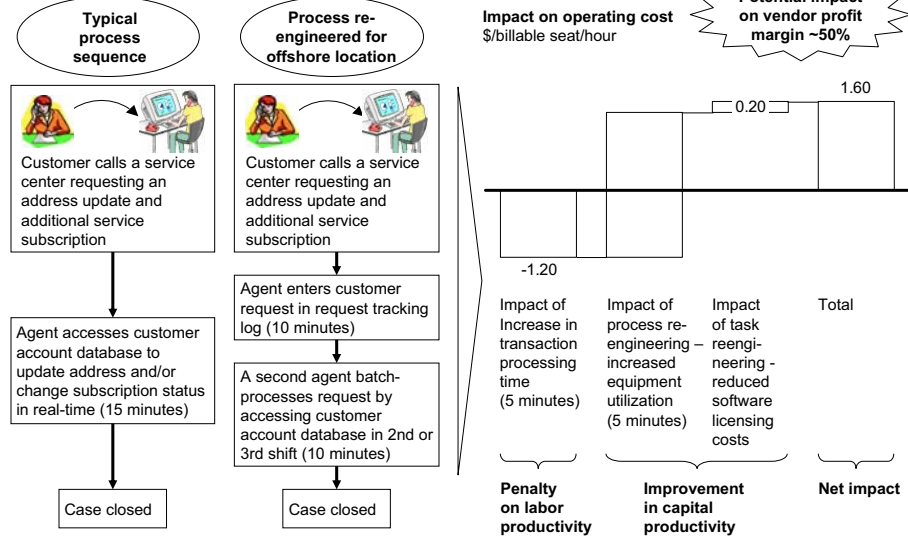


* 90% of all components sourced indigenously with equivalent or superior quality; savings achieved through lower factor costs and process reengineering including lower automation
 ** \$300 for a small car; \$500 for a large car; no tariffs for imports into Japan from India
 Source: McKinsey Global Institute

Exhibit 22

REENGINEERING PROCESSES TO OPTIMIZE FOR CAPITAL CAN IMPROVE MARGINS SUBSTANTIALLY

Process sequence for customer service call center



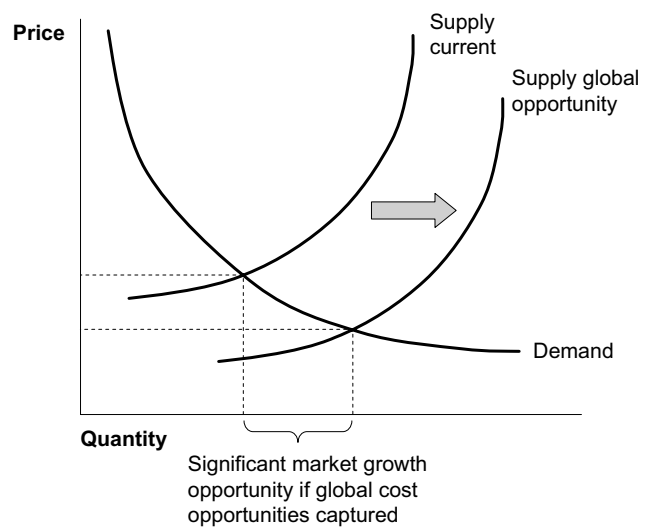
Source: McKinsey Global Institute

Exhibit 23

MOST INDIAN PLAYERS EMPLOY LOWER LEVELS OF AUTOMATION

Shop	Best practice level of automation	Observed in India	Activities, which can be automated	Share of total employment*
Press	90-100	75-90	<ul style="list-style-type: none"> Loading of presses Changing of dies 	5
Body	90-100	0-40	<ul style="list-style-type: none"> Welding Clamping Material handling 	17
Paint	70-80	20-60	<ul style="list-style-type: none"> Priming Base and top coat Sealing Material handling 	14
Assembly	10-15	<1	<ul style="list-style-type: none"> Windscreen Seats Tires Axles Etc 	33
Production - related activities	15-20	<1	<ul style="list-style-type: none"> Material handling (transport of parts to the line) 	31
Total				100

* Based on sample of companies covering 93% of total production in 1999-2000
 Source: Interviews; McKinsey Automotive Practice

Exhibit 24**OPPORTUNITY TO DEVELOP NEW MARKETS AFTER GLOBAL COST OPPORTUNITY CAPTURE**

Source: Interviews; McKinsey analysis

¶ Companies can also expand the addressable market by customizing product standards and designs to the needs of the lower income markets in developing countries. Companies can consider the relative costs and benefits of standards more relaxed than those now in place in their home countries (which often were not there just 10 or 20 years ago). Indian auto and Chinese consumer electronics sectors provide examples of successful execution in customizing standards. In the Indian auto sector, one OEM has designed low-cost cars with fewer safety tests and material standards, targeting the domestic market at a fraction of the production costs for similar cars in the triad (Exhibit 25). In China, local consumer electronics companies have designed lower-end air conditioners that allow them to offer products to the segments of the population that were previously not able to afford them.

THREE INTERPLAYING CHARACTERISTICS DETERMINE THE STAGE OF INDUSTRY RESTRUCTURING IN A SECTOR

The degree of sector globalization can be estimated by global sales, global trade, or a trade/sales ratio. These measures suggest what most already know, that consumer electronics is a highly global industry, and that, given massive regulatory protection in many countries, steel is not (Exhibit 26). However, these measures do not necessarily correspond to the stage of global industry restructuring. The interplay of industry characteristics, legal and regulatory restrictions, and organizational limitations determine the stage of industry restructuring in a sector (exhibits 27-28)

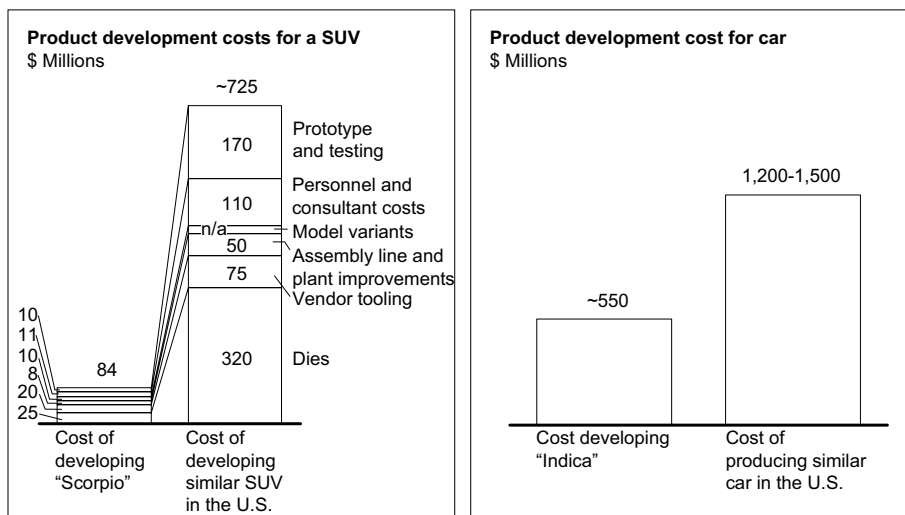
¶ **Industry characteristics** include scale economies that make concentrating production attractive, sensitivity to certain costs such as labor, high bulk-to-value, or ease of transporting products. These characteristics influence the ability to relocate operations and the potential for location-specific advantages (Exhibit 29).

The nature of apparel makes it a prime candidate for industry restructuring along both dimensions: labor represents the bulk of total production costs making low-wage locations very attractive, and low transportation costs create few barriers for relocating further away from final consumers (Exhibit 30). The business process offshoring (BPO) sector can similarly generate large cost savings by offshoring very labor-intensive tasks to low-labor-cost locations like India. Furthermore, the service nature of the sector limits transportation costs to telecommunications and electronic data transfer only. Steel is a very different case. In steel, the high investment in capital-intensive production facilities, the low share of labor in total production costs, and high transportation costs all reduce the potential benefits from disaggregating and relocating the global value chain closer to the high-quality raw materials.

¶ **Legal and regulatory restrictions** include high tariffs, quotas, local content requirements, and other trade barriers. These, too, tend to make certain activities necessary and others impossible.

Exhibit 25

INDIAN OEMs HAVE SUCCEEDED BY DEVELOPING LOCALIZED PRODUCTS AT A FRACTION OF GLOBAL COSTS

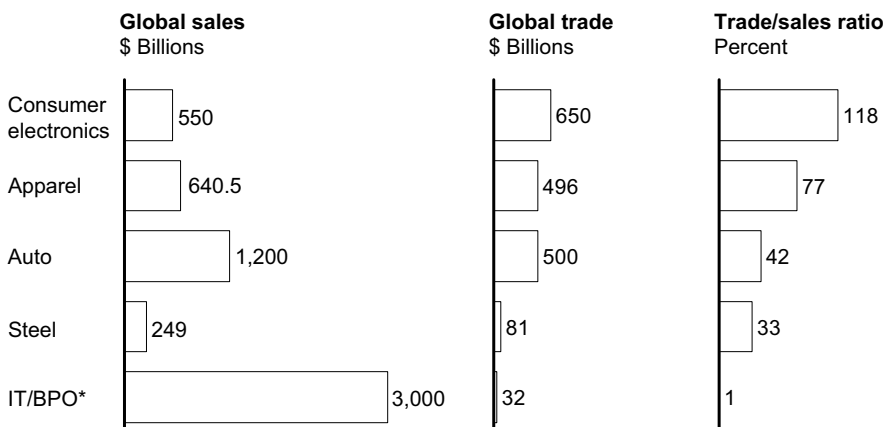


Note: These comparisons are rough estimates collected through interviews and are illustrative only. While the products being compared are similar, significant differences in regulatory standards, features, and quality exist and may not provide an apples-to-apples comparison

Source: Literature searches; interviews; McKinsey Automotive Practice; McKinsey Global Institute

Exhibit 26

MEASURES OF GLOBAL INDUSTRY RESTRUCTURING – 2000



* IT/BPO sales figure includes all IT/BPO exchanges

Source: UN PCTAS database; IISI, Statistical Year Book 2000; DATAMONITOR

Exhibit 27

DETERMINANTS OF GLOBAL INDUSTRY STRUCTURE/CAPTURE OF OPPORTUNITIES

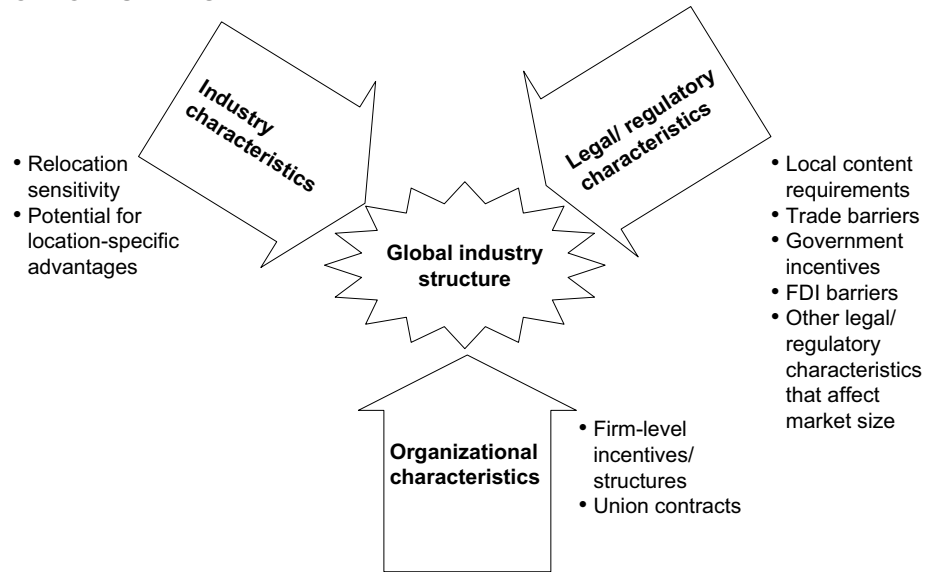


Exhibit 28

SUMMARY OF ABILITY TO CAPTURE GLOBAL PRODUCTION AND SALES OPPORTUNITIES

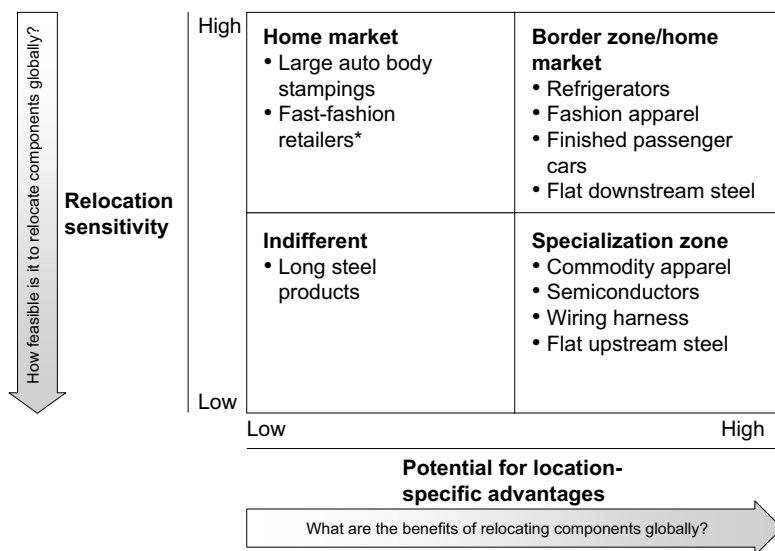
● Favors global production/sales
○ Inhibits global production/sales

	Industry characteristics	Legal/regulatory characteristics	Organizational characteristics	Overall rating
Steel	○ • High sunk costs • Transportation can be expensive	○ • Very high tariffs	○ • Unions play strong role	○ • U.S. trade barriers; environment
Auto	○ • Some parts more difficult than others to source globally	○ • Formal and informal trade barriers	○ • Unions complicate • Organizations more local/regional than global	○ • More opportunities appear to be available
Apparel	● • Labor intensive • Easy to ship	○ • High trade barriers, though regional agreements help	● • Unions are not very powerful	○ • Trade barriers prevent further restructuring
Consumer electronics	● • Most products easy to transport, though obsolescence an issue in some cases	● • Trade barriers generally low	● • Global production networks incentivized	● • High degree of opportunity capture
IT/BPO	○ • Easy to "transport", though breaking off portion of value chain more difficult in some segments	● • No trade barriers currently	○ • Often no incentives in place to offshore	○ • Nascent opportunity will develop quickly with more organizational incentives

Source: Interviews; McKinsey analysis

Exhibit 29

INDUSTRY CHARACTERISTICS INFLUENCING LEVEL OF PRODUCTION DISAGGREGATION

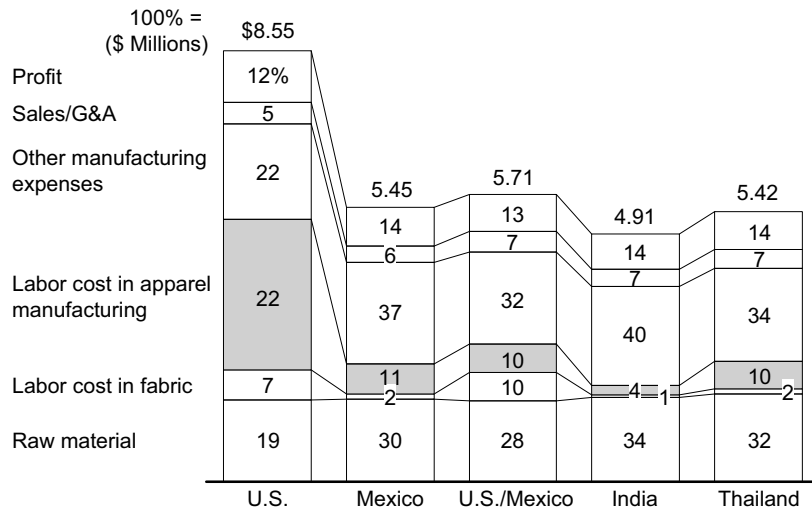


* Companies that focus on selling "trendy" clothes that go out of style within 1-3 months (e.g., Zara, H&M); they are not high-end luxury companies (e.g., Ralph Lauren)

Exhibit 30

MANUFACTURING LOCATION BECOMES A PRIMARY DIFFERENTIATING FACTORY IN TOTAL PRODUCTION COST IN APPAREL

FOB cost breakup of a shirt
Percent



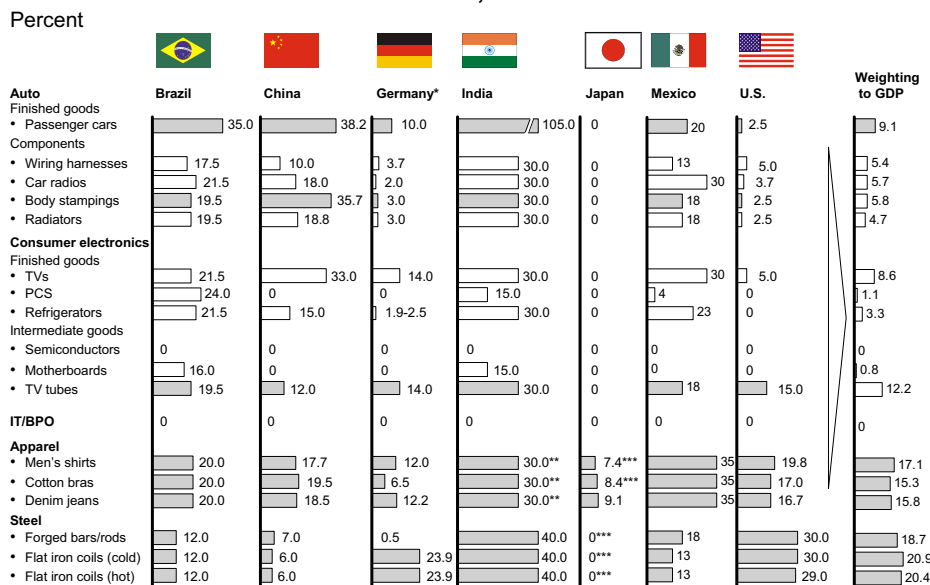
Source: *Competitiveness and globalization: The international challenge* by Raoul Verret; *Apparel Industry*, September 1997

Import quotas and tariffs on apparel have reduced the extent to which global production has been restructured and optimized across regions. The protection of production on specific locations – end users countries through tariffs or specific production locations through quotas – means that despite the economic case for production in lowest wage environments, the global apparel industry cost structure remains above its potential. Similarly in steel, the regulatory environment (both tariffs and regulated clean-up costs) has further limited the incentives for companies to relocate production to a lower-cost environment. In contrast, the newly emerging IT/BPO sector has not been subject to trade barriers, so companies are free to take advantage of the cost-saving opportunities. The Indian government has also waved most taxes for IT/BPO to encourage investment (Exhibit 31).

- ¶ **Organizational limitations** include firm level incentives or union contracts. Changing organizations to operate differently is a major challenge. Proof that this is difficult can be seen in the resistance of many U.S. and European based managers to take advantage of offshoring cost-saving opportunities because the job losses they would cause to their home organizations; and in automotive, OEMs buckled to strong unions' demands in U.S. and kept production local rather than moving more aggressively to low-cost production sites like Mexico (Exhibit 32).
- ¶ The critical interplay of the characteristics is illustrated well when comparing consumer electronics and automotive sectors.
 - Consumer electronics is among the sectors furthest along in the process of global industry restructuring. (Exhibit 33). There are several reasons for this: transportation is relatively easy and low-cost relative to value; large economies of scale may be exploited, particularly in parts; and, perhaps most importantly, few policy barriers or organizational factors stand in the way of global restructuring for consumer electronics companies. The liberal market environment has, in fact, created a very competitive sector globally, where successful companies are forced to innovate rapidly and aggressively reduce costs. This has led to a globally disaggregated, specialized, and low-cost value chain, and consumers have seen huge improvements in product quality at the same time as prices are constantly declining.
 - Auto assembly has a more complex product (measured by number of parts incorporated into the final product), and higher transportation costs because of the bulkiness of the parts, reducing the cost-saving potential from industry restructuring relative to consumer electronics. But just as important have been the policy and organizational barriers that have kept the sector from moving beyond the first stage – with few regional exceptions. The automotive sector has import barriers and tariffs in many developing countries, and the highest levels of direct government incentives for locating production within the end-user economies. At the same time, strong unions in developed countries limit the push for seeking for alternative production locations. All these factors have inhibited companies from aggressively seeking opportunities for reducing costs through industry restructuring, and they have also kept the product value chain tightly controlled by the OEMs (i.e., mostly proprietary parts with little standardization; close supplier-OEM relationships that limit value-chain disaggregation). One could argue that

Exhibit 31

TRADE BARRIERS – IMPORT TARIFFS, 2003



* U.S. to Germany; representative of non-EU tariff schedule
 ** Or Rs.135 per piece for men's shirts and jeans; or Rs.30 per piece for cotton bras
 *** WTO tariff; general tariff for men's shirts: 9.0%; cotton bras: 8.5%; denim jeans: 11.2%; steel (all categories): 3.9%
 Source: WTO; EU trade database; TecWin Brazil; Banco Nacional de Comercio Exterior, S.N.C.; Customs Tariff Schedules of Japan, China, U.S., and India

Exhibit 32

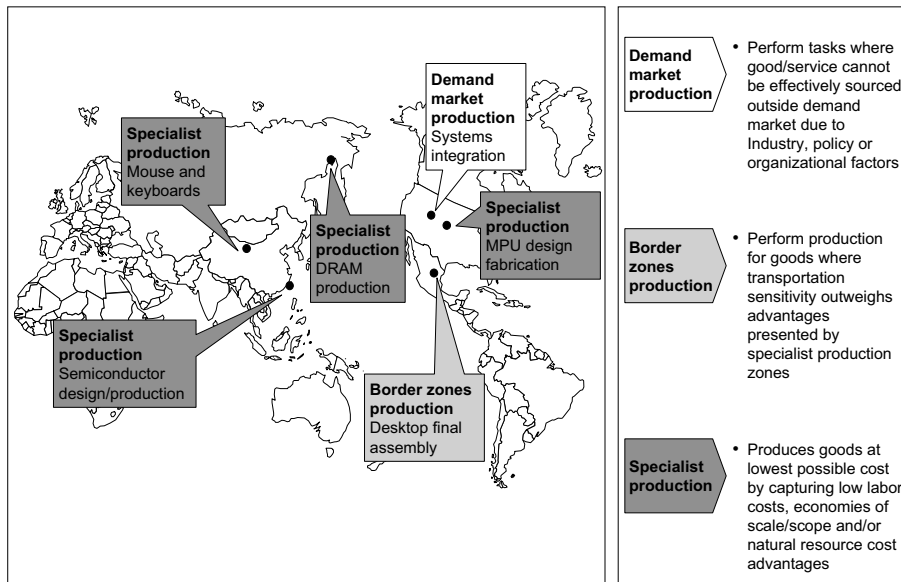
ORGANIZATIONAL BARRIERS TO GLOBAL INDUSTRY RESTRUCTURING – AUTO AND IT/BPO

Barriers	Impact/example
<p>Auto</p> <ul style="list-style-type: none"> • Strong labor unions in U.S. 	<ul style="list-style-type: none"> • DaimlerChrysler had 2 plants producing Dodge Rams, 1 in Mexico and 1 in the States (St. Louis). The company needed to shut down one plant because of over-capacity. Although the Mexican plant made better quality vehicles, Daimler-Chrysler decided to shut down the plant in Mexico because of concerns regarding the U.S. labor union reaction
<p>IT/BPO</p> <ul style="list-style-type: none"> • Little incentive to “tweak template” in new markets • Most mid-level managers resist off-shoring despite the value created for the company because the “disadvantages” are disproportionately borne by a few (i.e., loss of jobs; reduced managerial sphere of influence) 	<ul style="list-style-type: none"> • Due to agency problems/perceived high risk, replicate operators/capital structures and focus on market growth instead of focusing on opportunities to trade labor for capital in emerging markets • Slower migration of outsourcing work to offshore locations

Source: Interviews

Exhibit 33

ROLES COUNTRIES PLAY IN GLOBAL VALUE CHAIN – CONSUMER ELECTRONICS EXAMPLE



Source: Interviews

Exhibit 34

SUMMARY OF EXPORT COMPETITIVENESS

	Advantage	Description
Unit manufacturing costs	China	<ul style="list-style-type: none"> China has a more developed supply chain across all electronic industries Sources of cost advantage in inputs are logistics and factor costs Mexico loses competitiveness on items it must import from the U.S. (e.g., TV glass)
	Mexico <= China	<ul style="list-style-type: none"> Productivity at very similar levels – per both estimates and expert interviews
	China	<ul style="list-style-type: none"> China offers distinct cost advantages in labor (skilled and unskilled), electricity and land costs
Other costs	Mexico	<ul style="list-style-type: none"> Mexico's geographic proximity to the U.S. as well as similar time zone lower interaction costs with the U.S. This is especially important for newer and customized products
	Mexico	<ul style="list-style-type: none"> Border zones provide shipping advantage However, the geographical location advantage is far from being maximized Furthermore, component logistics increase costs for Mexico
	Mexico >= China	<ul style="list-style-type: none"> Mexico has tariff advantage (e.g., TVs) or parity (e.g., computers) with China This advantage is shrinking with China's accession to WTO
	China	<ul style="list-style-type: none"> Income taxes on manufacturing is much lower in China than in Mexico

the auto assembly sector today is at a stage where the PC industry was in the 1980s, when IBM controlled the full value chain from semiconductors to software. Despite the differences in the two sectors, however, removing some of the policy and organizational barriers to auto sector restructuring would be likely to lead to significant change.

PRESSURE TOWARDS INCREASING SPECIALIZATION FOR COUNTRIES AND COMPANIES

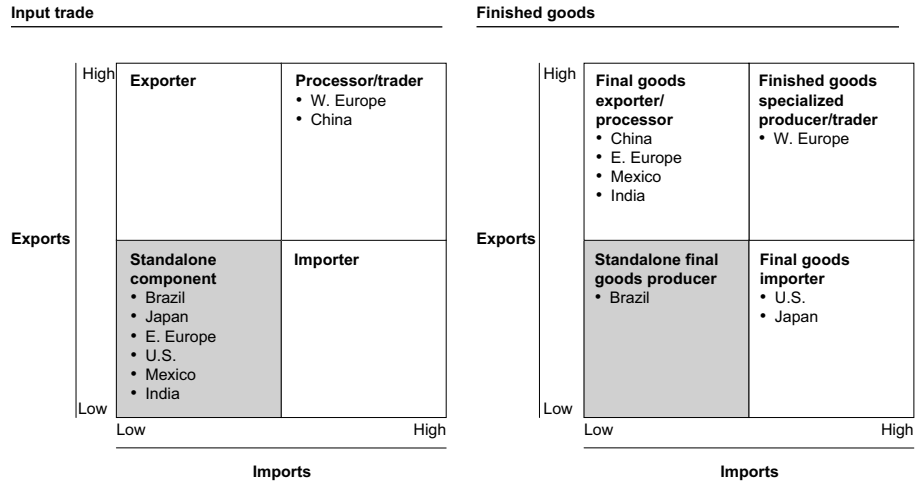
Many of these seemingly "immutable" characteristics are now undergoing major change as a result of competition, liberalization, and new technologies, opening up new possibilities. The changes are leading to increased specialization of production around the world, with countries and companies playing specific roles in the global production value chain.

¶ With global industry restructuring, we will see increasing specialization of global production between countries and regions along the lines of comparative advantage. With the move from product specialization to increasing value-chain disaggregation, specialization in the future is likely to occur more by the type of activity rather than by specific products or clusters. We are already seeing the emergence of a number of different patterns of specialization, and expect the process to continue evolving in this direction. For example, we have seen Mexico and Eastern Europe emerge as "border regions" that have industries specializing in assembly and production for a broad range of products and services destined for U.S. and Western Europe, the world's two largest end-user markets. Mexico's proximity to the U.S. market and the tariff benefits from NAFTA allow it to be a leading consumer electronics supplier to the U.S., despite having higher labor costs than Asian locations. China's comparative advantage is its large pool of very-low-cost labor, and it has become the global base for low-cost manufacturing of a broad range of low-cost consumer goods (from clothing to toys and bicycles; Exhibit 34). The U.S. is leading the transition of developed economies away from manufacturing, as first consumer electronics production, and now, more slowly, auto parts production, is moving cross-border.

This trend is causing countries to adopt different roles in the global production chain. In apparel for example, three large apparel export players, Eastern Europe, Mexico, and India, have standalone local supply chains behind their exports. China, on the other hand, plays the role of an intermediate broker, by both importing and exporting large volumes of cloth. Among developed economies, Japan and the U.S. are purely importers, while Western Europe is closely integrated into the global supply chain, as it both imports and exports large volumes of final goods. Lastly, Brazil remains largely isolated from the global economy, with low imports and exports of both inputs and final goods – largely because of very high barriers to trade (Exhibit 35). A similar story can be told of the different roles in consumer electronics (Exhibit 36).

Exhibit 35

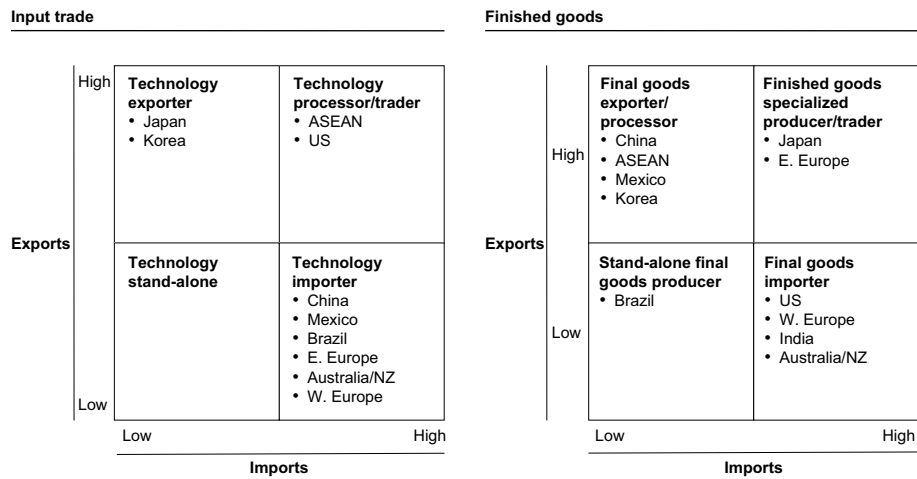
DIFFERENT ROLES OF COUNTRIES IN GLOBAL APPAREL TRADE



Source: McKinsey analysis

Exhibit 36

COUNTRIES' ROLE IN GLOBAL CONSUMER ELECTRONICS PRODUCTION AND CONSUMPTION CAN BE SEGMENTED INTO PATTERNS



Source: McKinsey analysis

¶ As companies take advantage of the opportunities provided by the new changes, they are also increasingly finding ways to focus on the steps of the value chain where they have a competitive advantage. Hence we will see companies that are innovators and designers, low-cost producers, specialized border producers, marketers and distributors, among others. Conversely, there will be fewer generalists, those that can excel at all the increasingly specialized steps of the value chain (Exhibit 37).

* * *

The global opportunity landscape for companies is changing. Policy and communications barriers to integrating developing countries into the global economy are declining. This creates new opportunities for radically reducing costs to seek new demand by moving along the five horizons of industry restructuring: from market entry and product specialization through value chain disaggregation and reengineering to new market creation.

Exhibit 37**PARTICIPANTS IN DISAGGREGATED OR VALUE CHAIN**

	Role in value chain	Examples	Value add
Innovators and designers	<ul style="list-style-type: none"> • Make fundamental breakthrough through R&Ds • Design new products to better meet consumer demand 	<ul style="list-style-type: none"> • Sony (Japan) 	● High
Marketers/distribution	<ul style="list-style-type: none"> • Control brand and distribution channels in home market 	<ul style="list-style-type: none"> • HP (U.S.) 	◐ Medium
Capital-intensive specialists	<ul style="list-style-type: none"> • Specialize and build scale in capital intensive facet of production 	<ul style="list-style-type: none"> • TSMC (Taiwan) 	◑ Low
Process managers	<ul style="list-style-type: none"> • Manage production for global branded companies as intermediary 	<ul style="list-style-type: none"> • Contract manufacturers (Taiwan, Singapore) 	◑ Low
Border zones	<ul style="list-style-type: none"> • Exploit geographic proximity to large end markets and labor cost advantage 	<ul style="list-style-type: none"> • Maquiladoras/ Mexico 	○ Low
Low labor cost-processes	<ul style="list-style-type: none"> • Play strong role in labor-intensive/commodity production 	<ul style="list-style-type: none"> • Contract manufacturers (China, Hong Kong) 	○ Low

● High
◐ Medium
○ Low

Implications for Companies

The opportunities opening up from global industry restructuring can lead to massive value creation for bold companies. But capturing the opportunities will not come easily: success in global industry restructuring will be based on good strategy and execution against new tradeoffs in new market environments.

MASSIVE VALUE CREATION POTENTIAL FROM RESTRUCTURING

The changing global landscape creates enormous opportunities for cost savings and revenue generation. In the auto sector example, over \$150 billion in cost savings and at least another \$170 billion of revenue could result if the barriers to industry restructuring could be overcome. Together these two opportunities represent roughly 27 percent of the \$1.2 trillion industry.¹ Capturing even part of this represents a huge value-creation opportunity for those companies that pursue it, and a competitive risk for those companies that do not.

- ¶ Each of the five horizons of industry restructuring offer potential cost savings and additional revenue generation potential. We assessed and estimated each separately (exhibits 1-3).
 - Increasing specialization of production and intra-industry trade, enabling capacity utilization to increase by 20 percent, would generate more than \$10 billion in total savings.
 - Increasing value-chain disaggregation would allow companies to gain economies of scale and scope, as well as reduce production costs. Shifting up to 70 percent of total production costs (including parts) to low-labor-cost developing countries, could result in nearly a \$148 billion opportunity in total savings. Additional opportunities from value chain reengineering could add tens of billions in further savings.
 - Finally, companies could generate additional revenues by taking advantage of these cost savings to introduce lower-cost cars to specific regions and market segments – in essence, creating new markets. Some \$100 billion in developing markets and more than \$70 billion in developed markets is possible.
- ¶ Companies that shape their industry evolution will need to size the opportunities from each of the five horizons – and be able to understand which of the existing constraints to sector restructuring are subject to change. This requires a disciplined three-step approach: first, to identify the relevant components of each of the three types of factors – nature of industry, policy and organizational environment – that affect the stage of industry restructuring. Second, to assess which of the factors are mutable through changes in technology, management, or policy changes. And third, to estimate the specific returns attainable from each change. This is the process we followed

1. We have not explicitly included capital in the sizing estimates because optimal capital deployment decisions need to be closely tied to the location and reengineering decision – and as a result, are likely to vary even more widely going forward. However, the sheer size of the opportunity suggests that significant capital outlays are justified. Similarly transportation and logistics would consume only a small share of the opportunity. For both cars and parts shipping costs and times are falling: shipping an automobile anywhere in the world today costs only \$500 and takes 3 weeks.

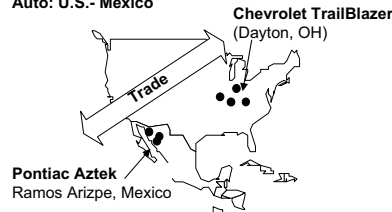
Exhibit 1

POTENTIAL FUTURE PATHS FOR THE AUTO SECTOR – PART 1

② Better utilize existing capacity

Product specialization

Auto: U.S.- Mexico

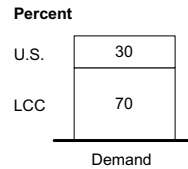
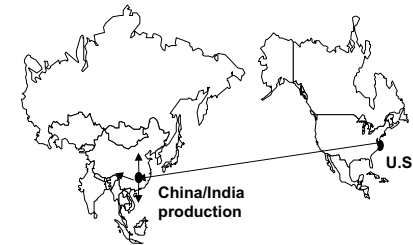


Potential savings of \$10 billion+

③ Shift production to LLC zones

Value chain disaggregation/reengineering

Auto: US to China



Potential savings of \$148 billion

Exhibit 2

POTENTIAL FUTURE PATHS FOR THE AUTO SECTOR – PART 1

(CONTINUED)

④ Alter production technology

Disaggregation

Factors promoting and hindering disaggregation

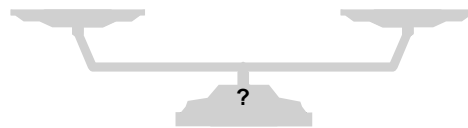
Promoting

- Pooling demand permits investment in new methods
- Supplier concentration allows OEMs to drive part standardization, thereby cutting costs
- Concentrating demand in specialists accelerates learning curve effects

Hindering

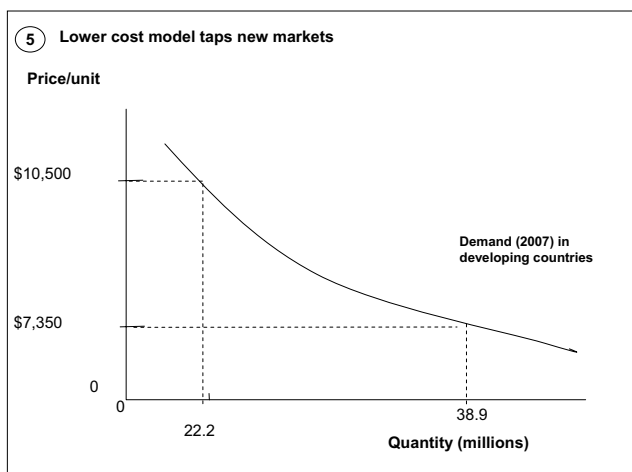
- Brand differentiation plans may insist on non-standardized parts
- Short-order-cycle customization strategy would require sitting parts plants near car plant
- Sourcing strategy may block dependence on a very small number of suppliers
- Technological innovation may fall to yield new scale economy curves

Disaggregation of value chain would allow individual entities to accumulate enough scale and scope to permit altering the technology of production, enabling shifts to new scale economy curves*— if conditions are right



Savings could be tens of billion \$ but depends on company specific strategies vis-à-vis product customization, supplier dependency, brand differentiation, etc.

* E.g., sufficiently high volume of wiring harnesses concentrated in one location and entity might permit investment of capital to automate what is now a wholly manual process

Exhibit 3**POTENTIAL FUTURE PATHS FOR THE AUTO SECTOR – PART 1 (CONTINUED)**

Potential for
\$170+ billion
revenue
opportunity

Total potential cost
savings/revenue
opportunity more than
27% of \$1.2 trillion sales
(+\$328 billion)

through for the auto sector to assess the global value creation potential (exhibits 4-7).

Companies that identify the barriers that can be relaxed and find ways to remove them are likely to capture disproportional share of the value. A good example of mutable barriers is the level of standardization in the sector: while it is often seen as a given, it is often more closely related to economic policies and ingrained industry practices than to the nature of the industry itself. Again, the consumer electronics and automotive sectors provide a good contrast: in consumer electronics, the high level of standardization is the result of the competitive industry dynamics (often a voluntary action by a group of companies to abide by a given standard as part of their competitive strategy) and in some cases, regulation (as in wireless handset standards set by governments). In auto, there simply has been no regulation or competitive pressure to increase standardization in select auto parts – although there may well be large opportunities in, say, windshield wipers and headlights. We believe that with the declining rate of trade barriers, some players will find ways to increase standardization.

SUCCESS ON THE BASIS OF GOOD STRATEGY AND EXECUTION AGAINST NEW TRADE-OFFS

Success in global industry restructuring will be based on good strategy and execution against a new set of tradeoffs. Incremental performance mandates will be increasingly inappropriate as bold targets come within reach. Finding the optimal capital versus labor mix in production, balancing appropriately global capabilities with local knowledge of markets, and shifting from multi-locale to global management will be some of the key new challenges facing companies.

Higher performance imperative

The opportunities for global industry restructuring suggest that the traditional, incremental targets for performance improvement will be replaced by much higher performance expectations, first by leaders in the industry, and later by the competitive pressure to keep up with those leaders.

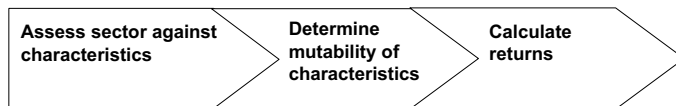
No single blueprint – and each battle is a new one

¶ Growth through global expansion has been shown to be very risky in most sectors, and no company – whether seeking markets or lower factor costs – has a template for operating successfully in all developing markets. Yet for those few that succeed, the returns are very high.

Global expansion alone does not ensure success – there is no direct correlation between the share of international sales and total returns to shareholders. Interestingly though, we do see a higher correlation among consumer electronics companies – the furthest along in industry restructuring – than among food retail and automotive, suggesting that the benefits from globalization are related to the stage of industry restructuring (exhibits 8-10).

Exhibit 4

THREE STEP PROCESS FOR EVALUATING BENEFITS FROM GLOBAL INDUSTRY RESTRUCTURING



- | | | | |
|----------------|--|---|---|
| Actions | <ul style="list-style-type: none"> Catalogue all finished goods and components used for production (e.g., passenger car, wiring harnesses) Evaluate each item against all industry, legal/regulatory and organizational characteristics to determine responsiveness to global sourcing (i.e., whether bulk/value ratio favors or inhibits global sourcing) | <ul style="list-style-type: none"> Determine which characteristics that currently inhibit global sourcing can be removed | <ul style="list-style-type: none"> Identify areas where company can take better advantage of global sourcing opportunities Calculate gains created by: <ul style="list-style-type: none"> Better utilizing existing capacity Shifting production to low labor cost countries Altering production technology Offering new products at lower price point to tap new market |
|----------------|--|---|---|

Source: McKinsey Global Institute

Exhibit 5

INDUSTRY CHARACTERISTICS: RELOCATION SENSITIVITY

● Low - Favors global sourcing
○ High - Inhibits global sourcing

	Bulk/value	Ease of meeting quality standards	Obsolescence time	Damage sensitivity	Demand volatility	Sunk costs	Overall relocation sensitivity
Auto parts							
• Wiring harnesses	● Compressible	● Manual testing	●	●	●	●	●
• Car radios	● Special packaging	●	●	● Components easily shipped to assembly point	●	●	●
• Major body stampings	○ Shipping air, special packaging	○ Driven by fit at welding shop	●	● Could be damaged or scratched in transit	●	●	●
• Radiators	● Stackable, needs protection	●	●	○ Shipping damage risk high	●	●	●

Source: Interviews; McKinsey analysis

Exhibit 6

INDUSTRY CHARACTERISTICS: LOCATION-SPECIFIC ADVANTAGES

- Favors global sourcing
- Not a factor in sourcing production locations
- Key characteristics

	Labor cost sensitivity	Economies of scale/scope	Natural resource intensity	Skill intensity
Auto parts				
• Wiring harnesses	●	○	○	○
• Car radio	◐	◐	○	○
• Major body stampings	◐	●	○	○
• Radiators	◐	◐	○	○

Source: Interviews; McKinsey analysis

Exhibit 7

GLOBAL INDUSTRY RESTRUCTURING ASSESSMENT TOOL: WIRING HARNESSES

- Low - Favors global sourcing
- High - Inhibits global sourcing
- Area of opportunity

Industry characteristics (relocation sensitivity)	Industry characteristics (location-specific)	Legal/regulatory characteristics*	Organizational characteristic*
Bulk/value ●	Labor cost sensitivity ●	Local content requirements ●	Firm level incentives ◐
Ease of meeting quality standards ●	Economies of scale/scope ○	Trade barriers ●	Union contracts ●
Obsolescence time ●	Natural resource intensity ○	Government incentives ●	
Damage sensitivity ●	Skill intensity ○	FDI barriers ●	
Demand volatility ◐			
Sunk costs ◐			
Overall rating ●	Overall rating ◐	Overall rating ●	Overall rating ◐

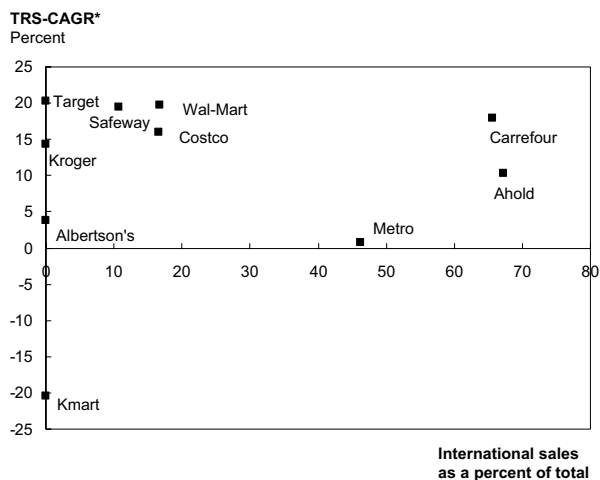
* In light of current legal/regulatory and union environment (i.e., full black circle designates lack of significant trade barriers)
Source: McKinsey Global Institute

Exhibit 8

THERE SEEMS TO BE HARDLY ANY CORRELATION BETWEEN GLOBALIZATION AND RETURNS TO SHAREHOLDERS IN RETAIL

International sales as a percentage of total vs. TRS-CAGR* for selected Food Retail firms

Percent



- Level of globalization and performance hardly display any correlation but there may be many other factors driving the trend
- Wal-Mart seems to be performing well despite less than 20% global revenues in it's total revenues. Carrefour which has over 60% global revenues in it's total revenues, is also a high performer in terms of revenues

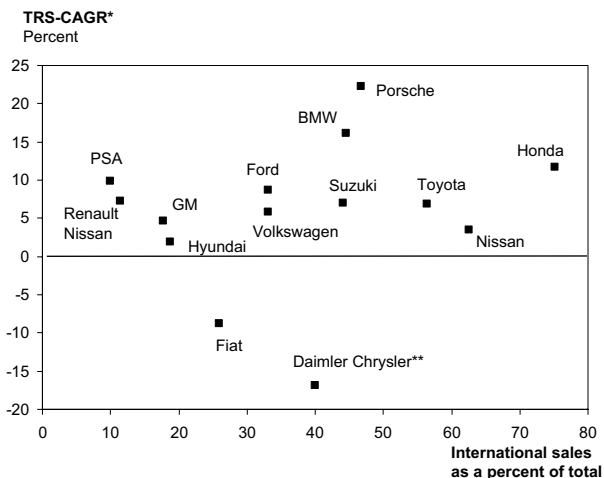
* Total Return to Shareholders CAGR over period Nov. 1, 1990 till Nov. 1, 2002
 Source: Datastream; Bloomberg; company financials; McKinsey analysis

Exhibit 9

LITTLE DIRECT CORRELATION BETWEEN LEVEL OF GLOBALIZATION AND TRS IN AUTO

International sales as a percentage of total vs. TRS-CAGR* for selected Auto firms

Percent



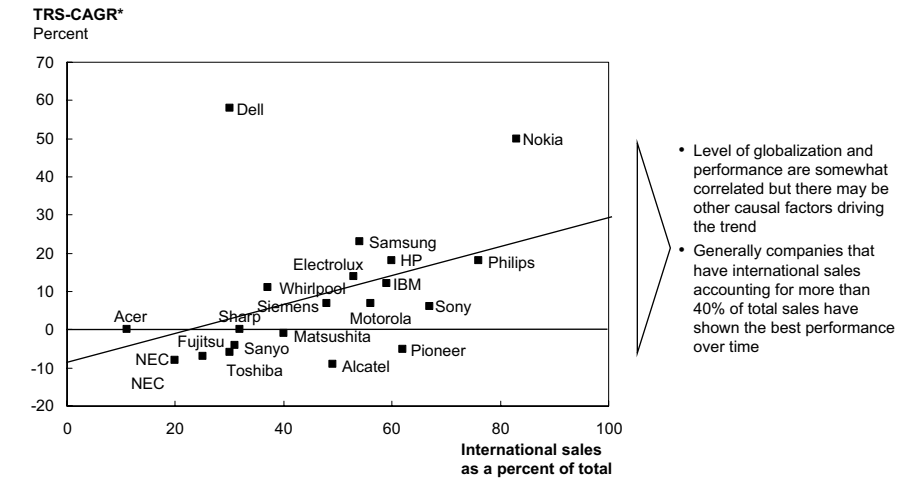
- Level of globalization and performance are somewhat correlated but there may be other causal factors driving the trend
- Generally companies that have international sales accounting for more than 40% of total sales have shown the best performance over time

* Total Return to Shareholders CAGR over period Nov. 1, 1990 till Nov. 1, 2002
 ** Sales in North America considered domestic
 Source: Datastream; Bloomberg; company financials; McKinsey analysis

Exhibit 10

HIGHLY GLOBALIZED PLAYERS HAVE SOMEWHAT HIGHER RETURNS TO SHAREHOLDERS IN CONSUMER ELECTRONICS

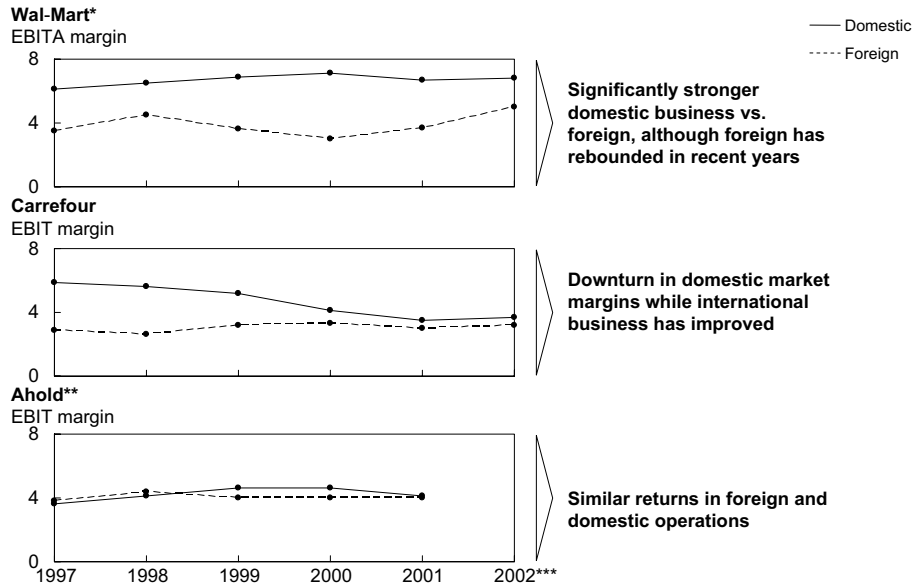
International sales as a percentage of total vs. TRS-CAGR* for selected CE firms
Percent



* Total Return to Shareholders CAGR over period Nov. 1, 1990 till Nov. 1, 2002
Source: Datastream; Bloomberg; company financials; McKinsey analysis

Exhibit 11

COMPARISON OF PROFITABILITY DOMESTIC VS. FOREIGN OPERATIONS



* Excludes distribution business, which represents 5% of Wal-Mart's total business
** Ahold margins for 1999-2002 represent breakout of Europe vs. non-Europe due to unavailable data on home market, the Netherlands
*** Ahold results for 2002 misstated in financial reports
Source: Annual reports

¶ Food retail is an industry where global players have rapidly expanded abroad during the past 10 years, yet leading players have traditionally generated lower returns on their international operations than in their home markets (Exhibit 11). Leading global players have used very different approaches to global expansion – Carrefour expanding through green field operations in hypermarket format, while Wal-Mart prefers acquisitions and being more flexible in formats. However, the success of either strategy critically depends on the local market conditions that influence the options available for them and the likelihood of success – as is suggested by the contrasting experiences of Wal-Mart in Mexico and Brazil (exhibits 12-14).

In all investments in developing countries, macroeconomic instability and exchange rate risks remain significant factors that can materially alter market prospects or cost structure relatively rapidly. The highly volatile macroeconomic environment in Brazil, and the sensitivity of efficiency-seeking FDI to changes in exchange rates illustrate this well.

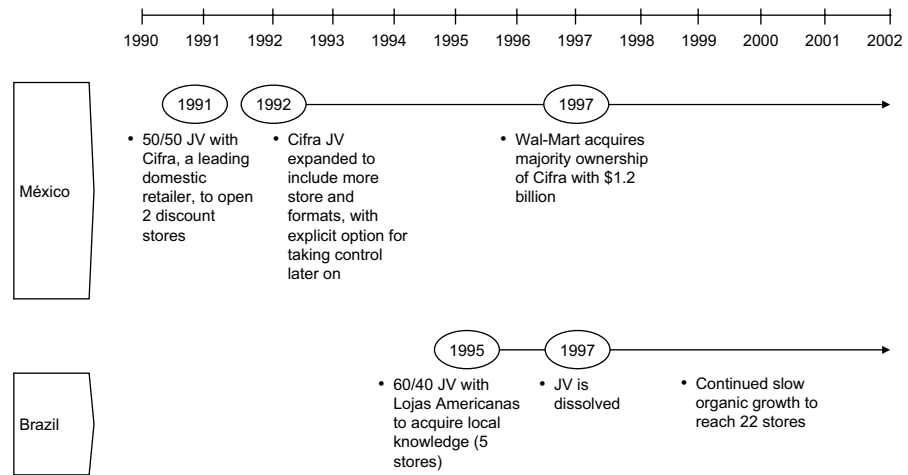
- Optimistic growth expectations for the Brazilian economy attracted large volumes of market-seeking foreign investments in the 1990s – approximately US \$100 billion in total. Yet the very volatile macroeconomic environment (after the end of hyperinflation, recession followed by devaluation) rapidly changed the domestic market prospects. The example of auto OEMs investing in Brazil illustrates this: while they expanded production to meet expected rapid sales growth, realized sales declined by 36 percent between 1997 and 1999 – and led to capacity utilization rates of 51-55 percent (exhibits 15 and 16). Other sectors of the economy were also heavily affected by the downturn.
- In our sample, all countries experienced significant changes in real exchange rate during the 1990s, and as a result, the relative long-term competitiveness of efficiency-seeking investments changed. Mexico's experience is illustrative: steep devaluation in 1995 helped boost rapid efficiency-seeking FDI inflow, yet slow real appreciation relative to the U.S. dollar during the rest of the decade eroded Mexico's relative cost position. And while Chinese currency was fixed to U.S. dollar during the 1990s, it appreciated in real terms relative to the Yen and Euro. Any exchange rate changes now would have an immediate impact on the global cost advantage of Chinese consumer electronics products that we have measured in our cases.

Finding the optimal capital-labor mix

Companies need to aggressively seek opportunities to further lower cost by substituting labor for capital – or reengineer production. In auto China for example, European OEMs have put in place capital-intensive plants designed for European factor costs – and as a result, capital intensity in Chinese auto plants today is comparable to European levels (Exhibit 17). Under intense competitive pressure, Indian auto OEMs have been driven to a different approach: by reducing automation across both the production and design process, they have been able to bring to market significantly less expensive passenger cars than are available from the stables of the global OEMs. And the IT/BPO case illustrates the large

Exhibit 12

WAL-MART ENTERED FIRST TO MEXICO AND THEN TO BRAZIL

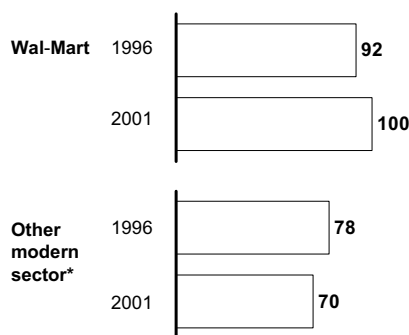


Source: Interviews

Exhibit 13

WAL-MART WAS VERY SUCCESSFUL IN MEXICO

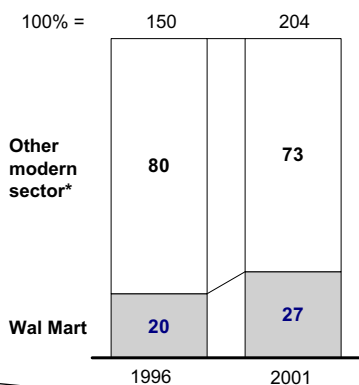
In Mexico, Wal-Mart has rapidly increased productivity . . . Mexican pesos of 2001 per hour worked



1.9% CAGR

-1.9% CAGR

. . . and gained market share of modern retail market
Total sales in Mexican pesos of 2001



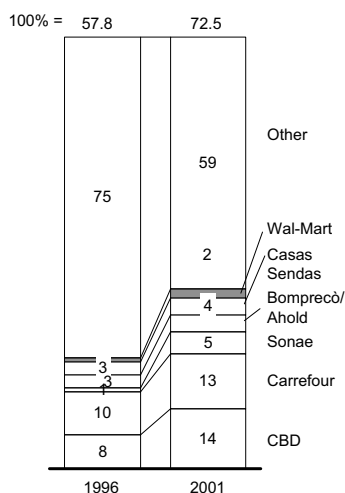
Key to Wal-Mart's strong performance was early entry and successful JV partnership, acquisition, and integration of a leading domestic retailer

* Includes self service formats (hyper-and supermarkets and convenience stores) that represent 30% of total Mexican food retail market
Source: McKinsey analysis

Exhibit 14

WHILE IN BRAZIL, WAL-MART HAS THE LOWEST MARKET SHARE OF ALL FOREIGN PLAYERS

2001 R\$ billions; percent



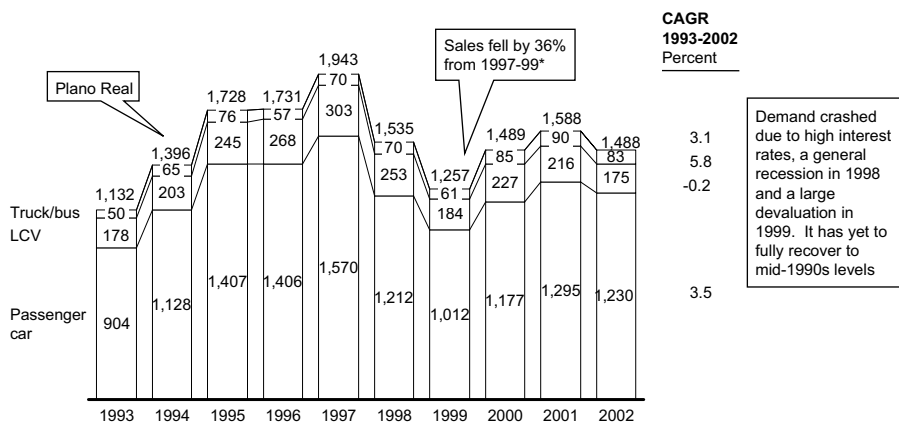
- Wal-Mart entered without a strong local partner in Brazil which was the key differentiating factor to their performance in Mexico. This decision was due to
 - Lack of an available appropriate target
 - Decision to adopt a cautious entry strategy focusing less on market share gains and more on performance of existing investments
- Lack of a strong domestic partner had many negative effects:
 - It slowed Wal-Mart's ability to benefit from scale (e.g., low purchasing power)
 - It has made it slow to adopt their skills to local market (e.g., difficulty with tailoring assortment to the local market)

* Includes only formal modern retailers
Source: McKinsey analysis; ABRAS

Exhibit 15

AUTOMOTIVE SALES IN BRAZIL*

Thousand units

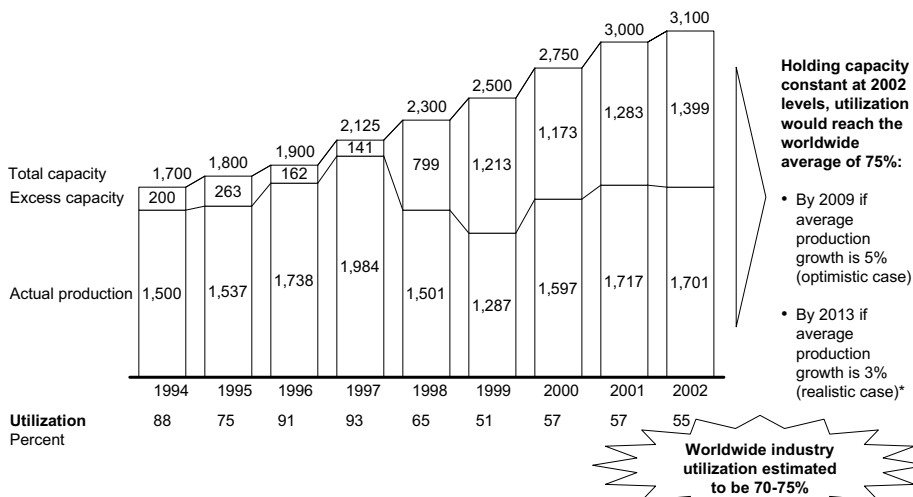


* Compare this to the biggest drop in the U.S. of 32% over 1978-82; biggest 2-year drop was 24%
Note: Figures include total domestic sales (including imports)
Source: Anfaeva

Exhibit 16

PRODUCTION AND EXCESS CAPACITY OF LIGHT VEHICLES, 1994-2001

Thousand vehicles per year



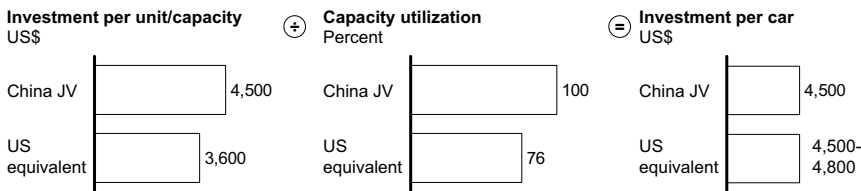
Note: Exports are usually 20-24% of production (only 16% in 1995-1996). Capacity figures reported are for end of year. Total capacity numbers are rough estimates, and depend on each OEMs' assumptions about shift lengths, etc.

* "Realistic case" is based on average sales growth figures for 1993-2002. Optimistic case assumes 2% additional growth, due to domestic market recovery and/or increasing exports

Source: Anfavea; CSM Worldwide; Lafis; Just-auto.com; McKinsey analysis

Exhibit 17

CHINESE PLANTS ARE JUST AS CAPITAL INTENSIVE AS U.S. PLANTS



Reason for higher investment per unit capacity in China

<p>Higher installation costs</p> <ul style="list-style-type: none"> Shipping equipment to China Expatriate staff to install equipment More support equipment (e.g., stable power supplies) 	+	<p>Smaller scale plants</p> <ul style="list-style-type: none"> Lower line speeds set by capacity bottlenecks (such as paint shops) Similar investment in paint shops for less capacity (low scale effects) 	-	<p>Less automation in welding</p> <ul style="list-style-type: none"> Chinese automation levels = 30% compared to 90% or more in developed countries 	=	<p>Higher investment cost per unit capacity</p> <ul style="list-style-type: none"> New plants in China have higher investment per unit capacity though roughly equivalent actual levels, given higher capacity utilization
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Source: UBS Warburg; plant visits; McKinsey Global Institute

financial benefits from trading labor productivity for capital productivity by moving from two to three shifts (exhibits 18-19).

Fine art of balancing global capabilities with local knowledge

The second critical execution challenge for global companies is to be able to leverage their capabilities in a way that fits the local conditions of the host country. Multinational companies have been well positioned to transfer their competitive products and processes, but less equipped to tailor them appropriately to local conditions. Strong local players have been well positioned to understand local market conditions but often lack capital, product or process technologies. This is particularly challenging in sectors like food retail where the local nature of consumer food preferences and the need to build a local supply chain make deep local knowledge critical, at the same time that capital intensive, technology-enabled investments can enhance performance greatly. Successful companies have either acquired a local company and its management team or built local management expertise over a longer time period (Exhibit 20). In manufacturing, examples of successful products tailored for local demand include low-cost passenger cars (Indica and Scorpio) targeting the low-income segments in India (Exhibit 21), and white goods tailored for specific local needs (Exhibit 22).

The transition to a global economy provides great opportunities for bridging the global-local gap by bringing together the capabilities of MNCs with local knowledge of companies in developing countries – and in the process, making this distinction itself less meaningful. It is already hard to categorize cases like Wal-Mart in Mexico, where the U.S. parent company owns 60 percent of WalMex, Mexican listed company, that is managed by the acquired local management team and that operates multi-format food retail operations that have a feel of Cifra, the acquired Mexican company, more than the Wal-Mart known in the U.S. Similarly the evolution of the Indian BPO sector has led to the creation of companies that cover the full range of ownership and management structures – all in the attempt to maximize the benefits from combining global brand and market access with local management expertise (Exhibit 23).

From multi-local to global optimization

The third critical execution challenge for global companies is to overcome their internal organizational barriers to global change. The experiences of multinational companies in our sample of 14 sectors and 4 countries suggest three key lessons for senior managers:

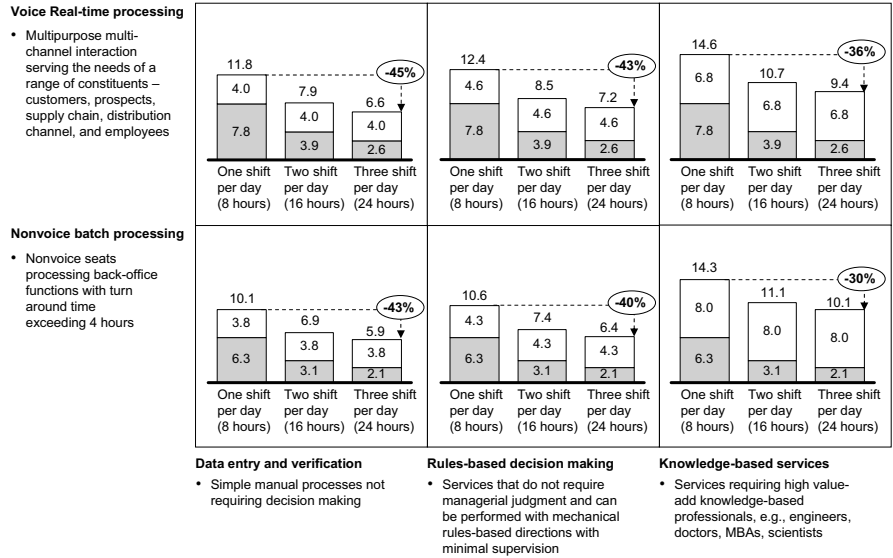
¶ **Align management incentives with global, not local performance, but allow for local tailoring.** Many companies have been slow to capture the benefits from offshoring because of the resistance of mid-level managers to trade the costs of job losses and reduced managerial sphere of influence for the large cost savings generated to the company. GE has overcome this barrier through strong top-down mandate (Exhibit 24).

Exhibit 18

CAPITAL PRODUCTIVITY IS THE PRIMARY LEVER IN INDIA

\$/billable seat/hour

Variable costs
Fixed costs

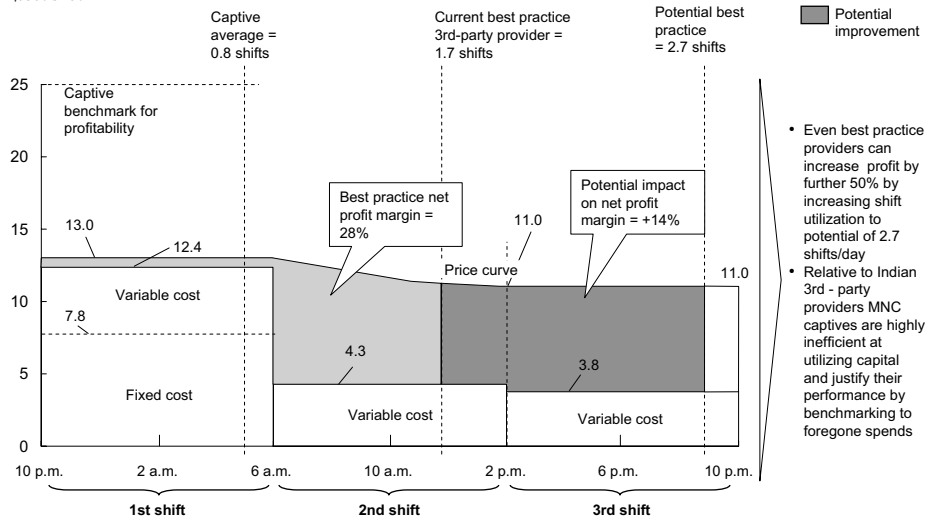


Source: Interviews; McKinsey Global Institute

Exhibit 19

INCREASING SHIFT UTILIZATION CAN IMPROVE PROFITABILITY 50%

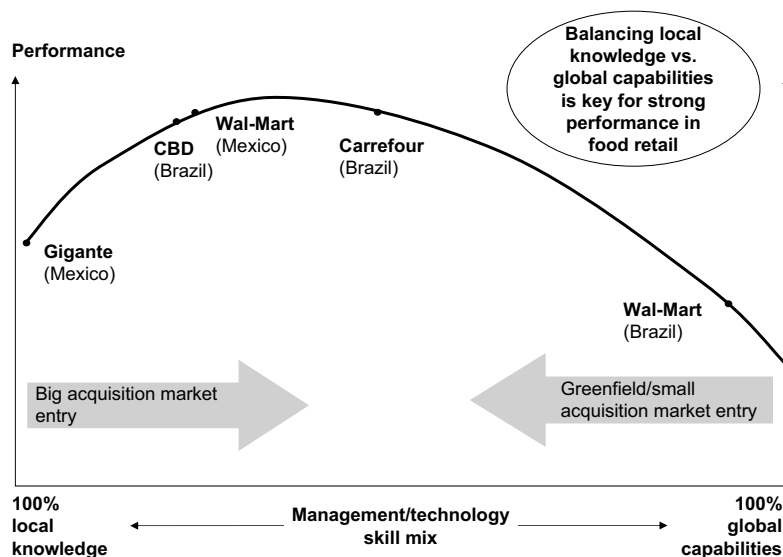
BPO provider profitability \$/seat/hour



Source: McKinsey Global Institute

Exhibit 20

COMPARISON OF FOOD RETAILER PERFORMANCE AND MIX OF LOCAL KNOWLEDGE AND GLOBAL CAPABILITIES



Source: Interviews; McKinsey

Exhibit 21

INDIA HAS EXHIBITED 2 KEY SUCCESS STORIES ON VEHICLE DEVELOPMENT FRONT IN RECENT PAST

Indica development project

Development time: 31 months



Cost and process

Total project cost Rs. 1,700 crores, within this the development cost was about Rs.206 crores and an old plant bought from Nissan for Rs. 100 crores (U.S. \$22 mill)

Indica has been designed by IDEA, Italy, test run in the USA and some 700 engineers worked on this project who had never designed a car before

TELCO Developed some 3,800-odd components and nearly 700 plus dyes and 4,000 fixtures. Partnered with 300 vendors to develop nearly 77% of the value of the vehicle

Le Moteur Moderne, France developed both gasoline and diesel engines

Result

Got some 115,000 orders with the initial deposit money on launch

Currently market leader in diesel small car category

Scorpio development project

Development time: ~60 months



Rs. 6,00 crores (U.S. \$122.4 million) total development costs with Rs. 250 crore (~U.S. \$50 mill) for the design development and Rs. 350 crore (~U.S. \$70 mill) for facilities upgradation

The core product development team comprised 120 members broken up into 19 cross-functional teams working using an integrated design and manufacturing process (IDAM)

74 prototypes made till final launch. Undertook 5 customer surveys over 1997-2002 to understand changing customer expectations

Developed diesel engine in-house in collaboration with AVL, Austria and tapped Renault (for the petrol engine)

Received the "Best Product Launch" of the year award at the India Leadership Summit in Nov 2002

Set a sales target of 1,200 units per month, but actually clocking around 2,000 units per month

Source: Press; Web Search; company release

Exhibit 22

UNIQUE WHITE GOODS CHARACTERISTICS DRIVEN BY TOTAL NEEDS

Local need/condition

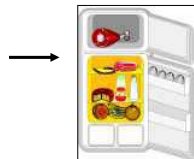
India
Scarcity of water, with high-cost water supply



Product characteristics

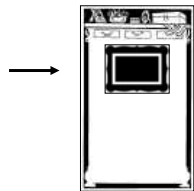
“Double basin” clothes washer, which allows for reuse of water

Europe
Heightened environmental concern and more frequent trips for food shopping



Smaller, more efficient refrigerators than American counterparts

China
Because many families live in one-room apartments, refrigerators are often in the living room; they are often given as wedding gifts

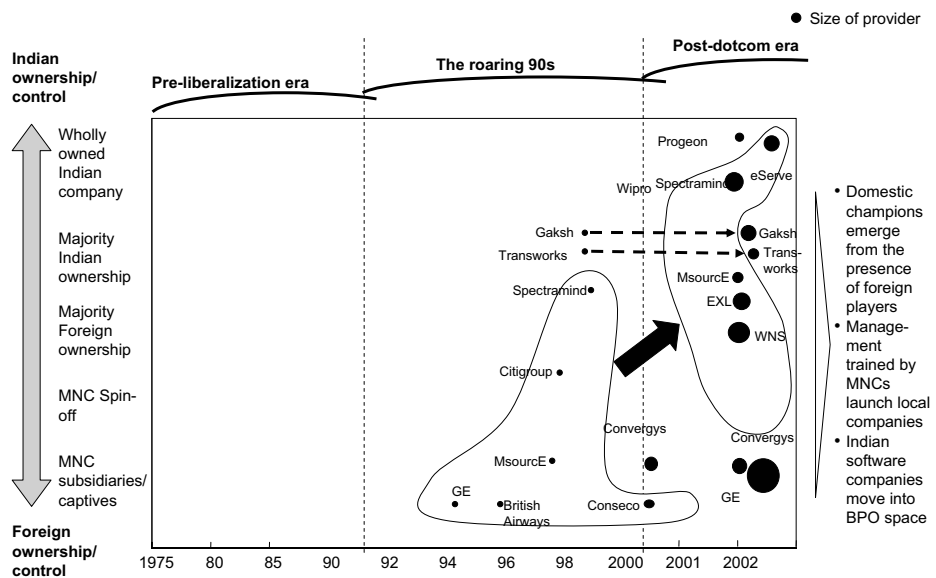


Refrigerators styled towards living room decor; picture frame integrated for wedding picture

Source: McKinsey Analysis

Exhibit 23

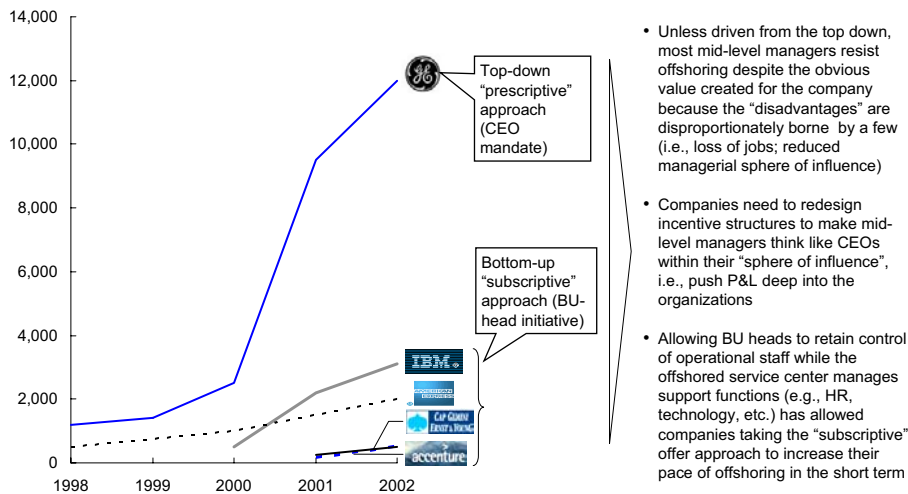
INDIA BPO SERVICES INDUSTRY EVOLUTION



Source: McKinsey Global Institute

Exhibit 24
BIGGEST BARRIER TO GLOBAL SOURCING OF SERVICES IS CORPORATE “COLLECTIVE ACTION PROBLEM”

Number of FTEs



Source: Interviews; McKinsey Global Institute

Exhibit 25

Retail banking Mexico

MNCS ADOPTED BROAD RANGE OF MANAGEMENT APPROACHES IN THEIR MEXICAN OPERATIONS

	Execution focus	Performance pressure	Mentoring approach
Example	BBVA – Bancomer	Santander – Serfin	Citigroup – Banamex
Description	<ul style="list-style-type: none"> Local management executes decisions made by parent company Little focus on independent thinking and initiative by local management 	<ul style="list-style-type: none"> Local management is given performance targets based on group benchmarks Up to local management to decide how to meet top-down targets 	<ul style="list-style-type: none"> Local management is given autonomy under guidance of parent company executives Local management encouraged to adopt best practice developed in other parts of the organization
Internal organization	<ul style="list-style-type: none"> Top management in subsidiary replaced by senior managers from parent company Key management decisions taken by parent company 	<ul style="list-style-type: none"> Subsidiary run by a combination of local and parent company executives Operational control by parent company with clear line authority over local management 	<ul style="list-style-type: none"> Subsidiary run mostly by local executives Multiple reporting lines within matrix-like structure
Skill transfer	<ul style="list-style-type: none"> Clear and direct transfer of best practice through central line of command Approach favours best practice over local content 	<ul style="list-style-type: none"> Model emphasizes local content rather than best practice Santander fosters best practice transfer through internal consulting unit 	<ul style="list-style-type: none"> Mentoring approach tries to strike balance between local content and best practice
Source: Interviews			

-
- ¶ **Eliminate barriers to innovate and take risks in search of restructuring opportunities.** The relatively short rotation time of auto OEM country managers limits their incentives to "tinker with the model" by seeking lower-cost local suppliers instead of relying on global supply chain partners. On the other hand, overinvestment may be encouraged if managers get credit for expansion but are not responsible for seeing that expansion results in an appropriate increase in returns.
 - ¶ **Create feed-back mechanisms to avoid repeated mistakes.** Local innovation needs to be encouraged but balanced against inappropriate organizational trial-and-error strategies. Global retailers ought not repeat product selection mistakes like selling ski boots in São Paulo or sit-on lawnmowers in Mexico City.

There is no one correct approach to managing global optimization. Just as high-performing companies in developed countries exhibit a broad range of successful management approaches, so too in the large developing economies. In Mexican retail banking, successful approaches ranged from BBV's top-down direction to Citigroup's management coaching of the executives in their newly acquired Mexican operations (Exhibit 25).

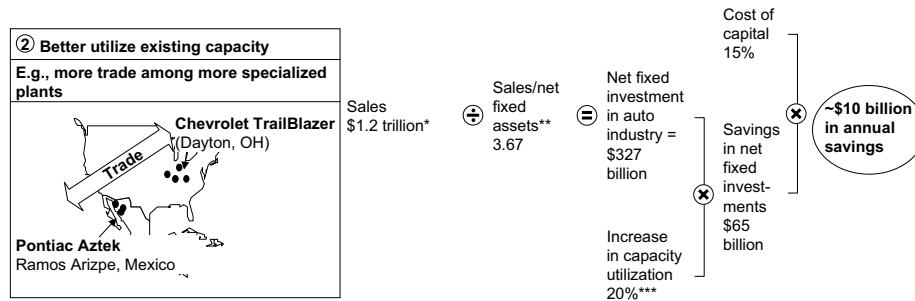
* * *

The changing global landscape creates very large opportunities for cost savings and revenue creation. Incremental performance mandates will be increasingly inappropriate as bold targets come within reach. These opportunities for value creation will be captured by companies that understand where the potential restructuring opportunities lie in their sector, are able to remove any existing barriers to globalization, and can succeed in execution.

Exhibit 26

POTENTIAL FUTURE VALUE CAPTURE FOR THE AUTO SECTOR

Better capacity utilization increasing trade among more specialized plants

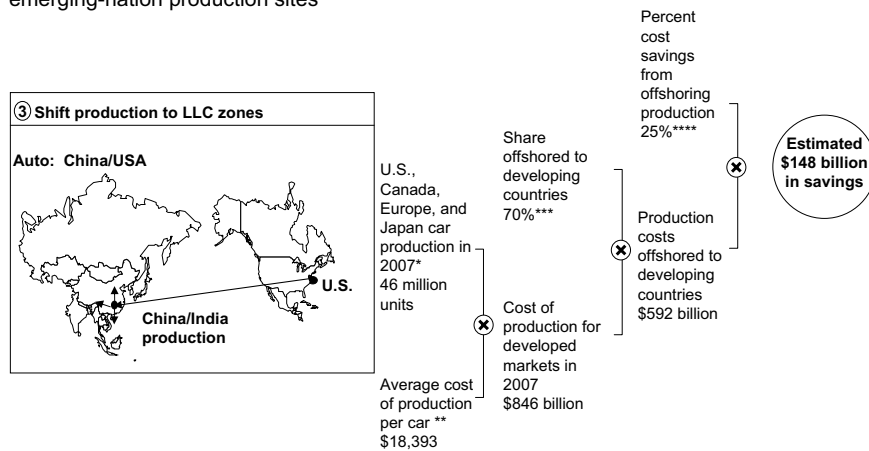


* Estimated market size in 2002
 ** Industry average for global automotive and light trucks manufacturers having a market cap excess of \$100 million; 30 companies benchmarked
 *** Due to increasing utilization of existing plants
 Source: SEC documents; interviews; literature searches; McKinsey Global Institute

Exhibit 27

POTENTIAL FUTURE VALUE CAPTURE FOR THE AUTO SECTOR (continued)

Reduced product cost through massive shift of production (e.g., 70%) to low labor cost emerging-nation production sites



* Assumes a 1% CAGR applied to ~ 44 million cars produced in US, Japan, Canada, and Europe in 2002; Europe includes Eastern and Western Europe production figures; used as a proxy for developed world's production
 ** Average for GM, Ford, and Daimler Chrysler in 2000, as reported by Goldman Sachs; used as a proxy for developed world
 *** Assumes that some production must be kept local
 ****Cost savings from offshoring to LLC usually results in 20-25% savings – see Global Industry Restructuring piece for more details; here we assumed the upper end of this spectrum since the percentage savings does not take into consideration the effects of falling tariffs
 Source: Global Insight; literature searches; Goldman Sachs research; McKinsey Global Institute

Exhibit 28

POTENTIAL FUTURE VALUE CAPTURE FOR THE AUTO SECTOR (continued)

Disaggregation of value chain permits specialization at each stage, gaining thereby economies of scale and scope

④ Alter production technology

Disaggregation

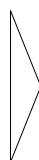
Factors promoting and hindering disaggregation

Promoting

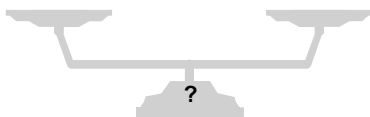
- Pooling demand permits investment in new methods
- Supplier concentration allows OEMs to drive part standardization, thereby cutting costs
- Concentrating demand in specialists accelerates learning curve effects

Hindering

- Brand differentiation plans may insist on non-standardized parts
- Short-order-cycle customization strategy would require sitting parts plants near car plant
- Sourcing strategy may block dependence on a very small number of suppliers
- Technological innovation may fall to yield new scale economy curves



- Potential for several tens of billions of savings globally, but precise amount depends on company specific strategies (e.g., product customization, supplier dependency, brand differentiation)
- Unlike many other industries, scale economies in the auto industry beyond current plant size mostly conjectural, as a result improvement less than options 1 and 2

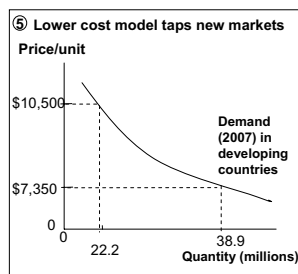


Source: Interviews; McKinsey Global Institute

Exhibit 29

POTENTIAL FUTURE VALUE CAPTURE FOR THE AUTO SECTOR (continued)

If Horizons 2, 3, and 4 were used in part to reduce price significantly, demand could be boosted and net profits expanded dramatically



- Issues:**
1. Environmental impact
 2. Stability of 2.5 elasticity

Sales volume in the developing world in 2007*

① No impact from lower price model

Demand for average price car**
14.8 million

Average price of car
\$10,500

66% of market (\$ 155 billion) unaffected by introduction of lower cost model
Revenue impact \$ 0 billion

② Price erosion from lower price model

Demand for people purchasing lower price model rather than average price model**
7.4 million

Revenue lost from people buying lower price model***
\$3,150

Price erosion of \$23 billion

③ New market creation

Demand for lower price model****
16.7 million

Price of lower cost model****
\$7,350

New revenue created from introduction of lower cost model
\$123 billion

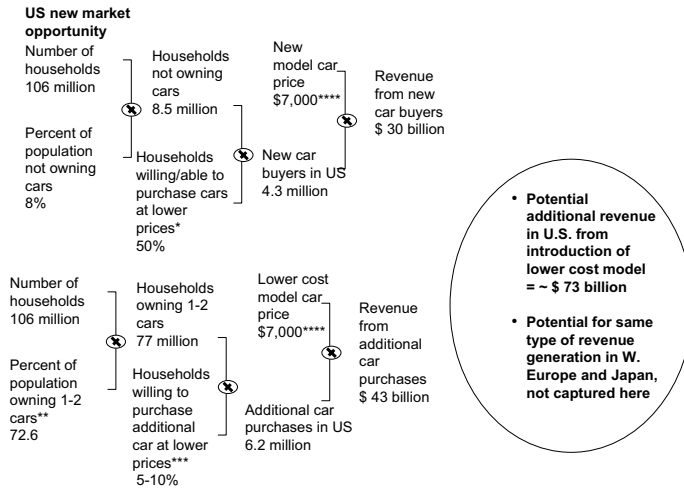
Additional revenue in developing world ~\$ 100 billion

* To determine sales volume in 2007, we applied an 8% CAGR to ~ 15.1 million cars produced in the developing world in 2002, resulting in an expected demand of 22.2 million units
 ** We assumed that 2/3 of demand was unaffected by the introduction of this lower cost model (2/3 * 22.2 million = 14.8 million); 1/3 of the market substituted lower price model car for the average price car (1/3 * 22.2 = 7.4 million)
 *** The difference between the average price of a car (\$10,500) and the lower cost model (\$7,350) – assumes that lower price model is 30% less expensive than average price car
 **** Assumes a price elasticity of 2.5 and 30% decrease in price (average car price was \$10,500, now reduced to \$7,350); % change in volume = % change in price * price elasticity = 75% boost in volume (22.2 million * 1.75 = 38.9 million for new market size), we assume that all of the increase in market size (38.9 million - 22.2 million = 16.7 million) is for lower price models

Exhibit 30

POTENTIAL FUTURE VALUE CAPTURE FOR THE AUTO SECTOR (continued)

If Horizons 2, 3, and 4 were used in part to reduce price significantly, demand could be boosted and net profits expanded dramatically



* Assumes that 80% of households who do not own cars simply cannot afford to do so; when a lower cost model is offered, 60% of those households choose to buy one; some household may buy used cars
 ** 2% of the population owns 1 car; 38.4% of the population owns 2 cars
 *** In order to calculate the revenue generation, our calculation assumes that 8% of people who own 1 or 2 cars will purchase an additional lower cost model (rough midpoint between 5-10%)
 **** Assumes 30% decrease in lowest cost US model - KIA Rio (~\$10,000)
 Source: Census 2000; Global Insight; literature searches; McKinsey Global Institute

Preface to the Auto Sector Cases

1

The auto sectors of Brazil, Mexico, China, and India are four of the major emerging markets in the auto industry, each of which possess quite distinct characteristics. Though the countries concerned are all large, developing nations, the policies pursued by each country toward the auto industry – and the resulting development of the industries – have been quite different. The industry size in each country varies, from the high of 1.8 million units a year produced in Mexico to a low of 0.6 million units a year produced in India. Similarly, the nature of the industry is also varied, with exports accounting for as high as 74 percent of production in Mexico, to a low of less than one percent in China. This preface provides the background information necessary for a full understanding of the comparative cases.

BACKGROUND AND DEFINITIONS

Sector scope. The study scope of the auto cases has been limited to an examination of the performance of OEMs in the passenger car segment. OEMs in passenger cars account for roughly 50 percent of total value-add in a car (Exhibit 1). In some cases, where appropriate, we have extended this scope to include other light commercial vehicle (LCV) segments like vans and pick-ups (Exhibit 2). For example, in Brazil and Mexico, in addition to passenger cars, we have included vans, pick-ups, and other LCVs produced by the same manufacturers and in the same plants as passenger cars. In China, in addition to the LCV segment, we have also included the bus and truck segments solely as comparators to highlight the impact FDI on the passenger vehicle segment. In each case, we have also studied the impact of FDI on the component industry, to understand how FDI creates backward linkages (spillover effects) to suppliers. The scope of the study does not include distributors/dealers or the aftermarket segments.

Country selection. We have studied the impact of FDI on the auto sector in four countries – Brazil, Mexico, China, and India (Exhibit 3).

- ¶ These countries are four of the five largest emerging markets in the industry, accounting for 51 percent of total emerging market production (Exhibit 4).
- ¶ The auto sector is a significant industry across all four countries, accounting for an average GDP and employment share (Exhibit 5). The industry is at different stages of development in each country, with productivity levels varying from a low of 21 in China to a high of 65 in Mexico¹ (Exhibit 6).
- ¶ Given the economic significance of the auto sector to each of the countries concerned and its importance as a symbol of modernity and of national advancement, each country has regulated the industry to varying degrees. Consistent with our approach in other sectors, we have selected two different focus periods in order to be able to compare and isolate the impact of FDI, both within the country and across countries.

The auto industry in developing countries

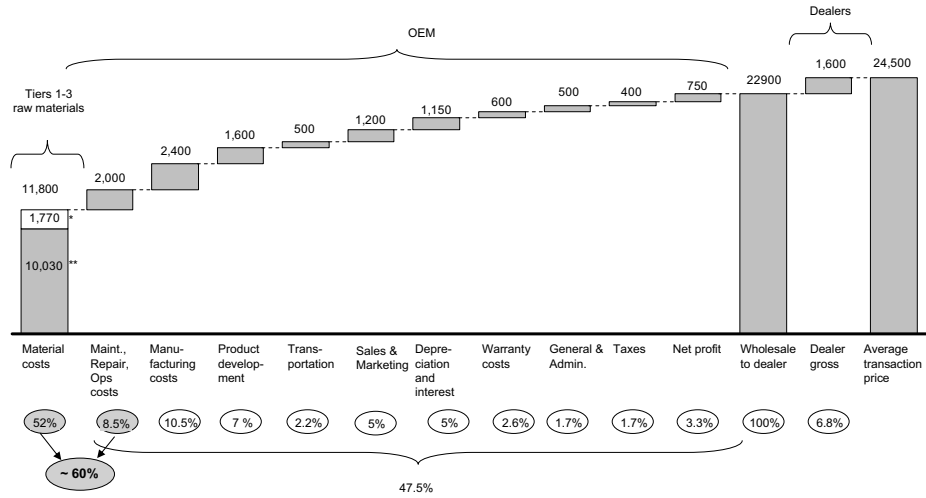
- ¶ The auto industry is a highly capital-intensive sector requiring substantial R&D

1. We have used productivity in the U.S. as a comparison, where U.S. productivity = 100.

Exhibit 1

OEM IN PASSENGER CARS ACCOUNT FOR NEARLY HALF OF THE TOTAL VALUE ADD IN A CAR

Dollars per vehicle



* Raw materials
** Purchase parts

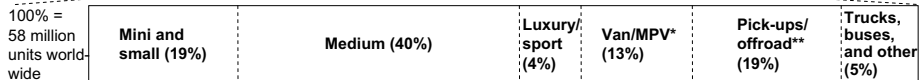
Source: Roland Berger; Deutsche Bank Report; team analysis

Exhibit 2

FOCUS OF ANALYSIS IN THE AUTO SECTOR

Focus

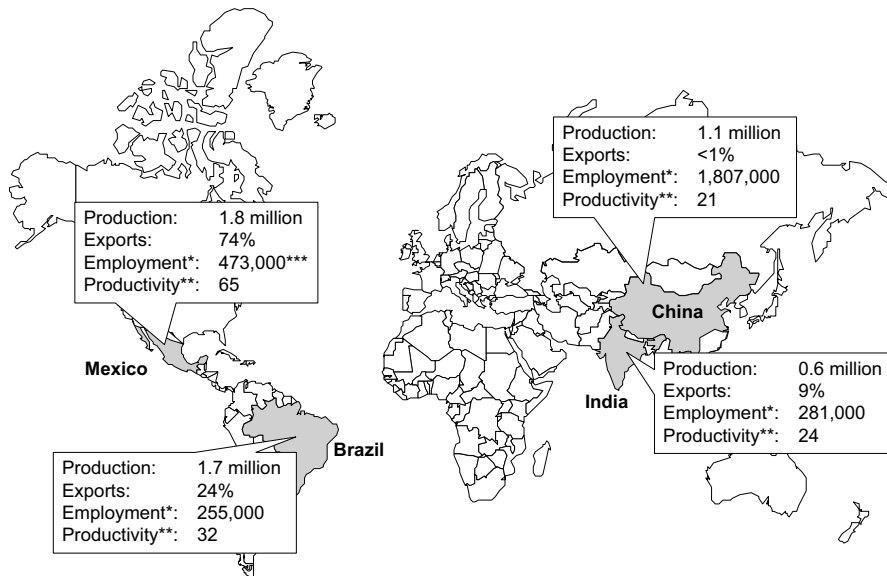
	Suppliers of material, components and systems	Original equipment manufacturers (OEMs)	Distributors/dealers	Aftermarket
Products/services supplied	<ul style="list-style-type: none"> Assembly of car parts 	<ul style="list-style-type: none"> Design of cars Organization of production Final assembly Marketing and sales Financing services 	<ul style="list-style-type: none"> Retail new car distribution Financing services Used car purchase and sales 	<ul style="list-style-type: none"> All activities related to car usage, e.g., <ul style="list-style-type: none"> Maintenance, repair Vehicle parts Fuel Recycling Planning Etc.
Example companies	<ul style="list-style-type: none"> Delphi Magna Visteon 	<ul style="list-style-type: none"> GM Ford Toyota DaimlerChrysler 	<ul style="list-style-type: none"> Mostly rather small dealers 	<ul style="list-style-type: none"> Many small companies Large fuel chains include ExxonMobil, Royal Dutch/Shell Group, etc.
Market segmentation	<ul style="list-style-type: none"> All kinds of autoparts, components systems and raw material 	<ul style="list-style-type: none"> Passenger cars (by size, by brand image) Light commercial vehicles (LCVs) Trucks, buses (not addressed) 	<ul style="list-style-type: none"> Captive vs. non-captive dealers 	<ul style="list-style-type: none"> Along activity performed Wholesaler vs. retailer



* Multi-person vehicle (e.g., mini-vans)
** Includes SUVs
Source: Procar World; McKinsey Global Institute

Exhibit 3

PROFILE OF AUTO SECTOR CASES



* Including components

**Benchmarked to U.S. at 100; India and Brazil are far below their potential productivity due to low capacity utilization

*** Including *maquiladora* employment of 211,000

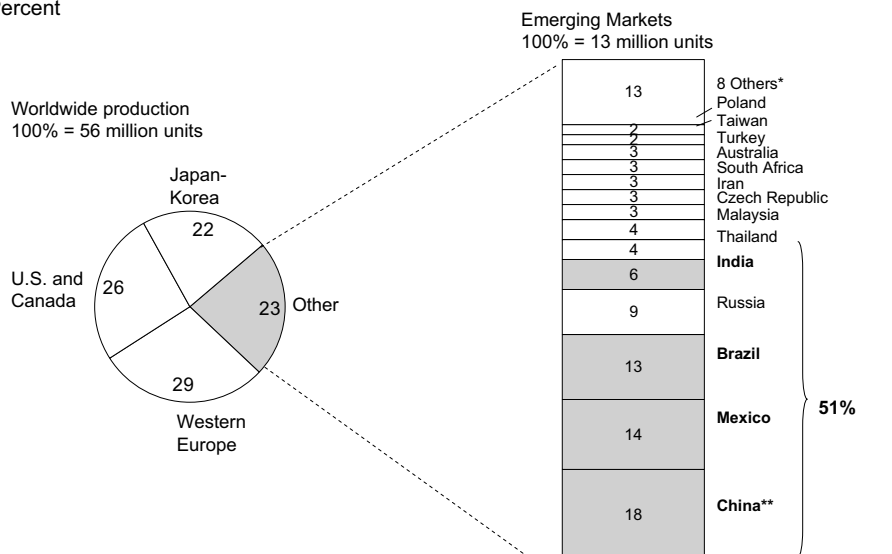
Source: ANFAVEA; SINDIPECAS; INEGI; ACMA; CRIS-INFAC; McKinsey Global Institute

Exhibit 4

LIGHT VEHICLE PRODUCTION IN EMERGING MARKETS 2002

Focus of study

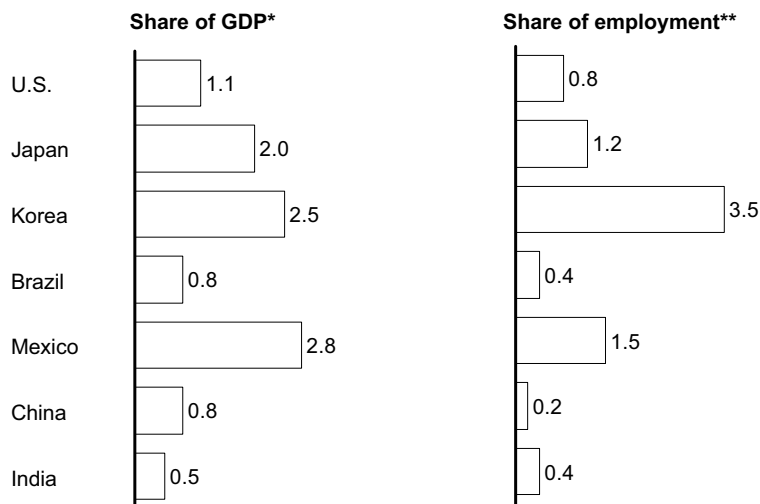
Percent



* Indonesia, Slovakia, Argentina, Hungary, Slovenia, Venezuela, Romania, and Philippines each produced less than 300,000 units

** Figure includes passenger cars and light commercial vehicles (e.g., light trucks), China auto case study excludes light commercial vehicles and consequently results in a smaller sample size; numbers will not exactly match auto case study

Source: Global Insight

Exhibit 5**AUTO IS A SIGNIFICANT INDUSTRY FOR MANY COUNTRIES**

* Auto sales as a percentage of GDP

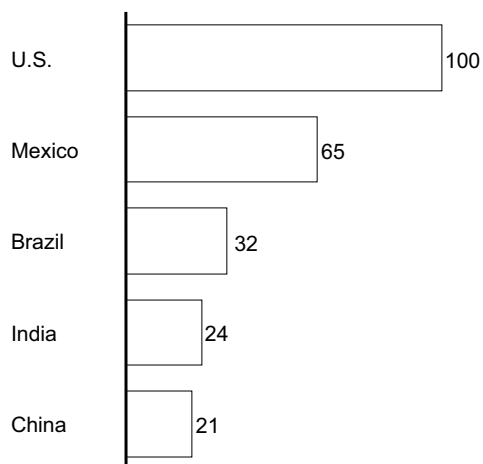
** Percent of auto employment/total employment

Note: Data for share GDP 2002; data for share of employment 1998 (India), 1999 (Korea, China) or 2001 (U.S., Japan, Brazil, Mexico)

Source: McKinsey Global Institute

Exhibit 6**SIGNIFICANT PRODUCTIVITY DIFFERENCES EXIST ACROSS COUNTRIES****Labor productivity in the auto sector**

U.S. productivity = 100



- Auto industry is less traded than other sectors
- There is therefore huge potential for FDI to raise productivity levels to best practice

Note: India and Brazil are far below their potential productivity due to low capacity utilization

Source: McKinsey Global Institute

and very large fixed investment upfront. It therefore has large economies of scale.² Passenger cars tend to be even more capital-intensive than trucks and SUVs as a result of higher design and assembly costs. Unlike trucks and SUVs in which a frame is the basic building block to which all parts are attached, cars are almost always built using "unit body" construction, where each piece of the car needs to be welded together; a costly process requiring more time in the body shop. Because of the large capital investments necessary for this industry FDI is usually the primary catalyst for jump-starting this sector in most emerging markets. Countries that do not allow FDI, end up relying on outdated products purchased from global companies. Our cases range from Brazil with 100 percent FDI-led industry to China and India where FDI was banned until the 1980s or 1990s.

¶ In order to capture economies of scale, OEMs need to produce a minimum of 250,000 vehicles per year (Exhibit 7). Most developing countries are forced to run sub-scale operations as a result of smaller market size, where the vehicles produced per plant are well below the amount needed to capture full economies of scale benefits (Exhibit 8). For example, in 2002, OEMs produced an average of 127,000 vehicles per plant in Mexico, 95,000 in Brazil, 72,000 in China, and 42,000 in India.

FDI typology. FDI in the auto industry can be both market-seeking and efficiency-seeking. The majority of the production in Mexico is efficiency seeking (70 percent), aimed at export to the U.S. market. China and India both attract market-seeking FDI that is made, at least part, to circumvent high trade barriers. Brazil attracts both market-seeking and efficiency-seeking FDI; to a certain extent, the two feed off of each other.

SOURCES

Data. For Brazil, Mexico, and China, productivity, output, and employment estimates were based on government statistical sources, industry associations, company websites, and annual reports. For India, financial and operational information was collected, analyzed, and aggregated from interviews with each OEM.

Interviews. The analysis of industry dynamics and the impact of external factors on the sector were based on interviews with company executives, government officials, industry analysts, and industry associations. Almost every leading OEM was interviewed in each country. Furthermore, these same sources were used to understand and verify the impact of FDI on productivity and, in particular, what operational factors might have influenced it.

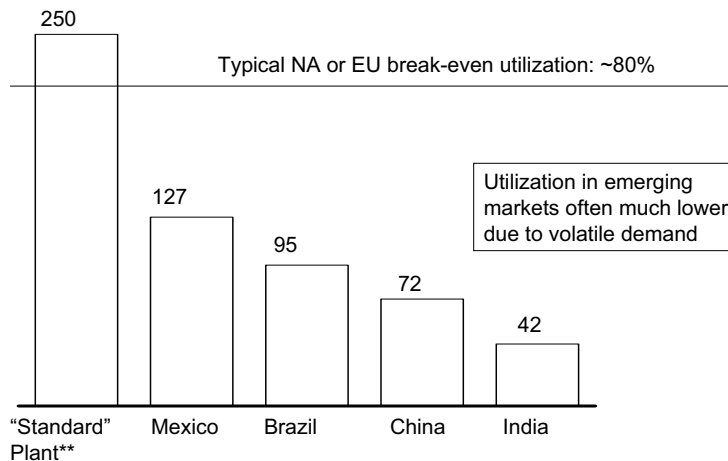
2. The auto sector value chain can be broken down into four processes: body stamping, welding/body shop work, painting, and physically assembling the car (e.g., on a conveyor belt using power tools). The majority of scale benefits tend to come from the painting work segment - the automated painting machinery is expensive and runs at the same rate all day, regardless of the number of cars produced.

Exhibit 7

EMERGING MARKET CAR PLANTS ARE OFTEN SUB-OPTIMAL IN EITHER SCALE OR UTILIZATION OR BOTH, LEADING TO LOWER PRODUCTIVITY

Assembly Plant Scale and Utilization Targets*

Thousands of units per year



* Averages for each country in 2002, except China (2001); equals total production/number of plants in the country

**Typical Triad plant scale, for mid-sized car (e.g., Taurus, Camry, Passat), based on 2-shift operations running 60-second take time and assuming highly automated paint and welding shops; can be reduced to 150,000 via 3-shift operations and even lower if labor substituted for capital (e.g., manual painting), but at that point quality drops below world standards

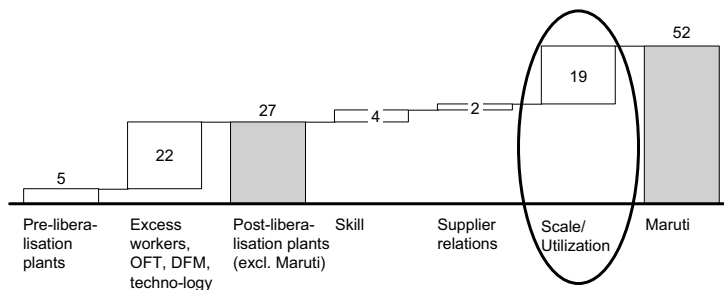
Source: Interviews; McKinsey analysis

Exhibit 8

LOWER PRODUCTIVITY OF MNCs IN DEVELOPING COUNTRIES LARGELY DRIVEN BY LACK OF SCALE AND POOR UTILIZATION

INDIA EXAMPLE

Equivalent cars per employee*, indexed to U.S. average



Causes

- Less experience
- Less JIT
- Lower product quality
- Less indirect labour per car produced
- Higher output

* Excluding sales, R&D, powertrain, etc., and adjusted for hours worked per year

Source: Interviews, SIAM, INFAC; McKinsey Global Institute

Auto Sector Synthesis

FDI has the potential to play a critical role in improving the performance of the auto industry globally. This is because in addition to upfront large capital investments for production, the auto sector also requires massive product development costs for new models and proprietary technology. Given the broad applicability of similar products across borders and the resulting benefits from leveraging global economies of scale, multinational companies are in a unique position to deliver benefits to emerging markets consumers. FDI therefore has the potential to jump-start the auto industry in developing countries by contributing not just capital but also proprietary R&D and technology that can take years for local OEMs to acquire.

FDI has proven to be a necessary, but not alone sufficient condition, for modernizing the auto industry in most developing countries. Once FDI is present in the country, conventional market forces – old-fashioned competition and managerial innovation – matter a great deal and the resulting economic impact can be highly varied. This is demonstrated vividly by our four country cases. For example, FDI created a strong positive impact on Mexico and India auto sectors, but its impact in China and Brazil was only categorized as positive. Given the differences in cross-border productivity in the auto industry, its significant importance to most economies, and the huge opportunity for performance improvement from FDI, it is important to understand why FDI had a varied outcome across our four sector cases.

GLOBAL INDUSTRY TRENDS

Given these significant differences in cross-border productivity, it is useful to first understand the global industry trends that contribute to this varied outcome.

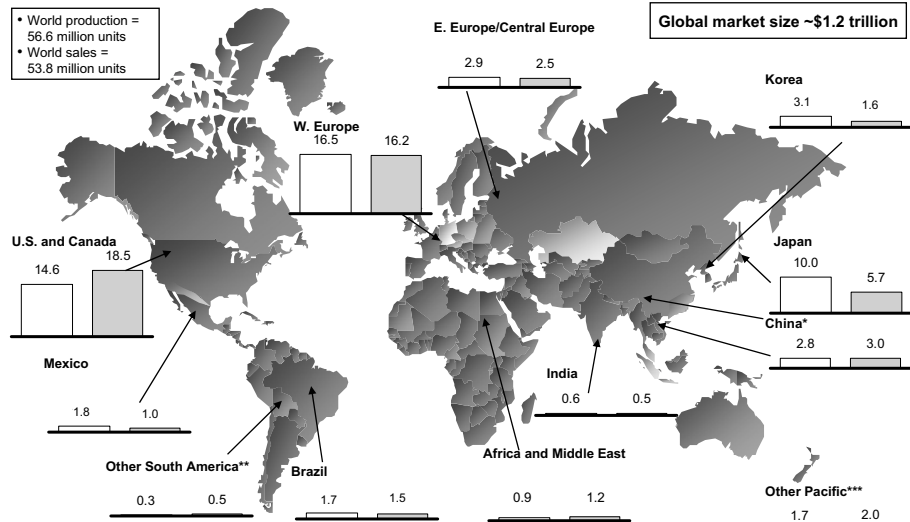
- ¶ The auto industry is a \$1.2 trillion industry (Exhibit 1) dominated by a small group of global competitors who sell products into virtually every market in the world. The industry has gone through dramatic consolidation since the 1950s (Exhibit 2). Today, five OEMs control more than half the global market (Exhibit 3). However, the industry lags many others in its performance along a number of conventional metrics. For example, it offers one of the lowest returns to its shareholders (Exhibit 4), has one of the lowest profitability levels (Exhibit 5), and has demonstrated low levels growth relative to most other industries (Exhibit 6).
- ¶ Although global players have captured market share in most developing countries, local players do survive in other developing countries. The key to their survival is their ability to capitalize on local capabilities in product development, production, and distribution and to source technologies through international partnerships. However, given the overwhelming economies of global scale in this industry, the future of local players is uncertain.
- ¶ Relative to industries like consumer electronics, the auto sector is less global (Exhibit 7). While the industry has recently begun to disaggregate its production process to improve performance, it is increasing the level of globalization at a relatively slow rate (Exhibit 8). Neither does this rate appear to be increasing over time (Exhibit 9).

Exhibit 1

GLOBAL SALES/PRODUCTION LANDSCAPE

Units, Millions, 2002

□ Production
■ Sales



* Figures includes passenger cars and light vehicles (e.g., light trucks); China auto case excludes light vehicles and consequently results in a small sample size; numbers will not exactly match auto case study
 ** Excluding Brazil
 *** Other Pacific includes Australia, Indonesia, Malaysia, Philippines
 Source: UN PCTAS database; McKinsey Analysis

Exhibit 2

AUTO INDUSTRY HAS UNDERGONE DRAMATIC CONSOLIDATION

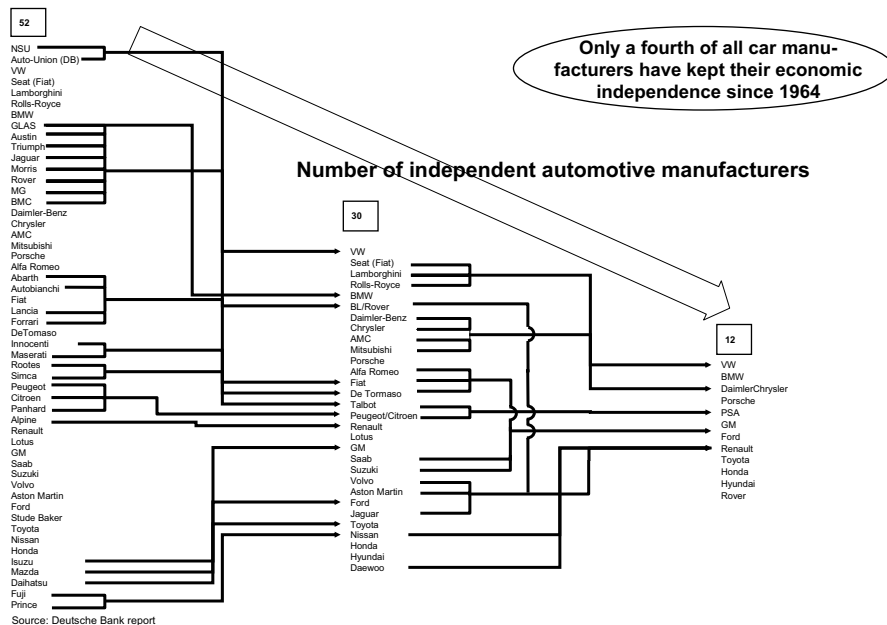
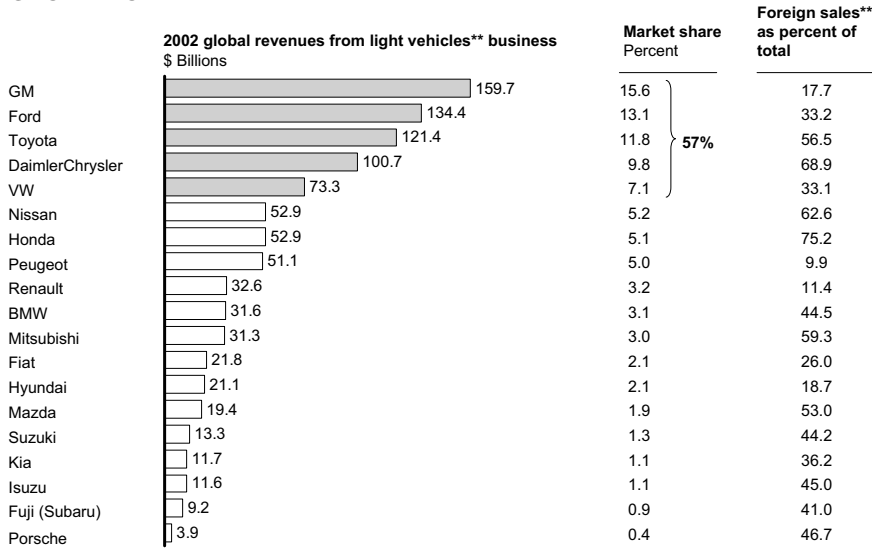


Exhibit 3

TOP 5 OEMs HAVE MORE THAN HALF THE SHARE OF THE GLOBAL OEM MARKET

Top 5 OEMs



* Total OEM revenues \$1,120 billion

** Based on Total Dollar Sales 2002

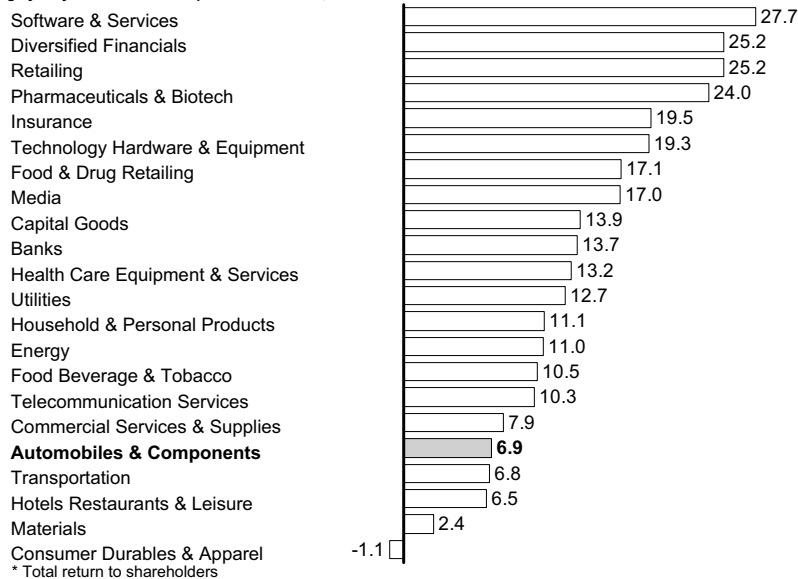
Source: Annual reports; Bloomberg; Hoovers; McKinsey Automotive Practice

Exhibit 4

AUTO AND COMPONENTS OEMS UNDERPERFORM MOST INDUSTRIES

Percent

Average yearly TRS* of U.S. Companies in S&P 500, 1997-2001



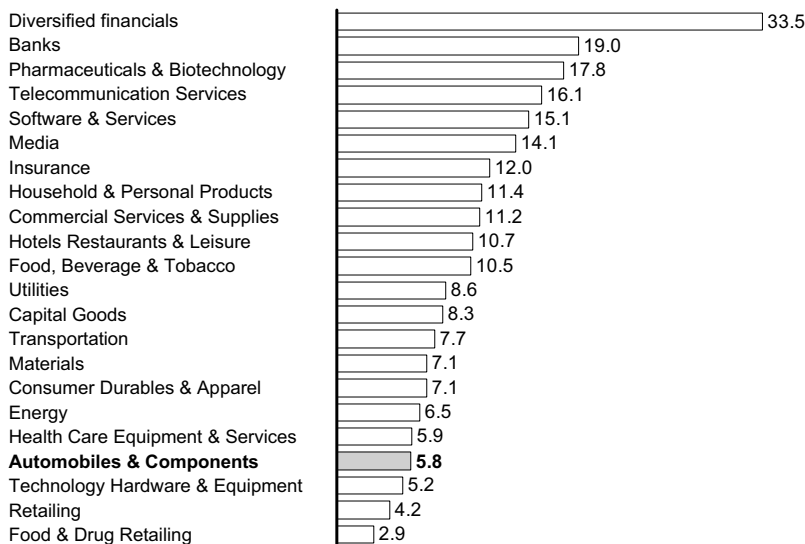
* Total return to shareholders
Source: McKinsey analysis

Exhibit 5

AUTO AND COMPONENTS OEMs HAVE LOW MARGINS

Percent

Average yearly margins of U.S. Companies in S&P 500, 1997-2001



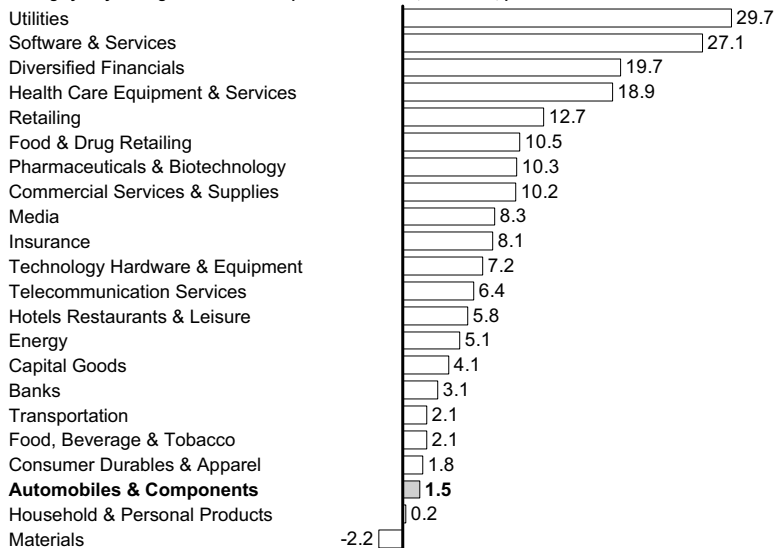
Source: McKinsey analysis

Exhibit 6

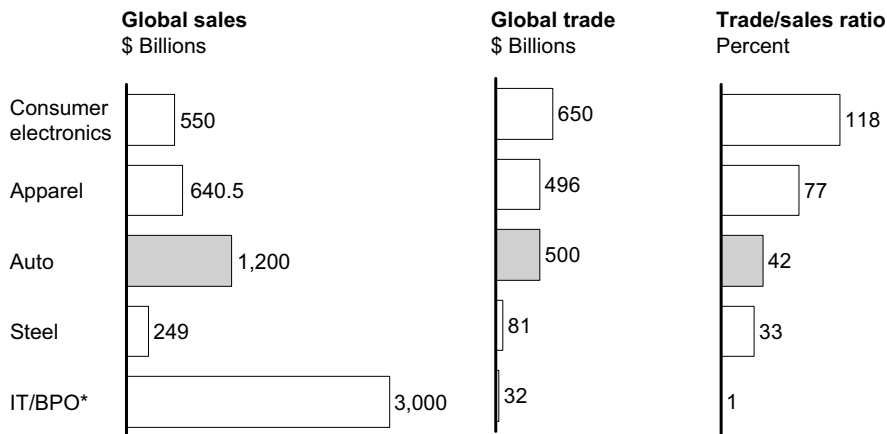
GROWTH IS NOT A KEY DRIVER OF PERFORMANCE FOR AUTO INDUSTRY IN THE WESTERN WORLD

US EXAMPLE

Average yearly sales growth of U.S. companies in S&P 500, 1997-2001; percent



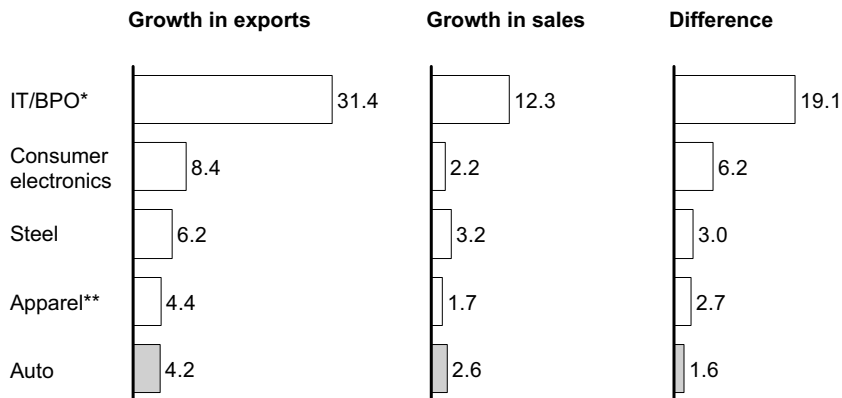
Source: McKinsey analysis

Exhibit 7**AUTO INDUSTRY IS LESS GLOBALIZED THAN CONSUMER ELECTRONICS OR APPAREL****Measures of global industry restructuring, 2000**

* IT/BPO sales figure includes all IT/BPO exchanges
 Source: UN PCTAS database; IISI, Statistical Year Book 2000; Datamonitor

Exhibit 8**CHANGE IN TRADE AND PRODUCTION (1996-2000)**

Percent



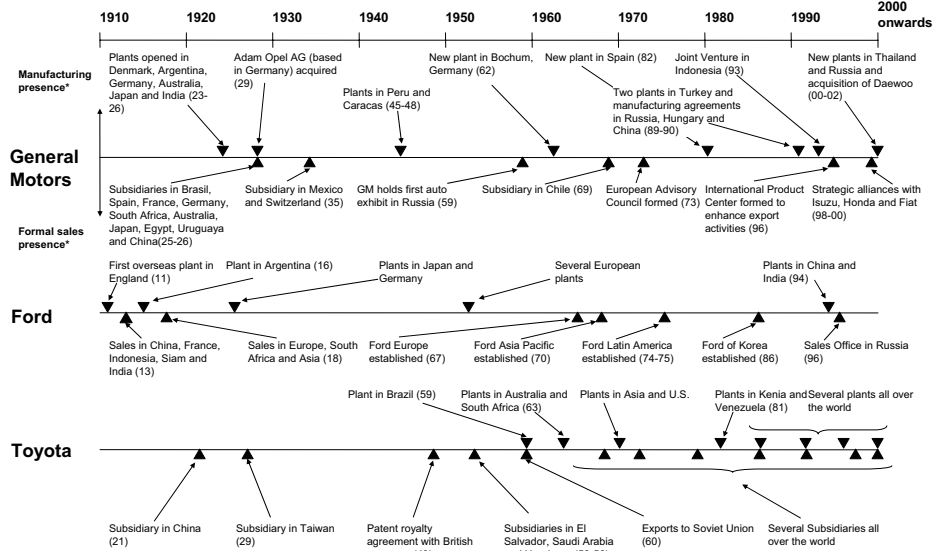
* Growth in exports and sales 1997-2000

** Growth in exports 1995-2000; growth in sales 1997-2000

Source: UN PCTAS database; International Trade Statistics 2002; IDC; Euromonitor; China Light Industry Yearbook; McKinsey analysis

Exhibit 9

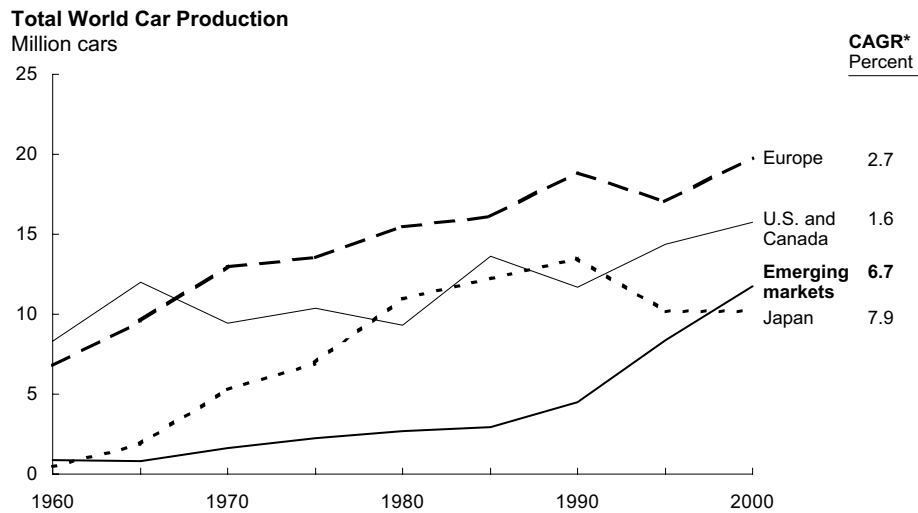
U.S. BASED AUTO COMPANIES' GLOBALIZATION HAS REMAINED STEADY OVER TIME



* Not all expansion activities accounted for
 Source: Company Web sites; press clippings; McKinsey analysis

Exhibit 10

EMERGING MARKETS OFFER GROWTH OPPORTUNITY



* 1960-2000
 Source: Wards 2001 Year Book (Page-16); McKinsey Global Institute

As the industry matures, there are modest growth opportunities in the OEMs' home markets, so they are being encouraged to enter emerging markets in order to tap the large potential for growth found there (Exhibit 10). However, this usually takes the form of market-seeking investments seeking to sell locally (exhibits 11 and 12). Driven in large part by regulation and protection, the industry has yet to exploit the potential of low-cost sourcing and to disaggregate production at the global level (Exhibit 13).

- ¶ Due partly to a highly inefficient and disaggregated production process, there is large overcapacity in the industry, as OEMs are unable to balance demand and supply through trade. In addition, due to requirements for local production in certain countries where demand is low, OEMs are forced to invest in subscale plants and suffer from significant diseconomies of scale.

EXPLANATION FOR THE VARIED IMPACT OF FDI

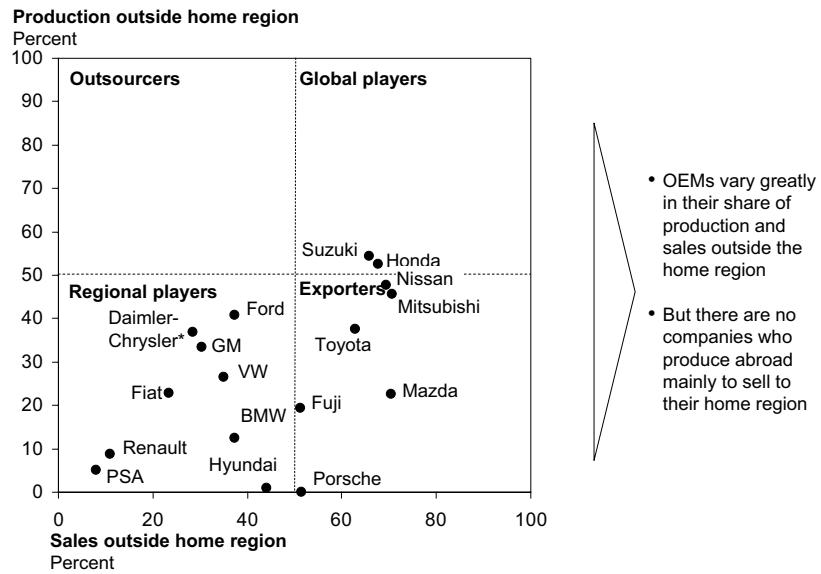
We found FDI to be a crucial driver of performance, but its impact was varied across all four cases. FDI has created a very positive impact on Mexico and India auto sectors. However, its impact in China and Brazil was categorized as positive. The following factors explain the differences:

- ¶ **Government actions that distort supply.** Government actions can distort the level of supply, either by increasing supply by offering incentives or imposing trade barriers (forcing OEMs to setup plants), or by reducing it by imposing licensing requirements – all which distort supply and dampen the potential impact that FDI can create.
 - **Incentives.** We found that the incentives governments use to attract FDI often adversely influence the impact of FDI. The most extreme example of this is in Brazil, where large incentives drove an investment frenzy, thereby creating massive excess capacity in the industry (Exhibit 14). This had the impact of reducing productivity substantially. While it is true that this overcapacity is likely to have increased competitive pressure somewhat, its positive impact is overshadowed by its large negative impact on productivity. In addition, the government incentives adversely affected the value creation potential of FDI by reducing the performance pressure on companies and by giving away money when not necessary.
 - **Import tariffs.** Import barriers in low demand segments force OEMs to set up subscale plants (i.e., market size is not large enough to support an at scale plant; in the absence of regulation, most OEMs would opt to import cars assembled in their overseas plants) and thus drive down the overall productivity of the industry. Such subscale operations in larger car segments in India³ explain why the positive impact of FDI was roughly halved due to scale issues.
 - **Licensing restrictions as a barrier to competition.** In addition to contributing much needed capital and technology, FDI's crucial contribution to the auto sector is seen in removing market distortions and unleashing competitive

3. Because of high taxes on medium large and luxury cars, demand for these products was suppressed and plants were underutilized.

Exhibit 11

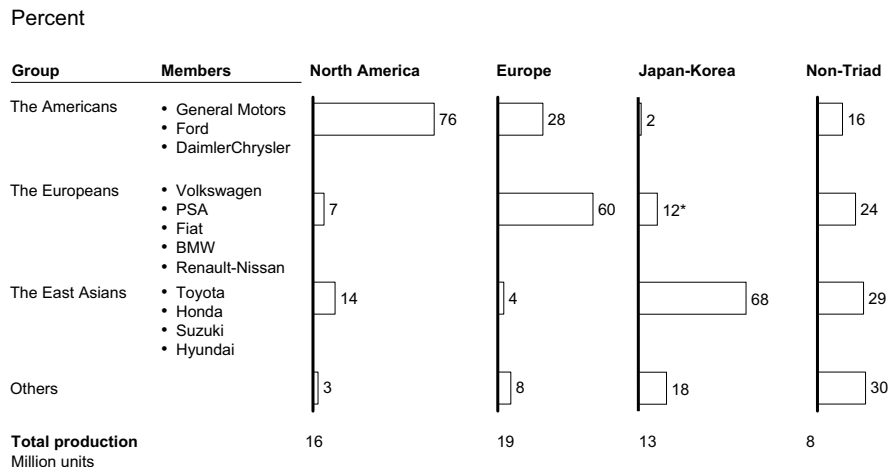
DEGREE OF GLOBALIZATION OF OEMs IN 2002



* Excludes Western Europe sales from home region
 Note: Based on units produced/sold. Home region defined as home continent of firms, except for Japanese & Korean firms where home region is defined as Japan and Korea
 Source: Global Insight; McKinsey analysis

Exhibit 12

LIGHT VEHICLE PRODUCTION SHARES OF OEM GROUPS 2002



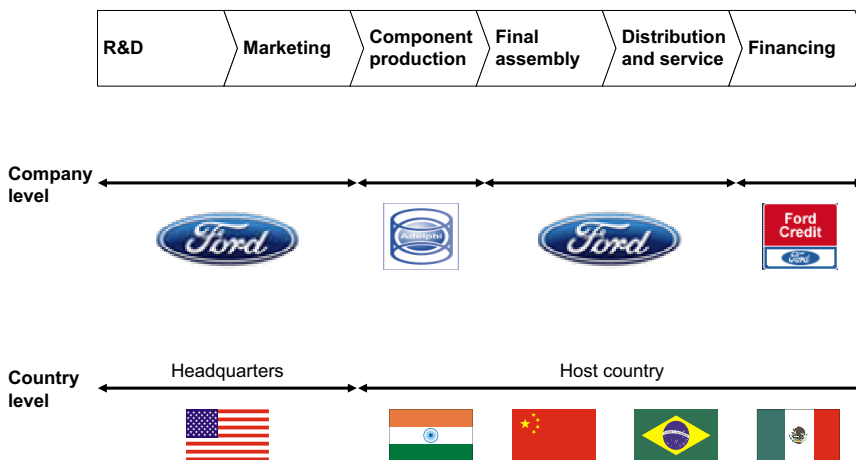
Observations

- Within the Triad, the majority of production is done by "local" firms
- In non-Triad countries, production is spread evenly across groups

* Figures for Renault-Nissan
 Source: DRI WEFA; McKinsey analysis

Exhibit 13

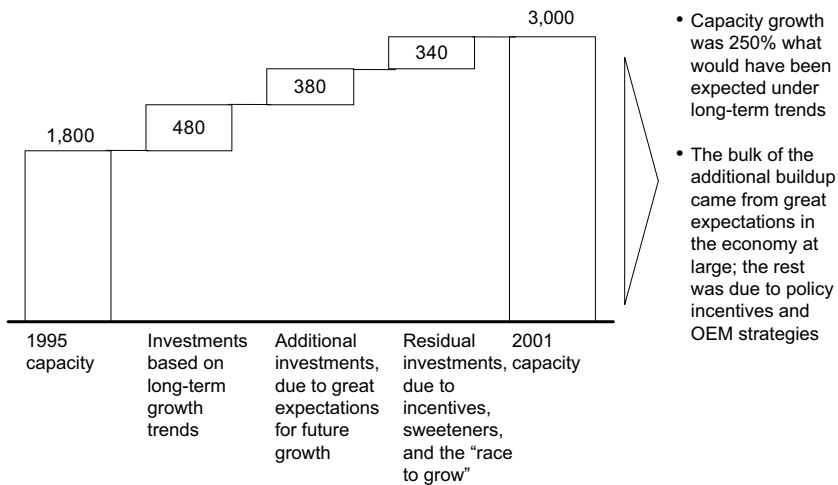
THE AUTO VALUE CHAIN HAS NOT DISAGGREGATED FULLY



Source: Interviews; McKinsey analysis

Exhibit 14

Brazil
REASONS FOR LARGE CAPACITY BUILDUP, 1995-2001
Thousand units



Note: Effect of long-term growth trends and high expectations for future growth trends are estimated using GDP elasticity 1.91, based on data from 1982-1995. All other factors (incentives, etc.) are included in the residual
Source: Team analysis

dynamics in otherwise monopolistic markets. The introduction of greater competition leads to local managerial innovation and operational improvement, ultimately increasing the productivity of the incumbents even where direct transfer of technology or capital from FDI is limited. This is the key reason why FDI had such a strong impact on productivity in India (exhibits 15 and 16), while in China (where the government has constrained new entrant supply and therefore competition) its impact has been only moderate (exhibits 17 and 18). Although the industry is competitive in Brazil, FDI's positive impact has been overshadowed by the issues of overcapacity discussed earlier and has been further exacerbated by the negative effects of macro-economic instability on demand.

– Capital-labor trade-offs. One area where the impact of increased competition is very evident is that of innovation: OEMs are being forced to innovate in developing markets due the competitive pressures. There is tremendous value creation potential to reengineer operations in low wage environments – and leverage the inverted cost of labor to capital. However, our cases show that only in markets where competition is very intense do managers pull this important lever. Most managers are risk-averse and prefer sticking to proven templates. For example, in India, where competition is intense (small car segments) we found OEMs making intelligent labor-capital trade-offs to improve performance (exhibits 19 and 20). While in larger car segments where competition is not so intense, firms routinely operate with levels of capital intensity comparable to those of western plants (Exhibit 21).

¶ **Government actions that distort demand.** Government regulation can also impact demand by imposing requirements for local content and through taxation regime.

- **Local content requirement.** Government actions to regulate the localization of components have forced OEMs to set up subscale component manufacturing facilities in certain countries. Such operations have resulted in low productivity. This ultimately leads to automobiles being sold at higher prices and, therefore, leads to suppressed demand. This reduced market size, in turn, impacts the productivity of the assembly sector by encouraging subscale assembly operations and/or overcapacity. For example, local content requirements in India and China have created relatively small-scale manufacturing plants in the components industry. This has led to higher components costs⁴ (Exhibit 22).

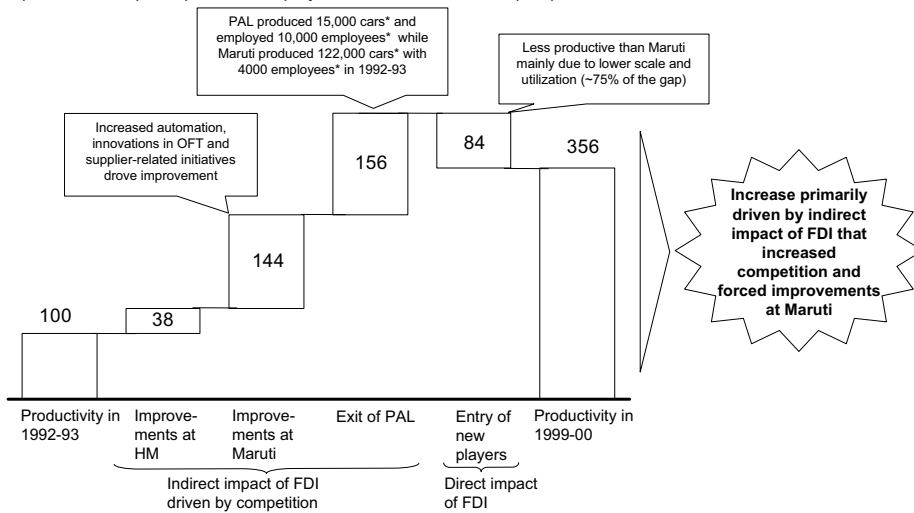
4. We found it difficult to make a convincing case that local content requirements led to the development of a mature components industry in India. Our research shows that while local content requirements may have marginally accelerated the development of India's component industry, it should not be seen as a direct result of these requirements. OEMs believe that they would have sourced components locally in any case because: 1) Given India's poor transportation infrastructure (ports, highways, rail freight) local sourcing was the only option to leverage Just-In-Time. Importing components would have been virtually impossible and increased costs prohibitively. 2) Following the Rupee's devaluation in the late 1980s and early 1990s, OEMs were forced to start sourcing components locally. If they had not they would have been driven out of business by the rising costs of imports (as happened in the LCV segment). 3) Given India's cheap, technically trained labor, it also makes organizational sense to manufacture components locally.

Exhibit 15

India
LIBERALIZATION'S MOST CRUCIAL IMPACT WAS TO INDUCE COMPETITION

Labor productivity

Equivalent cars per equivalent employee; indexed to 1992-93 (100)

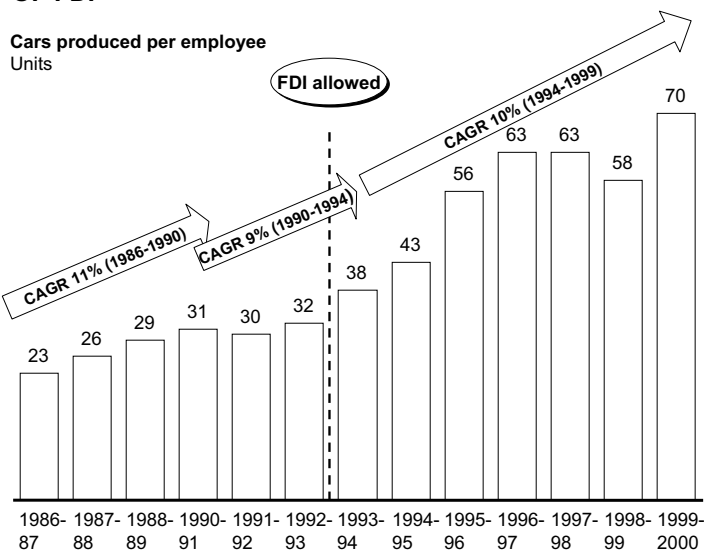


* Actual cars and employment (not adjusted)

Source: McKinsey Global Institute

Exhibit 16

MARUTI'S PRODUCTIVITY CONTINUED TO GROW RAPIDLY WITH THE ENTRY OF FDI



* Total output/total employment (direct + indirect)

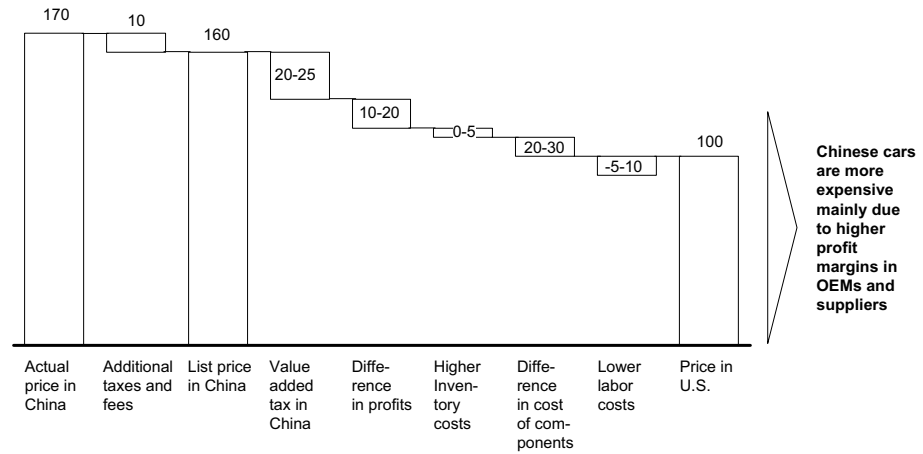
Source: McKinsey Global Institute

Exhibit 17

China
CHINA'S AUTO INDUSTRY IS HEAVILY REGULATED, LEADING TO LOW COMPETITION AND HIGH PRICES

ROUGH ESTIMATE

Comparison of China and U.S. passenger vehicle prices
 Percent

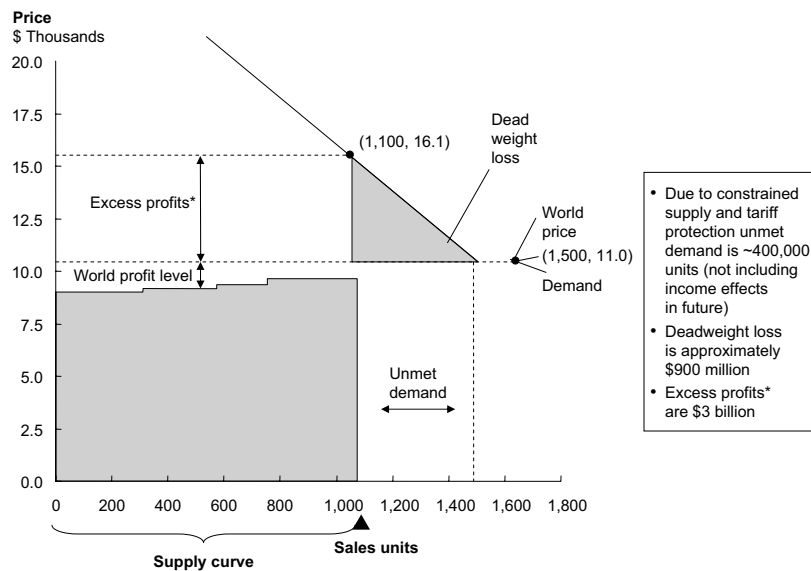


Source: Interviews; McKinsey Global Institute

Exhibit 18

China
SUPPLY AND DEMAND IN CHINA AUTO SECTOR, 2001

ROUGH ESTIMATES



* Includes excess profits of parts makers

Source: UBS Warburg; McKinsey analysis

Exhibit 19

India

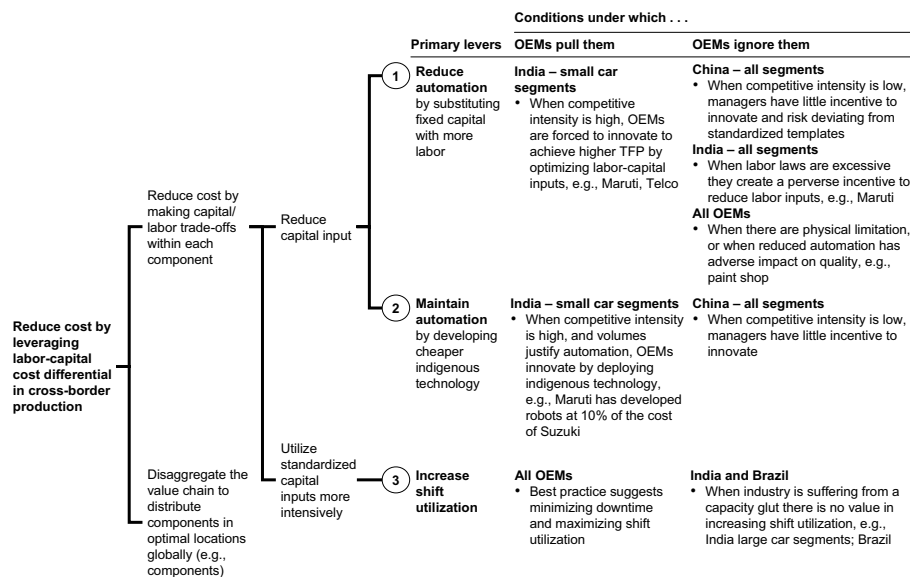
MOST INDIAN PLAYERS EMPLOY LOWER LEVELS OF AUTOMATION

Shop	Best practice level of automation	Observed in India	Activities, which can be automated	Share of total employment*
Press	90-100	75-90	<ul style="list-style-type: none"> Loading of presses Changing of dies 	5
Body	90-100	0-40	<ul style="list-style-type: none"> Welding Clamping Material handling 	17
Paint	70-80	20-60	<ul style="list-style-type: none"> Priming Base and top coat Sealing Material handling 	14
Assembly	10-15	<1	<ul style="list-style-type: none"> Windscreen Seats Tires Axles Etc 	33
Production - related activities	15-20	<1	<ul style="list-style-type: none"> Material handling (transport of parts to the line) 	31
Total				100

* Based on sample of companies covering 93% of total production in 1999-00
 Source: Interviews; McKinsey Automotive Practice

Exhibit 20

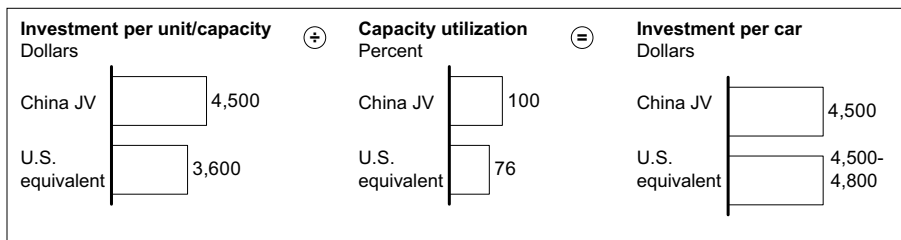
COMPETITION IS THE KEY DRIVER FOR AUTO OEMs OPTIMIZING CAPITAL/LABOR TRADE-OFFS IN EMERGING MARKETS



Source: McKinsey Global Institute

Exhibit 21

China
CHINESE PLANTS ARE JUST AS CAPITAL INTENSIVE AS U.S. PLANTS



Reason for higher investment per unit capacity in China

Higher installation costs	+	Smaller scale plants	-	Less automation in welding	=	Higher investment cost per unit capacity
<ul style="list-style-type: none"> Shipping equipment to China Expatriate staff to install equipment More support equipment (e.g., stable power supplies) 		<ul style="list-style-type: none"> Lower line speeds set by capacity bottle-necks (such as paint shops) Similar investment in paint shops for less capacity (low scale effects) 		<ul style="list-style-type: none"> Chinese automation levels = 30% compared to 90% or more in developed countries 		<ul style="list-style-type: none"> New plants in China have higher investment per unit capacity though roughly equivalent actual levels, given higher capacity utilization

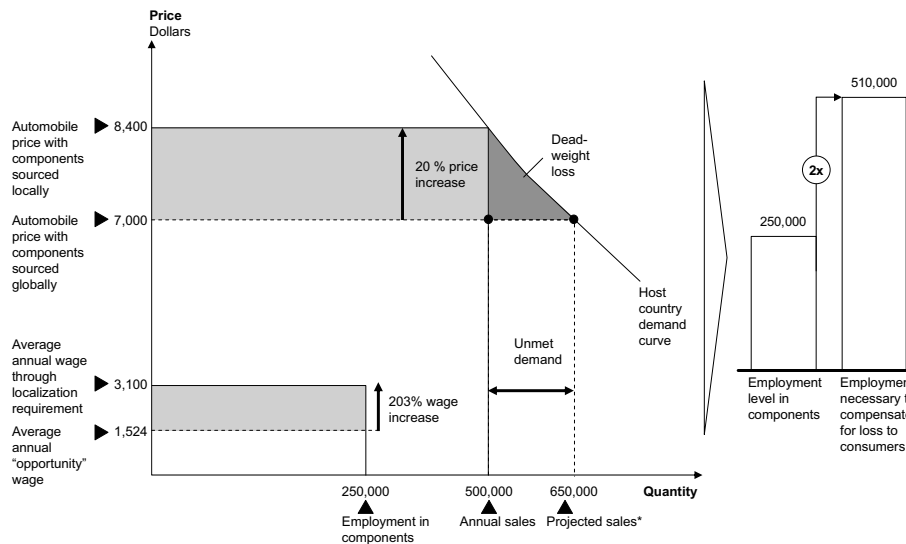
Source: UBS Warburg; plant visits; McKinsey Global Institute

Exhibit 22

LOCAL CONTENT REQUIREMENTS CREATE LOSS TO CONSUMERS THAT NORMALLY OFFSET LABOR SURPLUS BY A WIDE MARGIN

India automotive industry

ILLUSTRATIVE



* With a 20% price decline and a price elasticity of demand of -1.5
Source: Interviews; CRIS-INFAC; McKinsey Global Institute

-
- **Domestic taxes.** Similarly, high domestic taxes lead to higher overall costs and, therefore, to reduced demand. High taxes can therefore further exacerbate an already small market size and prevent OEMs from achieving the scale necessary for best-practice scale operations. For example, India's auto sector could increase its productivity appreciably if it could eliminate subscale assembly in larger car segments. Currently, this problem is driven in part by insufficient demand, a demand that is suppressed by high taxes.
- ¶ **OEM actions.** A large portion of the variable impact FDI created across the four cases could be traced to the poor judgment of OEMs in anticipating demand. For example, in Brazil and in India (larger car segments) OEMs overestimated demand substantially, thus creating large overcapacity that has dragged the overall industry productivity downwards.
- ¶ **Macro-economic conditions.** Finally, country level macro-economic conditions have also affected FDI's potential impact in the four cases. For example, macro-economic instability in Brazil played a significant role in reducing the purchasing power of Brazilians and in reducing the demand for automobiles. As a result, the Brazilian auto industry suffered from further overcapacity and a lowering of the sector's productivity.

Brazil Auto Sector Summary

EXECUTIVE SUMMARY

The Brazilian auto sector has consisted exclusively of international companies since Gurgel, the last Brazilian light vehicle maker exited in the early 1990s. Four veterans – VW, Fiat, GM, and Ford – dominate domestic sales, but newcomers such as Renault and Peugeot have captured a small but growing share of the market after the liberalization of the early 1990s. The focus period for our analysis is the Auto Regime of 1995 to the present, when government reestablished tariffs on vehicle imports and created a range of incentives to encourage more local production. FDI has therefore been market-seeking and is motivated largely by trying to overcome the high import tariffs (tariff-jumping).

Overall, FDI has had a positive impact on the Brazilian auto sector during this period. OEMs made productivity-improving investments in automation in old plants and built new plants. Increased competition led to declining prices for consumers. However, capacity expanded very rapidly during this period as a result of over-optimistic market projections and very high state subsidies to investments (that reduced the marginal cost of additional capacity). The steep macroeconomic downturn of 1997 led to a 36 percent decline in sales by 1999 and overall sector performance plummeted, as output, employment, and productivity declined. Despite growth in auto exports to the U.S., Mexico, and elsewhere, the volume of production has not yet returned to the level of 1997.

Brazil's vehicle consumers benefited from the new wave of FDI and the import liberalization reforms despite the sector downturn, as car prices have declined more rapidly than in the rest of the world. The costs from over-investments have been borne by the OEMs and the public sector. States that offered large incentives – which often amounted to several hundred thousand dollars for each new job created – have been the biggest losers from the investment boom. OEMs have suffered very weak financial performance and have not turned a profit from the latest round of capacity expansions in either the old or the new plants.

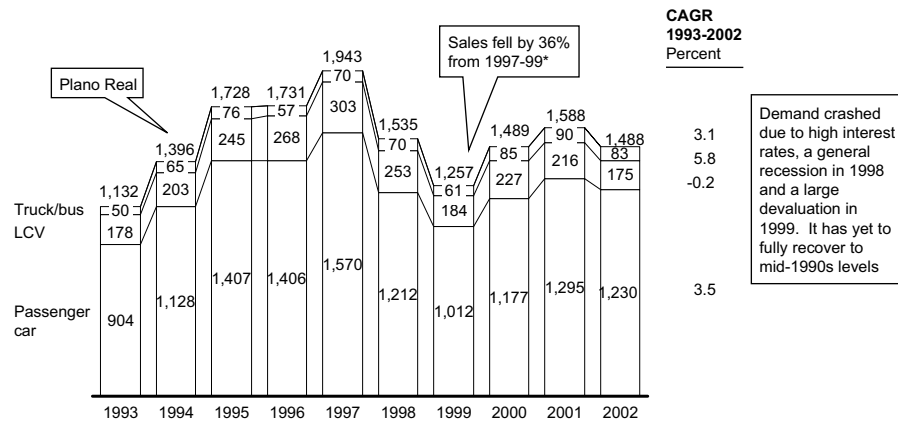
SECTOR OVERVIEW

¶ Sector overview. Brazil is the tenth largest vehicle-producing nation today, with a volume of 1.7 million units in 2002. Production is focused on smaller cars, and 75 percent is destined for the domestic market.

- Domestic vehicle sales grew to a peak of 1.9 million in 1997 and then plunged in the late 1990s (Exhibit 1). Demand jumped in the early 1990s partly due to 1L car incentives; as a result, OEMs focused more on meeting domestic demand, rather than on building cars for export.
- In 2002, 24 percent of vehicle production was for export. This is barely changed from the 1990 level of 22 percent. Although imports are small, they are of high value, resulting in a trade balance close to zero (Exhibit 2).
- Four veterans – VW, Fiat, GM, and Ford – dominate domestic sales, but newcomers such as Renault and Peugeot have captured a small but growing share of the market (Exhibit 3). There are domestic makers of trucks and buses, but the last Brazilian maker of automobiles, Gurgel, exited in the early 1990s.

Exhibit 1

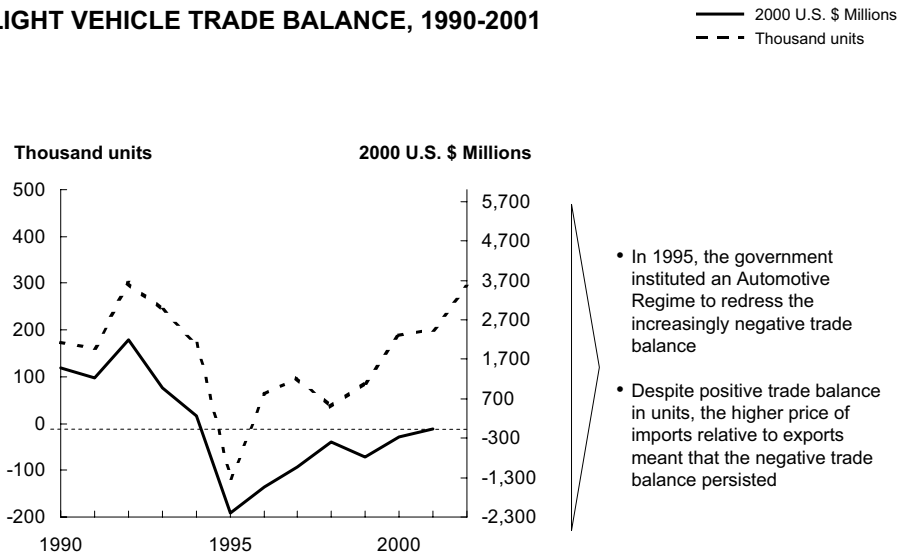
AUTO SALES IN BRAZIL*
Thousand units



* Compare this to the biggest drop in the U.S. of 32% over 1978-82; biggest 2-year drop was 24%
 Note: Figures include total domestic sales (including imports)
 Source: Anfavea

Exhibit 2

LIGHT VEHICLE TRADE BALANCE, 1990-2001

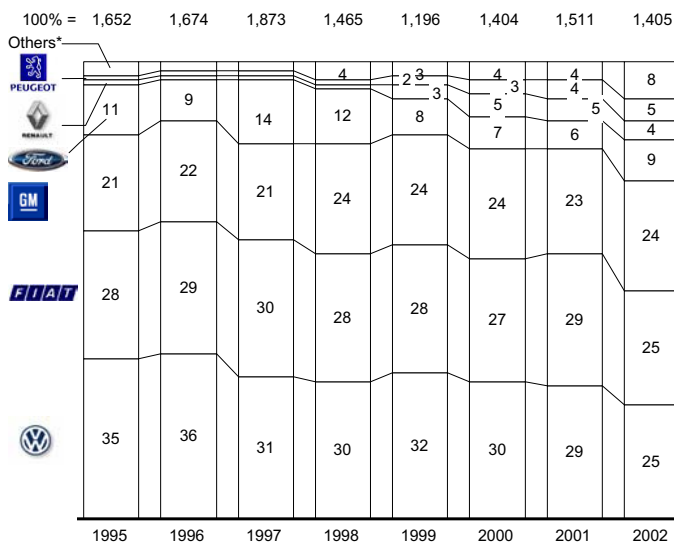


Note: Does not include trade in heavy vehicles or automotive parts. Data for 2002 are preliminary – from Banco Central
 Source: Anfavea; Lafis

Exhibit 3

MARKET SHARE OF KEY PLAYERS

Thousand units, Percent



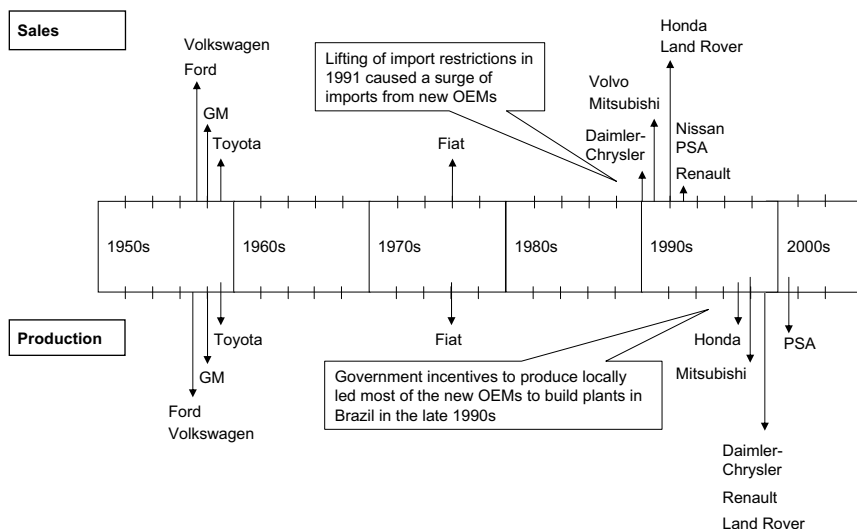
- GM is catching up with Fiat and VW, and the three are battling for market leadership
- Ford was left with a bad product portfolio after its joint venture with VW was dissolved; in addition, 1995 regulatory changes hit Ford heavily (since Ford had been focusing on imports)
- Of the new entrants, Renault and PSA have been most successful in growing their market share

Note: Includes light vehicles only
 * Others include DaimlerChrysler, Toyota, and Honda

Source: Anfavea

Exhibit 4

OEM ENTRY INTO BRAZILIAN AUTO MARKET



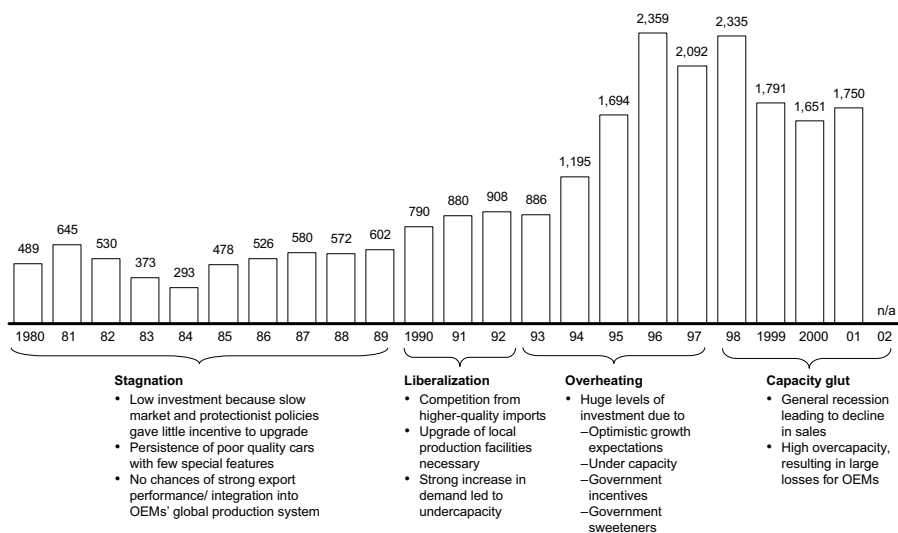
Source: Anfavea

- ¶ **FDI Overview.** Light vehicle assembly in Brazil has been almost exclusively the province of foreign companies for decades. FDI has been mainly market-seeking (and driven in part by trade barriers), but with the aim of serving not just Brazil but the rest of the South American market as well. Our focus is on the period during the Auto Regime, established in late 1995, when a wave of new FDI ("incremental FDI") entered the auto sector. To calibrate the impact of FDI, we have chosen to compare this period with the previous period of sector liberalization ("mature FDI").
- **Mature FDI (1990-95).** For many years the major companies in Brazil's auto sector – Fiat, GM, Ford, and VW were protected from competition by import barriers and price controls. But in 1990, Brazil allowed imports and price competition and began steadily lowering tariffs. This change in policy led to a flood of new importers (Exhibit 4), and veteran OEMs had to improve in order to stay competitive.
 - **Incremental FDI (1995-2000).** In 1995 Brazil changed course, establishing a measure of protection for domestic companies and creating a range of incentives to encourage more direct investment, rather than imports. Veteran OEMs responded by building new plants and by making upgrades at existing ones. A few newcomers also built domestic plants. In all, OEMs invested \$12 billion in vehicle assembly during this period (Exhibit 5).
- ¶ **External factors driving the level of FDI.** Economic growth and government incentives created the motives to invest in Brazil's auto sector (Exhibit 6).
- **Country-specific factors.** Investment was driven by strong macroeconomic performance and the expectations of future growth. Additionally, Brazil's federal and state governments also created special incentives and other market interventions to encourage further investment.
 - **Macroeconomic factors.** Strong GDP growth and price stability of the Plano Real helped fuel the new wave of FDI in the auto sector. Forecasters had predicted 3.5 percent GDP growth during the period 1995-2001, but OEMs built capacity to meet GDP growth closer to 4.6 percent (Exhibit 7). Capacity was increased much more rapidly than might have been expected based on long-term growth trends (Exhibit 8).
 - **Government policies.** Reduced taxes on 1L cars helped grow the market at the low end, and an overall reduction in the vehicle tax fuelled high sales growth during 1993-94. The Auto Regime gave favored tariff status to domestic producers; this two-tiered tariff created an incentive for international OEMs to invest locally (Exhibit 9). Finally, in an effort to attract new auto plants to their district, states offered land, infrastructure, tax breaks, and financing (Exhibit 10). This combination of government interventions encouraged firms to build even more capacity than can be explained by optimism about the economy (Exhibit 11). International OEMs raced to Brazil to build production facilities or increase their capacity with the hope of reaping lucrative profits from selling in the local Brazilian market.

Exhibit 5

INVESTMENT IN BRAZIL VEHICLE ASSEMBLY, 1980-2001

2001 U.S. \$ Millions



Source: Anfavea

Exhibit 6

DRIVERS OF CAPACITY BUILDUP IN BRAZIL LIGHT VEHICLE ASSEMBLY

External factors

Macro economy

- Real Plan in 1994 created price stability and helped ensure strong GDP growth until late 1997

“Popular” cars

- Government promoted 1L cars through reduced tax rates
- 1L car taxes were particularly low in 1993-94, and sales growth was especially high in those years

Auto Regime

- Two-tiered tariff aimed at boosting current account made production more attractive relative to imports
- Local content and trade surplus requirements also shifted the balance in favor of local production

Sweeteners

- States offered land, infrastructure, reduced and deferred taxes, and low-rate financing to lure new plants
- Tough competition developed between states to attract OEMs, leading to larger sweeteners and “fiscal wars”

Competitive intensity

- Competition from imports encouraged OEMs to upgrade their models and plants in order to stay competitive

Drivers

Little spare capacity

- As production grew at 12% per year, capacity began to approach full utilization
- Spare capacity was only 15% in 1995, and by 1997 it had fallen to 7% (compared to 20-30% world standard over a full business cycle)

Great expectations

- Solid economic growth and strong vehicle sales growth led to optimistic projections
- Some analysts predicted sales would reach 3 million units by 2000

Reduced investment costs

- Sweeteners both reduced overall cost, and discounted cost of future cash payments
- OEMs were also drawn to rural areas by abundant labor and easier logistics

Entry of new players

- Auto Regime incentives encouraged importers to undertake local vehicle production
- Brazil was to be used as the platform for exports to Mercosur and rest of Latin America

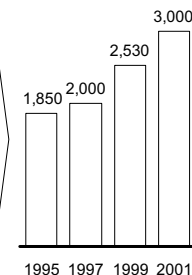
“Race to grow”

- OEMs needed new capacity to meet rising demand and hold on to market share in an increasingly competitive market
- Each investment put more pressure on the others to invest, leading to a “multiplier” effect

Outcome

Capacity

Thousand units per year

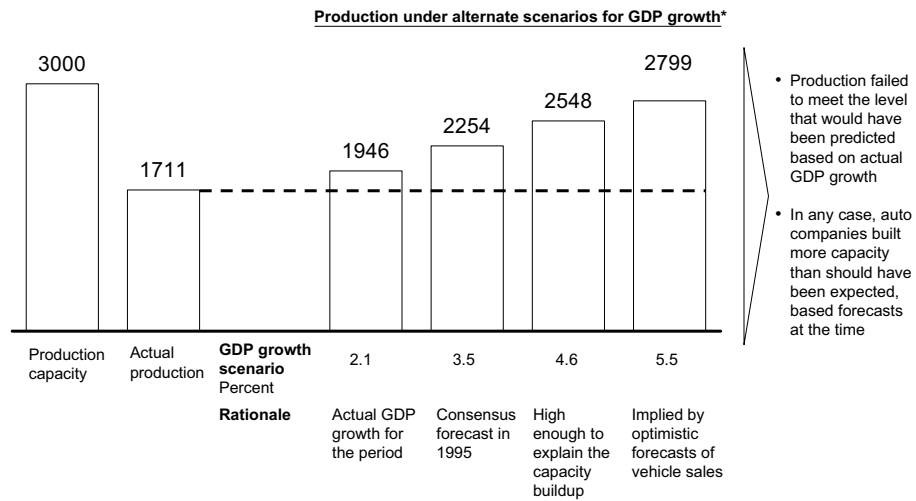


Source: Anfavea; CSM Worldwide; Lafis; team analysis

Exhibit 7

LIGHT VEHICLE PRODUCTION IN 2001 UNDER FOUR SCENARIOS FOR GDP GROWTH, 1995-2001

Thousand units

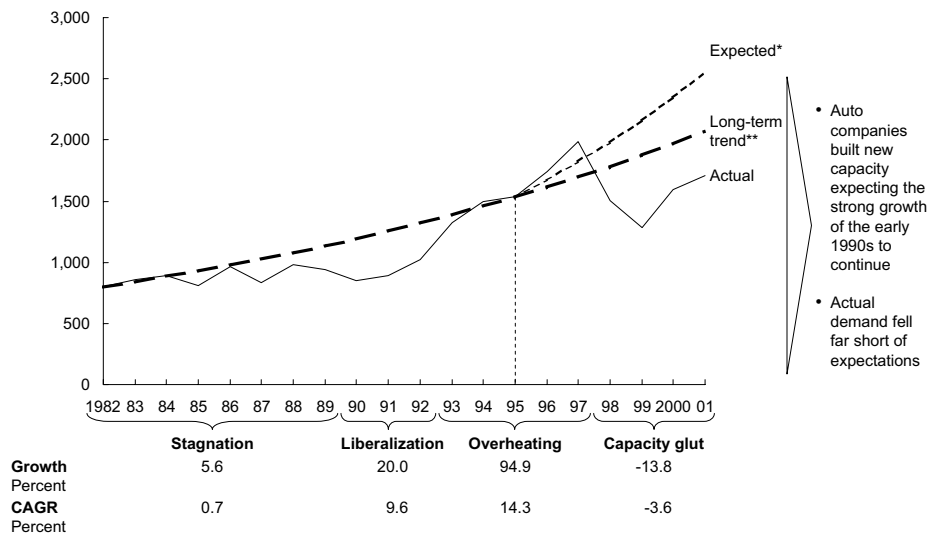


* Using a GDP elasticity of 1.91, based on development of GDP and production over 1982-1995
 Source: Brazil Central Bank, Goldstein

Exhibit 8

AUTOMOTIVE REGIME – EXPECTATIONS AND DISAPPOINTMENT

Production, thousand units per year

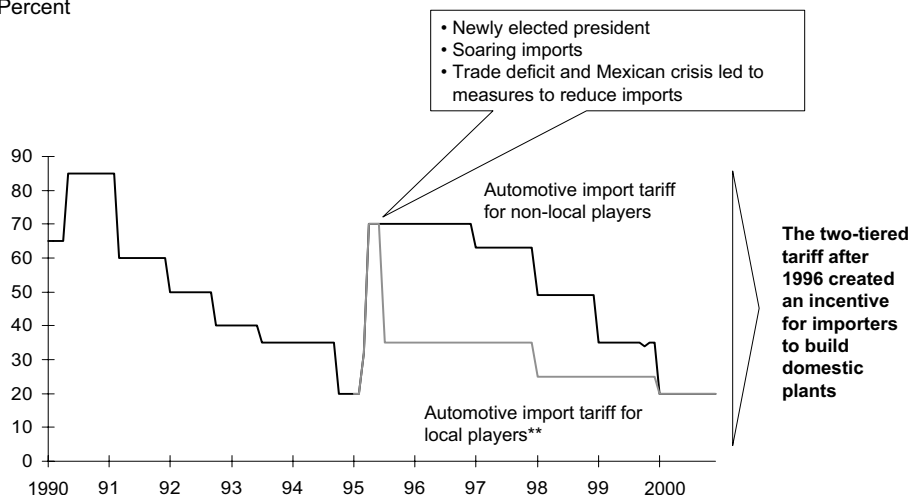


* Implicit growth expectations if the OEMs were trying to maintain spare capacity of 15% (the level in 1995)
 ** Based on average market growth from 1982 to 1995
 Source: Anfavea; Banco Central; team analysis

Exhibit 9

IMPORT TARIFFS FOR VEHICLES*

Percent



* Published schedule of tariff reductions

** Only companies with confirmed investments (either expansions or new facilities). Local players have to maintain a zero or positive company trade balance to benefit from the lower tariffs. Newcomers will have to export enough to make up for those benefits within 3 years

Source: Anfavea; Banco Central do Brasil; Conjuntura Econômica; Suma Econômica; Dinheiro Vivo; press clippings

Exhibit 10

COSTS AND EXPECTED BENEFITS OF SWEETENERS FROM STATES

Sweeteners type	Description	Examples
Land	• State and municipality donate most or all of the needed land	• Parana donated 2.5 million square meters for Renaults' new auto plants
Infrastructure	• State provides roads and utilities, and in some cases rail links and port terminals	• Rio Grande do Sul agreed to provide utilities, sanitation, and roads, and to subsidize water, electricity, gas, telecoms, and sewage disposal
Tax breaks	• State reduces or defers taxes for no less than 10 years	• Bahia gave Ford complete exemption from the ICMS, ISS, and import tax for 10 years
Loans and financing	• State provides loans at rates well below those of the Brazil credit market – repayable in the local currency	• Parana's loans (up to \$100 million) were to be repaid in 10 years – without interest, or clause regarding currency devaluations
Benefit type	Description	Examples
Direct jobs created	• Car maker promises to create a specified number of new jobs at autoplant	• Renault and Mercedes both committed to creating 1,500 new jobs
Supply of capital	• Car maker commits to a minimum capital investment	• Renault plant in Parana would represent 60% of Renault's total capital in Brazil
Spillovers to other industries	• State expects that auto plants will naturally attract parts makers and other industries, creating many indirect jobs	• Rio Grande do Sul predicted 150 indirect jobs for each direct job created by GM
Guaranteed long-term presence	• Car maker promises to pay a penalty if it shuts down the plant	• Renault agreed to pay \$50.5 million if the plant were dismantled in less than 20 years

In practice, it is easier to measure direct jobs created, than to capture the full costs of sweeteners

Governments also have political incentives to overstate the benefits generated by sweeteners

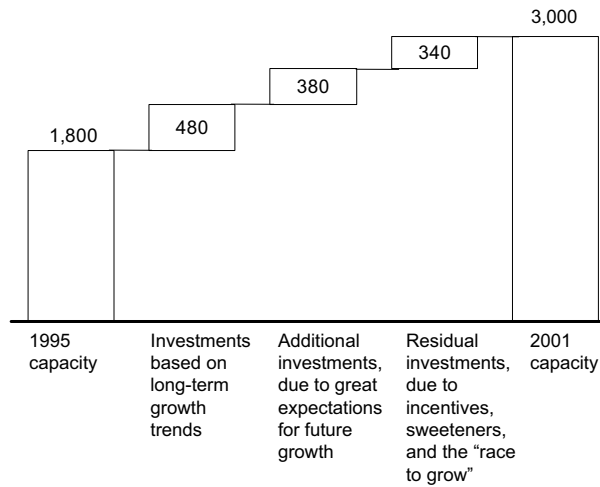
The cost-benefit analysis is especially likely to be distorted when the terms of the incentive packages are confidential

Source: JURR

Exhibit 11

REASONS FOR THE LARGE CAPACITY BUILDUP, 1995-2001

Thousand units



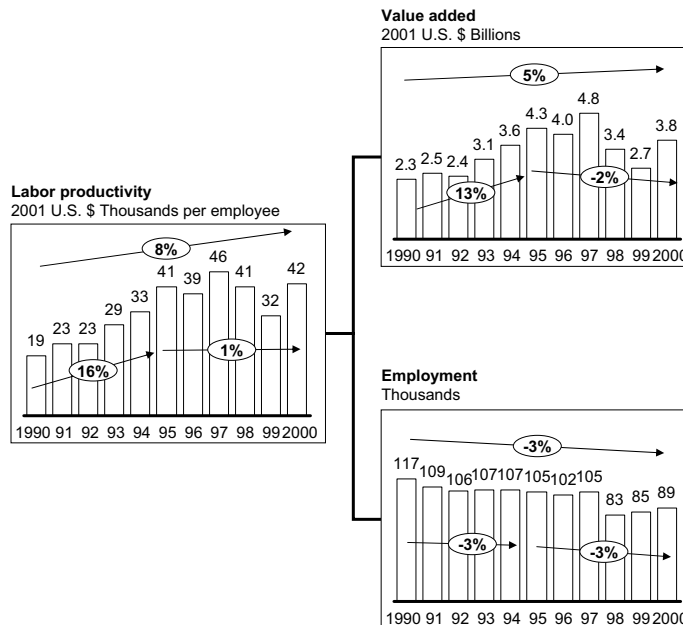
- Capacity growth was 250% what would have been expected under long-term trends
- The bulk of the additional buildup came from great expectations in the economy at large; the rest was due to policy incentives and OEM strategies

Note: Effect of long-term growth trends and high expectations for future growth trends are estimated using GDP elasticity 1.91, based on data from 1982-1995. All other factors (incentives, etc.) are included in the residual
 Source: Team analysis

Exhibit 12

BRAZIL VEHICLE ASSEMBLY LABOR PRODUCTIVITY, 1990-2000

○ CAGR



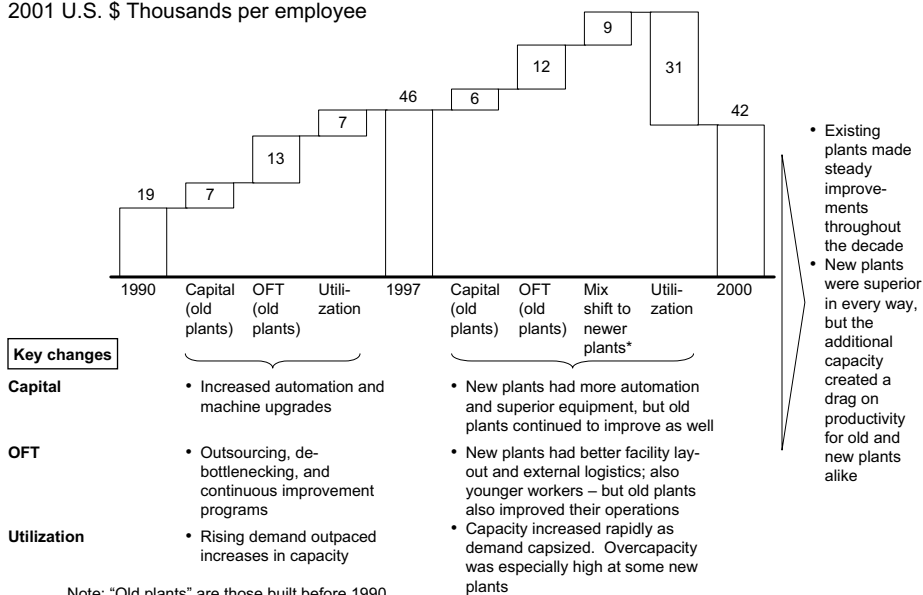
- Modernization of auto plants allowed for rationalization of employment and improved labor productivity
- However, labor was not fully rationalized during the downturn, so productivity declined

Source: IBGE; ANFAVEA; team analysis

Exhibit 13

SOURCES OF IMPROVED LABOR PRODUCTIVITY

2001 U.S. \$ Thousands per employee

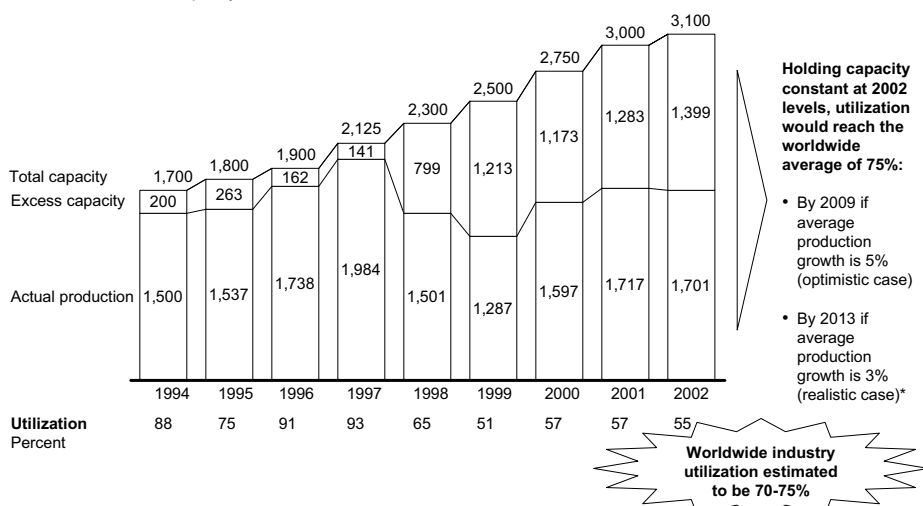


Source: Interviews; plant visits; team analysis

Exhibit 14

PRODUCTION AND EXCESS CAPACITY OF LIGHT VEHICLES, 1994-2001

Thousand vehicles per year



Note: Exports are usually 20-24% of production (only 16% in 1995-1996). Capacity figures reported are for end of year. Total capacity numbers are rough estimates, and depend on each OEMs' assumptions about shift lengths, etc.

* "Realistic case" is based on average sales growth figures for 1993-2002. Optimistic case assumes 2% additional growth, due to domestic market recovery and/or increasing exports

Source: Anfavea; CSM Worldwide; Lafis; Just-auto.com; McKinsey analysis

- **Initial sector conditions.** The sector's competitive intensity was already high at the start of our focus period, due to import competition, though the gap with best practice operations remained significant. These factors combined to cause OEMs to invest in upgrading their vehicle quality and manufacturing operations.

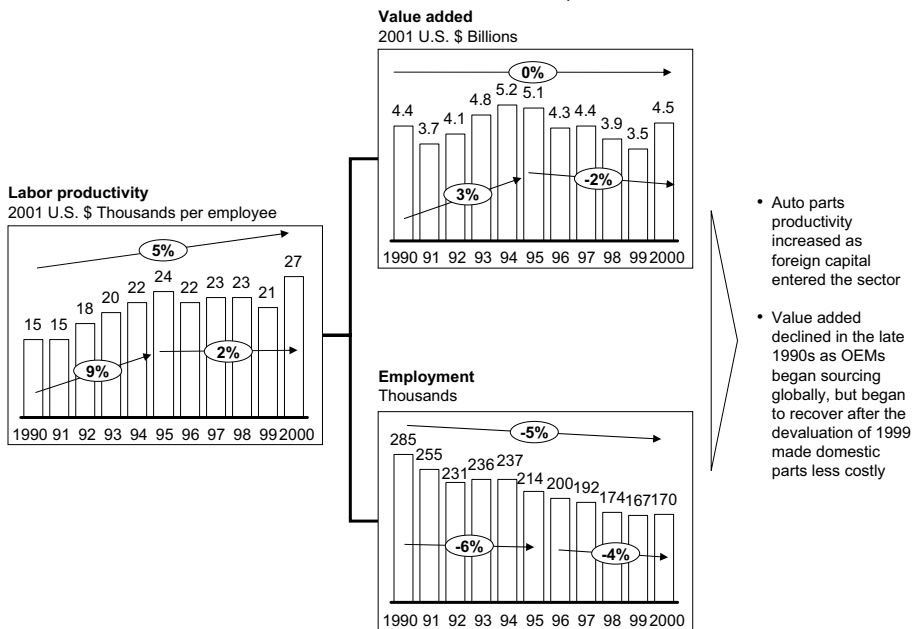
FDI IMPACT ON HOST COUNTRY

- ¶ **Economic impact.** From 1990 to 1997 labor productivity grew at 13.5 percent per year, and vehicle unit output grew at 13 percent a year. Employment in the sector declined steadily. A recession in 1998-99 dragged down both output and employment, and despite significant operational changes that increased potential productivity, resulting overcapacity have caused productivity to be far below its potential ever since (Exhibit 12).
- **Sector productivity.** For most of the 1990s, labor productivity rose at the old plants (Exhibit 13). The new plants had the potential for even greater productivity – but began opening in 1997 just as the recession took hold. As a result, much of the new capacity has remained underutilized (Exhibit 14), and their contribution to labor productivity has been negative. Far from leading to "convergence" with the developed countries, the new plants actually coincided with a sharp decline in capacity utilization and, as a result, productivity in Brazil. This contrasts with productivity in other developing countries, which was continuing to rise steadily (as in Mexico, China, and India). Contrasting the two periods shows that FDI's impact depends greatly on its environment: a negative macroeconomic environment can lead to declining productivity despite significant investments on automation and improved organization of functions and tasks.
- **Sector output.** Light vehicle production climbed from 0.8 million in 1990 to nearly 1.9 million in 1997. But over the period 1997-99 GDP growth was zero, sales plummeted by 36 percent, and output fell by the same proportion (Exhibit 14). In both 2001 and 2002 output was 1.7 million units – still 14 percent down from its peak. Sector growth has been driven by economic fluctuations, rather than by changes in the level of FDI. This conclusion is strengthened by the fact that OEMs were unable to shift to more exports when the domestic market took a dive.
- **Sector employment.** Employment drifted downward as productivity gains outpaced rising output needs. In 1998 vehicle assemblers reduced their workforce by 21 percent (22 thousand workers). After that employment began to recover but by 2002 it had fallen to its lowest level yet: just 82 thousand workers. Again, employment levels were driven by fluctuations in the macroeconomic environment; government incentives that were conditional on FDI and on job creation at specific sites had little impact on the overall level of employment in the sector.
- **Supplier spillovers.** Liberalization and new investment in vehicle assembly have led to significant structural changes in components manufacture, but this areas has seen less productivity growth than vehicle assembly.

Exhibit 15

BRAZIL AUTO PARTS LABOR PRODUCTIVITY, 1990-2000

○ CAGR



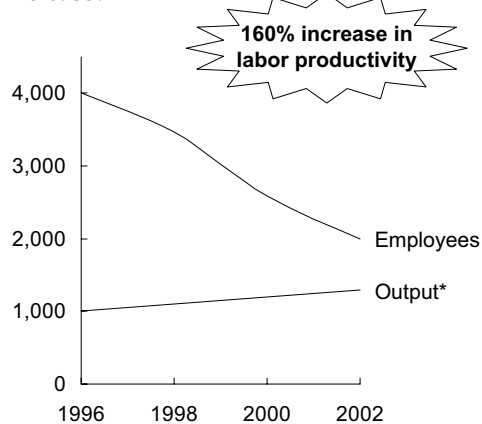
Source: IBGE; Sindipeças; team analysis

Exhibit 16

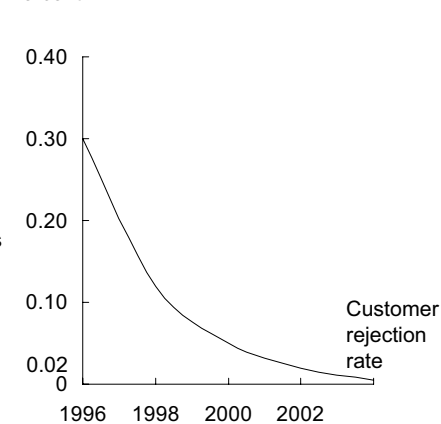
IMPROVEMENTS AT SUPPLIERS WHO WERE ACQUIRED BY MNCs

DISGUISED EXAMPLE

Employment declined while output increased . . .



. . . and quality steadily improved



* 1996 output = 1000
Source: Interviews

- When local vehicle makers demanded better quality components at competitive prices, many suppliers were forced out of business or were acquired by international companies. International ownership rose from 50 percent to 80 percent between 1994 and 2001.
- Foreign components companies brought new capital and better practices to Brazil; quality improved and labor productivity rose by 6 percent per year – mainly derived from a steady decline in employment (Exhibit 15). The most dramatic improvements in productivity were seen in the domestic component manufacturers acquired by international companies (Exhibit 16).

¶ **Distribution of FDI impact.** Companies and the government both suffered as a result of the resources poured into excessive capacity build-up; workers also suffered a sharp decline in employment when the recession hit. The great beneficiaries were consumers, but even here most of the benefits seem to have derived from the earlier liberalization reforms, rather than from FDI per se.

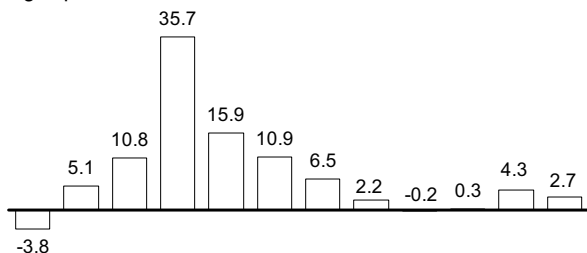
- **Companies.** Margins of veteran OEMs declined throughout the early-to-mid 1990s due to import competition. The margins of both the veterans and the newcomers were sharply negative after the recession struck (Exhibit 17). The OEMs have seen low margins globally for many years, but the negative margins suffered in Brazil were exceptional by any standard. (We do not distinguish here between FDI and non-FDI companies, as all the companies are multinational vehicle assemblers.)
 - Veterans. For much of the decade, the veterans' margins declined due to import competition. They responded by making costly upgrades to old plants and by investing in new plants. Most veterans suffered heavy losses because of low utilization. The best performer was Fiat – the only veteran that decided not to build a new plant in Brazil – but even Fiat's margins declined as competition increased.
 - Newcomers. Renault did extremely poorly: not only did it launch capacity just as the market was receding but it sourced most of its components from overseas, so it was hit the hardest by increased input costs after the devaluation of the Brazilian currency.
- **Employees.** Employment declined due to rising productivity and falling demand, and wages declined as firms shifted production to rural areas.
 - Level. Employment declined in the 1990s as productivity improved and took a dive in 1998 due to the recession. Certain States gave incentives to companies linked to the condition that the jobs that were created would be preserved. This helped contain the employment decline within those regions. Nevertheless, many jobs were lost elsewhere when the market went into recession.
 - Wages. New plants in rural areas created sought-after manufacturing jobs that paid well compared with jobs in the areas concerned. Nevertheless, average wages probably declined, due to the shift to rural areas (Exhibit 18).

Exhibit 17

COST OF INVESTING AT THE START OF THE DOWNTURN

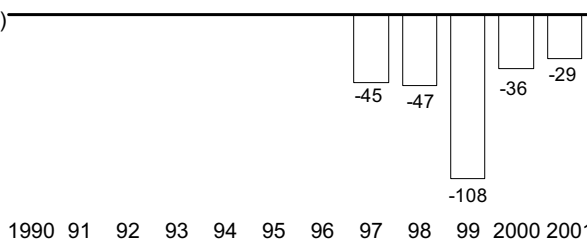
Net profit margin, percent

Fiat
(veteran)



Fiat saw its margins decline as competitive intensity heated up in the late 1990s – but by not overinvesting in new capacity, it avoided big losses when the market receded

Renault
(newcomer)



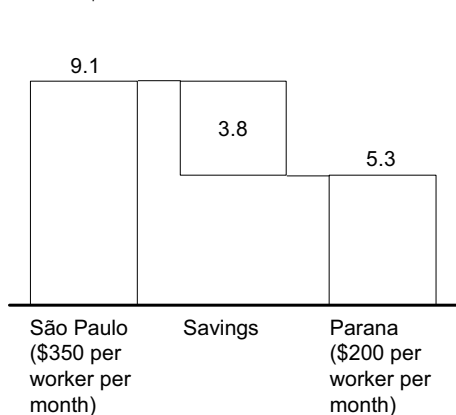
Renault had the misfortune of entering Brazil just as the recession began – and then doubled capacity from a level that was already too high. It now hopes to break even in 2005

Source: Balanco Anual

Exhibit 18

LABOR COST SAVINGS FOR AUTO PLANTS IN THE EXTERIOR

Annual labor cost for plant with 2,000 workers*
2001 US\$ Millions



- A mid-size plant outside of the São Paulo region saves ~\$4 million per year in labor costs alone
- Partly because of the wage difference, over the 1990s unit production outside of the São Paulo region grew by 12% per year, compared with just 4% within the region

* Assuming 13 months' pay (twice in December)

Source: Interviews; team analysis

- **Consumers.** Consumers became steadily better off throughout the decade.
 - Price decline. Real vehicle prices declined for most of the decade (Exhibit 19). Though prices have declined globally, the (quality-adjusted) decline was greater in Brazil. This was due mainly to market liberalization and increased competition, though the capacity build-up certainly added to the competitive intensity. (The currency devaluation of 1999 also caused prices to jump, especially among newcomers, since it raised the cost of auto components sourced abroad.)
 - Product selection and quality. By the end of the decade the Brazilian market offered many more models; quality (in terms of both accessories and low defects) was also far better (Exhibit 20).
- **Government.** The federal and state governments lost a great deal. States offered incentives – in the form of land, infrastructure, tax breaks, and low-interest loans – which often amounted to several hundred thousand dollars per new job created. Such incentives were extremely generous, even when compared with packages offered by states in the U.S. This helped to attract OEMs to rural areas, and some regions certainly gained new employment and a manufacturing base. On balance, however, both the vehicle assembly sector and the auto components sector continued to lose jobs, and the incentives amounted to a large transfer from taxpayers to the auto companies.

MECHANISMS BY WHICH FDI ACHIEVED IMPACT

The wave of FDI that came to Brazil in the 1990s created new capacity; increased the level of automation; brought with it the transfer of best practices in operations and created the potential for a more substantial export base (Exhibit 21).

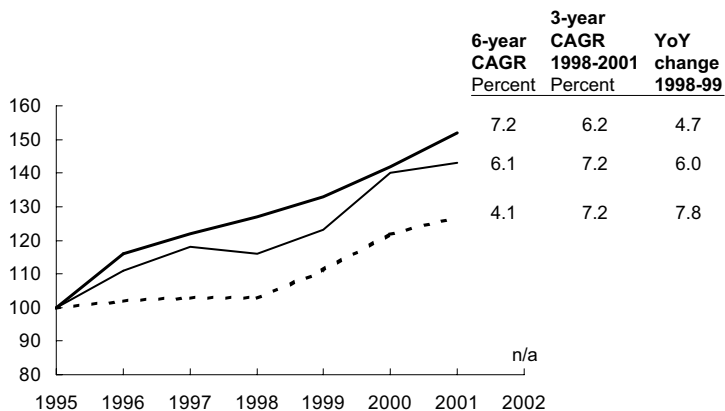
- ¶ **Operational factors.** The operational impact of additional FDI, for the most part, was to expand capacity, to increase the level of automation, and (to a lesser extent) to improve the export potential of vehicles.
 - **Capacity expansion.** The new wave of FDI brought the capital required for capacity expansion. Capacity increased from about 1.7 million units in 1994 to 3.0 million in 2001. This was achieved both by building new plants, by de-bottlenecking, and by expansions of existing plants (Exhibit 6).
 - **Automation.** FDI also brought the capital needed for higher levels of automation in welding and final assembly, as well as changes in the organization of functions and tasks. In particular, existing and new plants adopted lean production techniques (e.g., more flexible work roles and working in teams) and more efficient relations with suppliers (supplier parks, just-in-time production, modular assembly) (Exhibit 13).
 - **Exportability.** International companies' expanded presence in Brazil, combined with the improvements in quality and price, created the potential for more exports. But in 1999 exports tumbled, due mainly to the macroeconomic problems in Argentina, resulting in a collapse in exports to the country. Though OEMs made up for the decline to some extent by selling more to North America, they have yet to significantly alleviate their spare capacity problem (Exhibit 22).

Exhibit 19

GENERAL AND VEHICLE PRICE LEVELS, 1995-2001

1995 = 100

— Consumer price index
 — Retail vehicle price
 - - Wholesale vehicle price



- Since the start of the Auto Regime, vehicle prices have trailed the CPI
- However, vehicle prices jumped after devaluation increased the cost of imported auto parts

Notes: (1) Auto price series based on list prices, not transactions; (2) Price series is not adjusted for hedonics or for mix changes; (3) Wholesale and retail prices are from different sources
 Source: IPCA; FGV

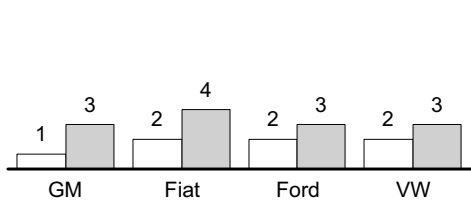
Exhibit 20

INCREASING DIVERSITY AMONG VETERANS

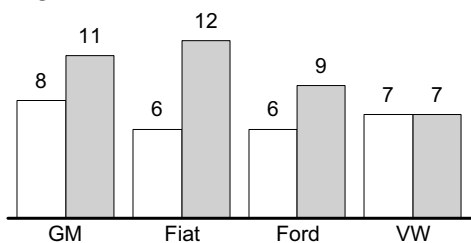
Number of models produced domestically

□ 1997
 ■ 2002

1 liter cars



Larger vehicles



Variety is highest and increasing in the above-1L segment, where there is more competition from newcomers

Source: Folha de Sao Paulo

Exhibit 21

IMPACT OF FDI ON BRAZIL LIGHT VEHICLE ASSEMBLY

Role

Capital

- Growth through expansion among veterans and greenfield entry by newcomers (e.g. Renault, Peugeot)
- Implementation of more capital intensive production methods (e.g. increased automation in welding)

Best practices and innovation

- Improvements in number and variety of accessories and options, and in overall quality of cars and parts
- Adoption of lean manufacturing techniques (e.g. continuous learning)
- Innovations in logistics and supplier relations (e.g. modular production)
- Development of new dealer networks

Export capability

- Global brands and access to MNC resources and knowledge (e.g. for financing, R&D, marketing)
- Relationship with headquarters and ability to negotiate trade contracts with other regional OEMs

Dynamics

Increase in competition

- Rise in competition on quality and price due to capacity buildup by veterans and new players
- Competition was further enhanced because foreign players wanted to establish market share, in anticipation of future market growth

Increase in size and improved quality

- Prices fell while the market grew, because rising supply more than met the demand
- OEMs adopted global platforms and models; upgraded accessories; used better quality parts; and achieved much lower defect rates

Changes in labor productivity

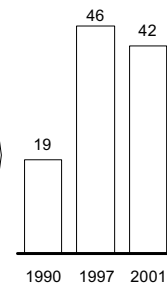
- Productivity gains through greater capital intensity and improved technologies
- Additional gains from lean manufacturing techniques and improved logistics, often involving investments in training
- Idle capacity from excessive buildup caused a drag on labor productivity (especially following recession and devaluation)

Spillovers to parts manufacturing

- Higher standards demanded by OEMs forced suppliers to invest in new technologies
- Because domestic manufacturers had limited access to the needed capital, they gave way to a wave of foreign acquisitions
- Foreign parts companies adopted best practices, and invested heavily in new technologies

Outcome

Productivity
2001 U.S. \$ Thousands per worker year

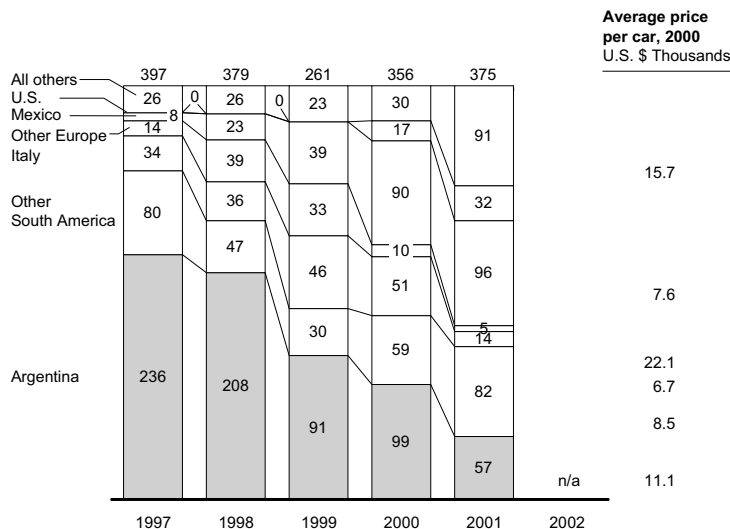


Source: McKinsey analysis

Exhibit 22

DEVELOPMENT OF BRAZIL'S KEY EXPORT MARKETS

Thousand units

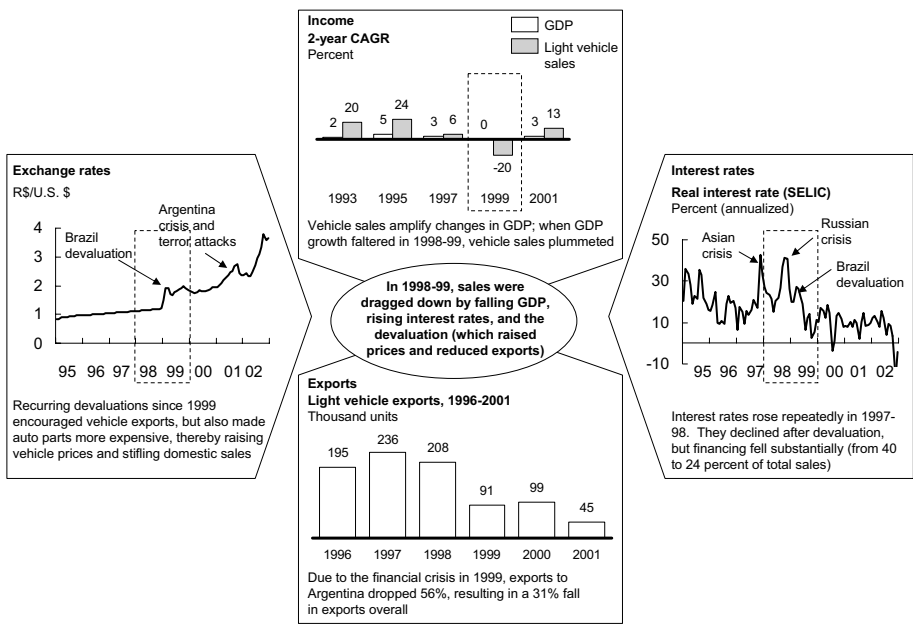


- Exports have shifted away from Argentina and Europe
- Recent trade agreements with Mercosur and Mexico have led to increasing trade with the rest of Latin America
- Meanwhile OEMs are exporting to new markets in Turkey, South Africa, and China and are beginning to reach the US

Source: ANFAVEA

Exhibit 23

ECONOMIC ENVIRONMENT AND THE LIGHT VEHICLE SECTOR



Source: Banco Central; Anfaeva; Lafis; MCM; team analysis

- ¶ **Industry dynamics.** Competition was high throughout the period under review and intensified after 1998, as a result of the increased overcapacity. However, the key impetus for this competition was not the new wave of FDI, so much as the liberalization reforms that preceded it.
- Competition escalated during the auto regime, as the industry saw several new entrants and reduced profit margins. After the recession struck, competition became even more intense, as OEMs looked for ways to make use of expensive spare capacity.
 - Nevertheless, an analysis of the components of competitive intensity indicates that most of the competitive pressure was already present during our comparison period. Moreover, the Auto Regime policies that attracted more FDI did so by limiting the extent of import competition. Some intensification of competition may be attributed to the new wave of FDI, but the key factor in increasing competition was the import and price liberalization at the start of the decade.

EXTERNAL FACTORS THAT AFFECTED THE IMPACT OF FDI

FDI's impact was enhanced by sector and price liberalization – but the impact of the incremental FDI during the period of review was seriously hampered, both by recession and by the distorting effects of government policies.

- ¶ **Country-specific factors.** The sharp macroeconomic downturn proved disastrous for the impact of FDI. Government policies (incentives and reduced tariffs and taxes) had an indirect effect by creating overcapacity.
- **Macroeconomic factors.** The economic environment hampered the ability of the new FDI to have greater impact. In late 1997, GDP growth collapsed. Automobile later prices rose, due both to an increase in real interest rates and to an increase in the cost of inputs following the devaluation of January 1999 (Exhibit 23). The result of these factors combined was a severe drop in vehicle demand, high excess capacity, and worse performance in output, productivity, and employment.
 - **Government policies.** Reduced tariffs enhanced the impact of mature FDI. As Brazil steadily reduced its tariffs, competitive intensity increased, resulting in higher productivity and better quality vehicles at lower prices. Reduced taxes had less effect on the impact of FDI, but the focus on 1L cars made it harder for OEMs to shift their production to export. The principal effect of state incentives was to transfer resources from governments to companies. By contributing to high overcapacity, incentives also added to the poor performance in productivity and profitability of the OEMs.
- ¶ **Initial sector conditions.** At the start of the first period under review, of mature FDI, Brazil's auto sector was uncompetitive and highly inefficient, so it was ripe for change. However, by the being of the second period, incremental FDI, the sector had been transformed into a much more competitive and productive industry and there was therefore less opportunity for incremental FDI to have major impact.

SUMMARY OF FDI IMPACT

Overall, FDI had a positive impact on the Brazilian auto sector by making productivity-improving investments and reducing prices to consumers. However, the over-investment in capacity and subsequent economic downturn wiped out these improvements as productivity, employment, and profits all fell. States that offered large incentives may have been the biggest losers. Brazil's vehicle consumers benefited most, both from the wave of incremental FDI and from the import liberalization reforms that preceded it.

Exhibit 24

BRAZIL AUTO – SUMMARY

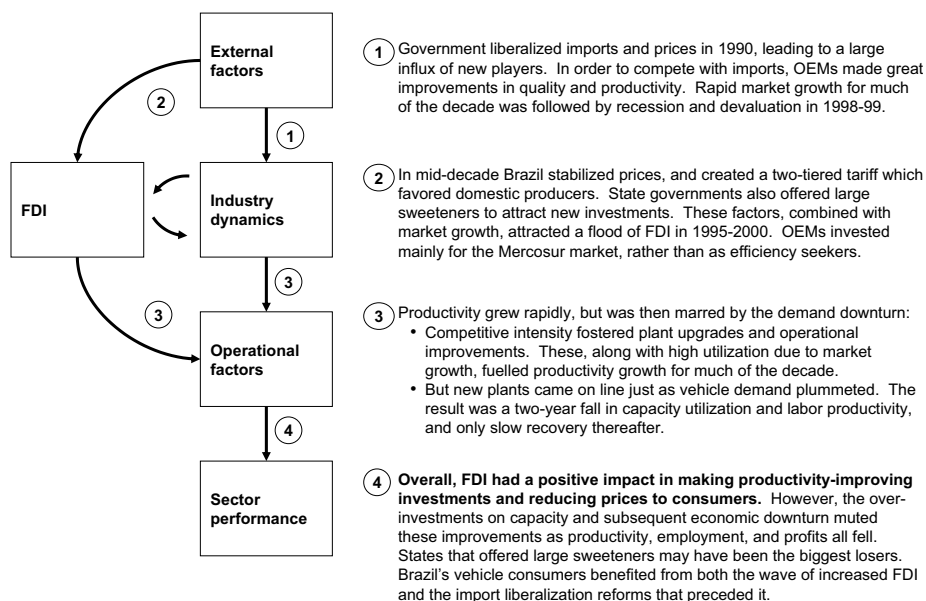


Exhibit 25

BRAZIL AUTO – FDI OVERVIEW



• FDI periods	
– Focus period: incremental FDI	1995-2000
– Comparison period: mature FDI	1990-1995
• Total FDI inflow (1995-2000)*	\$11.9 billion
– Annual average	\$2.0 billion
– Annual average as a share of sector value added	52%
– Annual average as share of GDP**	0.40%
– Annual average per employee	~ \$22k
• Entry motive (percent of total)	
– Market seeking	100%
– Efficiency seeking	0%
• Entry mode (percent of total)	
– Acquisitions	0%
– JVs	0%
– Greenfield	100%

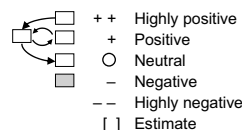
* Includes only vehicle assembly – not automotive parts

** Using 2001 GDP

Source: Anfavea, Banco Central

Exhibit 26

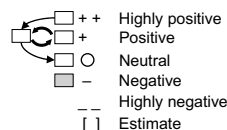
BRAZIL AUTO – FDI's ECONOMIC IMPACT IN HOST COUNTRY



Economic impact	Sector performance during		FDI impact	Evidence
	Mature FDI (1990-95)	Incremental FDI (95-00)		
• Sector productivity (CAGR)	16%	1%	+	<ul style="list-style-type: none"> Productivity grew rapidly from the start of the decade, as a result of the competitive intensity created by import and price liberalization. OEMs improved potential productivity with state-of-the-art new plants and plant upgrades, but the net effect was small due to the demand downturn – and indeed FDI contributed to the overcapacity
• Sector output (CAGR)	+13%	-2%	O	<ul style="list-style-type: none"> The domestic market grew rapidly in the first half of the decade. It reached a peak in 1997, then dropped 36% in two years. Production followed the same roller-coaster pattern. As a result, so far the wave of “incremental” FDI has resulted in greatly expanded capacity, without a corresponding growth in output
• Sector employment (CAGR)	-2%	-3%	O	<ul style="list-style-type: none"> Employment declined in the 1990s as productivity improved. States gave sweeteners on the condition that jobs would be created and preserved. This helped contain the employment decline – and preserved many jobs when the market turned south
• Suppliers (Labor productivity CAGR)	9%	2%	O	<ul style="list-style-type: none"> Competition in vehicle assembly created pressure for suppliers to improve their productivity as well. Suppliers also underwent a wave of FDI in the form of acquisitions, expansions, and upgrades – but the decline in the vehicle market caused overcapacity there too, so that the impact of FDI on labor productivity has so far been minimal
Impact on Competitive intensity	+	++	+	<ul style="list-style-type: none"> The large capacity buildup combined with a stagnant market to put enormous competitive pressure on OEMs But much of the rise in competitive intensity (evidenced by declining profit margins) had actually taken place earlier in the decade – the result of import and price liberalization

Exhibit 27

BRAZIL AUTO – FDI's DISTRIBUTIONAL IMPACT IN HOST COUNTRY



Economic impact	Sector performance during		FDI impact	Evidence
	Mature FDI (1990-95)	Incremental FDI (95-00)		
• Companies				
– FDI companies	+	--	-	<ul style="list-style-type: none"> Despite price liberalization, profit margins rose in early years as the market grew rapidly. But OEMs suffered dramatic losses when their large new investments coincided with a large decline in the market
– Non-FDI companies	N/A	N/A	N/A	<ul style="list-style-type: none"> No domestic makers of light vehicles
• Employees				
– Level of employment (CAGR)	-2%	-3%	O	<ul style="list-style-type: none"> Employment declined in the 1990s as productivity improved. States gave sweeteners on the condition that jobs would be created and preserved. This helped contain the employment decline; still, many jobs were lost when the market turned south
– Wages	+	+	+	<ul style="list-style-type: none"> New plants in rural areas created sought-after manufacturing jobs that paid well compared with jobs in those regions. (Nevertheless average wages probably declined, due to the shift to rural areas)
• Consumers				
– Prices	+	+	++	<ul style="list-style-type: none"> Real prices declined for most of the decade, as a result of import and price liberalization. (But prices increased in 1999, when devaluation raised the cost of imported parts.)
– Selection	+	++	+	<ul style="list-style-type: none"> Selection improved as a result of import liberalization and increasing competition
• Government				
– Taxes/Sweeteners	+	--	-	<ul style="list-style-type: none"> Government benefited from the early growth in the industry through higher tax revenues Sweeteners from state governments and development banks have been very expensive, and have so far failed to generate revenue

Exhibit 28

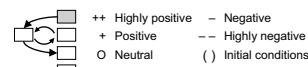
BRAZIL AUTO – COMPETITIVE INTENSITY



	Sector performance during		Evidence	Rationale for FDI contribution
	Mature FDI (1990-95)	Incremental FDI (95-20)		
Pressure on profitability			• Profit margins (for sample company) began to decline after 1993, even as the market grew	• Capacity buildup combined with macro factors to put increased pressure on OEMs
New entrants			• Newcomers entered as importers; several later built domestic plants	• Competitive pressure from importers was still significant even after some built plants in Br.
Weak player exits			• The one domestic carmaker, Gurgel, exited after import and price liberalization	• New wave of FDI led to market entry, not (yet) any important exits
Pressure on prices			• Real prices declined due to liberalization (though they rose after devaluation in 1999)	• Price competition came mainly from liberalization, but was intensified by overcapacity
Changing market shares			• Newcomers took share from market leaders; also some shifting among the 4 veterans	• New entrants and large FDI investments increased the competition for market share
Pressure on product quality/variety			• Steady increase in number of models; expansion of new segments	• Imports brought more variety directly, and prompted OEMs in Brazil to increase their variety • Entry of newcomers for production added to variety
Pressure from upstream/downstream industries			• Being few in number, OEMs enjoyed market power relative to both suppliers and dealers	• Additional FDI and entry of new players was not enough to give power to suppliers and dealers
Overall			• On the whole, real prices and profits declined as quality and productivity were improving	• Competition was driven by import and price liberalization, and was augmented by capacity buildup and a macro downturn

Exhibit 29

BRAZIL AUTO – EXTERNAL FACTORS' EFFECT ON FDI



Level of FDI*	Impact on level of FDI	Comments	Impact on per \$ impact	Comments
Global factors	0.40%			
Global industry discontinuity	O		O	
Relative position				
• Sector market size potential	++	• Domestic market expansion fuelled optimistic forecasts for the future	O	
• Prox. to large market	O		O	
• Labor costs	O		O	
• Language/culture/time zone	O		O	
Macro factors				
• Country stability	+	• Price stabilization under Real plan created expectations for growth	--	• Crash in demand and currency devaluation resulted in high spare capacity for years
Product market regulations				
• Import barriers	+	• Two-tiered tariff led to more plants	O	
• Preferential export access	+	• Zero tariff with Argentina (given a vehicle trade balance below 6.2%)	O	
• Recent opening to FDI	O		O	
• Remaining FDI restrictions	O		O	
• Government incentives	++	• Large sweeteners from states	--	• Sweeteners and managers with only short time horizons helped create overcapacity; TRIMs boosted size – not productivity – of local parts industry
• TRIMs	+	• LCRs and trade-balancing req's**	--	
• Corporate governance	+	• Transient managers may be myopic	-	
• Taxes and other	+	• Tax breaks on 1L cars boosted demand, encouraged investment	O	
Capital market deficiencies	O		O	
Labor market deficiencies	O		O	
Informality	O		O	
Supplier base/ infrastructure	O		O	
Sector initial conditions				
Competitive intensity	+(H)	• Import and price liberalization led OEMs to invest in upgrades	+(H)	• Competition led OEMs to focus on productivity (though the results were marred by overcapacity)
Gap to best practice	+(M)	• Gap caused OEMs to invest even more in state-of-the-art new facilities	+(M)	• Gap meant that the new wave of FDI had opportunity for real impact

* Average annual inflow as a percentage of GDP

** Local content requirements of 60% to attract investment in parts plants; OEMs faced 125% tax on any imports in excess of exports

Exhibit 30
BRAZIL AUTO – FDI IMPACT SUMMARY

[] Extrapolation ++ Highly positive – Negative
 + Positive -- Highly negative
 O Neutral () Initial conditions

Level of FDI relative to sector*	FDI impact on host country	Level of FDI** relative to GDP	External Factor impact on	
			Level of FDI	Per \$ impact of FDI
	52%		0.40%	
Economic impact		Global factors		
• Sector productivity	+	• Global industry discontinuity	O	O
• Sector output	O	• Relative position		
• Sector employment	O	• Sector market size potential	++	O
• Suppliers	O	• Prox. to large market	O	O
		• Labor costs	O	O
		• Language/culture/time zone	O	O
Impact on competitive intensity	+	• Macro factors		
Distributional impact		• Country stability	+	--
• Companies		• Product market regulations		
– FDI companies	–	• Import barriers	+	O
– Non-FDI companies	N/A	• Preferential export access	+	O
• Employees		• Recent opening to FDI	O	O
– Level	O	• Remaining FDI restriction	O	O
– Wages	+	• Government incentives	++	--
• Consumers		• TRIMs	+	–
– Prices	++	• Corporate governance	+	O
– Selection	+	• Taxes and other	+	O
• Government		• Capital markets	O	O
– Taxes	–	• Labor markets	O	O
		• Informality	O	O
		• Supplier base/ infrastructure	O	O
		• Competitive intensity	+ (H)	+ (H)
		• Gap to best practice	+ (M)	+ (M)
		• Sector initial conditions		

* Average annual FDI/sector value added

** Average (sector FDI inflow/total GDP) in key era analyzed

Mexico Auto Sector Summary

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EXECUTIVE SUMMARY

The auto sector in Mexico has been entirely in the hands of international investors for several decades. Starting in mid-1990s, FDI was efficiency-seeking and oriented mostly to export to the U.S. Five veterans – Ford, GM, Chrysler, Nissan, and VW – still control 90 percent of the market, but their previously more protected local market was opened to competition from imports and new local producers following the signing of NAFTA in 1994. Our analysis focuses on the period from 1994 to the present, when the veteran players were making incremental investments in response to the integrated North American market and the more competitive policy environment within Mexico.

The impact of FDI on the Mexican auto sector in this period has been very positive. Output, productivity, and employment have increased as OEMs responded to the more competitive environment by rationalizing production across North America. Each plant is now specialized and focused on fewer models, thereby allowing a decrease in fixed cost expenditures and increased utilization rates. The international companies have achieved further productivity improvements in Mexican plants by adopting lean techniques and more efficient organization of suppliers, reaching an average productivity level 65 percent of the U.S. level. As a result of more diversified sales stemming from increasing exports to North America, the sector has maintained rapid output growth, despite the 1995 financial crisis and recession in Mexico. In contrast to Brazil, Mexico has not given away any incentives. Because output has outpaced productivity growth, employment has increased by four percent annually. At the same time, consumer selection has increased through access to imported models. While Mexico has a very large auto components sector that exports a significant share of its output, productivity growth in the components segment has been much lower than in assembly.

There is further potential for growth and improved performance in the Mexican auto sector and components sectors. A number of factors in the U.S. limit the growth of Mexico's share in North American auto sector: regional overcapacity, strong unions, and large state incentives.

SECTOR OVERVIEW

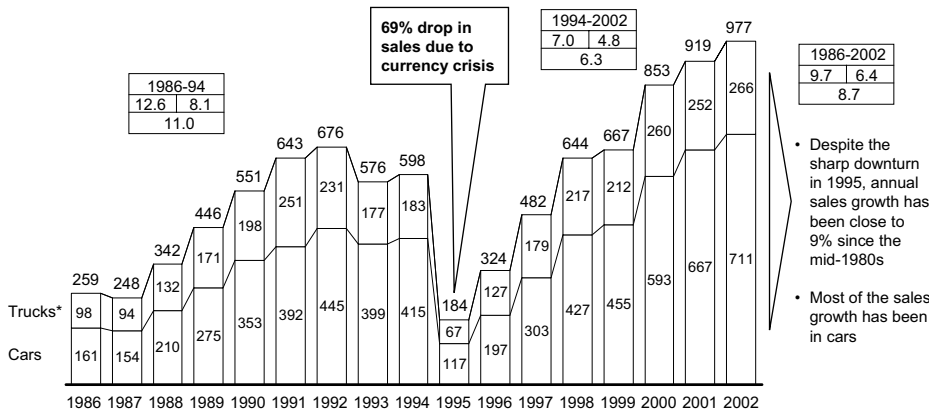
¶ Sector overview. Mexico ranks ninth in world vehicle production, with a volume of almost 1.8 million units in 2002. It exports much of its production to the U.S. and Canada; in recent years, vehicle makers have normally exported 70-80 percent of their production.

- Domestic market sales (including imports) were nearly 1 million units in 2002 and have grown at nine percent annually since 1986, a sharp downturn in 1995 notwithstanding (Exhibit 1). Production was nearly 1.8 million units in 2002, and has grown by 11 percent annually (Exhibit 2).
- In 1995, exports as a share of total production jumped from 52 percent to 84 percent, and have remained high since then. In 2001, Mexico represented 17 percent of all U.S. vehicle imports, up from eight percent in

Exhibit 1

VEHICLE SALES IN THE MEXICAN MARKET, 1986-2002
 Thousand units

CAGR		
Cars	Trucks	Total

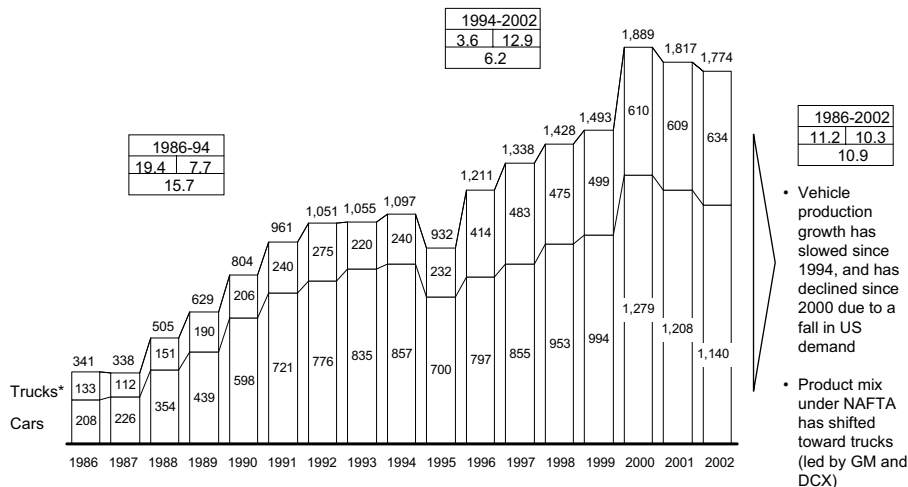


* Includes light trucks
 Note: Figures include total domestic sales (including imports)
 Source: AMIA

Exhibit 2

VEHICLE PRODUCTION IN MEXICO, 1986-2002
 Thousand units

CAGR		
Cars	Trucks	Total



* Includes light trucks
 Source: AMIA

1994 (Exhibit 3). However, imports into Mexico are rising at an even faster rate, so the trade balance has narrowed in recent years, especially since the downturn in the U.S. market since 2000 (Exhibit 4).

- Five veteran players – Ford, GM, Chrysler, Nissan, and VW – have been in Mexico for many decades. The 1990s saw a wave of new entrants, but these were mostly importers; the Big Five continued to dominate both production and sales (Exhibit 5). There are domestic makers of trucks and buses, but no Mexican light vehicle manufacturers.

¶ **FDI overview.** Light vehicle assembly in Mexico has been almost exclusively the province of foreign companies for decades. Early FDI was market-seeking, with the aim of overcoming trade barriers; mature FDI has been largely efficiency-seeking, striving to serve the U.S. market. Our review focused on period since 1994, when NAFTA was phased in and OEMs expanded capacity (we call this period "incremental FDI"). To calibrate the impact of FDI under NAFTA, we have chosen to compare this with the early years of the Fifth Auto Decree, 1994-2000 (which we call "mature FDI"), when imports were liberalized.

- **Mature FDI (1990-1994).** OEMs began making efficiency-seeking investments in the 1980s and early 1990s, building several new automobile plants outside of Mexico City (GM in Saltillo, Ford in Hermosillo, Nissan in Aguascalientes). But the real push to reach levels of global best practice began in 1990, when import liberalization allowed new entrants and created a more competitive environment (Exhibit 6).
- **Incremental FDI (1994-2000).** In the first six years that NAFTA was being phased in, the auto sector received \$9 billion in FDI. OEMs invested nearly \$4 billion, upgrading and expanding capacity at their existing plants by 50 percent. The rest came from auto components companies, in which FDI has been concentrated on acquisitions (Exhibit 7).

¶ **External factors driving the level of FDI.** Liberalization led OEMs to make capital upgrades, while market growth in the U.S. encouraged capacity expansion in existing plants.

- **Country-specific factors.** The threat of imports resulting from free-trade agreements forced OEMs to become more competitive in the local Mexican market; they responded by upgrading their capital. Strong growth in the U.S. market also led OEMs to expand capacity. The expansion would have been even greater if it had not met market distortion in the U.S., those of overcapacity, strong unions, and large state incentives (Exhibit 8).
 - **Location.** Mexico's proximity to the U.S., combined with labor costs that are only a quarter those of the U.S. and Canada, made Mexico the obvious choice for efficiency-seeking FDI. The level of FDI was limited by several factors north of the border, however, high levels of excess capacity, powerful labor unions, and large incentives from U.S. states.
 - **Macroeconomic factors.** The Tequila Crisis of 1995 hurt domestic sales, but had no obvious impact on investment decisions, perhaps because OEMs were able to respond by exporting more. The more relevant macroeconomic factor has been the strong growth in the U.S., which drove OEMs to produce at levels close to full capacity by 2000.

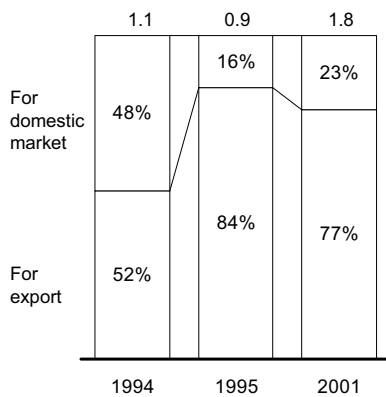
Exhibit 3

MEXICO AS AN EXPORT PLATFORM TO NORTH AMERICA

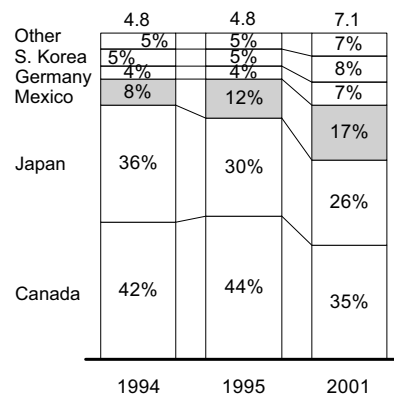
Exports rose sharply in the crisis, and have continued growing under NAFTA...

... especially to the US, where imports from Mexico grew by 18% per year

Mexico vehicle production
Million units



US vehicle imports
Million units



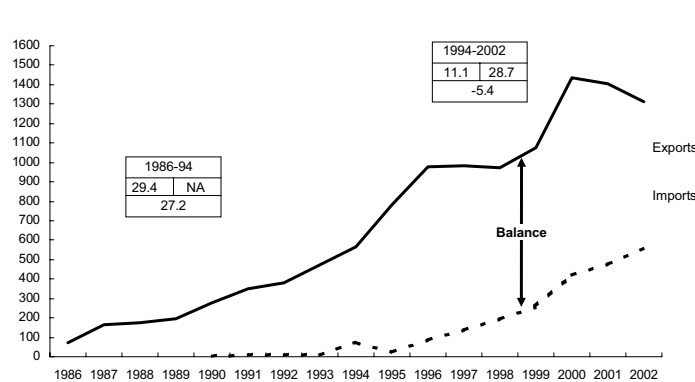
Source: AMIA

Exhibit 4

MEXICO VEHICLE EXPORTS AND IMPORTS, 1986-2002

Thousand units

CAGR	
Exports	Imports
Balance	



- The vehicle trade balance has grown more slowly since 1994
 - Export growth has slowed
 - Imports are growing rapidly
- Nearly 90% of exports are for the US; exports have fallen since 2000 due to a downturn in demand there

* No imports before 1990

Source: AMIA

Exhibit 5

SHARE OF MEXICO DOMESTIC VEHICLE SALES BY OEM, 1990-2002

Thousand units, percent

Cars

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
100% =	186	257	345	424	497	599	636	592	591	674	930	863	763
Others	0	0	0	0	0	0	0	1	2	4	5	9	10
DCX	15	16	19	15	13	15	18	13	11	10	12	13	10
Ford	15	14	15	13	12	17	23	13	10	10	11	12	12
VW	38	38	32	38	36	27	27	23	25	26	27	24	21
GM	9	11	11	13	15	16	18	27	25	25	23	20	22
R/N	23	20	22	21	24	23	14	22	25	23	21	23	25

Trucks

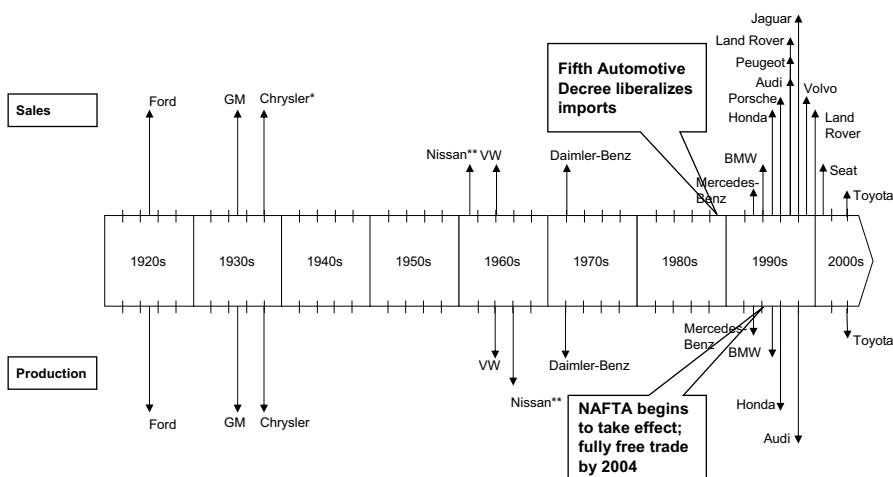
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
100% =	10	20	44	47	70	182	339	391	381	400	504	541	549
Others	0	0	0	0	0	3	1	1	1	3	1	2	4
VW	18	16	18	21	17	22	14	17	17	17	18	16	17
R/N	22	22	24	20	24	22	23	17	22	20	19	19	17
DCX	34	31	24	30	29	33	36	33	31	29	29	29	28
GM													
Ford	21	25	28	22	23	19	26	32	28	31	30	31	29

- R/N leads in domestic car sales, followed closely by GM
- VW has lost share in car sales, and fell to third place in 2002
- Ford and GM lead in domestic truck sales

Source: AMIA

Exhibit 6

OEM ENTRY INTO MEXICO AUTO MARKET



* Merged with Daimler-Benz in 1998 to become DCX

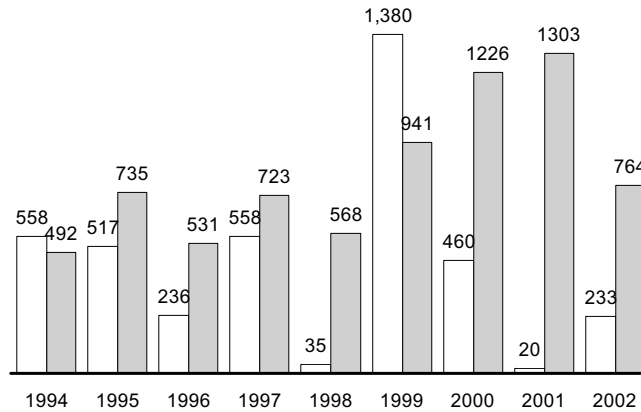
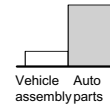
** Includes Renault since 2001

Source: AMIA

Exhibit 7

FDI IN MEXICO AUTO SECTOR – 1994-2002

U.S. \$ Millions

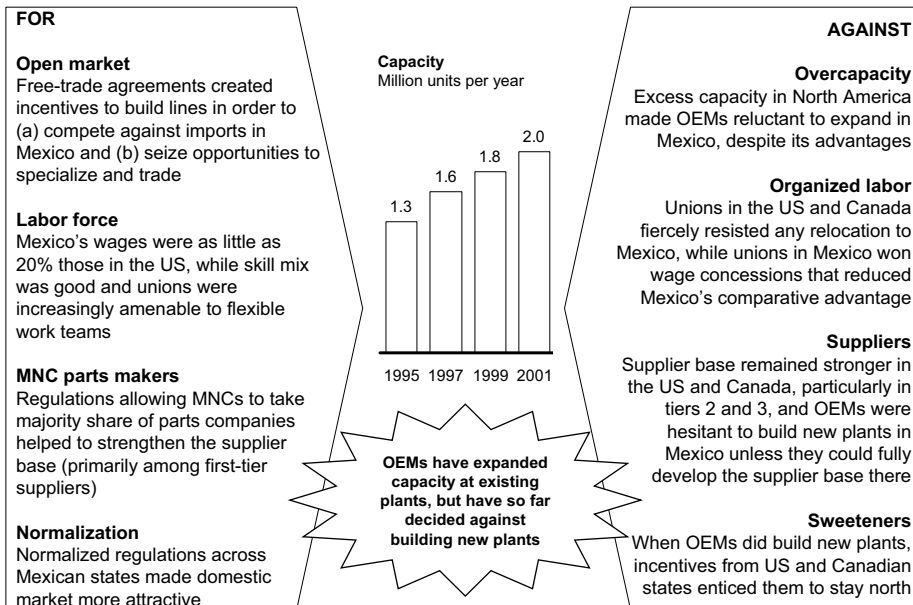


- Since NAFTA took effect in 1994, the Mexico auto sector has attracted over \$11 billion in FDI:
 - \$4 billion in vehicle assembly
 - \$7.3 billion in auto parts
- FDI flows have been very erratic from year to year

* Data for 2002 are estimates based on figures reported in September 2002
 Source: Secretaría de Economía

Exhibit 8

FORCES FOR AND AGAINST CAPACITY BUILDUP



Source: Interviews, team analysis

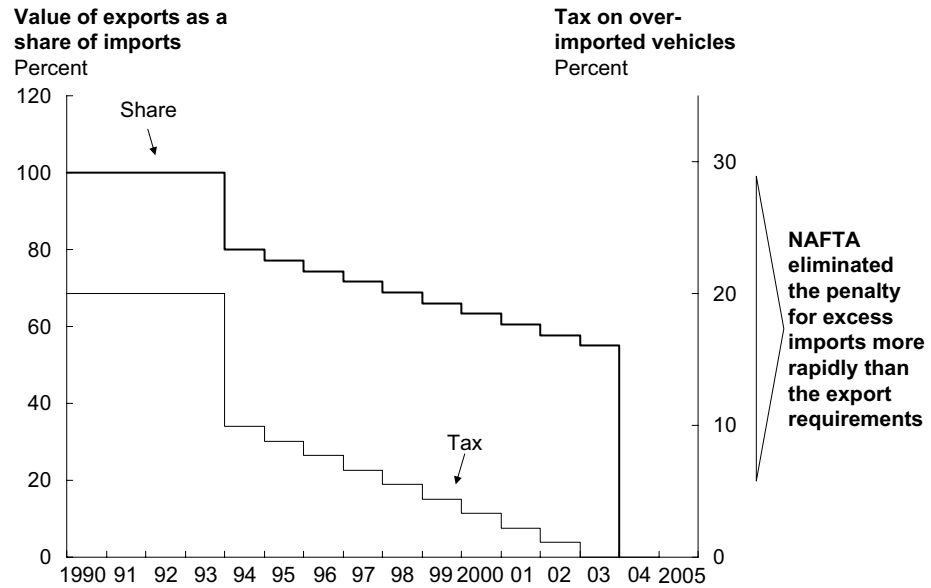
- Government policies. NAFTA and other trade agreements entailed a reduction in tariffs and in local content requirements (exhibits 9 and 10). Mexico also lifted the limit on foreign investment in auto components. These reforms encouraged OEMs to upgrade their existing facilities and to better integrate them with their North American production strategy.
- **Initial sector conditions.** Competition had already begun to increase at the start of the period under review due to import liberalization. At this time many of the plants were outdated and badly in need of upgrading if they were to compete in the North American market. This gap with best practice, coupled with intense competition, accounts for much of the investment in upgrading production and improving productivity.

FDI IMPACT ON HOST COUNTRY

- ¶ **Economic impact.** The industry has grown rapidly in both sales and production, despite a financial crisis and recession in 1995. Productivity growth has accelerated over the 1990s – and consumers have benefited as variety has increased and prices have fallen (Exhibit 11).
 - **Sector productivity.** Labor productivity grew by nearly 11 percent a year in the incremental FDI period, compared with seven percent a year in the earlier period. This improvement was due both to new FDI and to liberalization, which together facilitated several developments. These included: specialization and rationalization across countries, high capacity utilization due to strong U.S. economic performance, capital upgrades, and the adoption of better operational practices. In both periods, the levels of productivity growth compare favorably with those witnessed in other major developing countries during the same period.
 - **Sector output.** Unit production grew at 9.5 percent a year from 1994-2000, while value added grew by 15 percent a year, compared to four percent a year in the earlier period. The growth in vehicle production was fueled by growth in both the domestic and U.S. markets. This growth would not have been possible without the incremental FDI to expand capacity (Exhibit 2).
 - **Sector employment.** Employment in the focus period grew by four percent a year, compared to an annual decline of three percent in the earlier period. Employment declined early in the decade due to rising productivity and fell even further during the crisis of 1995. In recent years, rising production has more than offset rising productivity, and employment has risen, though it is still below its 1991 level (Exhibit 11).
 - **Supplier spillovers.** Liberalization of policy restrictions in vehicle assembly led to significant structural changes in components manufacturing, though productivity levels and growth are far lower than in seen assembly (Exhibit 12).
 - When local vehicle makers demanded better quality components at competitive prices, many suppliers were forced out of business or were acquired by foreign companies. The majority of first-tier suppliers were acquired by multinational companies.

Exhibit 9

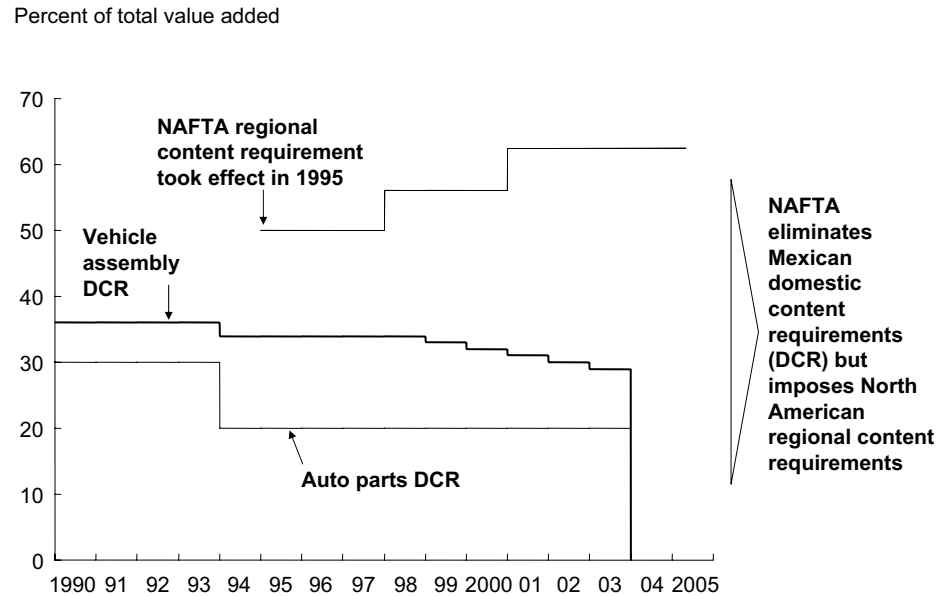
MEXICO EXPORT REQUIREMENTS UNDER NAFTA



Source: EGADE

Exhibit 10

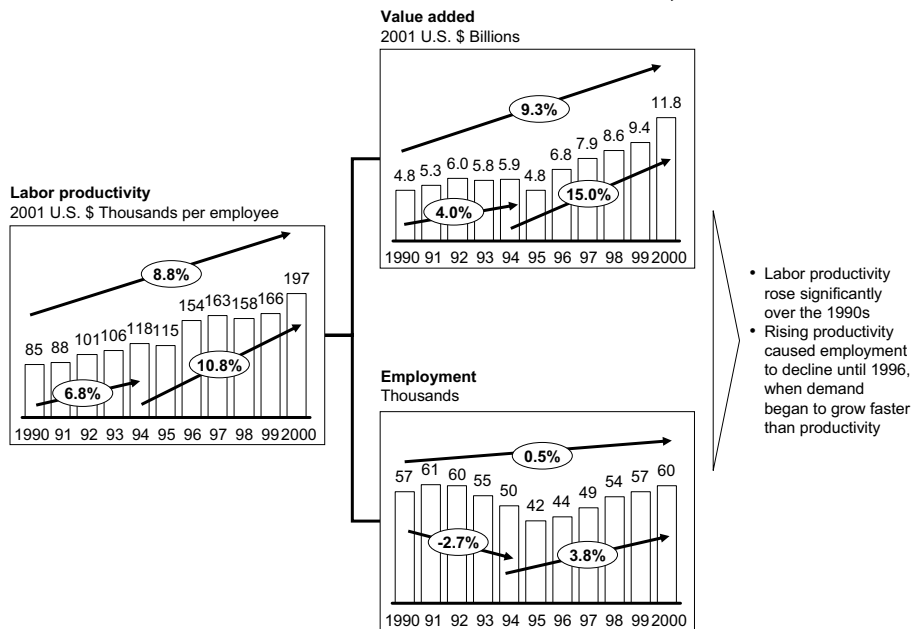
DOMESTIC VS. REGIONAL CONTENT REQUIREMENTS, 1990-2005



Source: EGADE

Exhibit 11

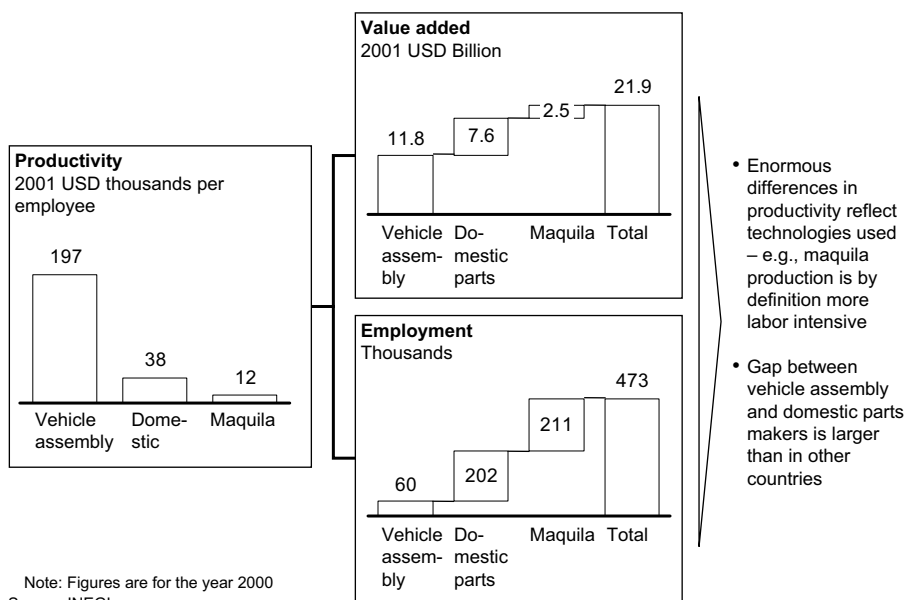
MEXICO VEHICLE ASSEMBLY LABOR PRODUCTIVITY, 1990-2000 ○ CAGR



Source: INEGI; team analysis

Exhibit 12

MEXICO LABOR PRODUCTIVITY IN ASSEMBLY AND AUTO PARTS, 2000



Note: Figures are for the year 2000
Source: INEGI

Exhibit 13

MEXICO DOMESTIC AUTO PARTS LABOR PRODUCTIVITY, 1990-2000

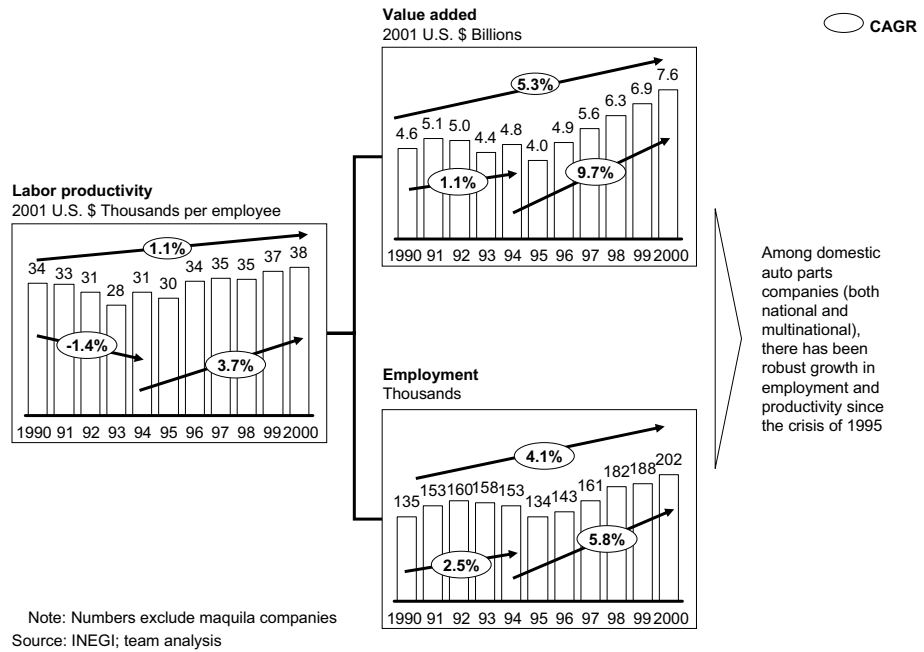
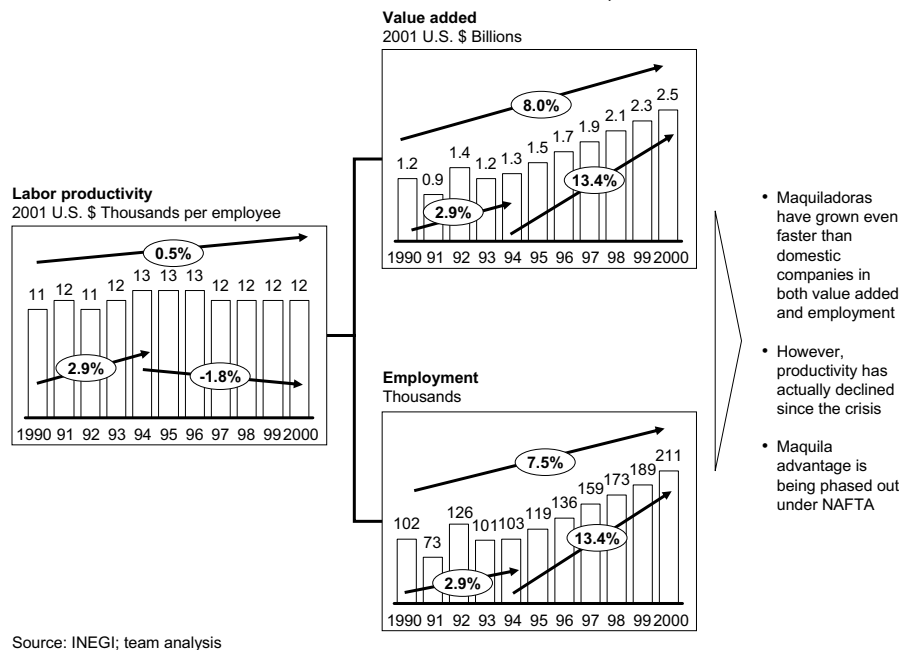


Exhibit 14

MEXICO MAQUILADORA LABOR PRODUCTIVITY, 1990-2000



- International companies brought new capital and better practices to the local market. But productivity in components grew much less than in assembly; it rose mildly among domestic suppliers, and declined slightly in the labor-intensive *maquiladoras*⁵ (exhibits 13 and 14).

¶ **Distribution of FDI impact.** Most companies (some luxury brands excluded) have seen margins decline as the competitive intensity has increased. Employment and wages have risen; quality and prices for consumers have improved; and the government has avoided giving large incentives.

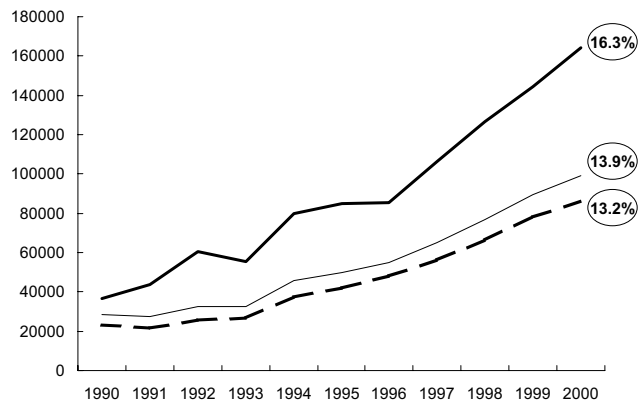
- **Companies.** Data on profitability is not available, but the evidence suggests that despite strong growth, OEMs have been facing slimmer margins in recent years. This is due to the intense level of competition, which is forcing OEMs to make ongoing improvements in quality and productivity while offering increasingly attractive prices and financing packages.
- **Employees.** Employment levels in Mexico have increased since NAFTA, and wage growth has been rapid.
 - Level. Employment declined in the mature FDI period, as productivity growth outpaced production growth. It began rising in 1994, at the start of the Incremental FDI period, thanks to NAFTA and strong growth in the U.S. market.
 - Wages. Wages appear to have risen even faster than average productivity – and have certainly risen faster than in the U.S. and other developed countries. Real wages in vehicle assembly rose by 16 percent a year; this may reflect the success of labor's bargaining power, in addition to improvements in productivity (Exhibit 15).
- **Consumers.** Consumers have fared best, though this is due more to market opening than to FDI.
 - Price decline. Real prices declined sharply, even when compared to declining vehicle prices globally (Exhibit 16). In recent years, OEMs have offered more attractive financing packages.
 - Product selection and quality. Model variety and quality has increased (Exhibit 17). By the end of the decade, defect rates were on par with, or even lower than, those of U.S.-made automobiles. In some cases, American customers have specifically requested vehicles made in Mexico rather than the same model made in the U.S.
- **Government.** Sector expansion in the 1990s has most likely had a positive effect on the government's budget through increased income taxes. Revenues grew so rapidly that they more than offset for declining margins. In addition, by not giving incentives, the federal and state governments have avoided problems similar to those seen in Brazil.

5. *Maquiladoras* were first established by the Mexican government in 1965 as part of the Border Industrialization program, in order to increase the employment opportunities for Mexican workers and to boost the economy. *Maquiladoras* are foreign-owned assembly plants that were allowed, on a temporary basis, to import free of duty machinery and materials for production or assembly by Mexican labor, and to re-export the products, primarily back to the U.S. This allowed foreign-owned companies to decrease their cost base by taking advantage of lower labor costs. Most plants are located on the Mexico-U.S. border.

Exhibit 15

MEXICO AUTO SECTOR WAGES, 1990-2000
2001 Pesos

— Vehicle assembly
- - - Automotive parts
— Overall average



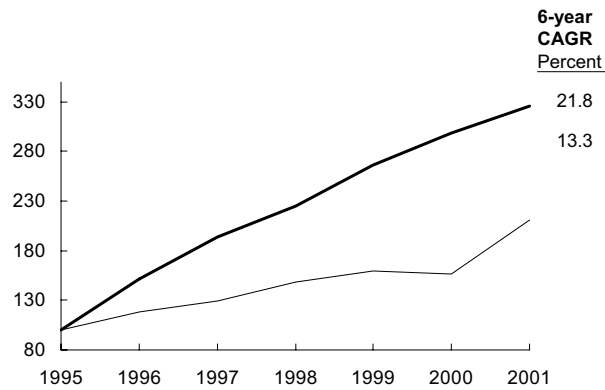
- Real wages rose most rapidly in vehicle assembly, reflecting faster productivity growth
- In both sub-sectors, real wages rose more rapidly than productivity

Note: Overall industry includes rubber products
Source: INEGI; team analysis

Exhibit 16

GENERAL AND VEHICLE PRICE LEVELS, 1995-2001
1995 = 100

— Consumer price index
— Retail vehicle price



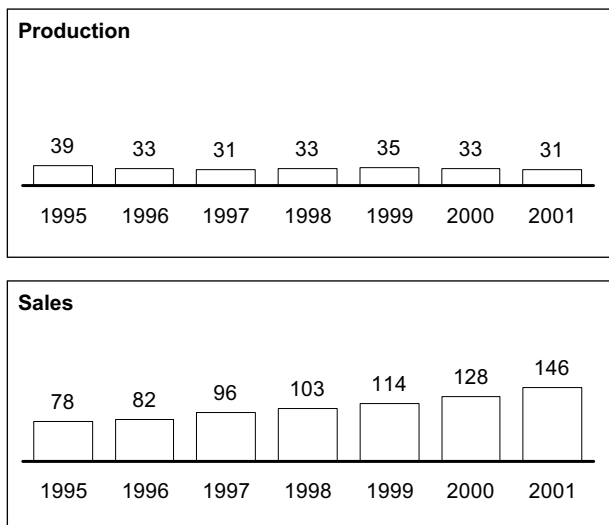
Vehicle prices have trailed the consumer price index

Source: INEGI; INPC

Exhibit 17

SPECIALIZATION IN PRODUCTION; DIVERSITY IN SALES

Number of models



- Liberalization of imports has allowed OEMs to specialize while offering more variety to domestic consumers

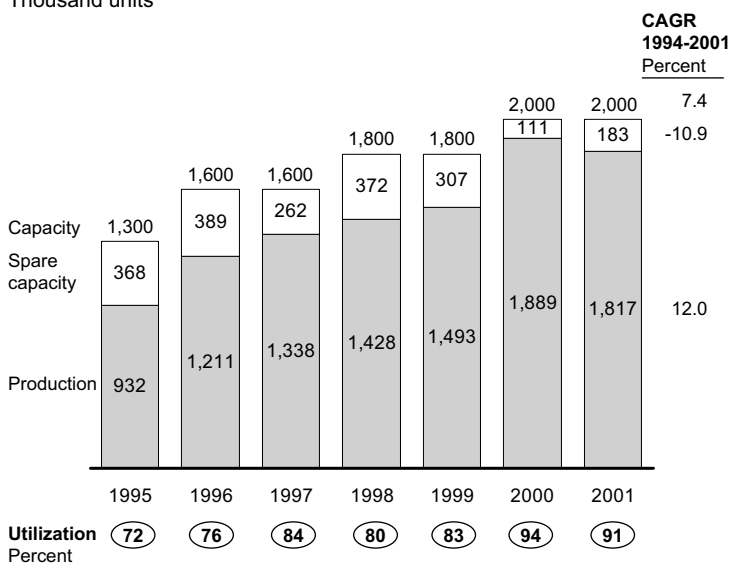
- Units per model produced have risen from 24,000 to 58,000 – and OEMs are benefiting from increased economies of scale

Source: Marketing Systems

Exhibit 18

CAPACITY AND UTILIZATION OF OEMS IN MEXICO – 1995-2001

Thousand units



- Veteran OEMs have expanded capacity at existing plants, rather than build new plants

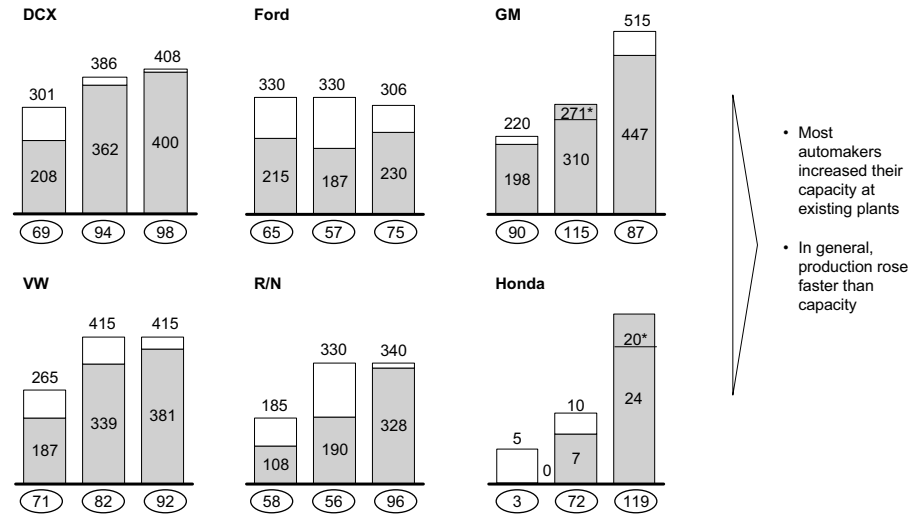
- Since 1995, production has outpaced capacity, resulting in high utilization rates

Note: Capacity figures are estimates
Source: AMIA; CSM worldwide

Exhibit 19

CAPACITY AND UTILIZATION OF OEMs IN MEXICO – 1995-2001

Thousand units



- Most automakers increased their capacity at existing plants
- In general, production rose faster than capacity

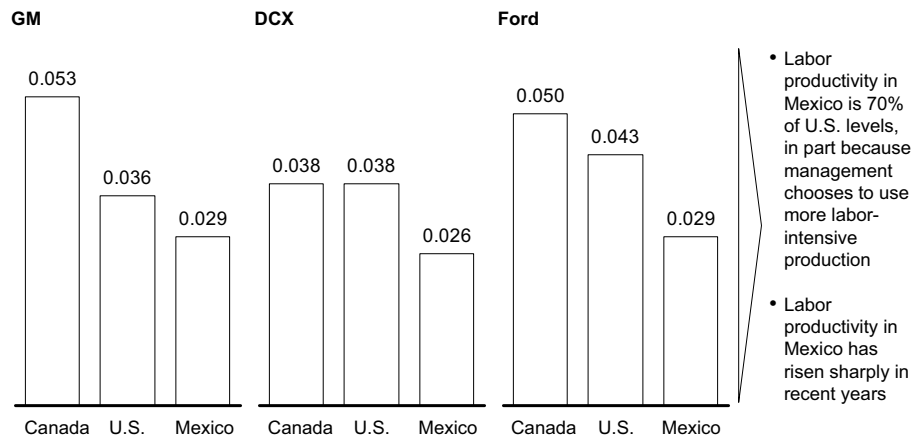
* For GM in 1998 and Honda in 2001, production exceeded normal full utilization levels

Source: CSM Worldwide

Exhibit 20

PHYSICAL LABOR PRODUCTIVITY IN NORTH AMERICA, 2001

Cars per person per hour



- Labor productivity in Mexico is 70% of U.S. levels, in part because management chooses to use more labor-intensive production
- Labor productivity in Mexico has risen sharply in recent years

Source: Harbour

HOW FDI HAS ACHIEVED IMPACT

The new economic policies exposed OEMs to more competition. They responded by specializing their production across North America while increasing consumer selection through imports, thereby achieving economies of scale. Adoption of lean techniques and more efficient organization of suppliers have also contributed to higher productivity.

¶ **Operational Factors.** The operational impact of additional FDI was mainly to expand capacity, increase the level of automation, and (to a lesser extent) improve quality, thereby making exports more attractive.

- **Capacity expansion.** The new wave of FDI brought the capital required for additional capacity. Capacity increased from about 1.3 million units in 1994 to 2.0 million in 2001, but since production volume was growing even more rapidly, capacity utilization rose as well (Exhibit 18). GM, VW, and DCX led the way in capacity expansion (Exhibit 19). FDI also enabled higher levels of automation and other production improvements.
- **Specialization.** While the number of models available to consumers nearly doubled from 1995 to 2001, the number of models being produced actually declined from 39 to 31 (Exhibit 17). Reducing the number of models while capacity was expanded enabled OEMs to capture economies of scale; plant activities were simplified, and OEMs had to invest less capital per vehicle.
- **Management practices.** OEMs in Mexico drew on the skills and expertise of their parent organization in adopting the practices of high-performing plants. Managers from advanced plants were transferred on a short-term basis to help move the plants to lean production techniques and more efficient relations with suppliers.

¶ **Industry dynamics.** Competition has increased to some extent due to FDI; most of the increase has been due to policy liberalization.

- FDI brought more competition in the form of new entrants and capacity build-up. OEMs lowered their prices in real terms (Exhibit 16) and offered zero-percent financing. Those who sold imports listed in dollars offered favorable exchange rates to customers in order to reach their sales targets.
- Most of the increase in competitive intensity is due to NAFTA and, in particular, to the increased availability of U.S. imports.

EXTERNAL FACTORS THAT AFFECTED THE IMPACT OF FDI

¶ **Country-specific factors.** Liberalization reforms have made FDI more effective. The financial crisis of 1995 did no lasting damage to the industry (Exhibit 1).

- **Relative position.** Mexico's proximity and well established ground and sea transportation to the U.S. has facilitated its integration into the North American market, both through competition with U.S. products and through exposure to best practices. Low wages in Mexico have caused managers to choose more labor-intensive production – a rational decision to accept lower labor productivity (Exhibit 20). (OEMs in Mexico have found that even rural workers with no manufacturing experience can be trained quickly).

- **Government policies.** Liberalization has enabled OEMs to rationalize production across North America and other geographies. The result is that OEMs can specialize by producing fewer models, thereby capturing economies of scale. Meanwhile, the variety of options available to consumers is steadily improving (Exhibit 17). The government normalized regulations and worked to attract suppliers, marginally improving the impact of FDI in assembly.
 - **Macroeconomic factors.** The most important macroeconomic factor has been robust growth in the U.S. market in the late 1990s. But the Tequila Crisis of 1995 led OEMs to export more, and may have actually sped up the process of specialization, putting OEMs in a better position to take advantage of the growing U.S. market.
- ¶ **Initial sector conditions.** By the time NAFTA began to take effect, at the start of the period under review, Mexico's auto sector was already becoming competitive and the gap with best practices was beginning to narrow. However, at that point the gap remained significant, leaving plenty of room for liberalization, competition, and the new wave of incremental FDI to have impact.

SUMMARY OF FDI IMPACT

Overall impact of FDI has been very positive after liberalization, as OEMs have rationalized production across North America while broadening model offering to domestic consumers. Rising productivity, coupled with high plant utilization, resulted in a large increase in value added, which was shared among various stakeholders in the form of investment returns, wages, and consumer surplus. The Mexican government also benefited from higher tax revenues and without giving away large incentives.

Exhibit 21

MEXICO AUTO – SUMMARY

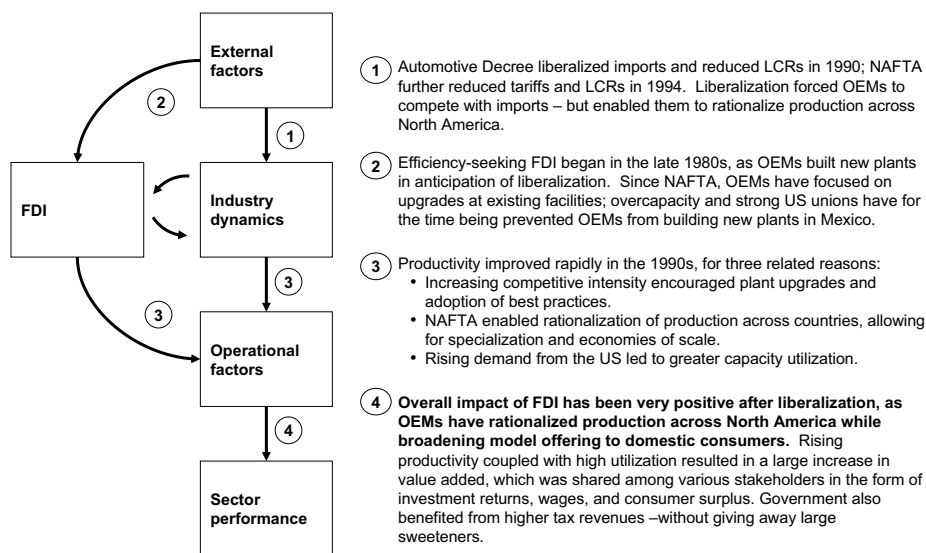


Exhibit 22

MEXICO AUTO – FDI OVERVIEW



• FDI periods	
– Focus period: Incremental FDI	1994-2000
– Comparison period: Mature FDI	1990-1994
• Total FDI inflow (1994-2000)*	\$3.7 billion
– Annual average	\$0.6 billion
– Annual average as a share of sector value added	6.5%
– Annual average as share of GDP**	0.10%
– Annual average per employee	~ \$12k
• Entry motive (percent of total)	
– Market seeking	30%
– Efficiency seeking	70%
• Entry mode (percent of total)	
– Acquisitions	0%
– JVs	0%
– Greenfield	100%

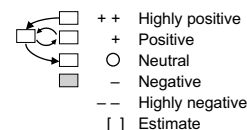
* Food retail including discount warehouses

** Using 2001 GDP

Source: SECOFI; Registro Nacional de Inversiones Extranjeras

Exhibit 23

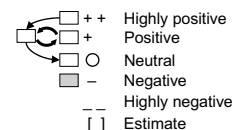
MEXICO AUTO – FDI's ECONOMIC IMPACT IN HOST COUNTRY



Economic impact	Sector performance during		FDI impact	Evidence
	Mature FDI (1990-94)	Incremental FDI (94-00)		
• Sector productivity (CAGR)	7%	11%	++	<ul style="list-style-type: none"> Productivity grew rapidly from the start of the decade, as a result of the competitive intensity created by import and price liberalization Further liberalization under NAFTA, coupled with strong growth in the US market, led to even more rapid productivity growth
• Sector output (CAGR)	4%	15%	++	<ul style="list-style-type: none"> Production growth was powered by growing exports, thanks to NAFTA and to a growing US market. The domestic market also grew significantly. It plunged in 1995, but managed to fully recover by 1998, and has continued to grow. But exports are still more important for the industry than domestic sales
• Sector employment (CAGR)	-3%	4%	+	<ul style="list-style-type: none"> Employment declined in the early years, as productivity growth outpaced production growth. But it began rising in 1994, thanks to NAFTA and to strong growth in the US market
• Suppliers	1%	0%	+	<ul style="list-style-type: none"> Value added and employment have grown for both domestic suppliers and maquilas. But productivity growth has been minimal: <ul style="list-style-type: none"> For domestic suppliers, productivity fell slightly in the early 1990s, then grew at 4% since NAFTA For the maquilas, productivity actually declined since NAFTA (but both the levels and the rate of change are relatively small)
Impact on Competitive intensity	++	++	+	<ul style="list-style-type: none"> Sector liberalization and entry of new players caused an increase in competitive intensity, and OEMs faced pressure to make dramatic improvements in productivity and quality. Nevertheless profit margins remained high, thanks to high market growth and capacity utilization

Exhibit 24

MEXICO AUTO – FDI's DISTRIBUTIONAL IMPACT IN HOST COUNTRY



Economic impact	Sector performance during		FDI impact	Evidence
	Mature FDI (1990-94)	Incremental FDI (94-00)		
• Companies				
– FDI companies	[+]	[+]	[+]	<ul style="list-style-type: none"> Reliable data on company profitability unavailable, but increases in productivity and capacity utilization suggest that profitability also rose
– Non-FDI companies	N/A	N/A	N/A	<ul style="list-style-type: none"> No domestic makers of light vehicles
• Employees				
– Level of employment (CAGR)	-3%	4%	+	<ul style="list-style-type: none"> Employment declined in the early years, as productivity growth outpaced production growth. But it began rising in 1994, thanks to NAFTA and to strong growth in the US market
– Wages	12%	14%	++	<ul style="list-style-type: none"> Wages appear to have risen even faster than average productivity. This may be due to the success of unions in profitable times
• Consumers				
– Prices	+	++	+	<ul style="list-style-type: none"> Real prices have declined – especially in recent years, as OEMs have offered more attractive financing packages
– Selection	+	++	+	<ul style="list-style-type: none"> Model variety and quality has increased, the specialization of production notwithstanding
• Government				
– Taxes/Sweeteners	+	+	+	<ul style="list-style-type: none"> Government has benefited from industry growth through higher tax revenues – and has avoided giving large sweeteners

Exhibit 25

MEXICO AUTO – COMPETITIVE INTENSITY

	Sector performance during		Evidence	Rationale for FDI contribution
	Mature FDI (1990-94)	Incremental FDI (94-00)		
Pressure on profitability			<ul style="list-style-type: none"> Liberalization meant that OEMs would have to compete for profits; still, profits were high in the late 90s thanks to strong demand 	<ul style="list-style-type: none"> FDI added to the pressure to gain high returns, but did not increase competition overall
New entrants			<ul style="list-style-type: none"> Newcomers entered as importers; none has yet built large capacity 	<ul style="list-style-type: none"> Competitive pressure from importers remains more significant than entry of new producers
Weak player exits			<ul style="list-style-type: none"> There were no exits in the 1990s (last significant exit was Renault in 1980s) 	<ul style="list-style-type: none"> New wave of FDI led to market entry, not (yet) any important exits
Pressure on prices			<ul style="list-style-type: none"> Real prices declined due to liberalization, and improvements in quality and productivity 	<ul style="list-style-type: none"> Price competition came from price liberalization, but was exacerbated by overcapacity
Changing market shares			<ul style="list-style-type: none"> Market shares shifted, but not drastically; newcomers took little share from the Big 5 	<ul style="list-style-type: none"> No evidence that market shares were more volatile because of FDI
Pressure on product quality/variety			<ul style="list-style-type: none"> Steady increase in number of models; expansion of new segments 	<ul style="list-style-type: none"> Imports brought more variety directly, and prompted OEMs in Brazil to increase their variety Entry of newcomers for production added to variety
Pressure from upstream/downstream industries			<ul style="list-style-type: none"> Being few in number, OEMs enjoyed market power relative to both suppliers and dealers 	<ul style="list-style-type: none"> Additional FDI and entry of new players was not enough to give power to suppliers and dealers
Overall			<ul style="list-style-type: none"> On the whole, real prices declined as quality and productivity were improving 	<ul style="list-style-type: none"> Competition was driven by import liberalization and exposure to the US market

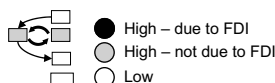
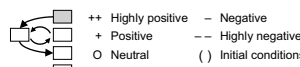


Exhibit 26

MEXICO AUTO – EXTERNAL FACTORS' EFFECT ON FDI

	Impact on level of FDI	Comments	Impact on per \$ impact	Comments
Level of FDI*	0.10%			
Global factors				
Global industry discontinuity	0		0	
Relative position				
Sector market size potential	0		+	Domestic market recovered after '95
Prox. to large market	++	• NAFTA included Mexico in N. Amer.	++	• Rationalization of production and growth of US market led to rapid growth in Mexican production volume
Labor costs	+	• Wages ¼ those of US (but other countries offer even lower wages)	+	
Language/culture/time zone	0		0	
Macro factors				
Country stability	0		0	• Crisis of 1995 had only limited impact on productivity, since OEMs shifted to exports
Product market regulations				
Import barriers	+	• Some barriers remained until 2004	0	
Preferential export access	++	• Ability to import and to access	++	• NAFTA made it possible for OEMs to shift quickly to exports
Recent opening to FDI	0	• NAFTA attracted more investment	0	
Remaining FDI restrictions	0		0	
Government incentives	0		0	
TRIMs	+	• LCRs and trade-balancing req's*	+	• TRIMs contributed to size – not to productivity – of local parts industry
Corporate governance	-	• Unions in the US restrained OEMs' ability to relocate to Mexico	+	
Taxes and other	0		0	• Headquarters aided in knowledge transfer
Capital market deficiencies	0		0	
Labor market deficiencies	0		0	
Informality	0		0	
Supplier base/infrastructure	0		0	
Sector initial conditions				
Competitive intensity	+(H)	• Import and price liberalization led OEMs to invest in upgrades	+(H)	• Competition led OEMs to focus on productivity (though the results were marred by overcapacity)
Gap to best practice	+(M)	• Gap caused OEMs to invest even more in state-of-the-art new facilities	+(M)	• Gap meant that the new wave of FDI had opportunity for real impact



* Average annual inflow as a percentage of GDP

** LCRs gradually phased out, but replaced with 62.5% regional content requirement for NAFTA. Also, other RCRs with other countries

Exhibit 27

MEXICO AUTO – FDI IMPACT SUMMARY

[] Extrapolation ++ Highly positive – Negative
 + Positive -- Highly negative
 O Neutral () Initial conditions

Level of FDI relative to sector*	FDI impact on host country		Level of FDI** relative to GDP	External Factor impact on	
	6.5%			Level of FDI	Per \$ impact of FDI
Economic impact			Global factors		
• Sector productivity	++		• Global industry discontinuity	O	O
• Sector output	++		• Relative position		
• Sector employment	+		• Sector market size potential	O	+
• Suppliers	+		• Prox. to large market	++	++
Impact on competitive intensity	+		• Labor costs	+	+
Distributional impact			• Language/culture/time zone	O	O
• Companies			• Macro factors		
– FDI companies	[+]		• Country stability	O	O
– Non-FDI companies	N/A		• Product market regulations		
• Employees			• Import barriers	+	O
– Level	+		• Preferential export access	++	++
– Wages	++		• Recent opening to FDI	O	O
• Consumers			• Remaining FDI restriction	O	O
– Prices	+		• Government incentives	O	O
– Selection	+		• TRIMs	+	+
• Government			• Corporate governance	–	–
– Taxes	+		• Taxes and other	O	O
			• Capital markets	O	O
			• Labor markets	O	O
			• Informality	O	O
			• Supplier base/ infrastructure	O	O
			• Sector initial conditions		
			• Competitive intensity	+ (H)	+ (H)
			• Gap to best practice	+ (M)	+ (M)

* Average annual FDI/sector value added

** Average (sector FDI inflow/total GDP) in key era analyzed

China Auto Sector Summary

EXECUTIVE SUMMARY

China has historically had strong FDI barriers. Earlier, only persistent companies were able to negotiate entry in the initial stages. VW and Beijing Jeep were the first to enter the market in the mid 1980s and Peugeot and Suzuki followed in the early 1990s. Entrance by FDI accelerated in the late 1990s. Among the most important recent entrants are GM, Honda and, more recently, Nissan and Ford. Driven by its market potential, China's auto sector is now a magnet for FDI. Most of the major global companies have now entered China, with an acceleration in the rate of entry since 1998. All of the companies that have entered the Chinese market have done so through joint ventures with Chinese state-owned enterprises (SOEs), as is required by the government.

Overall FDI has had a positive impact on China's auto sector. FDI has contributed by bringing products and processes to China that are far superior to those that were present in the SOE incumbents. A reduction in entry barriers in the late 1990s and early 2000s, allowed more FDI companies into the Chinese market. This helped increase the level of competition as evidenced by the rapid decline in prices and an increase in number and quality of models available. FDI has also helped create significant investment in China's components industry. Because of heavy OEM investments in creating supplier bases, high levels of localization have been achieved and China is today a large exporter of auto components.

The impact of FDI on China's auto industry has still not reached its maximum potential. Government license controls ensure that China's auto industry remains supply constrained and demand far outpaces supply. As a result, there is limited competition and OEMs operate at relatively low productivity levels. Prices remain 70 percent above the world average, and profitability remains above the expected risk-adjusted rate of return. As capacity continues to expand in the Chinese market with the decrease of entry barriers, we expect supply will outgrow demand, competition will increase, and prices and profitability will continue to decline. However, ongoing finished good import tariffs of 25 percent will continue to reduce the overall impact of FDI marginally, even when domestic supply outpaces demand.

SECTOR OVERVIEW

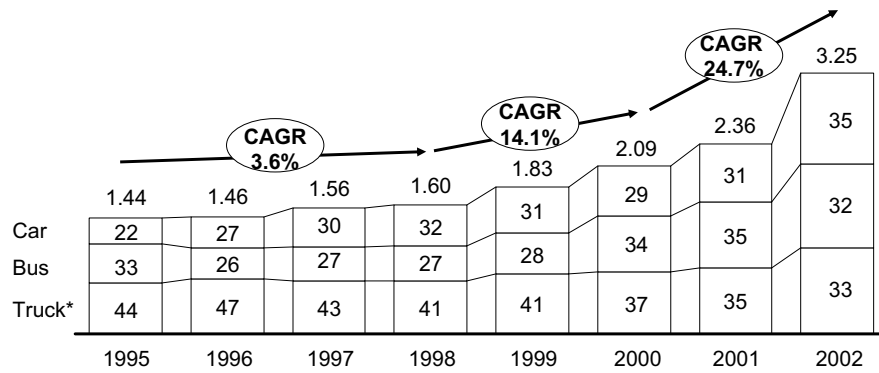
¶ **Sector overview.** The Chinese passenger car sector produced approximately 1.1 million automobiles in 2002, displaying an annual growth rate of 25 percent from 2000 (Exhibit 1). This represents around \$12 billion in sales and nearly \$3 billion in value add in the auto industry.

- Though China's sector is rapidly closing the market penetration gap – it still appears to be somewhat under-penetrated by global standards (Exhibit 2).
- Consumers are replacing governments and institutional purchasers rapidly as the biggest market segment; this has made economy automobiles an increasingly important segment (Exhibit 3).

Exhibit 1

**TOTAL CHINA AUTO SECTOR LOCAL PRODUCTION SALES
BY SEGMENT – 1995-2002**

Million units; percent

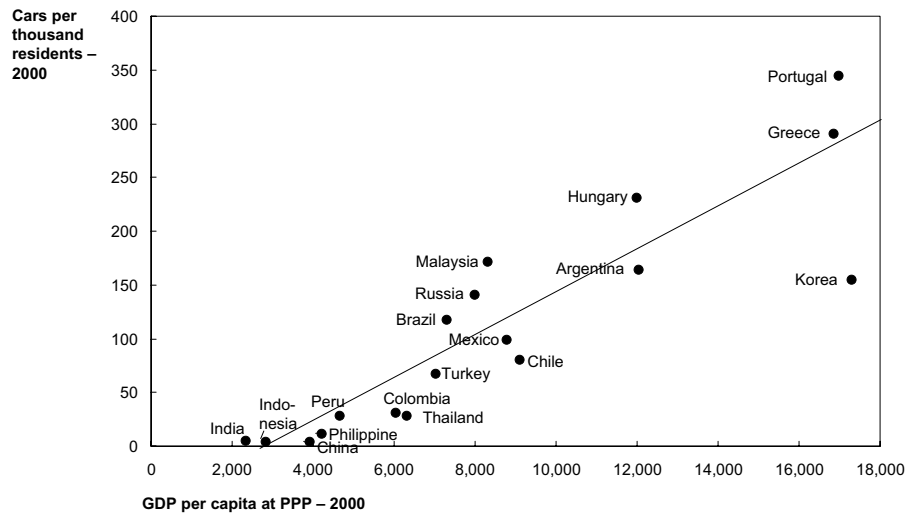


* Includes all trucks including light and mini-duty

Source: China Automotive Industry Yearbook, 1998-2002; Literature search

Exhibit 2

CARS PER THOUSAND INHABITANTS VS. GDP PER CAPITA – 2000



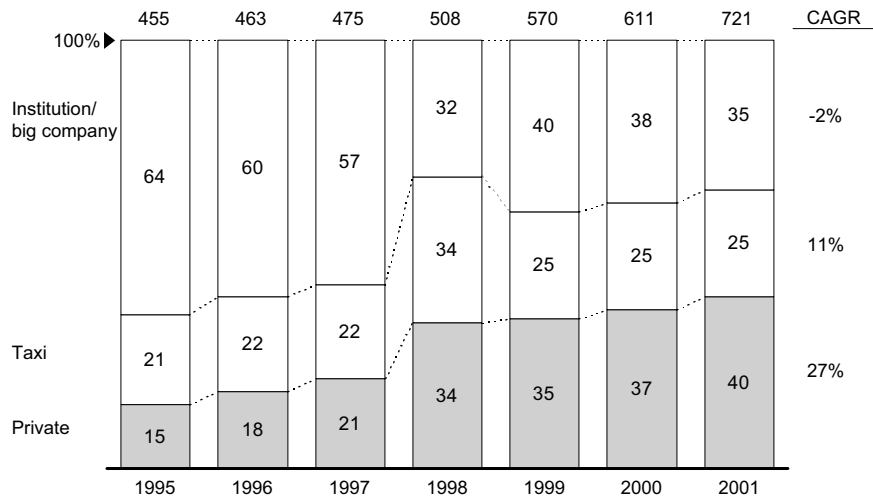
Source: DRI; World Bank; China Automotive Industry Year Book, 2001; China Statistical Year Book, 2001; McKinsey analysis

-
- Exports of components have grown rapidly to \$1.8 billion, though China still has a negative trade balance due to \$3 billion in components imports. Finished goods exports and imports are small (Exhibit 4).
- ¶ **FDI Overview.** China's vehicle sector attracted approximately \$4 billion of FDI from 1998 to 2001. While significant, this represents only around two percent of China's total FDI over this time period. Many of the major companies have now entered – with an acceleration in the rate of entry occurring post-1998. We have chosen to define the period before 1998 as "early FDI" and the period from 1998 to 2001 as "maturing FDI", and have made a comparison of these two periods (exhibits 5-8). To further understand the impact of FDI, we have compared the passenger auto sector (FDI-dominated) with the truck and bus sector (almost no FDI) where appropriate.
- **Early FDI.** VW and Beijing Jeep entered the market in the mid-1980s with Peugeot and Suzuki entering in the early 1990s. VW dominated the market throughout this time period, holding over 60 percent market share in 1995.
 - **Maturing FDI.** Entrance by FDI accelerated in the late 1990s. Among the most important recent entrants are GM, Honda and, more recently, Nissan and Ford. All of these companies entered the Chinese market through joint ventures with Chinese SOEs, as is required by the government.
- ¶ **External Factors driving the level of FDI.** China's market potential has been the strongest attractor of FDI – especially as some of this potential began to be realized in the late 1990s and early 2000s. Several government policies have had positive or negative influences on FDI, with the entry barriers to FDI being a key inhibitor.
- **Country specific factors.** China's market – even though income per capita is still relatively low – is perceived by FDI entrants to have significant growth potential. Furthermore, import barriers and TRIMs have increased the amount of FDI by making vehicle import impossible, and requiring OEMs to invest in the creation of a local supply base. FDI barriers (each company negotiates a specific entry agreement with the government) markedly slowed FDI entry, especially prior to the entry of GM and Honda.
 - Sector market potential. China's market offers significant growth potential, especially since prior to FDI, high prices reduced penetration.
 - Import barriers. Though the Japanese auto companies in particular had hoped to gain sales in China through imports, the Chinese government maintained a combination of high import tariffs, quotas, and local content requirements to protect the local market. Once FDI companies had entered the market with competitive models, this meant that a company had to manufacture in China to have any chance at capturing local market share.
 - FDI barriers. Entry to China is by no means easy even today. Both Honda and GM spent more than four years negotiating with the Chinese government to set up joint ventures in China. Ford, which was initially excluded, was later able to partner with Changchun Auto. These FDI barriers reduced the amount of total FDI in this study's focus period.

Exhibit 3

SALES OF PASSENGER CARS BY SEGMENT, 1995-2001*

Thousand units, percent



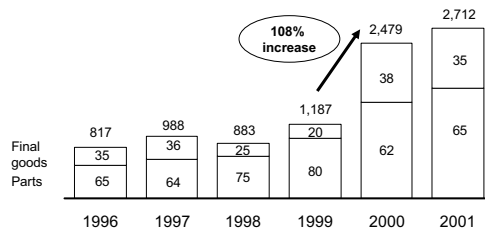
* Including imports
Source: Literature search, McKinsey analysis

Exhibit 4

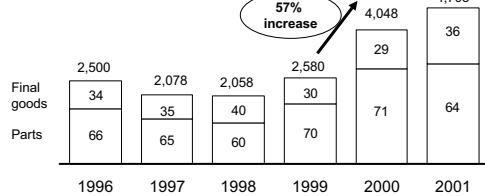
TRADE IN AUTO AND AUTO PARTS

\$ Millions; percent

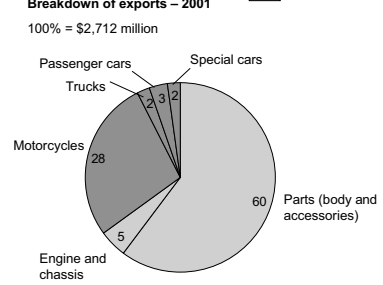
Exports



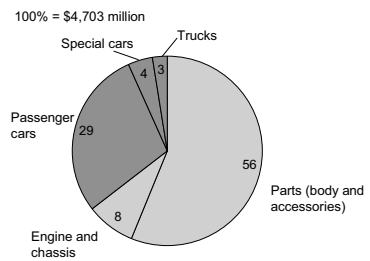
Imports



Breakdown of exports – 2001
100% = \$2,712 million



Breakdown of imports – 2001
100% = \$4,703 million



Source: China Automotive Industry Yearbook, 1996-2001

Exhibit 5

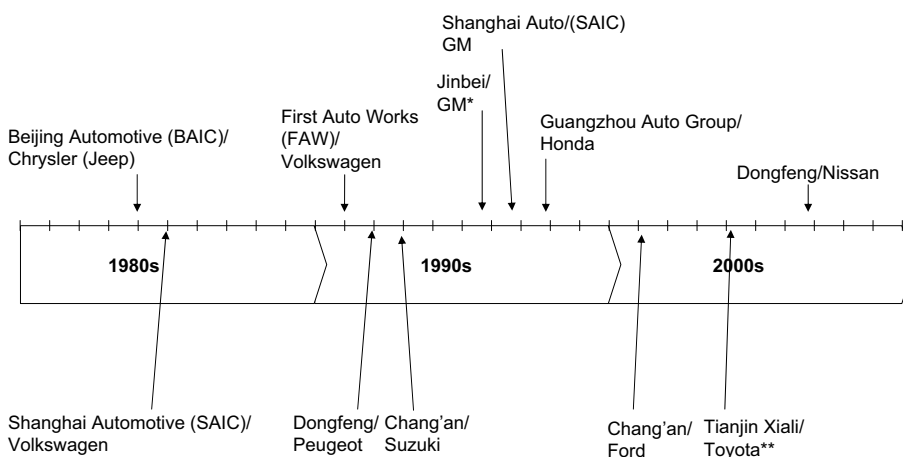
ERA ANALYSIS OF CHINA AUTO INDUSTRY

	Completely Closed Pre-1985	Limited Foreign Participation 1985 - 1997	Growing Foreign Participation 1998 - 2001	Post WTO 2001 and later
External factors	<ul style="list-style-type: none"> No imports or foreign investments in auto sector 	<ul style="list-style-type: none"> Limited JVs allowed, with government approval High tariffs on finished-vehicle imports together with licenses and quotas Low entry barriers for local producers due to government protection 	<ul style="list-style-type: none"> Government allowed and encouraged more JVs Highly government interventions via screening, foreign equity limits, local content requirements Distribution still controlled by the government 	<ul style="list-style-type: none"> WTO will reduce tariffs to 25% and eliminate quotas by 2006 Regulations on foreign investment in downstream industries (distribution & financing) would be removed
Industry dynamics	<ul style="list-style-type: none"> Three major SOE auto makers Planned economy with no market competition 	<ul style="list-style-type: none"> VW became the first and the only dominant foreign JV partner that virtually locked on market for 10 years 	<ul style="list-style-type: none"> Increasing car models and declining prices Four major car maker JVs dominated the market Vertically integrated players emerged 	<ul style="list-style-type: none"> More competition in the passenger car market, raise requirement on high quality and low price Increasing export in parts
Performance	<ul style="list-style-type: none"> Extremely backward production techniques with few models, using Soviet techniques /design Production aimed entirely at government purchase 	<ul style="list-style-type: none"> High price and high profitability for auto makers Profitability achieved with high cost structures due to the sub-optimal scale of the supplier industry 	<ul style="list-style-type: none"> Improved productivity Most car OEMs remained to be more profitable than their global peers 	<ul style="list-style-type: none"> Pressure on price may lead to profitability decline, but economy of scale and improved cost in supplier industry would help to slow down the drop Continuous capacity building may bring the risk of overcapacity for major car OEMs

Source: McKinsey analysis

Exhibit 6

OEM ENTRY IN CHINA



* Set up in 1992; restructured and expanded in 1998

** JV created in 2000, however production did not begin until October 2002; Tianjin Xiali was a standalone company before the JV

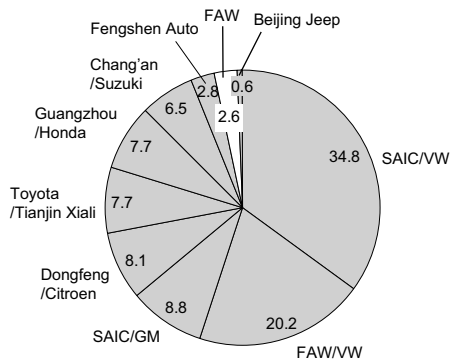
Source: Company homepages; literature search; China Auto Industry Yearbook

Exhibit 7

CHINESE PASSENGER CAR OEMS' MARKET SHARE, 2001

Percent

Market share of JVs



• 100% = 721,000 units
 • Total market share of JVs = 97 %

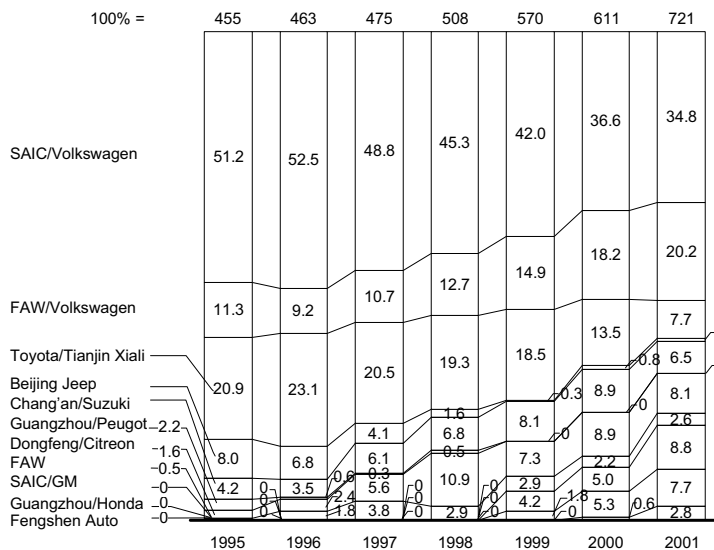
JV	Foreign Partner	Local Partner
• SAIC/VW	• VW	• SAIC
• FAW/VW	• VW	• FAW
• Toyota/Tianjin Xiali	• Toyota	• TAIC
• Dongfeng/Citroen	• Citroen	• Dongfeng
• Chang'an/Suzuki	• Suzuki	• Changan
• SAIC/GM	• GM	• SAIC
• Guangzhou/Honda	• Honda	• Guangzhou Auto
• Beijing Jeep	• Daimler-Chrysler	• BAIC
• Fengshen Auto	• Yunbao Auto (from Taiwan)	• Dongfeng Jingan Auto

Source: China Automotive Industry Yearbook

Exhibit 8

PASSENGER CARS MARKET SHARES – 1995-2001

Percent; thousand vehicles



• More players entered into passenger cars market, with two late comers (SAIC/GM and Guangzhou/Honda) gained more than 16% of the market share in 3 years

• Some market leaders lost significant market shares due to more intensive competition

Source: Auto and Parts Magazine

- **Initial sector conditions.** Low competitive intensity has created high profitability for OEMs (Exhibit 9), thus making China an attractive market. Furthermore, the gap with best practice operations – as evidenced by outdated models such as the Santana and a significant productivity gap – strongly encouraged the entrance of new FDI companies.

FDI IMPACT ON HOST COUNTRY

¶ **Economic impact.** Labor productivity and total factor productivity (TFP) grew in both the maturing FDI period and the early FDI period, though TFP growth accelerated in the later period. Sector output also accelerated rapidly, especially after 2000, while employment grew marginally.

- **Sector productivity.** To isolate the impact of FDI, we compared passenger auto productivity growth with that of trucks and buses during the same time period. While FDI controls 98 percent market share in passenger auto, it is virtually non-existent in truck and bus manufacture.⁶ We conclude that FDI had a marked impact on productivity levels, though truck and bus productivity is now growing rapidly as well, driven by state sector restructuring (exhibits 10-14).

- **Growth.** Both trucks and buses and automobiles grew rapidly during period under review – but for very different reasons. Productivity growth in automobiles was driven by large increases in value added while inputs were increasing. With the rapid income growth in China, international companies were well prepared to offer higher quality models to meet the demand. Productivity increased as new companies entered with high-productivity plants and existing OEMs improved performance as a result of increasing competition. In trucks and buses, the improvements were driven by both growth in value added but also by significant cuts in employment resulting from SOE restructuring.

Passenger auto. Labor productivity growth in passenger auto was stable at approximately 30 percent per annum from 1995-2001; capital productivity, meanwhile, dipped by 25 percent per annum from 1995-1998, then accelerated to over 20 percent a year from 1998- 2001. The drop in capital productivity can be explained by a sharp investment in new fixed assets between 1995 and 1997 (investment made ahead of demand), which then slowed in the 1997-2001 time period.

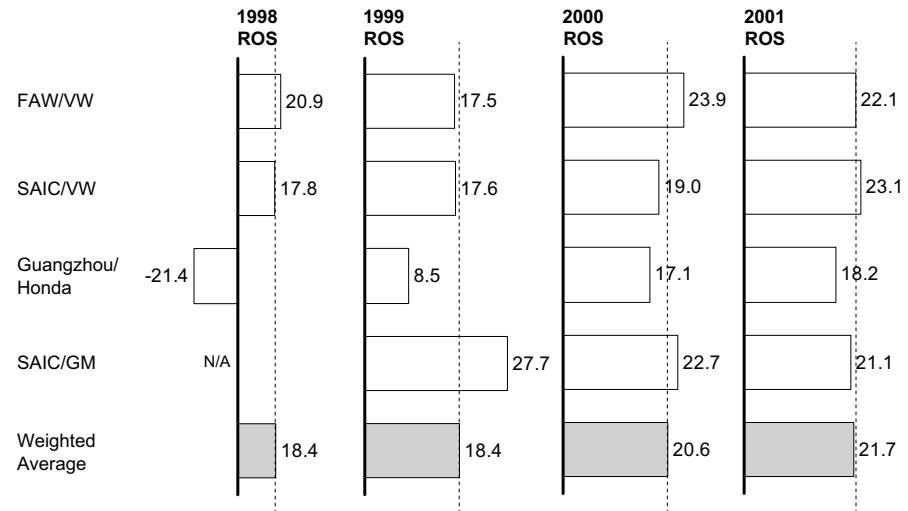
Trucks and buses. Labor productivity grew at 10 percent CAGR from 1995-1998, then accelerated to 41 percent CAGR in 1998-2001. Capital productivity showed a drop similar to that seen in passenger automobiles in 1995-1998 (though somewhat less severe) – and accelerated to 21 percent CAGR in 1998-2001.

6. Since the automobile and truck and bus industries manufacture similar products, they provide a good mechanism for understanding the impact of FDI. Note that we have not carried out a full examination of the truck and bus industries and cannot, therefore, explain these sectors' performance in the same detail as we can in passenger automobiles. However, greater FDI for passenger automobiles might be explained by the differences in import tariffs between automobiles and trucks/buses; these are from 80-100 percent for automobiles and 50 percent for trucks and buses. However, because of the WTO agreement, the significant differences between these segments will be eliminated over time. By 2006, tariffs will be 25 percent for both automobiles and buses and between 15 to 25 percent for trucks.

Exhibit 9

PASSENGER CAR JOINT VENTURE PROFITABILITY

Percent



Source: China Automotive online database; McKinsey analysis

Exhibit 10

CAPITAL PRODUCTIVITY CHINA AUTO SECTOR, 1995-2001

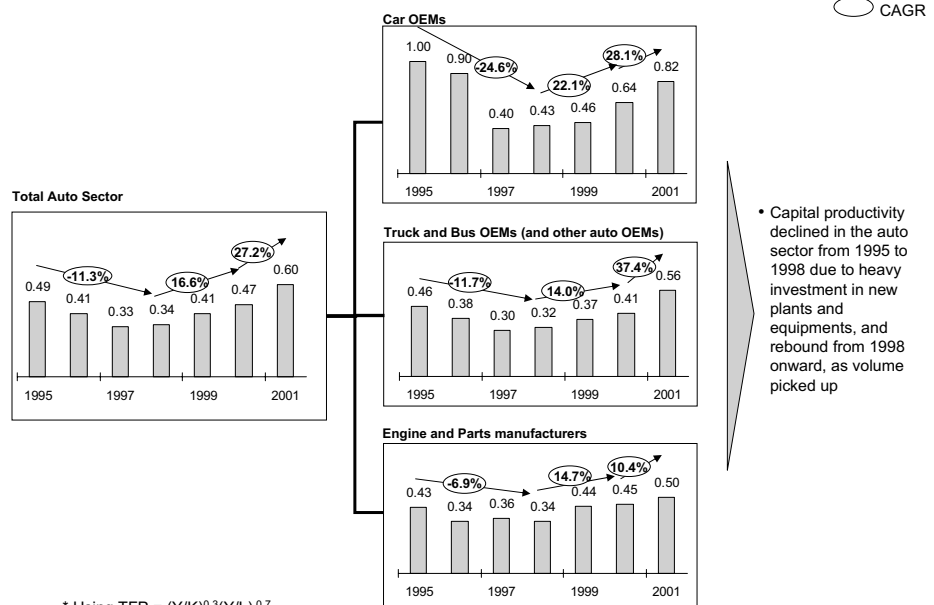
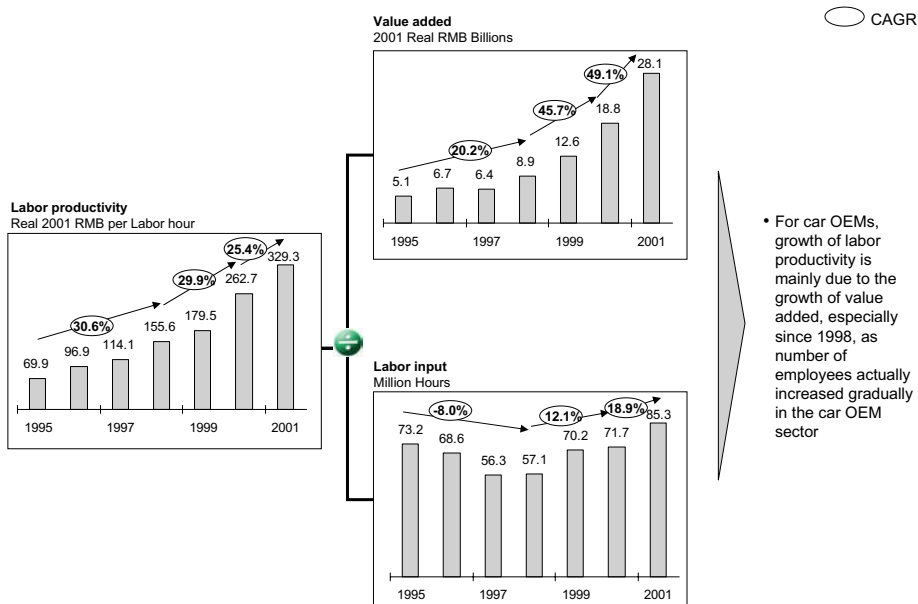


Exhibit 11

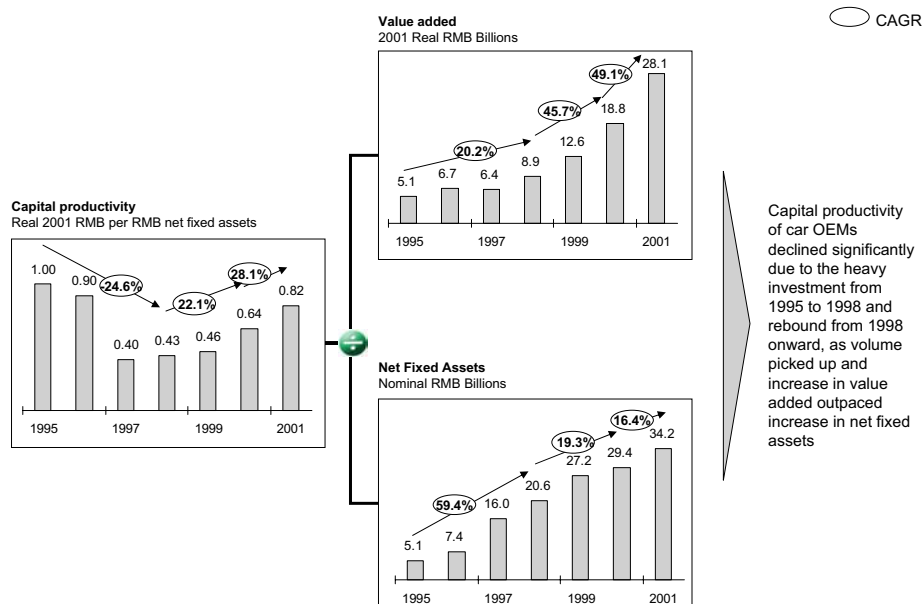
LABOR PRODUCTIVITY OF CAR OEMs, 1995-2001



Source: China Auto Industry Yearbook 1996-2002; McKinsey analysis

Exhibit 12

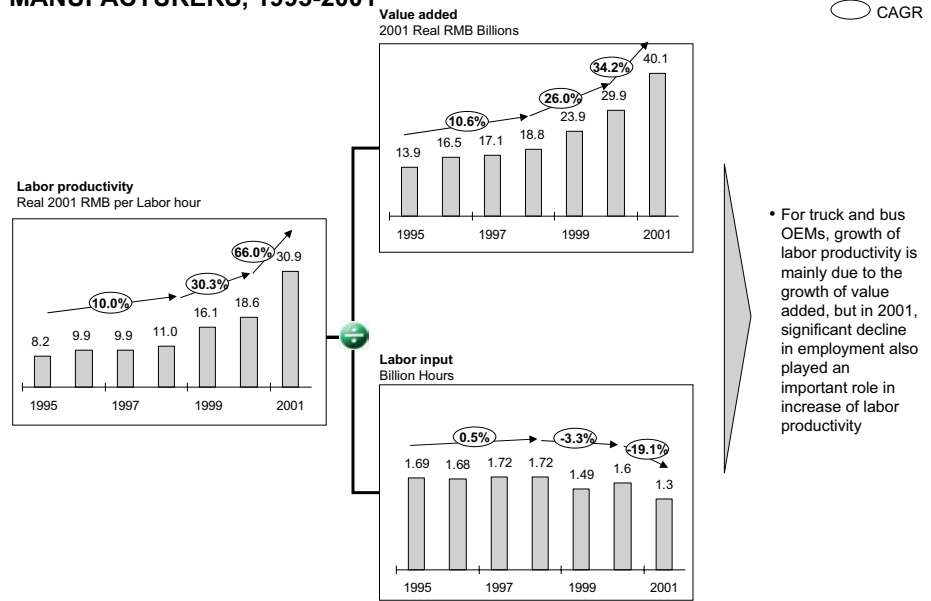
CAPITAL PRODUCTIVITY OF CAR OEMs, 1995-2001



Source: China Auto Industry Yearbook 1996-2002; McKinsey analysis

Exhibit 13

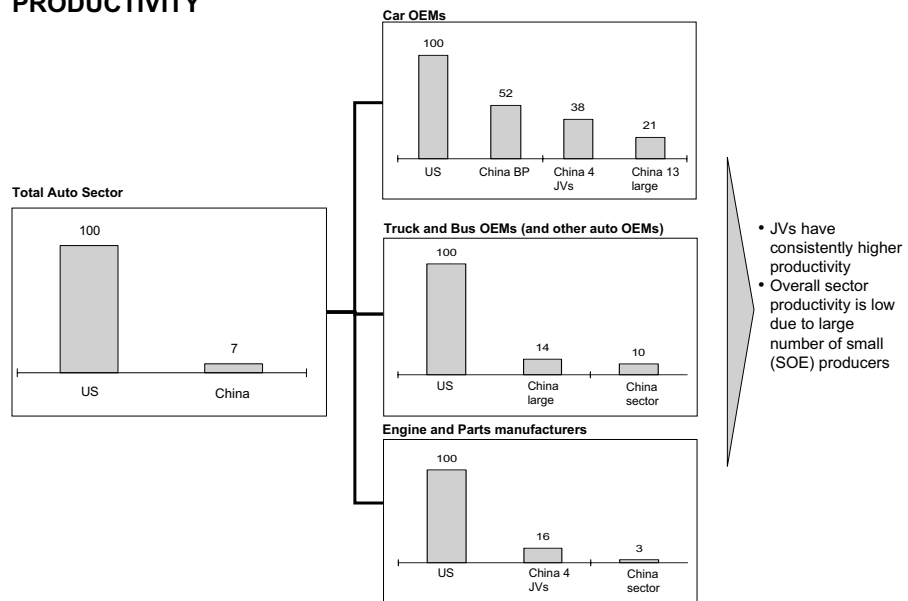
LABOR PRODUCTIVITY OF TRUCK AND BUS MANUFACTURERS, 1995-2001



Source: China Auto Industry Yearbook 1996-2002; McKinsey analysis

Exhibit 14

COMPARISON BETWEEN CHINA (2001) AND US LABOR PRODUCTIVITY



Source: China Automotive Industry Yearbook 1996-2002; McKinsey analysis

-
- **Levels.** Labor productivity levels in passenger autos are significantly higher than those seen in trucks and buses. Given that the industries are somewhat similar and have similar inputs to create the finished product, it appears that FDI may have played a role in the earlier development of higher productivity in the passenger car segment.
 - Passenger car.** The average productivity levels across thirteen joint ventures are at 21 percent of U.S. levels; a sample of four large joint ventures shows that they achieve 38 percent U.S. levels, and a best practice company achieves 52 percent U.S. levels.
 - Trucks and buses.** The sector as a whole achieves only 10 percent of U.S. levels and a sample of large companies shows a level of 14 percent.
 - **Sector output.** Growth in value-added accelerated sharply in the maturing FDI period, to over 45 percent per annum. This contrasts with only 20 percent in the 1995-1998 period. One cannot trace this acceleration to increased GDP growth, as real GDP growth was similar in both periods, at about seven percent CAGR. There are several possible explanations for the difference in growth rates. It might be due in part to the increasing number of Chinese households crossing the 'automobile affordability threshold' income of \$14,500 per household. Financing has also become available increasingly in the period under review, helping spur the acceleration. Finally, increasing competition – as evidenced by lower prices – helped induce growth. This is where FDI played a stronger role by creating more competition (see "How FDI has achieved impact" for further details).
 - **Employment.** Employment grew at roughly 14 percent per annum in the maturing FDI period, while having declined by 8 percent per year in the earlier period. Output and employment growth seem to be tightly linked; employment growth, therefore, can only be attributed to FDI in the same proportion that output growth is (see above for more details).
 - **Supplier spillovers.** Most FDI entrants made significant investment in building supply bases. For example, GM and Ford both invested in anticipation of their entry in 1998 – though only GM was granted permission to enter at that time and Ford's suppliers remained to serve other OEMs (and eventually Ford when it entered). Because of heavy OEM investments in creating supplier bases, high levels of localization have been achieved (exhibits 15 and 16).
- ¶ **Distribution of FDI impact.** FDI-companies, non-FDI companies, consumers, employees, and the government have all benefited from increasing FDI in China. Many FDI companies have benefited from risk-adjusted profits, though some FDI-companies who have lost out. Consumers have benefited from the continuous decrease in prices and increases in quality and number of models available, though additional benefits will be captured as competition continues to intensify.
- **Companies**
 - FDI companies. FDI firms have generally performed very well in China – with a pre-tax return of sales in excess of 20 percent as compared to five percent in the rest of the world (Exhibit 17). However, some firms (such as Jeep and Peugeot) have been less successful, with large losses and low market share (Exhibit 8). Key success factors in the market include

Exhibit 15

OEMs' INVESTMENT IN BUILDING LOCAL SUPPLY BASE – GM EXAMPLE

Joint Venture	Location	Formed In	Chinese Partner	Products
Saginaw Zhejiang Xiaoshan Steering Gear	Xiaoshan (Zhejiang)	1996	Zhejiang Wanda Steering Gear Co.	Steering columns, intermediate shafts, steering gears
Shanghai Saginaw Steering	Shanghai	1996	Dongfeng Motors	Pinions and driving gears
Asia-Pacific Braking Systems	Zhejiang	1996	Zhejiang Asia-Pacific Mechanical/Electrical Group	Braking components and assemblies
Hubei Delphi Automotive Generator Group	Wuhan	1996	Hubei Super-Elec Auto Electric Motor Ltd.	Generators
Shanghai Delco Battery	Shanghai	1995	Shanghai Mechanical/Electrical Industrial Investment Co.	Enclosed maintenance-free batteries
Packard Electric BaiCheng	Baicheng (Jilin)	1994	Baicheng Auto Wires	Ignition wires, wire harnesses
Packard Sanlian	Shanghai	1995	Shanghai Sanlian Wire Harness	Wire harnesses
Saginaw Norinco Ling Yun Drive Shaft	Zhuozhou (Hebei)	1995	Norinco China North Industries Group	Axle shafts and constant velocity joints
Wanyuan GM Electronic Control Co.	Beijing	1994	Wanyuan Industrial Co.	Engine management systems
Packard Hebi	Hebi (Henan)	1995	Hebi Auto Electrical	Central distribution terminal, connectors
Delphi Shanghai Steering and Chassis Systems. Co	Shanghai		(Wholly owned by Delphi)	Steering and brake system

Including wholly-owned ventures, GM(Delphi) has invested well over \$200 million in China to date

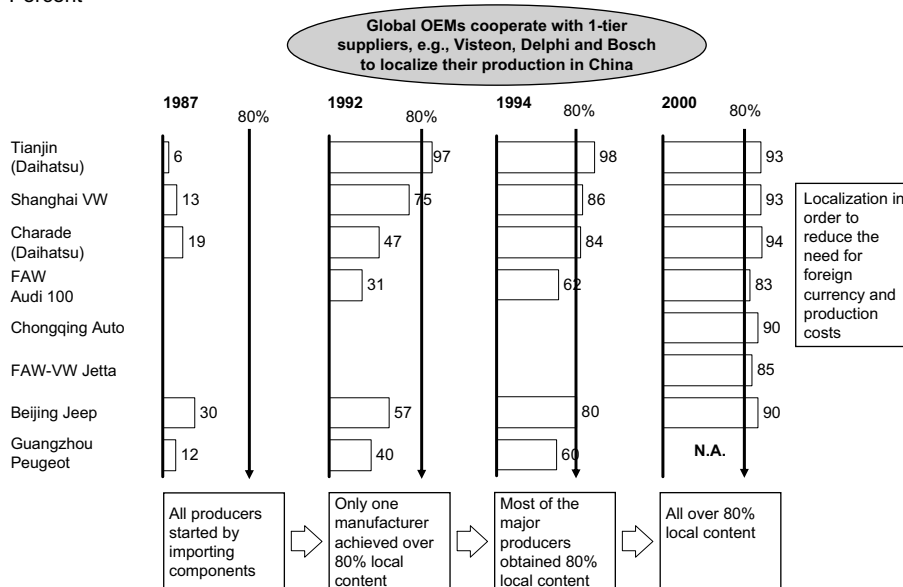
Source: Asian News Service; Financial Times; Dow Jones News Service; Ward's Auto World

Exhibit 16

LOCAL CONTENT INCREASE

NOT EXCLUSIVE

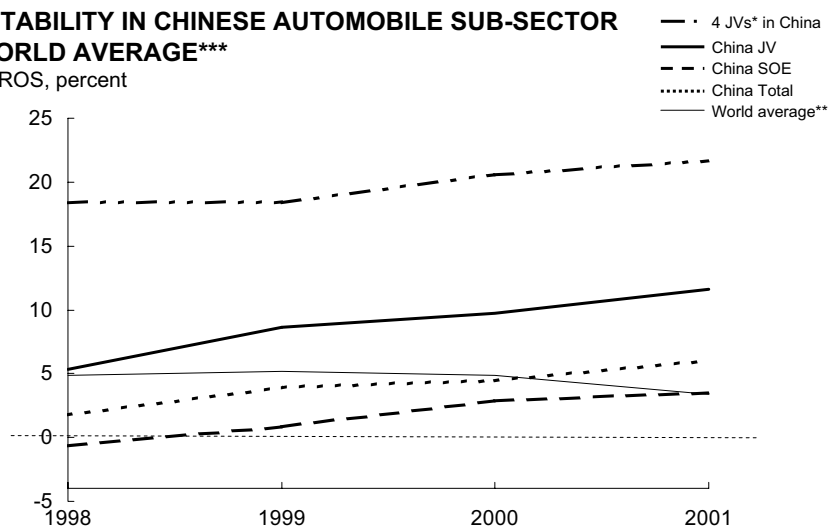
Percent



Source: Literature search; China Infobank

Exhibit 17
**PROFITABILITY IN CHINESE AUTOMOBILE SUB-SECTOR
VS. WORLD AVERAGE*****

Pre-tax ROS, percent



* 4 top JVs are FAW/VW, SAIC/VW, Guangzhou/Honda, SAIC/GM

** The world average is the non weighted average of ROS of GM, DCX, Ford, Toyota, VW, Honda, Renault & Nissan, PSA and BMW; it includes non manufacturing activities of OEMs, and the 9 companies may use various accounting standards

*** Non-risk adjusted ROICs would range between 20% (at GM capital structure) and 80% (at Honda capital structure), indicating that this indeed represents excess returns

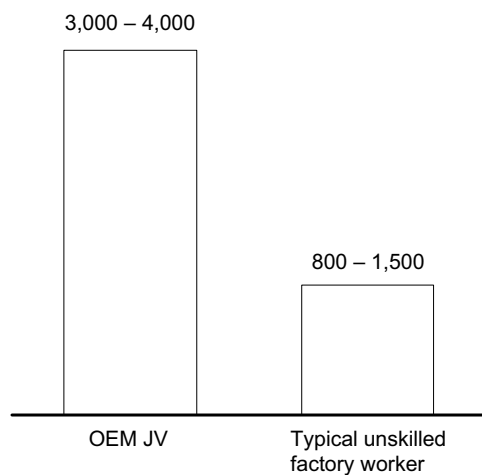
Source: China Automotive Yearbook; McKinsey analysis

the chosen partnership strategy, product and positioning, servicing strategy, and the building of a strong supplier base.

- Non-FDI companies. The immediate impact of FDI in the mid-1980s was the complete domination of the passenger automobile market by international joint venture companies and a corresponding reduction in the market share of non-FDI companies. Though the Chinese government has enacted a policy aimed specifically at allowing Chinese companies to eventually re-emerge in the market – including the joint venture requirement for all FDI and other trade barriers – Chinese companies show little sign of developing into strong, standalone ability in auto manufacture. Furthermore, according to our interviews, they have not made substantial headway in transferring best practices from joint venture operations to non-joint venture operations. However, they have benefited from the high profits generated by their joint ventures themselves.
- **Employment**
 - Employment levels. An employment increase in the latter period can be attributed to output growth. This growth in output can in turn be attributed to the increasing numbers of Chinese population who are able to afford automobiles because of greater income, increased availability of financing, and lower prices due to the growing level of competition due to more FDI-players in the market.
 - Wages. Wages are higher in FDI-auto companies than in general manufacturing jobs. Wages in one auto company range from RMB 3,000-4,000 monthly for a line worker, while an unskilled manufacturing worker in China typically earns RMB 800-1,200 per month (Exhibit 18).
- **Consumers**
 - Price declines. Prices increased by 10 percent in the overall economy between 1995-2001 while they decreased by 31 percent in passenger automobiles over the same period. We believe the continually increasing number of FDI-companies in the market place helps explain this price decline (Exhibit 19).
 - Product selection and quality. The number of models available to Chinese consumers grew rapidly over the period under review. While the outdated Santana dominated sales through the early-1990s, more up-to-date models, such as the Accord and the Buick Regal, began to gain market share in the late-1990s and early 2000s. Quality improved continuously, reaching international levels. Again, the entry of FDI companies helps explain this improvement in selection and quality (exhibits 20-22).
- **Government.** Tax revenues from the auto sector, tied to the growth in output, increased steadily throughout this period. FDI contributed to additional government revenues to the extent that it helped spur output growth (Exhibit 23).

Exhibit 18**WAGE COMPARISON – AUTO OEM JOINT VENTURE VS. CHINA AVERAGE**

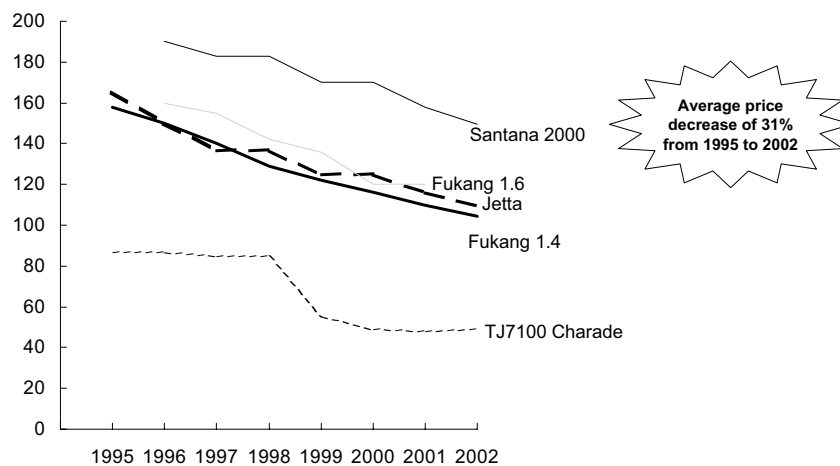
Unskilled labor, wage per month in RMB



Source: Interviews

Exhibit 19**PRICE EVOLUTION FOR DIFFERENT MODELS**

Thousand RMB (nominal values)

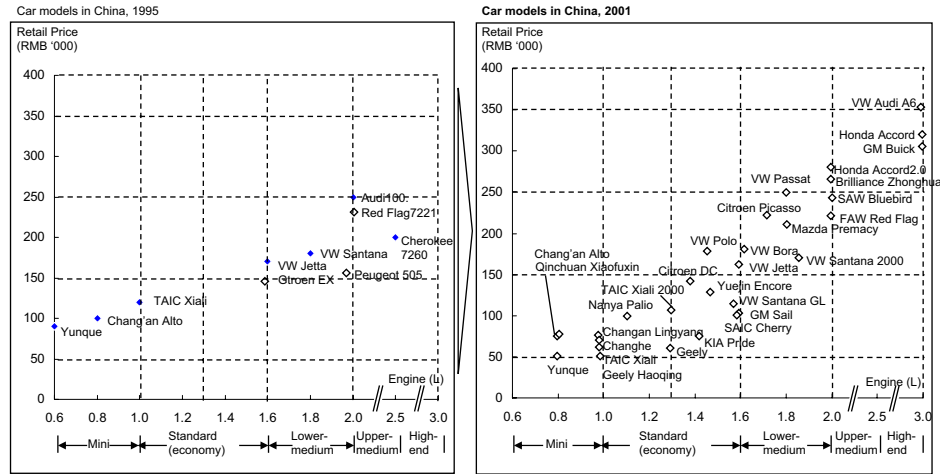


Note: List price does not necessarily reflect transaction price; incentives have to be investigated further; other possible methodological issues include change in car quality

Source: Access Asia; Press Search

Exhibit 20

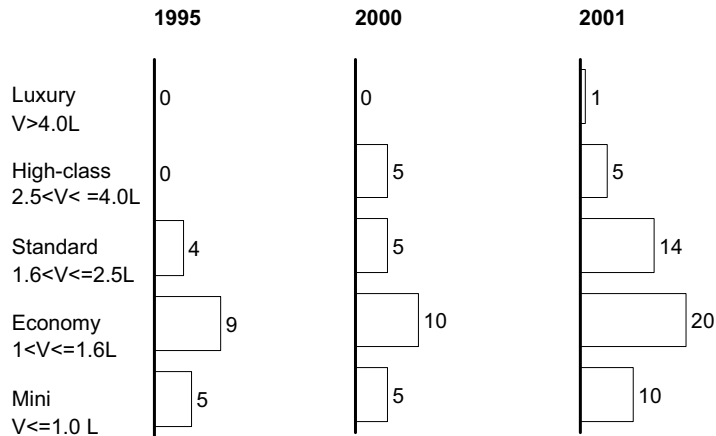
CHANGE OF VARIETY OF CAR MODELS AVAILABLE IN CHINA – 1998-2001



Source: McKinsey analysis

Exhibit 21

NUMBER OF LOCALLY PRODUCED NEW CAR MODELS BY SUBSEGMENT
Number of models



Source: China Automotive Industry Yearbook; China Auto 2000

Exhibit 22

MOREOVER, CHINA HAS PROVEN ABILITY TO MANUFACTURE HIGH QUALITY PRODUCTS



"Guangzhou Honda is ranked the best quality plant of Honda"

– Media

"GZ Honda-produced Accord is regarded as the best quality among all Honda overseas manufacturing plants rated by Japanese experts"

– GZ Honda



"The China plant is one of the Top 3 plants for Audi worldwide"

– Analyst reports

"Shanghai VW is consistently ranked among Top 5 plant by quality of VW world facilities"

– Analyst reports

"The Passat made in China is even better than the ones in Germany"

– German engineers

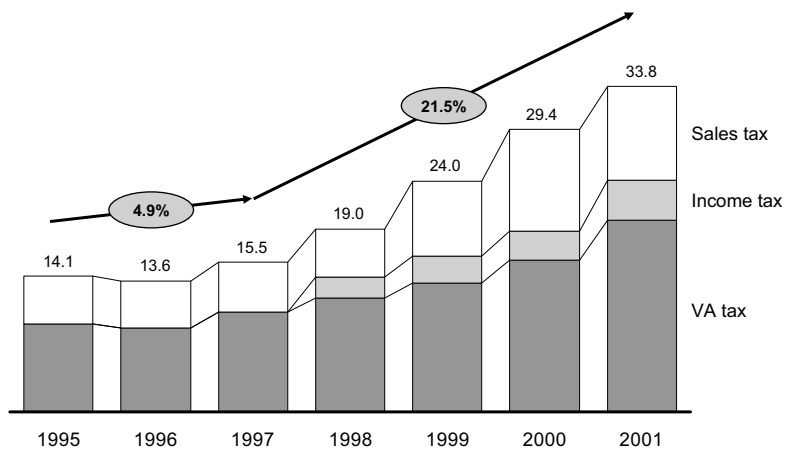
Source: Interviews; analyst reports; literature search

Exhibit 23

TAX CONTRIBUTION BY THE AUTO PRODUCTION SECTOR IN CHINA, 1995-2001

Billion RMB, percent

○ CAGR



Source: Literature search; McKinsey analysis

Exhibit 24

IMPACT OF WTO OVER CHINESE AUTO SECTOR

Area	Pre-WTO entry	Upon WTO entry	A few years after WTO entry
• Tariff	<ul style="list-style-type: none"> • <3.0L*: 70% • ≥3.0L*: 80% 	<ul style="list-style-type: none"> • 51.9% • 61.7% 	<ul style="list-style-type: none"> • 25% in 2006 • 25% in 2006
• Quota restriction	<ul style="list-style-type: none"> • Global quota limits of U.S.\$ 6 billion 	<ul style="list-style-type: none"> • Expanded to U.S.\$ 6.9 billion** 	<ul style="list-style-type: none"> • Eliminated in 2005
• Local content requirements	<ul style="list-style-type: none"> • 40% of all parts must be sourced locally 	<ul style="list-style-type: none"> • Local content requirement lifted (still subject to import quotas) 	<ul style="list-style-type: none"> • Local content requirement lifted (not subject to import quotas)
• Manufacturing	<ul style="list-style-type: none"> • Max. 50% foreign ownership for engine manufacturers • Max. 50% foreign ownership for OEM 	<ul style="list-style-type: none"> • No restriction on foreign ownership • Restriction remains 	<ul style="list-style-type: none"> • Same • Same
• Distribution	<ul style="list-style-type: none"> • No foreign investment allowed in auto distribution 	<ul style="list-style-type: none"> • Foreign JV allowed, but no controlling interest or foreign partner 	<ul style="list-style-type: none"> • Restriction on foreign owned distribution lifted in 2006
• Financing	<ul style="list-style-type: none"> • Foreign non-bank financial institutions not allowed to provide auto finance services 	<ul style="list-style-type: none"> • Allow foreign non-bank financial institutions to provide auto finance 	<ul style="list-style-type: none"> • Same
• Private ownership	<ul style="list-style-type: none"> • Auto company ownership by private Chinese owners not allowed 	<ul style="list-style-type: none"> • Private ownership restrictions relaxed 	<ul style="list-style-type: none"> • Same

* Based on engine displacement

** Increases by 15% annually

Source: China Automotive Yearbook; literature search; McKinsey analysis

HOW FDI HAS ACHIEVED IMPACT

FDI achieved impact initially through operational factors (bringing more modern production techniques and models to China) and over time through increased competition, though room for even higher competitive intensity still exists.

- ¶ **Operational factors.** FDI brought with it modern production techniques. Plants in China were fitted with automated presses, paint and assembly lines, and in some instances, welding systems. Companies captured increased economies of scale by consolidating R&D capabilities into one central location rather than having local offices, leading to a decrease in overhead costs (e.g., labor and infrastructure savings). Superior models also allowed joint venture companies to build larger market shares and achieve economies of scale in production.
- ¶ **Industry dynamics.** FDI has improved the level of competition in the sector, though the level of competition is still not high by international levels (Exhibit 24). The impact of increased competition is evidenced in lower prices, higher quality and more variety (exhibits 19-22). Interviews suggest that entry barriers inhibited entry in the 1980s and 1990s; GM and Honda respectively took more than four years to negotiate entry with the Chinese government.

EXTERNAL FACTORS THAT AFFECTED THE IMPACT OF FDI

Import barriers, the remaining barriers to FDI and TRIMs, have been the key inhibitors to FDI impact in the maturing FDI period. A large gap with best practice allowed FDI to achieve greater impact than otherwise (exhibits 24-29).

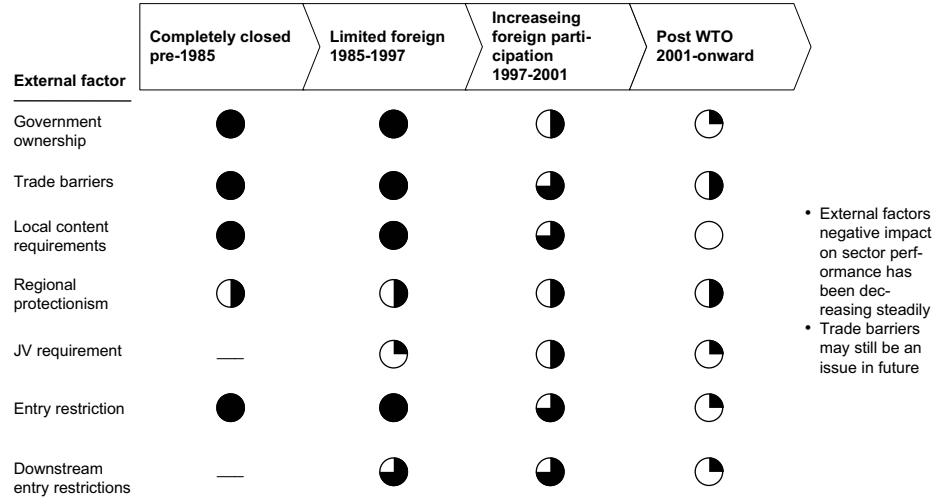
¶ Country specific factors

- **Import barriers.** Import barriers are a key inhibitor to even higher FDI impact. Since the key FDI-companies in China are all operating at nearly 100 percent capacity utilization, the fact that there is no competition from imports allows prices to remain at nearly 70 percent above U.S. levels. These import barriers will continue to exist in the future, with import tariffs leveling of at 25 percent post-WTO.
- **FDI entry barriers.** Residual entry barriers also reduced competition in the time period under examination, though these barriers were gradually reduced in the late 1990s and early 2000s and should not be a factor in the future.
- **Local content requirements.** The regulations for local content requirement also reduced the impact of FDI by forcing international companies to manufacture locally at sub-optimal scale. This reduced productivity and increases costs. These barriers have now been removed and should cease to be a factor by 2006 (when the component import quota is removed).
- **Supplier base.** A fragmented supplier base (partially caused by TRIMs) increases the cost of building automobiles in China, and also decreases OEM productivity by forcing the OEMs to perform some tasks they would like to outsource to suppliers (e.g., cockpit assembly). Due to the reduction in TRIMs/import barriers on components, in combination with market growth

Exhibit 25

EXTERNAL FACTORS INFLUENCE OVER CAR OEM SECTOR PERFORMANCE

Strength of impact
 ● High
 ○ Low

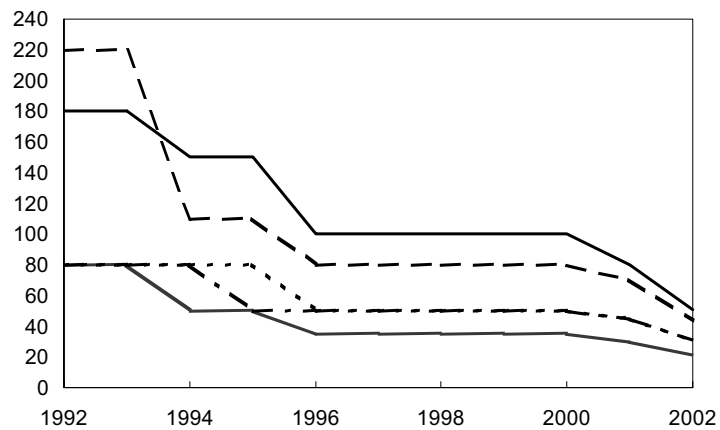


Source: China Automotive Yearbook; literature search; McKinsey analysis

Exhibit 26

TARIFFS IN CHINESE AUTO SECTOR

— Car (displacement >3.0 L)
 - - Car (displacement <3.0 L)
 Parts – Bumper and Seat Belt
 - · - Parts – Air Bag
 ——— Parts – Gearbox for car

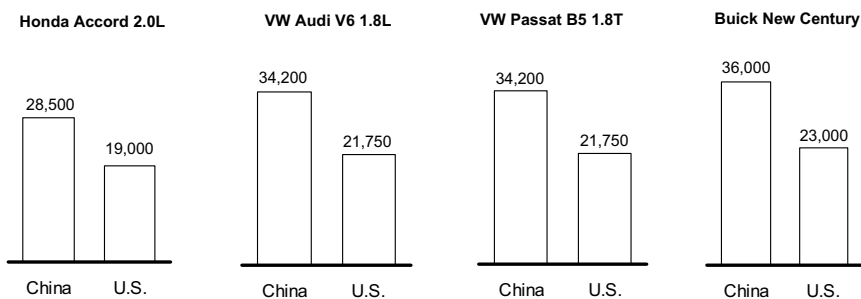


Source: China customs yearbook

Exhibit 27

COMPARISON OF PASSENGER CAR RETAIL PRICES IN CHINA AND U.S. IN 2001

Dollars



On average, passenger car retail prices in China is 60% higher than that in U.S., Europe and Japan

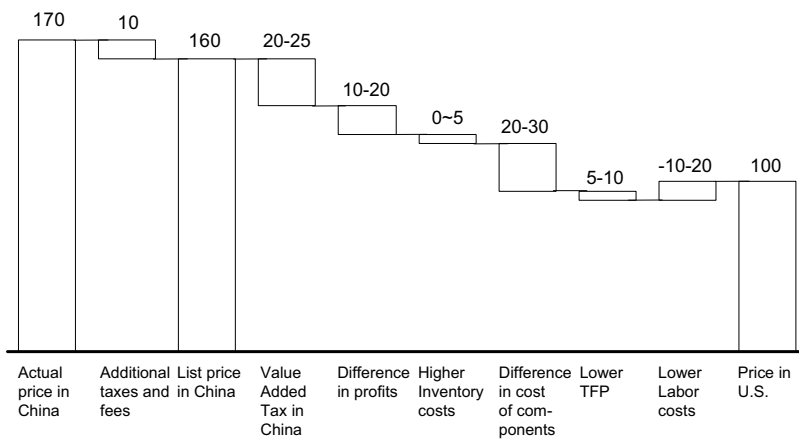
Source: Literature search; Interviews

Exhibit 28

WATERFALL COMPARING CAR PRICE IN CHINA TO U.S.

ROUGH ESTIMATE

Percent

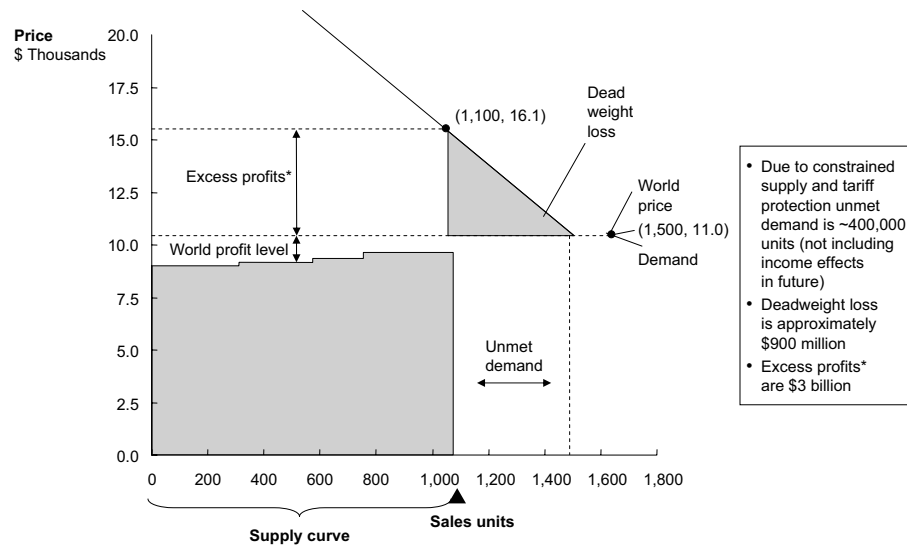


Source: Interviews; McKinsey analysis

Exhibit 29

SUPPLY AND DEMAND IN CHINA AUTO SECTOR, 2001

ROUGH ESTIMATES



* Includes excess profits off parts makers
 Source: UBS Warburg; McKinsey analysis

and consolidation, this should be less of an inhibiting factor in the future.

- **Initial sector conditions.** The substantial gap with best practice in the initial period, allowed new FDI to have more impact than otherwise by enabling it to achieve very high rates of productivity growth (30 percent per year) from its initial low levels.

SUMMARY OF FDI IMPACT

Overall impact of FDI has been positive in China by bringing products and processes that were far superior to those present in SOE incumbents. The reduction in entry barriers in the late 1990s and early 2000s allowed more FDI companies into the Chinese market and these helped increase competition, as evidenced by rapid declines in price and the increase in number and quality of auto models available.

The impact of FDI has still not reached its maximum potential; prices remain 70 percent above the world average, and profitability is still above the expected risk-adjusted rate of return. As capacity continues to expand in the Chinese market with the removal of entry barriers, we expect supply to outgrow demand, competition to increase and prices and profitability to continue to decline in the Chinese market. However, ongoing finished good import tariffs of 25 percent will continue to reduce the overall impact of FDI marginally even when domestic supply outpaces demand.

Exhibit 30

CHINA AUTO – SUMMARY

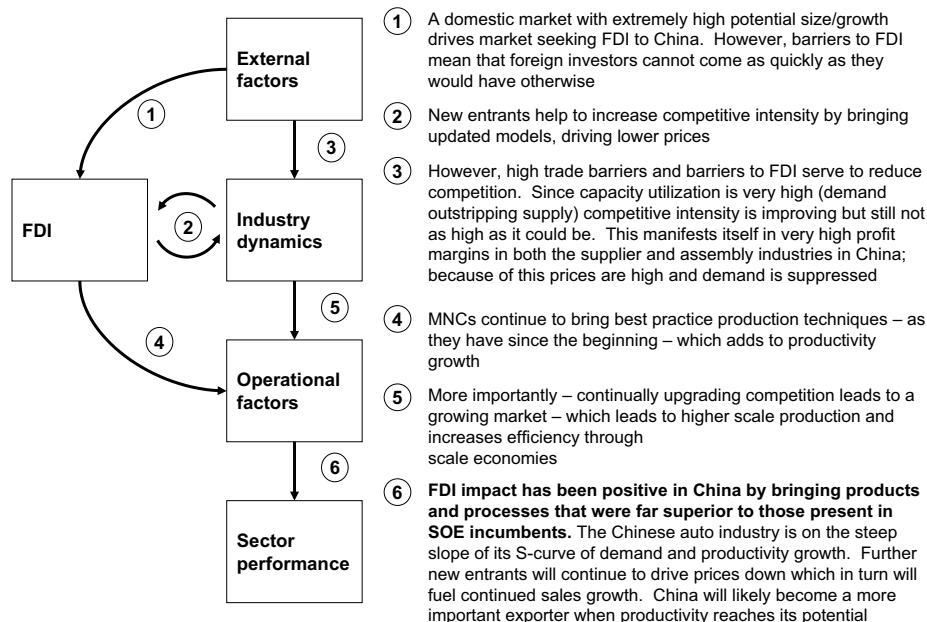


Exhibit 31

CHINA AUTO – FDI OVERVIEW

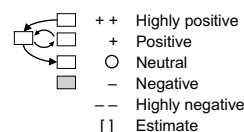


• Total FDI inflow (1998-2001)	\$2.7 billion
– Annual average	\$0.7 billion
– Annual average as a share of sector value added	33%
– Annual average per sector employee	\$16,600
– Annual average as a share of GDP	0.06%
• Entry motive (percent of total)	
– Market seeking	100%
– Efficiency seeking	0%
• Entry mode (percent of total)	
– Acquisitions	0%
– JVs	100%
– Greenfield	0%

Source: China Automotive Industry Yearbook, 1996-2001; Interviews; McKinsey analysis

Exhibit 32

CHINA AUTO – FDI IMPACT IN HOST COUNTRY

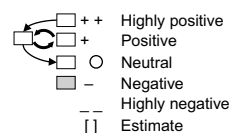


Economic impact	Early FDI* (1980-1997)	Increasing FDI (1997- 2001)	FDI impact	Evidence
• Sector productivity (CAGR)	O	+	+	• Sector productivity grows extremely rapidly as increased FDI enters sector post-1998, though is still below total potential
• Sector output (CAGR)	O	+	+	• Sector output grows extremely rapidly post-1998, though total auto penetration is still lower than it could be. Exports not that significant, though imports have been steadily replaced
• Sector employment (CAGR)	-	+	+	• Employment grows slowly as rapid value add growth slightly outpaces very high productivity growth
• Suppliers	+	+	+	• Significant supplier base building has happened, very much driven by FDI. Consolidation is starting to take place
Impact on competitive intensity (net margin CAGR)	O	+	+	• Competitive intensity is certainly increasing post-1998, but is still not as high as it could be

* Use 1995-97 as proxy for period
Source: McKinsey Global Institute

Exhibit 33

CHINA AUTO – FDI IMPACT IN HOST COUNTRY



Distributional impact	Early FDI (1980-1997)	Increasing FDI (1997-2001)	FDI impact	Evidence
• Companies				
– MNEs	n/a	++	++	• FDI players have extremely high ROIC, about 4 times world average
– Domestic companies	n/a	O	O	• Local companies have gained profits through JVs, but do not appear to have acquired significant standalone skills
• Employees				
– Level of employment (CAGR)	n/a	+	+	• See prior page for evidence
– Wages	n/a	+	+	• JV players workers earn more than other manufacturing sectors
• Consumers				
– Prices	n/a	-	+	• Prices declining recently, but still far above world averages
– Selection	n/a	+	+	• Selection has increased markedly since 1998, both in number and quality (newer) of models
• Government				
– Taxes	n/a	+	+	• Government collects almost 10% of its taxes directly or indirectly through auto sector; its growth has benefited tax coffers

Exhibit 34

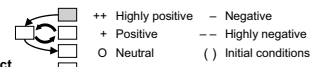
CHINA AUTO – COMPETITIVE INTENSITY



	Early FDI (1980-1998)	Increasing FDI (1998-2001)	Evidence	Rationale for FDI contribution
Pressure on profitability	○	○	• Profitability very high by world standards	• FDI controls market
New entrants	◐	◑	• Many new entrants since 1998	• All new entrants except Brilliance China are FDI
Weak player exits	○	○	• Most players still in market	• FDI controls market
Pressure on prices	○	◑	• Price has started to decline, but still far above world average	• FDI controls market
Changing market shares	◐	◑	• Market share starting to shift with VW losing some share	• Driven mostly by GM and Honda
Pressure on product quality/variety	○	◑	• Several new models being introduced across each segment; older Santana and Jetta previously dominated	• FDI responsible for all introductions except one
Pressure from upstream/downstream industries	○	○		
Overall	○	◑	• Competitive intensity is starting to increase but not as high as it could be	• FDI controls market

Exhibit 35

CHINA AUTO – EXTERNAL FACTORS' EFFECT ON FDI



Level of FDI*	Impact on level of FDI	Comments	Impact on per \$ impact	Comments		
Global industry factors	Global industry discontinuity	○		○		
	Relative position	• Sector Market size potential	++	• Extremely high potential especially givers with low penetration	○	
		• Prox. to large market	○		○	
		• Labor costs	○	• Not yet a major factor as entrants have not entered to export	○	
	() Macro factors	• Language/culture/time zone	○		○	
		• Country stability	+	• Stable currency and country environment attracts investors	○	• Stability allows for steady capacity expansion without high risk
		• Import barriers	+	• Protected market requires FDI for access	--	• Reduce competition from imports, which would be important due to high capacity utilization
	Country-specific factors	Product market regulations				
		• Preferential export access	○		○	
		• Recent opening to FDI	+	• More open auto FDI policy brings several new entrants	○	• Also continues to reduce competition
• Remaining FDI regulation		-	• FDI regulation still slows entrance of new players in studied period	-	• Higher cost components in some case due to lack of scale/competitiveness in supplier industries (TRIMs+ tariffs); especially harmful in case of new production capacity where supplier industries need time to develop	
• Government incentives		○		○		
• TRIMs		+	• TRIMs require faster investment in building parts industry though investment probably would have come eventually	-		
• Corporate Governance		○		○		
• Taxes and other		○		○		
Capital deficiencies		○		○	• Higher cost components in some case due to lack of scale/competitiveness in supplier industries	
Labor market deficiencies		○		○		
Informality	○		○			
Supplier base/infrastructure	○		-			
Sector initial conditions	Competitive intensity	+(L)	• Increases attractiveness of local market due to higher margins	○ (L)		
	Gap to best practice	++(H)	• Low level of productivity, outdated models encourage new entry	+(H)	• Significant productivity growth (30+% CAGR) achieved due to large initial gap	

Exhibit 36

CHINA AUTO – FDI IMPACT SUMMARY

[] Estimate ++ Highly positive – Negative
 + Positive -- Highly negative
 O Neutral () Initial conditions

Level of FDI relative to sector*	FDI impact on host country		Level of FDI** relative to GDP	External Factor impact on	
	33%			Level of FDI	Per \$ impact of FDI
Economic impact			Global factors	0.06	
• Sector productivity	+		• Global industry discontinuity	O	O
• Sector output	+		• Relative position		
• Sector employment	+		• Sector market size potential	++	O
• Suppliers	+		• Prox. to large market	O	O
Impact on competitive intensity	+		• Labor costs	O	O
Distributional impact			• Language/culture/time zone	O	O
• Companies			• Macro factors		
– MNEs	++		• Country stability	+	O
– Domestic	0		• Product market regulations		
• Employees			• Import barriers	+	--
– Level	+		• Preferential export access	O	O
– Wages	+		• Recent opening to FDI	+	O
• Consumers			• Remaining FDI restriction	–	–
– Prices	+		• Government incentives	O	O
– Selection	+		• TRIMs	+	–
• Government			• Corporate governance	O	O
– Taxes	+		• Taxes and other	O	O
			• Capital deficiencies	O	O
			• Labor market deficiencies	O	O
			• Informality	O	O
			• Supplier base/infrastructure	O	–
			• Sector initial conditions		
			• Competitive intensity	+ (L)	O (L)
			• Gap to best practice	++ (H)	+ (H)

* Average annual FDI/sector value added

** Average (sector FDI inflow/total GDP) in key era analyzed

India Auto Sector Summary

95

EXECUTIVE SUMMARY

Until a decade ago, the auto sector in India had been a highly protected industry restricting the entry of foreign companies, with steep tariffs against imports. Domestic companies, HM and PAL, had monopolistic domains and operated at a fraction of the productivity of global best practice companies. Consumers were forced to pay high prices for outdated and poorly produced products and industry size was severely restricted. In 1983, the government permitted Suzuki, the lone FDI company, to enter the market in joint venture with Maruti, a state-owned enterprise. Ten years later, as part of a broader move to liberalize its economy, India fully opened up the entire sector to FDI, and since then has also progressively relaxed import barriers. Today, almost all of the major global companies are present in India producing cars in all segments, although small cars account for 85 percent of the market by volume.

FDI has had a strong positive impact on India's auto industry. The productivity of the industry has increased five-fold and almost all of the benefits have flowed to consumers. Prices have declined at an average rate of four to six percent annually, and several dozen new models have been introduced. As a result of rising productivity, declining in prices and rising incomes, the industry has experienced explosive growth. India now produces 13 times more cars than it did in 1983 and has become an exporter of automobiles. India has developed a world-class components industry, witnessing annual exports growth in excess of 40 percent.

FDI created a powerful impact on India's auto industry not just by contributing capital, technology, and managerial best practices but also by introducing intense competition that led to the exit of low productivity companies and pushed incumbents to improve their productivity dramatically. FDI's impact has been much more pronounced in the small cars segment, where productivity is growing rapidly as FDI and Indian companies are forced to innovate design and production techniques to deliver value to consumers. However, in the larger car segments where demand is very low, rising productivity improvements have been offset to a large extent by diseconomies of scale and massive overcapacity.

SECTOR OVERVIEW

¶ **Sector overview.** India has one of the fastest growing auto sectors in the world (16 percent CAGR for units produced) manufacturing over half a million units annually (roughly 1.6 percent of global production) and representing roughly \$5 billion in sales. Of the automobiles manufactured, 85 percent are in the small car segments. This segment includes smaller and more economical two-box cars (e.g., the Ford Ka). The industry has shown robust growth over the past few years, growing at over 15 percent annually by unit volume. Exports account for a small share of total production but have grown from a base of zero in 1983 to roughly ten percent of production today.

India's auto industry has historically been a highly closed, supply-constrained market characterized by poor productivity, poorly produced products, and high

prices. The sector was liberalized partially in 1983 and subsequently in 1993, when global OEMs were permitted to make investments in the country (Exhibit 1). However, even as FDI has been allowed to enter the country, the sector has remained protected against imports. Tariffs on the import of new cars are as high as 105 percent, while the import of used cars is prohibited completely.

Since the opening of the sector to FDI, the industry has gone through tremendous growth, and has increased competition and improved productivity. Suzuki's arrival in 1983 introduced limited competition in the industry. The incumbents (HM and PAL) continued to enjoy patronage from government purchases and corporate clients, while Maruti-Suzuki began a quasi-monopoly by creating its own segment. In 1993, the sector was opened to all international auto companies and the competitive intensity increased dramatically.

¶ **FDI overview.** FDI in India auto sector was allowed in two waves: the first was in 1983, and the second in 1993. Both waves of FDI were market-seeking (Exhibit 2). Although there was no formal requirement for joint ventures, most OEMs chose to enter the country with a local partner (Exhibit 3). However, all joint venture relationships, except that of Maruti-Suzuki, have either been broken up, or have been diluted subsequently with the share of the Indian partner reduced to a very minor stake. Suzuki's joint venture with Maruti, a state-owned enterprise, is a highly successful relationship, as the two companies bring complementary skills to the table – Suzuki as the provider of capital and technology and the state-owned enterprise as a facilitator of bureaucracy.

To isolate the impact of FDI on the sector, we have calibrated the performance of the industry across two distinct phases of FDI:




- **Restricted FDI (1983-1993).** FDI in the auto sector was first allowed in 1983, when Suzuki was invited to enter India as a minority stakeholder in a joint venture arrangement with the government. Of the several potential joint venture partners then courted by the government, Suzuki was the only OEM who agreed to the conditions and was willing to make a capital investment of \$260 million. Other local companies were prevented from making similar arrangements with international auto companies.
- **Mature FDI (1993-to present).** Subsequently, the sector was opened to global companies in 1993 and roughly \$1.6 billion has been invested by OEMs to date (Exhibit 4). However, following the 1993 liberalization, it was still nevertheless heavily regulated, requiring multinational companies to achieve localization in a specified period of time, make specified capital investments, balance foreign exchange flows, and meet export obligations. These restrictions are progressively being relaxed, but the sector remains regulated.

¶ **External factors that drove the level of FDI.** India's market potential, combined with the 1993 regulatory liberalization, attracted FDI into the industry. This brought in new OEMs and required the existing OEMs to make capital upgrades.

- **Country-specific factors.** There were several country-specific factors that drove the level of capital infused into the industry.

Exhibit 1

FDI WAS ALLOWED INTO THE AUTO ASSEMBLY SECTOR IN 2 WAVES

	Closed market 1947-83	Wave 1 – “Suzuki Era” 1983-93	Wave 2 – Transition to open market 1993-2003
Characteristics	<ul style="list-style-type: none"> • Closed market (licensing) • Output growth limited by supply • Models were versions of European cars unchanged for decades 	<ul style="list-style-type: none"> • Joint venture between government of India and Suzuki in 1983 (Maruti) • JVs with Japanese companies in commercial vehicles and parts • Existing Suzuki product transplanted in India 	<ul style="list-style-type: none"> • Passenger car production delicensed in 1993 • Most major MNCs started operations in India to manufacture existing products developed for other markets • Imports allowed on a commercial basis since 2001 with very high tariffs
Players in passenger car segment			
Production (Units)	43,558 in FY 1982-83	273,305 in FY 1994-95	559,878 in FY 2001-02
Domestic sales (Units)	43,558 in FY 1982-83	163,302 in FY 1994-95	564,113 in FY 2001-02
Exports (Units)	Negligible	28,851 in FY 1995-96	50,108 in FY 2001-02

Source: EIU; SIAM; Interviews; McKinsey Global Institute

Exhibit 2

MARKET-SEEKING OBJECTIVES WERE THE PRIMARY MOTIVE FOR INVESTMENT IN INDIA AUTO SECTOR

	Description	Importance for attracting FDI
Globalization Hype	<ul style="list-style-type: none"> • Every auto major begins to look at emerging markets to spur growth • Need to not be ‘left out’ as competitors move overseas 	● High
Market Potential and Growth*	<ul style="list-style-type: none"> • Almost 2 million households that can afford cars represent a large, untapped opportunity • Market was growing at 13% in 1992-93 with a total demand of 165,000 units 	● High
Trade Barriers	<ul style="list-style-type: none"> • Very substantial import tariffs meant succeeding in the Indian market virtually required local manufacturing and parts sourcing 	◐ Low
Emerging components industry	<ul style="list-style-type: none"> • Existence of strong local component suppliers set the foundation for lower costs through localization • Success stories of local players allowed OEMs to convince global suppliers to enter India simultaneously 	◐ Low
Maruti’s success	<ul style="list-style-type: none"> • Maruti’s incredible success in India demonstrated the potential of the Indian market and provided a living case example of how to succeed in India 	◐ Low

* Main reason for Wave 1

Source: McKinsey Global Institute

Exhibit 3

MOST MNCs ENTERED INDIA THROUGH EQUAL JVs, BUT SOON ACQUIRED MAJORITY STAKES

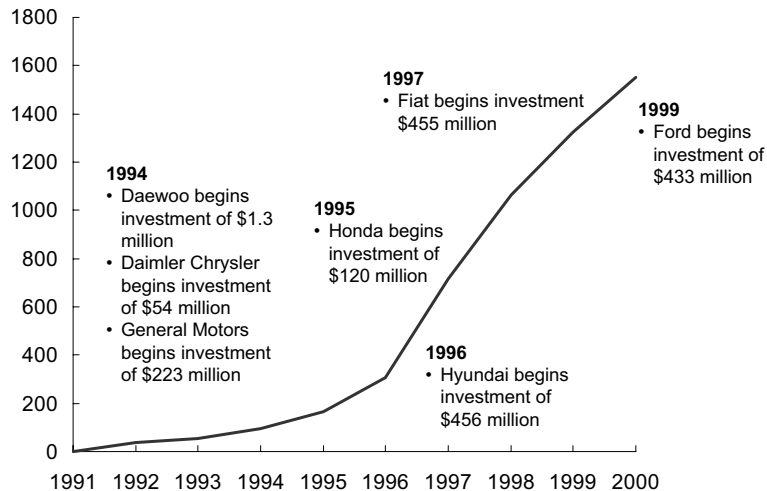
	Rationale	Outcome	Key Learnings
3 types of JVs <ul style="list-style-type: none"> With Local OEMs <ul style="list-style-type: none"> Ford-Mahindra GM-CKB Honda-Seil With government <ul style="list-style-type: none"> Maruti-Suzuki With Local non-OEM firms <ul style="list-style-type: none"> Toyota-Kirloskar 	<ul style="list-style-type: none"> Mitigate risks associated with a new unfamiliar market Understand local market and conditions through experienced eyes Leverage strengths of local player 	<ul style="list-style-type: none"> Foreign partner acquires majority stake when local partner is unable to bring in additional capital <ul style="list-style-type: none"> Ford increases stake from 51 to 85% Honda increases stake from 40 to 95% GM increases stake from 50 to 100% Local players unable to absorb initial losses 	<ul style="list-style-type: none"> Goals and objectives off all players should be clearly aligned By definition, partnerships tend to be short-term in nature Clearly defined roles and responsibilities essential Government intervention in management should be minimal to prevent additional complexity
	<ul style="list-style-type: none"> Government backing vital to create market (and volumes), overcome infrastructure constraints and develop ancillary industries 	<ul style="list-style-type: none"> Partnership continues to exist after 20 years Suzuki gradually allowed to increase ownership <ul style="list-style-type: none"> Increased stake from 26 to 54.1% in 2002/03 	
	<ul style="list-style-type: none"> Mitigate risks associated with a new unfamiliar market Strong match of personalities, goals and objectives 	<ul style="list-style-type: none"> Jury still out as venture is relatively new <ul style="list-style-type: none"> Toyota increased its stake from 74 to 99% leaving Kirloskar with an option to buy back 25% in the future 	

Source: McKinsey Global Institute

Exhibit 4

SIGNIFICANT AMOUNT OF FDI FLOWED INTO INDIA ONCE THE SECTOR WAS LIBERALIZED

Annual foreign direct investment*
\$ Millions



Note: Suzuki invested \$260 million in 1982-83

* FDI for entire transportation sector which includes 2 wheelers, commercial vehicles and tractors

Source: Foreign Investment Promotion Board

- **Sector market potential.** The growth of the Indian market has been fueled by tapping into potential demand that had until then been latent. However, market penetration, relative to countries with similar levels of GDP per capita, remains one of the lowest in the world. At Indian prices, less than 10 percent of households can afford a car (Exhibit 5), which is well below the levels of penetration seen in other countries at similar level of economic development. This has led OEMs to invest more modest amounts of capital relative to markets such as China. Analysts estimate that the industry can grow to two million units annually if OEMs can achieve lower prices.
- **Government policies.** Several policies mandated by the government have influenced the level of capital infused in the industry:
 - Recent opening to FDI.** A high volume of FDI infusion within a short period of time was driven primarily by the removal of barriers to FDI. OEMs had for some time assessed India as a lucrative market but were prevented from investing into it. With the removal of these barriers, the race to invest in India began.
 - Import barriers.** High import tariffs have required OEMs selling very small volumes (e.g., Daimler-Chrysler) to set up plants in India when they would have preferred to access the market through exports instead (small volumes create large production inefficiencies).
 - Local content requirements.** Local content requirements forced OEMs and their suppliers to invest larger amounts of capital in order to meet the local content requirement of up to 70 percent and to meet the need for balancing foreign-exchange flows.
 - Government incentives.** Although incentives did on the margin impact location decisions of OEMs within India, there is no evidence of incentives driving the flow of capital into the country (Exhibit 6).
- **Poor Infrastructure.** Poor state of power, transport, and communications infrastructure, particularly for delivering components efficiently discouraged OEMs from making investments initially.
- **Sector initial conditions.** As competition began to heat up with the entry of global OEMs, Maruti-Suzuki – which had relatively lower level of automation – was forced to improve productivity by infusing more capital.

FDI IMPACT ON HOST COUNTRY

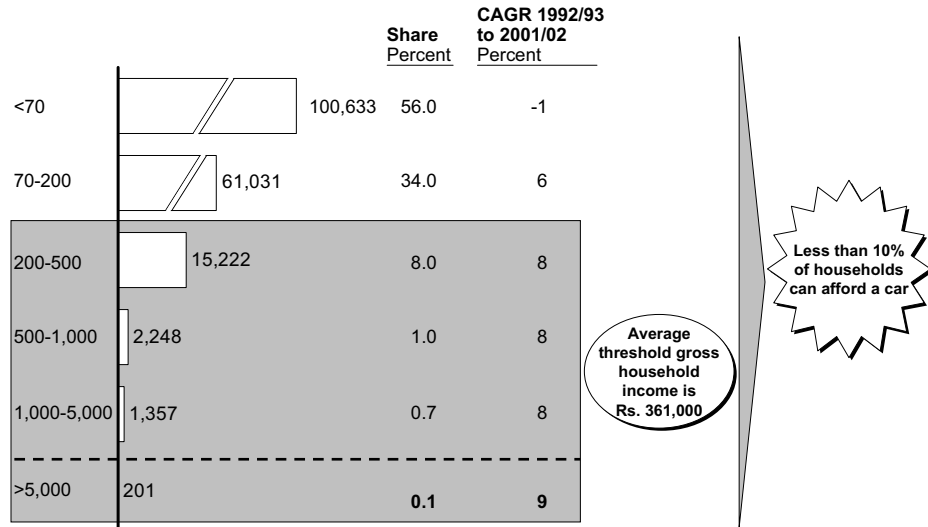
Overall impact from FDI on Indian auto industry has been highly positive. In addition to providing much needed capital, FDI infused new technology and management skills in an industry – a need that could not have been fulfilled by domestic capital efficiently (Exhibit 7).

¶ **Economic impact.** Sector performance – as measured in output and productivity growth – has grown steadily since 1993 when the industry was opened to the second wave of FDI. However, employment has declined marginally.

Exhibit 5

VERY SMALL PERCENTAGE OF INDIA'S POPULATION CAN AFFORD A PASSENGER CAR

Income level (Rs. '000); Number of Households ('000), 2001-02



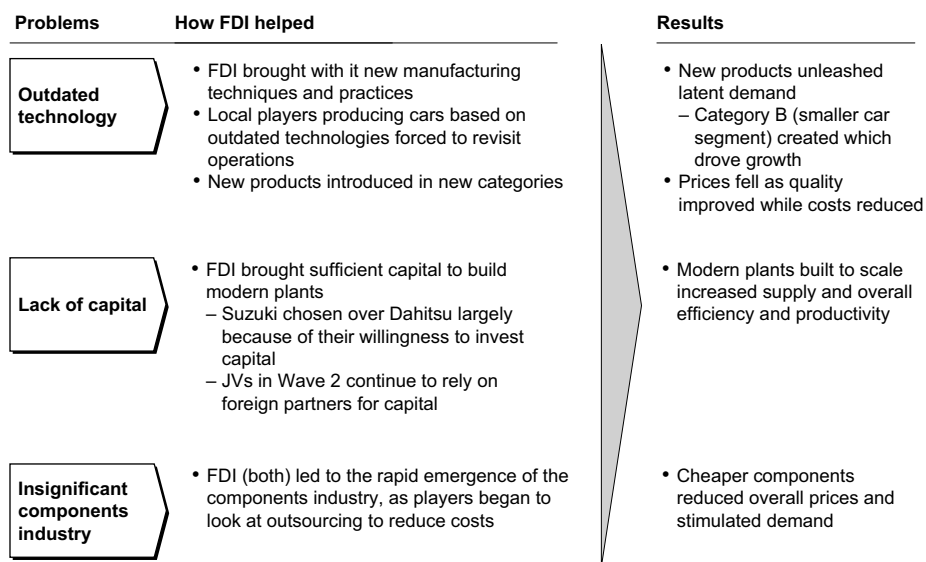
Source: NCAER; Cris-Infac; McKinsey Global Institute

Exhibit 6

STRONG SUPPLIER BASE AND AVAILABILITY OF SKILLED LABOR ARE KEY FACTORS IN MNC LOCATION DECISIONS (FORD EXAMPLE)

<p>Ford was offered a host of incentives to locate its plant in Tamil Nadu</p> <ul style="list-style-type: none"> Cheap land <ul style="list-style-type: none"> Government offered Ford 300 acres of freehold land at a subsidized cost of Rs. 300 million Infrastructure assistance <ul style="list-style-type: none"> Guaranteed power supply – plant will get power from 2 separate stations (one being a 230KV) Ford to get 40% discount on power tariff in Year 1 although this was gradually eliminated by Year 5 Adequate piped water supply assured Fiscal incentives <ul style="list-style-type: none"> 14-year holiday on sales tax (now 12%) on cars sold within Tamil Nadu (~9% of total production) Holiday on 4% CST on all cars sold outside Tamil Nadu Concession on sales tax levied on bought-out components in production process No import duty on capital goods (~30% at that time) as long as Ford made a commitment to export 5 times the value of the duty (subsequently changed) 	<p>However, incentives were not the most important factor driving their location decision</p> <p>Rankings of factors affecting location decision 10=highest 1=lowest</p> <table border="1"> <thead> <tr> <th>Factor</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Distance from international airport</td> <td>3</td> </tr> <tr> <td>Proximity to target market</td> <td>3</td> </tr> <tr> <td>Availability of cheap land</td> <td>4</td> </tr> <tr> <td>Proximity to port/inland container terminal</td> <td>7</td> </tr> <tr> <td>Incentives</td> <td>7</td> </tr> <tr> <td>Availability of infrastructure</td> <td>8</td> </tr> <tr> <td>Availability of skilled labor</td> <td>9</td> </tr> <tr> <td>Availability of supplier base (ancillary unit)</td> <td>9</td> </tr> </tbody> </table>	Factor	Rank	Distance from international airport	3	Proximity to target market	3	Availability of cheap land	4	Proximity to port/inland container terminal	7	Incentives	7	Availability of infrastructure	8	Availability of skilled labor	9	Availability of supplier base (ancillary unit)	9
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Incentives	7																		
Availability of infrastructure	8																		
Availability of skilled labor	9																		
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Note: Taken from "Study on policy competition among states in India for attracting direct investment" by R. Venkatesan et al
Source: Interviews; NCAER

Exhibit 7**FDI WAS NECESSARY TO JUMP START THE INDIAN AUTO INDUSTRY**

Source: McKinsey Global Institute

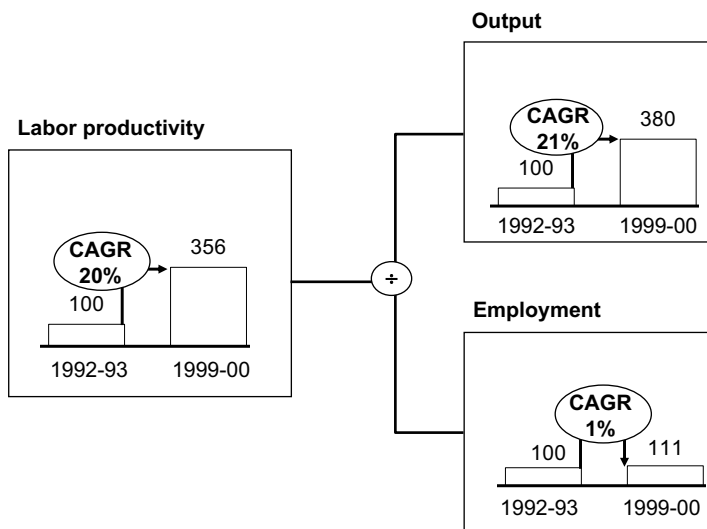
- **Sector Productivity.** To isolate the impact of FDI, we compared passenger auto productivity growth in the two phases defined above. The comparison shows that FDI has contributed to raising both the rate of productivity growth and the productivity level.
 - **Growth.** Labor productivity has grown at a staggering annual rate of 20 percent since the sector was opened to FDI in 1993 (Exhibit 8). This growth was driven primarily by the exit of the low productivity company, PAL, and by productivity improvements at incumbents HM and Maruti-Suzuki (even as their capacity utilization declined) (Exhibit 9). Our interviews indicate that the continuing rapid productivity growth in these players was driven by the increasing competitive intensity (Exhibit 10).
 - **Level.** FDI companies on average are 38 percent as productive as U.S. plants, while non-FDI companies achieve productivity that is only 5 percent of the U.S. plants. Maruti-Suzuki, the highest performing company in the industry, has a productivity more than 50 percent that of U.S. plants (Exhibit 11).

Sector productivity has remained at less than its full potential. Most multinational companies achieve productivity levels significantly lower than they do in their home country. This is not only due to their sub-optimal scale in India (Exhibit 12) but also to a glut in capacity. The industry has 40 percent overcapacity as a result of OEMs overestimating demand and making excessive investments.
- **Sector Output.** Output by volume in the industry has grown lockstep with the FDI-infusion in the industry. In the decade prior to 1983, when there was no FDI, output grew at a rate less than one percent a year. From 1983 to 1993, following FDI from Suzuki, industry output grew at 13 percent annually. From 1993 to date, in the period of mature FDI, output has grown at over 15 percent annually (Exhibit 13).
- **Sector Employment.** While employment has grown at healthy rates for most OEMs during our focus period (eight percent CAGR at Maruti-Suzuki, accounting for 25 percent of industry employment), overall employment in the sector has declined marginally (by one percent CAGR). This decline has been driven by the forced exit of the lower productivity company PAL while other OEMs were adding jobs.
- **Supplier spillovers.** The most prominent spillover impact of FDI in India's auto sector has been on the components industry.
 - The components industry more than tripled in size (Exhibit 14) during the period of review as new car sales boomed and assemblers outsourced more of their cost base to improve productivity. Outsourcing by OEMs to components manufacturers has greatly increased from the minimal levels in the pre-FDI period (Exhibit 15).
 - Several international components companies have entered the sector to serve the international companies and competition has intensified as a result. Components manufacturers have been forced to increase quality and reliability and dramatically improve their performance and quality (Exhibit 16).

Exhibit 8

LABOR PRODUCTIVITY IMPROVED WITH MORE FDI

Equivalent cars per equivalent employee 1999-00; Indexed to India = 100 in 1992-93



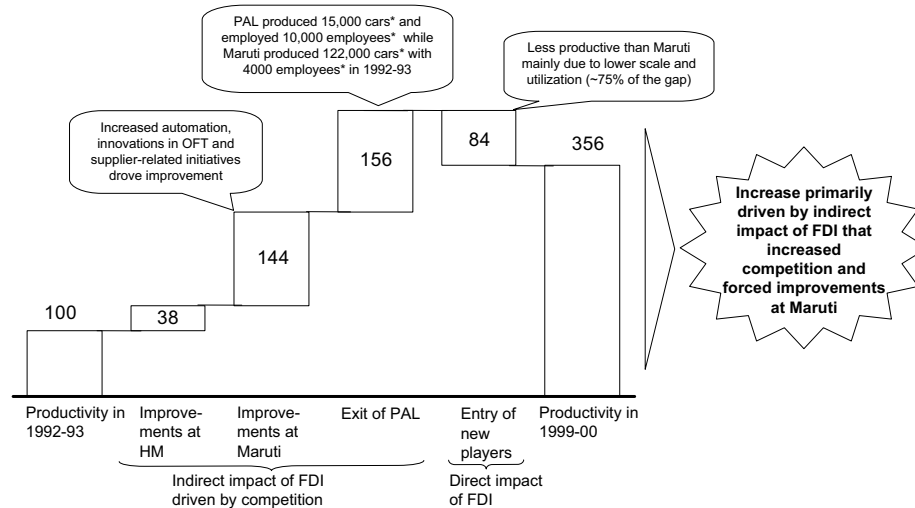
Source: Interviews; SIAM; Annual reports; McKinsey Global Institute

Exhibit 9

FDI'S MOST CRUCIAL IMPACT WAS TO INDUCE MARKET REFORM

Labor productivity

Equivalent cars per equivalent employee; indexed to 1992-93 (100)

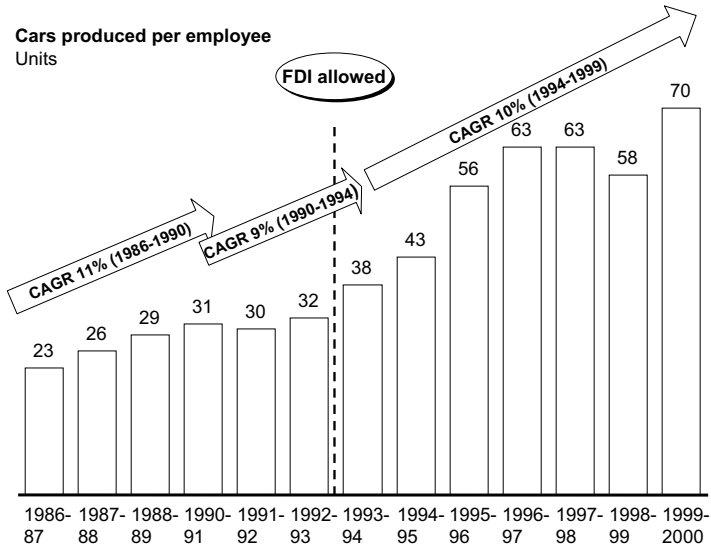


* Actual cars and employment (not adjusted)

Source: MGI; McKinsey Global Institute; team analysis

Exhibit 10

MARUTI'S PRODUCTIVITY CONTINUED TO GROW RAPIDLY WITH THE ENTRY OF FDI

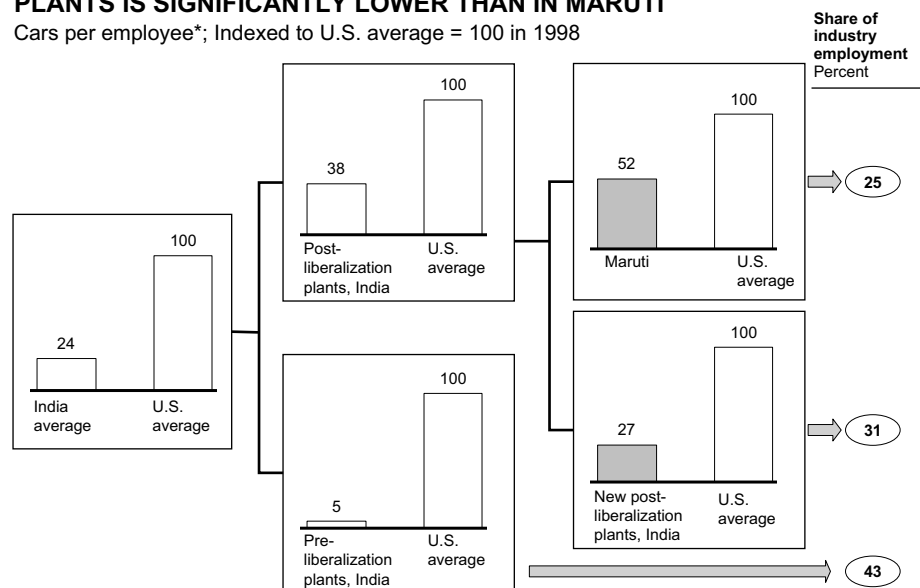


* Total output/total employment (direct + indirect)
Source: McKinsey Global Institute

Exhibit 11

LABOR PRODUCTIVITY IN MULTINATIONAL COMPANY PLANTS IS SIGNIFICANTLY LOWER THAN IN MARUTI

Cars per employee*; Indexed to U.S. average = 100 in 1998

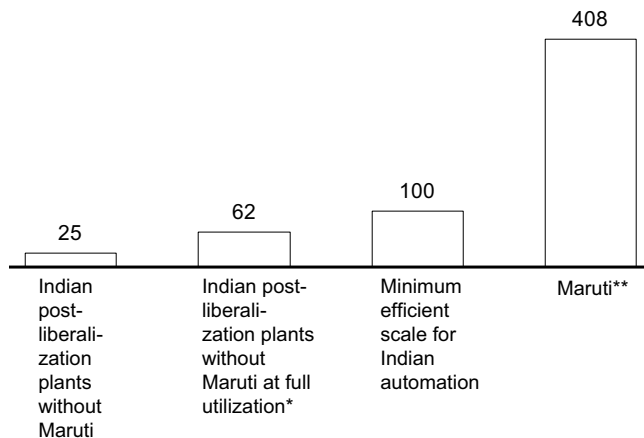


* Estimate accounts for differences in level of outsourcing by benchmarking only comparable elements of assembly
Source: Interviews, SIAM; McKinsey Global Institute

Exhibit 12

SCALE OF PRODUCTION 1999-00

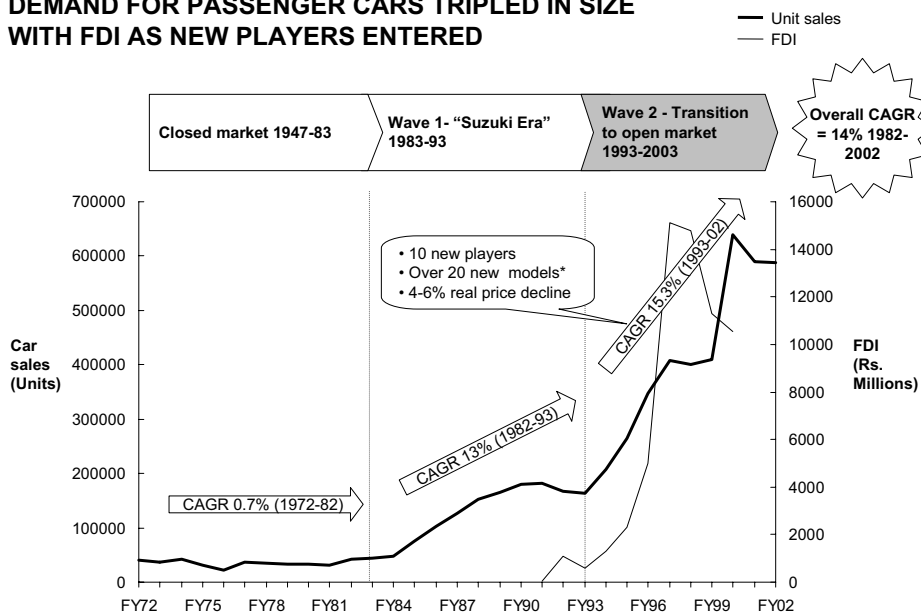
Thousand cars per plant



* With two shifts
 ** Including MUV
 Source: Interviews, SIAM, Harbour report

Exhibit 13

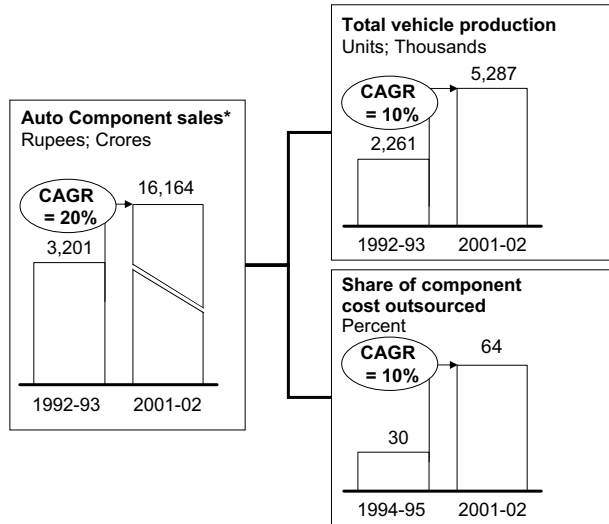
DEMAND FOR PASSENGER CARS TRIPLED IN SIZE WITH FDI AS NEW PLAYERS ENTERED



* Does not include multiple variants of same model
 Source: ACMA; McKinsey Global Institute

Exhibit 14

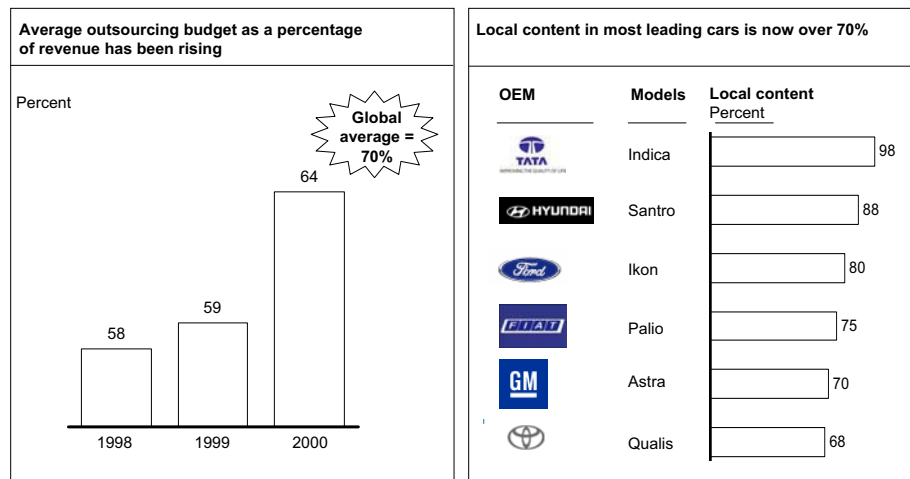
WITH FDI IN ASSEMBLY, THE COMPONENTS INDUSTRY MORE THAN TRIPLED IN SIZE



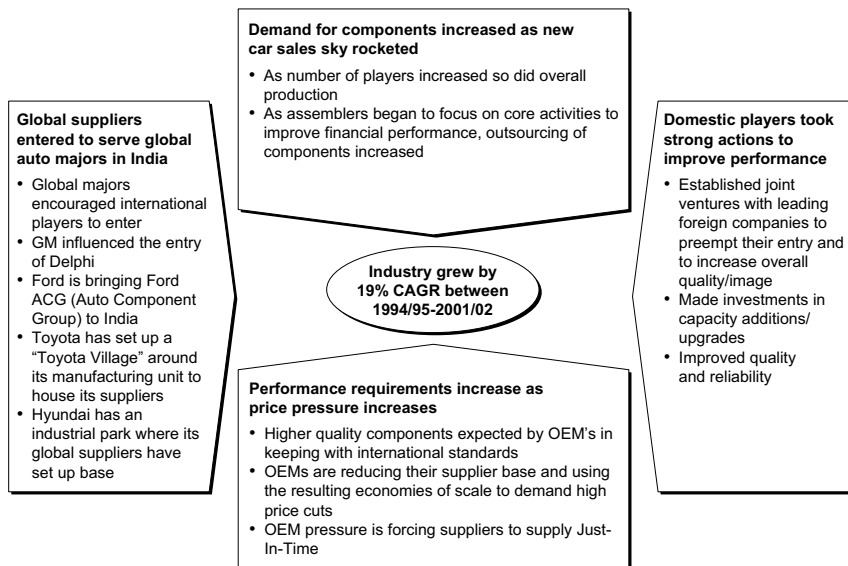
Note: Increase in amount spent per vehicle used as a proxy for increased outsourcing
 * Includes component sales to all auto categories - 2, 3, and 4 wheelers (Passenger cars, Utility Vehicles and Commercial Vehicles)
 Source: CRIS-Infac; ACMA; McKinsey Global Institute

Exhibit 15

OUTSOURCING IS ON THE RISE AS OEMS BEGIN TO FOCUS ON CORE ACTIVITIES



Note: Maruti has nearly 90-100% local content in most high volume models
 Source: ACMA; Infac; news reports; McKinsey Global Institute

Exhibit 16**RAPIDLY INCREASING DEMAND, COMPETITION AND HIGHER STANDARDS FUNDAMENTALLY CHANGED COMPONENTS INDUSTRY**

Source: McKinsey Global Institute

- Although we have not estimated productivity growth in the components industry, its emergence as a base for exports (\$0.8 billion exports in 2002, growing at roughly 38 percent annually) indicates rising competitiveness.

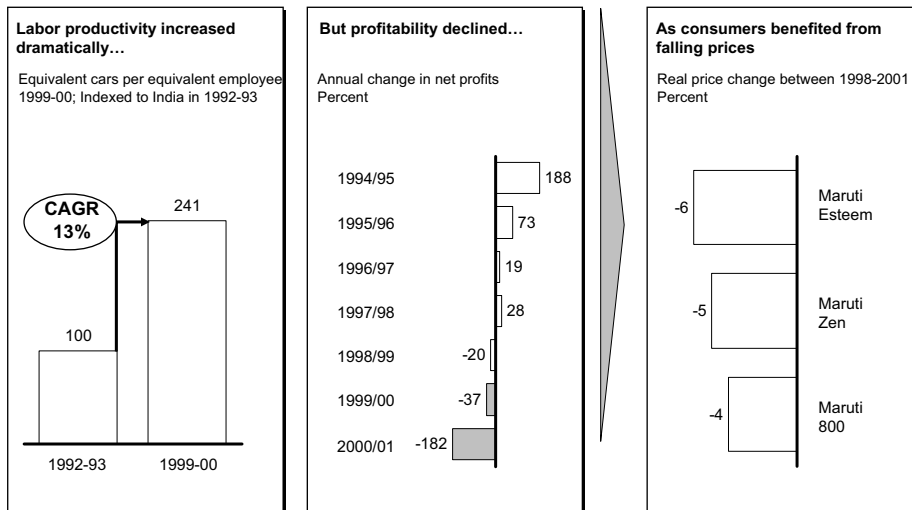
¶ **Distribution of FDI impact**

FDI's impact in increasing productivity, along with increasing the level of competitive intensity, has ensured that most of the surplus generated is transferred to consumers and labor. Companies have not managed to retain the benefits from improved productivity and have been forced to reduce their margins.

- **Companies.** While the industry has improved its productivity dramatically with FDI, OEMs have been forced to yield the surplus generated to consumers and labor. Profitability in the industry has declined measurably (Exhibit 17) with OEMs in small car segments reducing margins to the global industry average and those in large car segments losing money (Exhibit 18).
 - **FDI Companies.** Despite the fact that many companies are still performing well by global industry standards, their profitability has declined from what it used to be before the sector was fully liberalized. Maruti-Suzuki, the lone FDI-OEM in the first wave, was highly profitable before competition from FDI. With competition, even as Maruti-Suzuki has improved its productivity dramatically, it has had to reduce its margins steadily. Before Hyundai's arrival, Maruti-Suzuki enjoyed profit margins of 10-12 percent (compared to global average of five percent). However, after Hyundai's arrival, its margins have come down to 3-4 percent. Other FDI companies – especially the American and European OEMs who have limited or no products to offer in small car segments – are losing money. The only exceptions that are profitable, other than Maruti-Suzuki, are Hyundai (with a substantial presence in small car segments) and Honda (with a very small presence).
 - **Non-FDI Companies.** Of the main non-FDI companies HM has now has entered a joint venture with Mitsubishi and PAL has been driven out of business. This leaves Telco and Mahindra. Telco, while much smaller than Maruti-Suzuki, is a dominant company in a smaller car segment (one of the most popular segments in the sector), where it has one third of the market. Telco has managed to attain this position by developing a car that it has developed itself, the Indica. This has been successful with certain customer segments because it is customized to local needs (e.g., it has lower operating costs). Similarly, Mahindra has developed in India a localized version of an SUV that has captured a large share of the market; the product has already broken even in 2.5 years (well ahead of the industry norm of 6-7 years).
- **Employees**
 - **Level of employment.** With the infusion of FDI, overall employment in the sector in the period under review has declined marginally (by one percent CAGR). While employment grew at healthy rates for most OEMs during this period (eight percent CAGR at Maruti-Suzuki, which accounts for 25 percent of industry employment), the decline was driven by the forced exit of the lower productivity company PAL.

Exhibit 17

CONSUMERS BENEFITED THE MOST FROM MARUTI'S IMPROVED PERFORMANCE

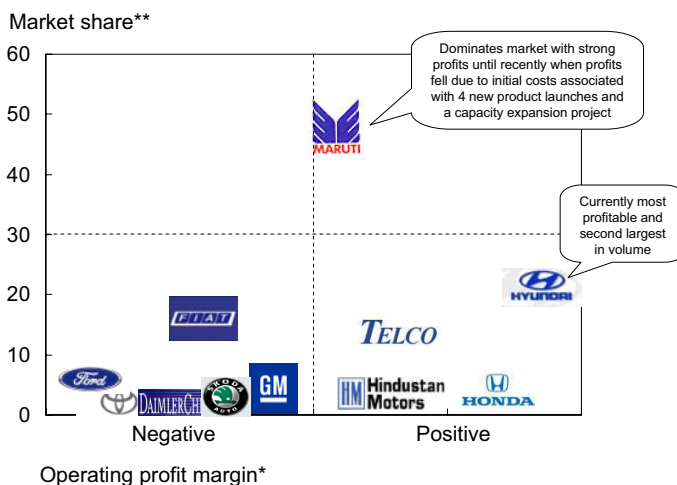


Source: Interviews; SIAM; Annual reports; McKinsey Global Institute

Exhibit 18

PERFORMANCE IN THE INDIAN AUTO SECTOR IS HIGHLY VARIED

NOT EXHAUSTIVE



* For year entries March 2002 for all players expect maturity and Hyundai where March 2001 numbers used
 ** For the period April-September 2002
 Note: Margin for passenger cars, HCVs and LCVs for Telco
 Source: Cris-Infac; McKinsey Global Institute

- Wages. Although wages at the sector level have not been compiled, there is strong evidence to suggest that wages have risen with FDI. Wages at Maruti-Suzuki have risen at 25 percent annually during the period. Average wages for line workers in the auto industry today are Rs. 120,000-150,000 a year, as compared to an average of Rs. 75,000-Rs. 90,000 prior to 1993. While a large portion of this rise might be related to the incentive based bonuses at Maruti-Suzuki that have been used to drive its productivity improvement ahead of other OEMs, it is unlikely that such dramatic increases in wages at Maruti-Suzuki were isolated from the rest of the industry.
- **Consumers**
 - Prices. Prices have declined substantially with the infusion of FDI. Prices tracked for all segments over the past five years show a steady decline of 8-10 percent annually, even as the consumer price index rose by an average of 4-7 percent a year in this period (Exhibit 19). As a result, demand has risen and the industry has tripled in size as cheaper products in new categories unlocked latent demand and the industry was relieved of supply constraints.
 - Product selection and quality. The selection of products has also improved with FDI (Exhibit 20). Prior to Suzuki's arrival, the industry had two models in the passenger cars segment. Following Suzuki's arrival in the 1980s, this climbed to eight. Today, with the mature FDI in place, the number of products has risen to over (Exhibit 21).
- **Government.** The industry has tripled in size by unit volume with annual growth rates of 13 percent (Wave 1) and 16 percent (Wave 2), compared to one percent in the pre-FDI era. Government revenues through taxes on sales have thereby increased substantially.

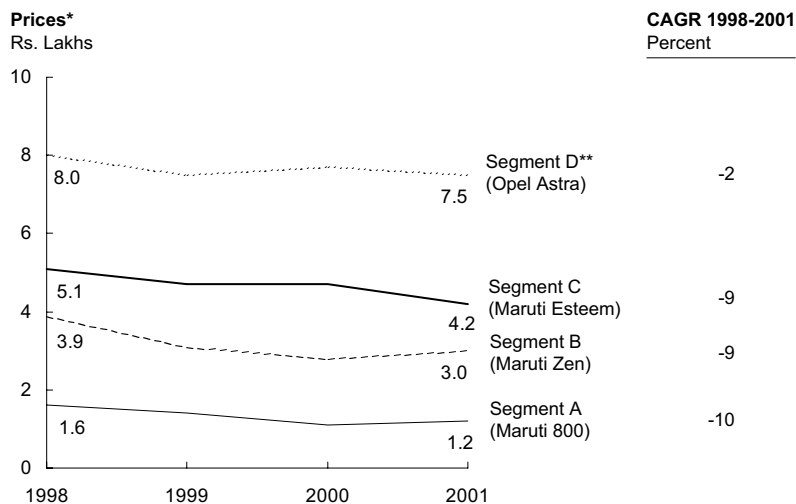
HOW FDI HAS ACHIEVED IMPACT

FDI has had a crucial role in improving the performance of the auto sector in India by changing the industry dynamics and improving operations.

- ¶ **Industry dynamics.** The second wave of FDI played a crucial role in altering the industry dynamics so as to make the industry competitive internationally. The total number of companies in the industry quadrupled as many major OEMs entered India (Exhibit 22). The entry of highly productive global OEMs raised competitive intensity (exhibits 23 and 24) and pushed the incumbent Maruti-Suzuki into increasing its productivity.
 - In the first wave of FDI, Maruti-Suzuki's impact in increasing competitive intensity and raising the productivity of incumbents was limited. Maruti-Suzuki created its own segment of customers by tapping into latent demand for high-quality low cost cars. Production volume for local OEMs did not suffer as demand still outstripped supply.
 - Competitive intensity increased with the second wave of FDI as new, more productive companies entered, and manufacturers greatly expanded product offerings and competed on price. Sector productivity increased dramatically, not only because of the arrival of the more productive international

Exhibit 19

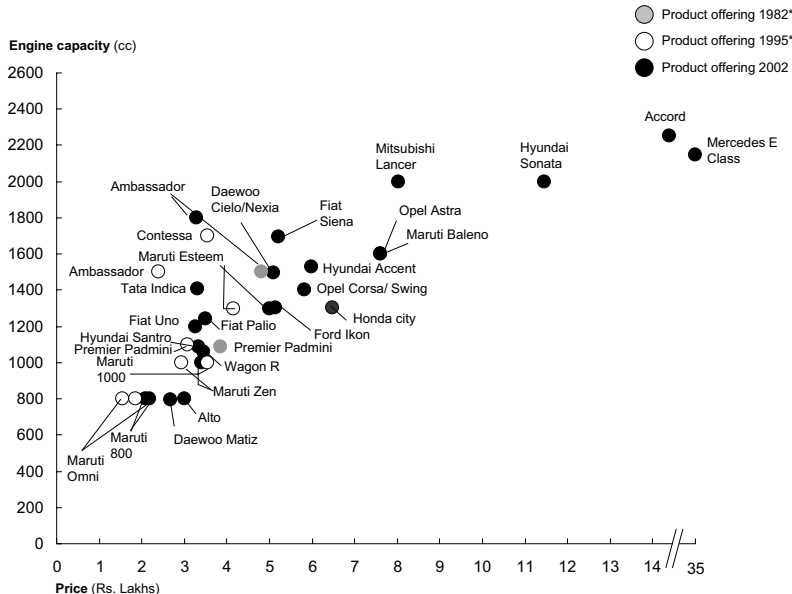
OVERALL PRICES HAVE DECLINED



Note: Prices shown for most expensive model in each segment
 * Retail prices adjusted for improvement in quality and for inflation using CPI
 ** Prices not adjusted for quality
 Source: INFAC; McKinsey Global Institute

Exhibit 20

CONSUMERS NOW ENJOY GREATER CHOICE



* Retail prices adjusted for inflation using Consumer Price index (not auto specific) ; excludes 2 models by PAL (Padmini and 118NE) which together accounted for ~13% of the market
 Source: Autocar India, Lit search; McKinsey Global Institute

Exhibit 21

FDI SPURRED INDUSTRY GROWTH BY CREATING NEW PRODUCT SEGMENTS

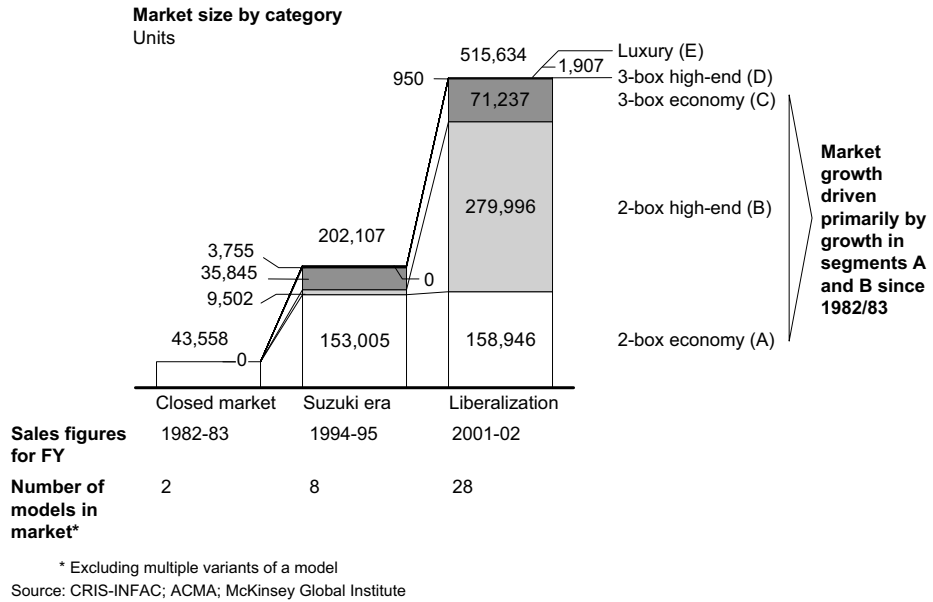


Exhibit 22

INCUMBENTS LOST SIGNIFICANT MARKET SHARE AS COMPETITION INTENSIFIED

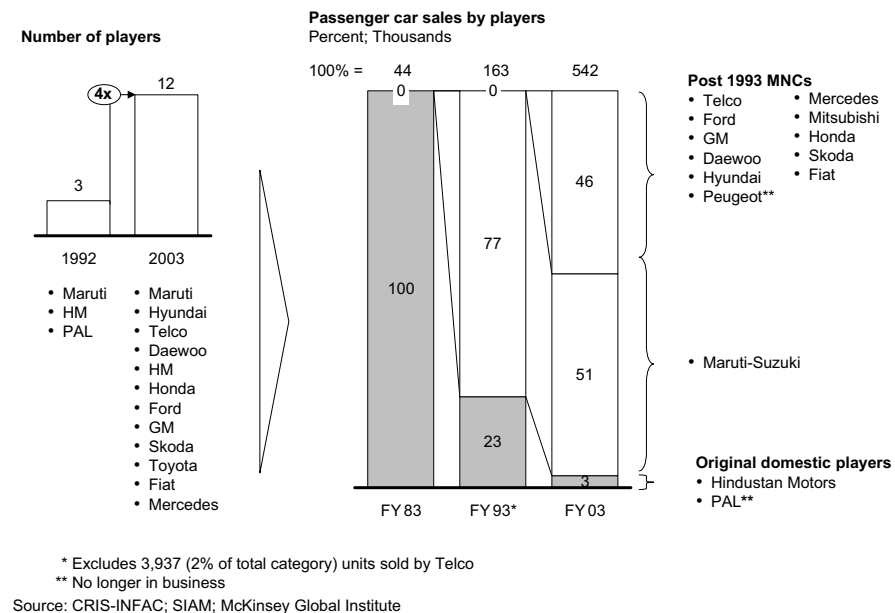


Exhibit 23

FDI INCREASED INDUSTRY COMPETITIVE INTENSITY

Indicators of competitive intensity	Degree of intensity	Comments/Observations	● High ○ Low
New entrants (contestability)	●	<ul style="list-style-type: none"> 12 new players entered since 1993 when the auto assembly sector was liberalized "New players" now account for nearly half the market 	
Weak players exit	●	<ul style="list-style-type: none"> PAL exited in 1999-2000 as demand for its outdated Padmini model (designed in the 60s) vanished PAL-Peugeot also exited as demand failed to pick up Daewoo disappeared as consumers stopped buying its cars on concerns over the future availability of spares and service support 	
Market position turnover	◐	<ul style="list-style-type: none"> Incumbents like Maruti and Hindustan Motors have steadily lost share as new players grabbed share with better product offerings Share has continuously shifted between new players since 1994 as new models were introduced and prices fell 	
Role of price*	◐	<ul style="list-style-type: none"> Real prices have fallen for all categories as overcapacity forced players to drop prices On average, real prices have declined 2-6% between 1998 and 2001 Moreover if quality improvements were to be factored in, prices would have fallen even further 	
Profitability*	◐	<ul style="list-style-type: none"> Sector level profitability has declined by 25% CAGR between 2001-02 largely due to real price declines At a player level, more productive players (e.g. Hyundai) have seen profitability increase while most others have suffered as volumes declined 	

* Covered in earlier section
Source: McKinsey Global Institute

Exhibit 24

SEGMENTS A AND B HAVE BEEN IMPACTED THE MOST BY FDI

Degree of competitive intensity

Segments	A/B (smaller car)	<p>Medium</p> <ul style="list-style-type: none"> Maruti practically invented the A category by introducing the 800 Although Ambassador and Premier Padmini (2 cars sold when Maruti entered) were not A/B cars by length, they fell into this category based on their price 	<p>Very high</p> <ul style="list-style-type: none"> Segment B which accounts for nearly half the total market saw the entry of Hyundai, Daewoo (now closed) and Fiat which brought superior products Several MNCs now launching new products including Honda and GM
	C/D/E (larger car)		<p>Medium</p> <ul style="list-style-type: none"> Although several players compete in these segments, volumes are very small (~15% of the total market) Given limited demand, most players suffer from very low capacity utilization
		Wave 1	Wave 2
FDI Phases			

Source: McKinsey Global Institute

companies (the product mix effect) but also because weak companies exited and incumbents were forced to improve (the low-productivity company PAL exited, while HM fundamentally changed its role to become an outsourcer to Mitsubishi).

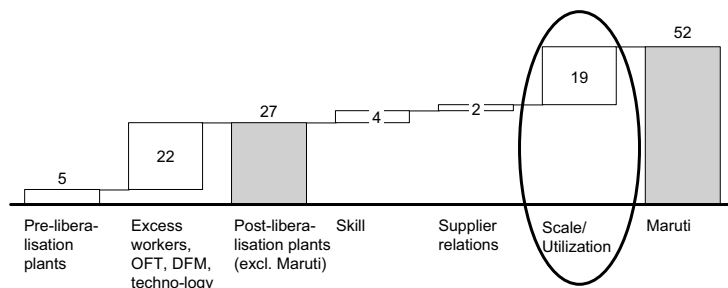
¶ **Operational Factors.** Both waves of FDI have had a strong impact on operations in the sector.

- **Capacity expansion.** Prior to the arrival of Suzuki, the Indian auto industry was highly supply-constrained. In the first wave of FDI (the Maruti-Suzuki joint venture), FDI provided capital and increased production capacity. The impact of this increased capacity was positive on industry productivity through improved economies of scale (Exhibit 25). This allowed the industry to offer better products at low prices, unleash latent demand and virtually create the Indian auto industry. By contrast, the impact of increased capacity on productivity in the second wave of FDI was negative, as OEMs created 40 percent overcapacity, which dragged down sector productivity and profitability (Exhibit 26).
- **Improved products.** Innovation in the industry soared with FDI. Prior to the arrival of FDI, the industry offered only two models and had offered no new products for decades. With Suzuki's arrival in the 1980s, this number climbed to eight. Today, with the mature FDI in place, not only has the number of products risen to more than 30, but product quality is at international levels and is being exported to the multinational company's home markets (Exhibit 20).
- **Management practices.** The first-wave of FDI had a direct impact on improving the productivity of the industry as Suzuki brought superior production and management skills to India. In contrast, the second-wave of FDI impacted management and production skills through both direct and indirect means. It did so directly, as high-productivity FDI companies such as Hyundai increased industry productivity built scale and captured market share. FDI had an even greater impact indirectly: Maruti-Suzuki was forced to revamp its production template and increase its productivity at an annual rate of 10 percent (exhibits 25 and 27).
- **Supplier industries.** FDI has also contributed to improving the productivity of auto sector in India through upstream positive spillover effects. This impact has been achieved in two distinct ways.
 - Improving productivity of suppliers. Although productivity data are not available, interviews with OEMs and secondary indicators (falling prices, improved quality, rising exports) indicate that the productivity of the supplier industry has improved substantially with FDI. This was achieved in two ways: first, FDI-OEMs co-located suppliers and transferred best practice techniques; second, FDI-OEMs required their home country suppliers to make FDI investments in India, introducing similar dynamics in the supplier industry to those described in the auto sector.
 - Enabling further FDI in assembly. FDI enabled the creation of a reliable supplier industry. This in turn has been responsible for attracting further FDI investments from OEMs and has set a virtuous cycle of improvement in motion, as OEMs have helped improve the productivity of suppliers, while a high-performing supplier industry has helped improve OEM productivity.

Exhibit 25

LOWER PRODUCTIVITY OF MNCs LARGELY DRIVEN BY LACK OF SCALE AND POOR UTILIZATION

Equivalent cars per employee*, indexed to U.S. average



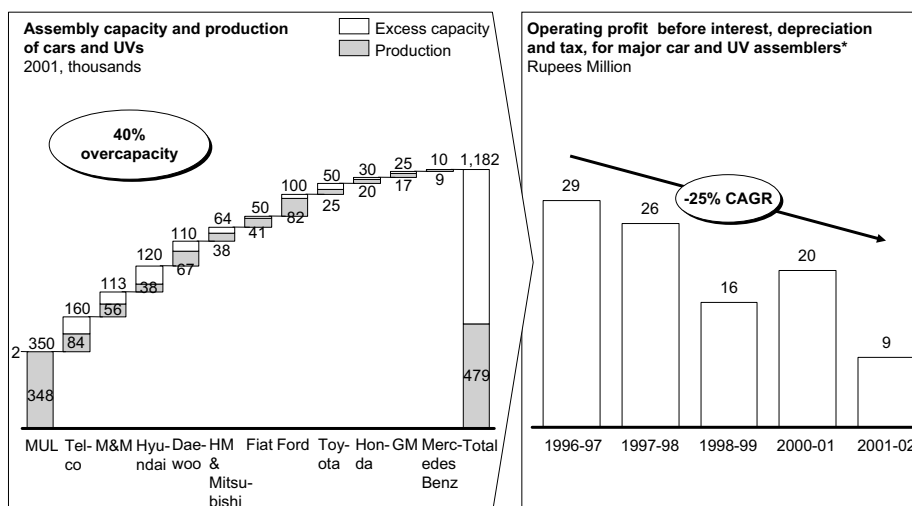
Causes

- Less experience
- Less JIT
- Less indirect labour per car produced
- Lower product quality
- Higher output

* Excluding sales, R&D, powertrain, etc., and adjusted for hours worked per year
 Source: Interviews, SIAM, INFAC; McKinsey Global Institute

Exhibit 26

OVERCAPACITY IN THE INDUSTRY HAS LED TO LOWER PROFITS












* Includes – Bajaj Tempo Ltd., Daewoo Motors Ltd., Hyundai Motors India Ltd., Hindustan Motors, M&M, MUL & Telco
 Note: Operating profit is net sales less operating expenses
 Source: INFAC; SIAM; CMIE Capex; Prowess; McKinsey Global Institute

Exhibit 27

PRODUCTIVITY INCREASES DRIVEN BY SEVERAL FACTORS

● High
○ Low

	Examples of what they did	Impact on productivity	How it helped
Increased Automation	<ul style="list-style-type: none"> Robots in body shop increased (300 robots now) – indigenously developed robots costing ~\$50,000 had a payback period of ~5-8 years given high labor costs (~\$400 per worker) Use of automatically guided vehicles in material handling Transfer of 8 sets of dies from semi automatic to automatic presses (replacing 18 people) 		<ul style="list-style-type: none"> Output increased due to higher productivity Less rework as quality improved
Process improvements	<ul style="list-style-type: none"> Several innovative production practices which drastically improved quality resulting in optimal utilization of production lines (examples to follow) Shop floor layout improved (e.g. gap between stations reduced) – over 35,556 sq. meters between 1997/98 and 1999/00 Kaizen Quality Circles initiated to encourage worker participation (Over 140,000 suggestions implemented since 1995/96) 	   	<ul style="list-style-type: none"> Overall speed of line increased Less rework as quality improved
Suppliers	<ul style="list-style-type: none"> Sourcing more sub systems from suppliers Number of suppliers reduced from 375 to 299 by removing all dormant/inactive vendors and retaining only high performers New ventures aimed at increasing overall capacity – Maruti and Machino Techno Sales set up a Rs 400m (\$12.7m) steel metal stamping shop near Delhi that augmented Maruti's steel metal pressing capacity with an 800-ton press line, possibly rising to 1,200 tons 	  	<ul style="list-style-type: none"> Lower complexity resulted in higher reliability and lesser downtime Move towards more sub assemblies allowed existing labor to be redeployed to increase line speed / capacity New partnerships helped increase overall capacity without significant increase in labor
Capacity addition	<ul style="list-style-type: none"> New plant added with a capacity of 100,000 units (2 shifts) with minimal new labor (labor mostly redeployed from existing plants) 		<ul style="list-style-type: none"> Currently running one shift, this new plant increased overall capacity by 50,000 units accounting for a fifth of the total increase in output

Source: Interviews; McKinsey Global Institute

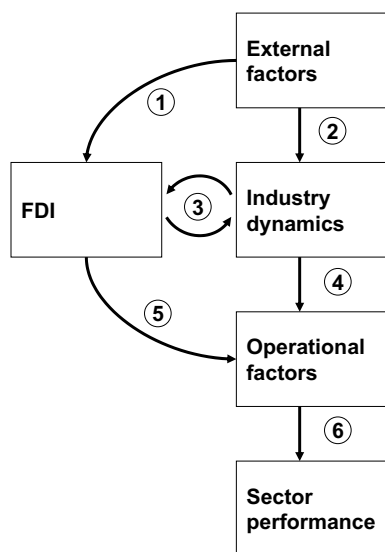
EXTERNAL FACTORS THAT AFFECTED THE IMPACT OF FDI

FDI made a very positive contribution to the industry by infusing capital and technology and by creating a competitive industry dynamic that forced incumbents to reform or exit. Although FDI's impact was very strong, certain factors external to the industry did dampen its full potential. For example, local content requirements forced OEMs to set up subscale component manufacturing plants in India, or find informal ways to source imports while showing them as sourced locally⁷. While it may be argued that on the margin this accelerated the development of a component industry⁸, in the short run it increased the cost of producing autos in India and reduced demand. Similarly, high import tariffs forced OEMs to setup subscale operations in larger car segments, while high domestic taxation suppressed demand and exacerbated overcapacity. In addition, labor regulations prevented the rationalization of employment, poor infrastructure led to production inefficiencies and larger inventories, and overcapacity in production for larger size cars have all prevented MNCs from achieving their full productivity potential.

SUMMARY OF FDI IMPACT

Overall, FDI on the host country has been very positive. In an industry where global scale has traditionally been necessary to develop world-class products, FDI has been crucial in reinventing India's formerly under-productive auto industry. FDI not only fulfilled this direct need in India, but also set in motion dynamics that have resulted in a dramatic impact on the industry – from upstream spillovers to increased competitive intensity – that forced incumbent OEMs to improve productivity. With FDI, the industry has increased its productivity several-fold and tripled its output over the past two decades. Benefits of the surplus generated have largely flowed to consumers (in the form of better, cheaper products and increased choice) and, to a lesser degree, to labor (in the form of increased wages). The government also benefited from higher tax revenues. However, to date, the losers have been OEMs themselves – the very agents that have driven these changes.

7. Through our interviews, we learned that some OEMS sourced components from local manufacturers who had actually imported them but found ways to show them as having been produced locally.
8. We found it difficult to make a convincing case that local content requirements led to the development of a mature components industry in India. Our research shows that while local content requirements may have marginally accelerated the development of India's component industry, it should not be seen as a direct result of these requirements. OEMs believe that they would have sourced components locally in any case because: 1) Given India's poor transportation infrastructure (ports, highways, rail freight) local sourcing was the only option to leverage Just-In-Time. Importing components would have been virtually impossible and increased costs prohibitively. 2) Following the Rupee's devaluation in the late 1980s and early 1990s, OEMs were forced to start sourcing components locally. If they had not they would have been driven out of business by the rising costs of imports (as happened in the LCV segment). 3) Given India's cheap, technically trained labor, it also makes organizational sense to manufacture components locally.

Exhibit 28**INDIA AUTO – SUMMARY**

Source: McKinsey Global Institute

- ① • India's potential large market and relaxation of FDI regulations explain the headlong rush of OEMs into India after 1993. Prior to this, Suzuki was the only MNC permitted in the country
- ② • India's licensing policy had for decades protected a duopoly of highly inefficient domestic players and constrained supply. Innovation was rare and shoddy products were sold at high prices. There was large latent demand as consumers were unable to afford what the industry offered
- ③ • Suzuki's JV entry in 1983 unleashed this latent demand by introducing a high performance product at low price. With further liberalization, highly productive MNCs like Hyundai entered the country driving competitive intensity particularly in segments A/B
 - As a result, new products were introduced and prices declined. Pre-FDI incumbents lost market share rapidly and weak players exited (PAL)
 - Some highly capitalized domestic conglomerates also entered, introducing indigenously developed products and captured market share from MNCs
 - Overestimating demand, MNCs created a large overcapacity in segments C, D, E (larger car segments)
- ④ • Intense competition in segments A/B (smaller car segments) drove innovation as OEMs like Maruti dramatically improved their productivity by automating plants with indigenous technology, revamping OFT and improving labor skills
 - Domestic champions like Telco and Mahindra optimized labor/capital trade-offs and superior local knowledge to develop indigenous products at a fraction of the cost of global OEMs and produce them cheaply
- ⑤ • Segments A/B: FDI improved productivity of the Indian industry by contributing knowledge and technology. Productivity of best practice FDI player Maruti is 10 times of pre-FDI domestic players
 - Segments C/D/E: Even as MNCs contribute knowledge and technology, they drag industry productivity down due to sub-optimal scale and severe overcapacity
- ⑥ • Overall FDI impact on the host country has been very positive. Sector productivity increases several-fold and consumers benefit from greater choice and lower prices while employment remains flat

Exhibit 29**INDIA AUTO – FDI OVERVIEW**

• FDI periods	
– Focus period: Mature FDI	1993-2003
– Comparison period: Early (only Suzuki) FDI	1983-1993
• Total FDI inflow (1993-2000)*	\$1.5 billion
– Annual average	\$216 million
– Annual average as a share of sector value added**	NA
– Annual average per sector employee**	\$1,000
– Annual average as share of GDP**	0.05%
• Entry motive (percent of total)	
– Market seeking	100%
– Efficiency seeking	0%
• Entry mode (percent of total)	
– Acquisitions	0%
– JVs	82%
– Greenfield	18%

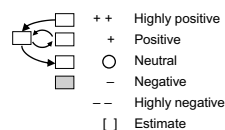
* FDI for entire transportation sector which includes 2 wheelers, commercial vehicles and tractors

** 2001

Source: Foreign Investment Promotion Board

Exhibit 30

INDIA AUTO – FDI AND ECONOMIC IMPACT IN HOST COUNTRY



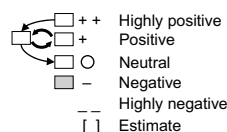
Economic impact	Sector performance during		FDI impact	Evidence
	Early FDI (1983-1993)	Mature FDI (1993-2003)		
• Sector productivity (CAGR)	++	20%	++	<ul style="list-style-type: none"> Wave 1 of FDI drove productivity of the industry by mix-effect from the entry of a highly productive player like Suzuki Wave 2 of FDI was the key driver of increased competitive intensity which drove Maruti to further dramatically increase its productivity. It also forced the exit of unproductive incumbents like PAL
– Maruti	1%*	13%		
• Sector output (CAGR)	13%	21%	++	<ul style="list-style-type: none"> FDI increased output of the industry through 2 key drivers: <ul style="list-style-type: none"> Increased supply to match existing unmet demand Create additional demand by introducing new products at reduced prices that tapped latent demand in the market
• Sector employment (CAGR)	+	1%	O	<ul style="list-style-type: none"> Increased competition from FDI resulted in the exit of employment-intensive player PAL. However, adverse impact on employment was offset by a proportional increase in output by MNCs
• Suppliers	+	++	++	<ul style="list-style-type: none"> MNCs required their suppliers to setup base in India and helped build a mature supply chain. Impact of upgrades in quality has allowed Indian components manufacturers to become large exporters and the industry has grown at 13% per annum since 1998
Impact on competitive intensity (net margin CAGR)	25% Increase (89-93)	~25% Decline (96-02)	++	<ul style="list-style-type: none"> FDI brought all major OEMs into the country and created 40% overcapacity in the industry. As OEMs fought to maintain market share, profitability declined even as productivity increased

*1990-92

Source:McKinsey Global Institute

Exhibit 31

INDIA AUTO – FDI'S DISTRIBUTIONAL IMPACT IN HOST COUNTRY



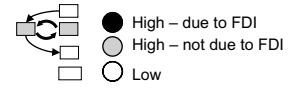
Economic impact	Sector performance during		FDI impact	Evidence
	Early FDI (1983-1993)	Mature FDI (1993-2003)		
• Companies				
– FDI companies	25% Increase (89-93)	~25% Decline (96-02)	--	<ul style="list-style-type: none"> Due to intense competition, MNCs were forced to pass on more than what they gained through productivity increases to consumers
– Non-FDI companies	-	--	-	<ul style="list-style-type: none"> In addition to reducing prices and profitability, domestic companies also lost market share to MNCs in all categories (Does not include TELCO – a new domestic entrant in the passenger car segment that has successfully captured ~11% market share in 3 years)
• Employees				
– Level of employment (CAGR)	+	1%	O	<ul style="list-style-type: none"> Increased competition from FDI resulted in the exit of employment-intensive player PAL. However, adverse impact on employment was offset by a proportional increase in output by MNCs
– Wages	+	++	+	<ul style="list-style-type: none"> Maruti's wages increased at 25% CAGR between 1993-2000; Maruti accounts for over 20% of sector employment*
• Consumers				
– Prices	+	++	+	<ul style="list-style-type: none"> Intense competition resulted in OEMs transferring all gains in productivity to consumers
– Selection	+	++	++	<ul style="list-style-type: none"> With FDI, number of models available increased dramatically
• Government				
– Taxes	+	++	++	<ul style="list-style-type: none"> Increased revenue due to taxes levied on cars likely to outweigh lost taxes on company profits

* Both waves of FDI resulted in wage increases – Maruti, which currently pays the highest wages in the industry, entered in Wave 1, and pressure from Wave 2 players resulted in higher wages due to higher productivity

Source:McKinsey Global Institute

Exhibit 32

INDIA AUTO – COMPETITIVE INTENSITY

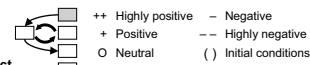


	Sector performance during		Evidence	Rationale for FDI contribution
	Pre-Wave 1 FDI (1993)	Wave 1 FDI (2003)		
Pressure on profitability	○	●	<ul style="list-style-type: none"> Maruti's rising profitability has steadily been declining since 1993; All MNCs (excl. Hyundai) making losses 	<ul style="list-style-type: none"> Competition/increased choice and overcapacity have forced OEMs to squeeze margins in all segments
New entrants	◐	●	<ul style="list-style-type: none"> 13 new entrants since 1993 	<ul style="list-style-type: none"> Of the 13 new entrants, 12 are MNCs
Weak player exits	○	◐	<ul style="list-style-type: none"> 3 weak player exits out of a total of 13 	<ul style="list-style-type: none"> PAL (domestic), Peugeot and Daewoo exited as higher productivity OEMs offered better products at much lower prices
Pressure on prices	○	◐	<ul style="list-style-type: none"> Real prices for products have been declining steadily across the board 	<ul style="list-style-type: none"> Real prices of MNC products fell in all categories as competition increased
Changing market shares	○	◐	<ul style="list-style-type: none"> Dramatic changes in market share as more productive players enter the market 	<ul style="list-style-type: none"> Maruti steadily lost share (from 80% to 50%) to Hyundai and other MNCs in addition to Telco, a domestic player
Pressure on product quality/variety	◐	◐	<ul style="list-style-type: none"> OEMs are constantly introducing new products in the market 	<ul style="list-style-type: none"> FDI players have further broadened SKU selection
Pressure from upstream/downstream industries	○	○	<ul style="list-style-type: none"> N/a 	<ul style="list-style-type: none"> N/a
Overall	○	●	<ul style="list-style-type: none"> Intense competition in the industry, especially in segments A/B 	<ul style="list-style-type: none"> Prior to FDI, the market was an uncompetitive and protected oligopoly

Source: McKinsey Global Institute

Exhibit 33

INDIA AUTO – EXTERNAL FACTORS' EFFECT ON FDI



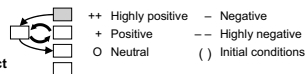
Level of FDI*	Impact on level of FDI	Comments	Impact on per \$ impact	Comments	
Global industry factors	Na				
Global industry discontinuity	○		○		
Country-specific factors	Relative position				
	• Sector market size potential	+	• Players attracted to large population, although less than 0.2% (400,000) HHs can afford a car	-	• Lack of demand has resulted in ~40% overcapacity in industry
	• Prox. to large market	○		○	
	• Labor costs	○		+	• Lower labor costs allow OEMs to substitute labor with capital to reduce costs, while cheaper engineers enable them to value engineer costs down and develop indigenous machinery
	• Language/culture/time zone	○		○	
	Macro factors				
	• Country stability	○		○	
Product market regulations					
• Import barriers	+	• Import restrictions and high duties made it important to set up assembly lines initially	○		
• Preferential export access	○		○		
• Recent opening to FDI	++	• FDI was allowed freely post 1993	+		
• Remaining FDI restriction	○		○		
• Government incentives	+	• In the absence of state govt. incentives (esp. infrastructure promises), level of FDI likely to have been lower	-	• Incentives and protection led to overcapacity and sub-scale plants	

* Average annual FDI/sector value added

Source: McKinsey Global Institute

Exhibit 34

INDIA AUTO – EXTERNAL FACTORS' EFFECT ON FDI

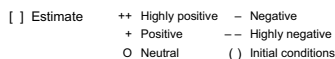


	Impact on level of FDI	Comments	Impact on per \$ impact	Comments	
Level of FDI*	+	• TRIMS forced cos to invest a minimum amount & localize quickly thereby increasing the level of FDI investments	O	• Higher localization led to lower prices, which in turn increased demand and improved utilization and increased productivity	
	O	• Corporate governance	O		
	O	• Other	O		
	+	Capital deficiencies	• Foreign partners required to bring substantial amount of capital given inability of local players unable to invest/raise sufficient funds	O	
	O	Labor market deficiencies	• Archaic labor laws and unions worried MNCs given need to substitute labor with capital	O	
	O	Informality		O	
Country-specific factors	+	Supplier base/ infrastructure	• Existence of a fairly developed components industry encouraged MNCs to enter & localize	+	• Cheap and good quality components have helped lower costs (& prices) and can potentially improve India's export competitiveness (both for cars + comps.)
	+(L)	Competitive intensity	• Low competitive intensity in a high potential market encouraged players to enter India	++(L)	• Very positive impact for consumers as prices fell and it has helped boost overall productivity although profitability has reduced
Sector initial conditions	+(H)	Gap to best practice	• Domestic players were highly inefficient (~5% of US in 1999-00) and MNC players were capable of being far more productive	+(H)	• Higher productivity of new players vs. domestic players helped drive overall productivity further

Source: McKinsey Global Institute

Exhibit 35

INDIA AUTO – FDI IMPACT SUMMARY



Level of FDI relative to sector*	FDI impact on host country		Level of FDI** relative to GDP	External Factor impact on			
	NA			Level of FDI	Per \$ impact of FDI		
Economic impact				0.05%			
• Sector productivity	++		Global factors	Global industry discontinuity	O	O	
• Sector output	++			Relative position	• Sector market size potential	+	-
• Sector employment	O				• Prox. to large market	O	O
• Suppliers	++				• Labor costs	O	+
					• Language/culture/time zone	O	O
Impact on competitive intensity	++			Macro factors			
• Suppliers	++			• Country stability	O	O	
Distributional impact			Country-specific factors	Product market regulations			
• Companies				• Import barriers	+	+	
– FDI companies	--			• Preferential export access	O	O	
– Non-FDI companies	-			• Recent opening to FDI	O	+	
				• Remaining FDI restriction	O	O	
				• Government incentives	+	-	
				• TRIMS	+	O	
				• Corporate governance	O	O	
				• Other	O	O	
• Employees					Capital deficiency	+	O
– Level	O			Labor market deficiencies	O	O	
– Wages	+			Informality	O	O	
• Consumers				Supplier base/ infrastructure	+	+	
– Prices	+						
– Selection	++						
• Government			Sector initial conditions	Competitive intensity	+(L)	++(L)	
– Taxes	++			Gap to best practice	+(H)	+(H)	

* Average annual FDI/sector value added
 ** Average (sector FDI inflow/total GDP) in key era analyzed

Preface to the Consumer Electronics Sector Cases

1

Each of our four country cases, Brazil, Mexico, China, and India, are large developing economies that have carried out some form of policy liberalization toward foreign investments in the consumer electronics sector during the past 10 years. All of them have a large domestic consumer electronics market with at least \$8 billion in sales – that of China being roughly four times the size of the others (Exhibit 1). Yet the market and policy environment for foreign investments has been quite different in each of the four countries, ranging from a largely open market environment by the end of our study period in China and Mexico to the more protected policy environments of Brazil and India. This preface provides the background information necessary for a full understanding of the comparative cases.

BACKGROUND AND DEFINITIONS

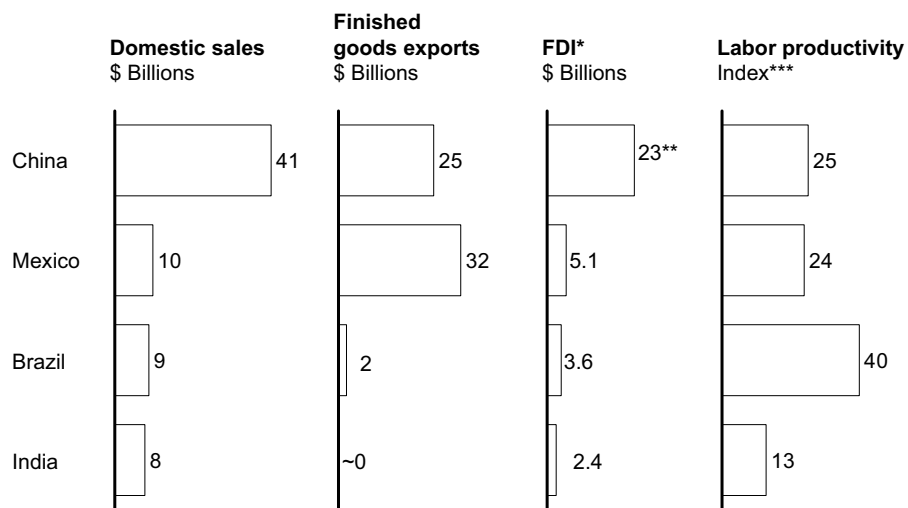
FDI typology. FDI in consumer electronics spans the range of FDI typologies. Mexico has, in the period under review, received almost purely efficiency-seeking FDI, mostly for assembly operations of products targeting the U.S. market. Brazil and India have high import tariffs, and in the case of Brazil, unique standards, both of which have limited imports and led to tariff-jumping FDI. China's large domestic market has attracted market-seeking FDI, while its low labor costs have attracted efficiency-seeking FDI. Both motives explain the large FDI inflow to the country.

Sector segmentation. Our segmentation of the sector includes a broad and representative range of consumer electronics categories, with somewhat different characteristics:

- ¶ **PCs and peripherals.** This includes desktops, laptops, and all their peripherals, such as optical and magnetic storage, monitors, and keyboards. This sub-segment is the furthest along the process of value-chain disaggregation. Widely adopted hardware and software standards have enabled the creation of separate markets for most components and peripherals. Most of the component markets in this sub-segment are characterized by rapid technological change and high levels of global competitive intensity.
- ¶ **Mobile handsets.** This includes wireless telephone handsets only. The segment is characterized by very rapid technological change (including technology transitions from analog to digital and 3G); standardization at the regional level (e.g., GSM in Europe and PDC in Japan) and a low bulk-to-value ratio.
- ¶ **White goods.** This includes refrigerators, washing machines, dishwashers, window air-conditioners, and other household appliances. These products tend to be bulkier to transport and have fewer components and a slower rate of technological innovation than most other consumer electronics products. In all the countries studied, domestic companies were already present. As a result, acquisitions have played a more important role in white goods than in the other segments.
- ¶ **Brown goods.** This includes home audio and video equipment such as televisions, DVD players, VCRs, home stereo systems, and portable audio

Exhibit 1

COMPARATIVE DATA FROM CONSUMER ELECTRONICS CASES – 2001

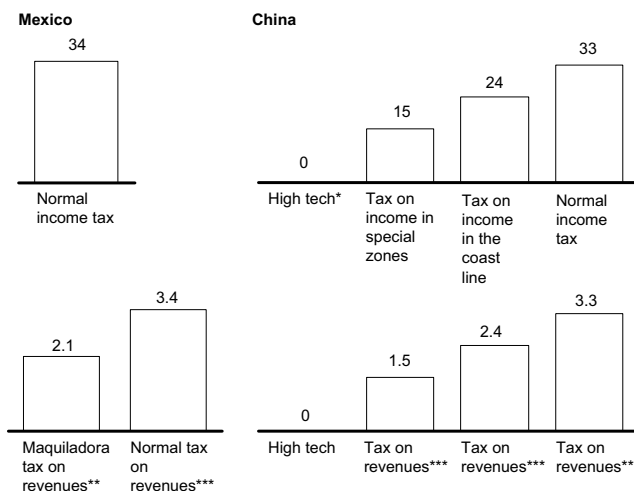


* 1996-2001
 ** Adjusted to exclude estimate of semiconductor FDI
 *** Indexed to Korea = 100: Base measurement = RMB/worker/hour
 Source: National statistics; McKinsey Global Institute

Exhibit 2

TAX EXEMPTIONS TO EXPORTERS IN SPECIAL ECONOMIC ZONES/REGIMES

Percent



* For the first 2 years
 ** For maquiladoras (main exporter) considering the "Safe Harbor" scheme which taxes 34% on the higher of 6.5% of total assets or 6.9% of total costs, and considering that total costs are 90% of revenues
 *** Considering a 10% profit margin
 Source: Interviews, literature search; McKinsey Global Institute

equipment. This sub-segment is the most varied among all those studied in that it covers products with very different bulk-to-value ratios and rates of technological change (e.g., standard low-end radios, DVD players, and large-screen TVs).

Role of product mix and activity mix in explaining productivity. In consumer electronics, there are very large labor productivity differences between different steps in the value chain for the same product (e.g., capital-intensive component production compared to the more labor-intensive assembly operations)¹. There are also significant differences in labor productivity between different products (e.g., white goods compared to mobile phones). These differences are usually much larger than the differences observed across countries within the same step of the value chain of a single product: for example, many contract manufacturers locate identical, highly automated component production facilities in a number of countries that have very similar levels of labor productivity performance overall. As a result, the most important explanatory factor for average productivity differences between countries is the product mix.

Special economic zones/fiscal regimes. Developing countries, such as Mexico and China, have attempted to attract efficiency-seeking FDI in consumer electronics by giving foreign direct investment a special status tied to exports. This can be achieved either through a special fiscal regime (such as maquiladoras in Mexico that provide input tariff and tax exemptions²) or the development of a special production locations (such as the Chinese Special Economic Zones – SEZs) that provide better infrastructure and lower taxes than available elsewhere within the country concerned (Exhibit 2). These interventions have segmented the overall consumer electronics sector and created a non-level playing field between export-oriented manufacturing and production for domestic market.

SOURCES

Data. For Brazil, Mexico, and China, productivity, output, and employment estimates were based on government statistical sources, and price information was derived from price indices from public and proprietary McKinsey price surveys. For India, company-level financial information was analyzed and aggregated to estimate value add; employment data was gathered from public sources and telephone interviews. UN PCTAS trade statistics were used for trade whenever possible, with supplemental and comparative information gathered from national statistical sources. One difficulty faced in data analysis in consumer electronics is that countries often define the sector and its subsegments differently. We have taken every step possible to ensure the comparability of the data used and have noted wherever applicable where the various data sets that have subtle definitional differences.

1. The different steps in production also vary in relation to the role economies of scale play: they can be very large in some capital-intensive components, while negligible in some assembly operations, where home-based informal players can remain competitive in the market.
2. This is in the process of being phased out by NAFTA and is due to end in January 2004.

Exhibit 3**KEY DATA SOURCES AND INTERVIEWS FOR CONSUMER ELECTRONICS CASES**

	China	Mexico	India	Brazil
Key data sources	<ul style="list-style-type: none"> • China Electrical Industry yearbook • China Light Industry yearbook • China statistical annual • Company financials • Sino market research • Gartner • IDC • EIU • China Foreign Trade and Economy yearbook 	<ul style="list-style-type: none"> • INEGI • Secretaria de Economia • Bancomext • BN RCTAS • CIEMEX-WEFA • U.S. Trade Online 	<ul style="list-style-type: none"> • Company financials • Center for Monitoring the Indian Economy • RBI India • UN PCTAS database • MAIT • ELCINA • Newspaper reports 	<ul style="list-style-type: none"> • ABINEE • SECEX • Banco Central • FIPE • CAMEX • SUFRAMA • IBGE
Interviews	<ul style="list-style-type: none"> • 8 company interviews • 4 analyst and expert interviews 	<ul style="list-style-type: none"> • 6 company interviews • 5 analyst and expert interviews 	<ul style="list-style-type: none"> • 2 company interviews • 2 expert interviews • Leveraged extensive interview base for CII report 	<ul style="list-style-type: none"> • 8 company interviews • 3 expert interviews

Interviews. An assessment of the impact of industry dynamics and external factors on the sector was made based on interviews with company executives, government officials, industry analysts, and industry associations (Exhibit 3). These sources were also used to verify the impact that FDI has had on productivity and to understand the various operational factors that it might have influenced.

Consumer Electronics Sector Synthesis

7

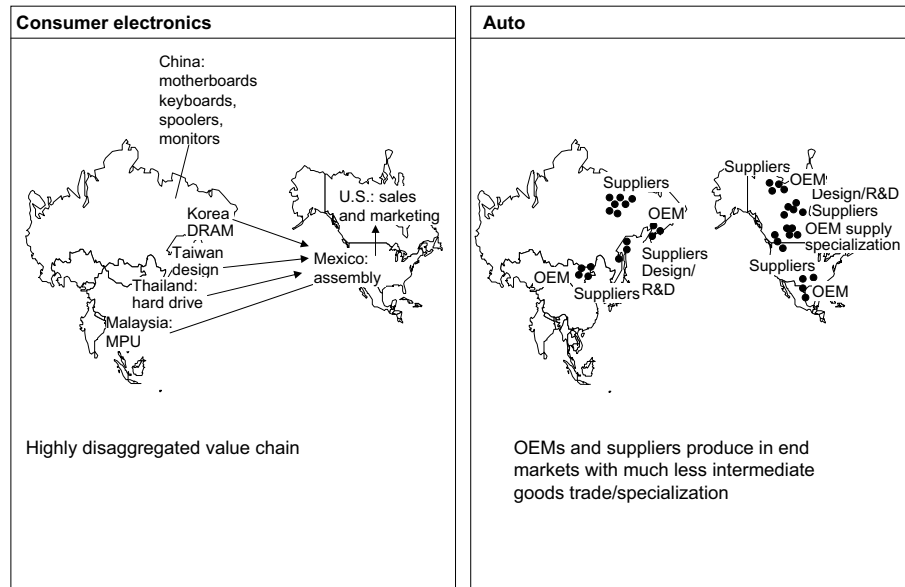
The consumer electronics sector (along with that of IT/BPO) is furthest along in the process of industry restructuring among those studied. The production process among most sub-segments has been disaggregated so that individual parts can be manufactured in different places and assembled as a final product in another location (exhibits 1 and 2). Each of our sample of four large developing countries – Brazil, Mexico, China, and India – has gone through some form of foreign investment policy liberalization during the past 10 years; we found the impact on the host countries to be either positive or very positive in every case. However, these positive impacts have surfaced in very different ways according to each country's unique market and policy environment.

- ¶ Consumer electronics has annual worldwide sales of approximately \$560 billion across our four sub-segments. The very globalized nature of the industry has led to production and sales being spread throughout the different regions of the world and to a high degree of trade.
 - PCs and components are the largest sub-segments among our sample of consumer electronics products, representing a third of the total market with sales continuing to grow. White and brown goods together represent half of the global market. Mobile phones, which have roughly \$100 billion in annual global sales, are the fastest growing segment (Exhibit 3).
 - The largest end-user markets for consumer electronics are Western Europe and the U.S. Asia (ASEAN, Japan, China, and Korea) and the U.S. are the leading exporters of both finished products and components. This illustrates the very different patterns by which different regions and countries have been integrated into the global consumer electronics market (exhibits 4-7).
 - Leading consumer electronics companies have a global reach and, with a few exceptions, more globalized players tend to produce higher returns for shareholders (exhibits 8 and 9). The rate of overseas expansion for companies in the sector appears to be accelerating over time (Exhibit 10).
- ¶ China and Mexico have largely liberalized their policies toward foreign investment in the consumer electronics sector. Both of them have seen a boom in foreign investment and this has had a very positive impact on the host countries, though in different ways.
 - China has been the most successful country among those studied in growing its consumer electronics industry. Both market-seeking and efficiency-seeking FDI has flowed into China. This has led to a very rapid growth of output and productivity in the assembly of final products. Market-seeking FDI sought to tap into the \$40 billion domestic market that continues to grow at double-digit rates; efficiency-seeking FDI took advantage of low labor costs and the supply chain serving the domestic market. This rapid growth has in turn attracted a broad range of components suppliers so that China is now steadily expanding from assembly to cover the full supply chain of parts, including semiconductors.

The role of multinational companies in this success has been critical, as a source of both technology and of managerial skills in serving the domestic market and, even more importantly, as providers of access to their global brands and distribution networks. Chinese domestic companies have also played a very important role by creating a highly competitive industry dynamic that has driven rapid cost reductions and productivity

Exhibit 1

CONSUMER ELECTRONICS' VALUE CHAIN IS VERY DISAGGREGATED ACROSS COUNTRIES COMPARED TO AUTO'S

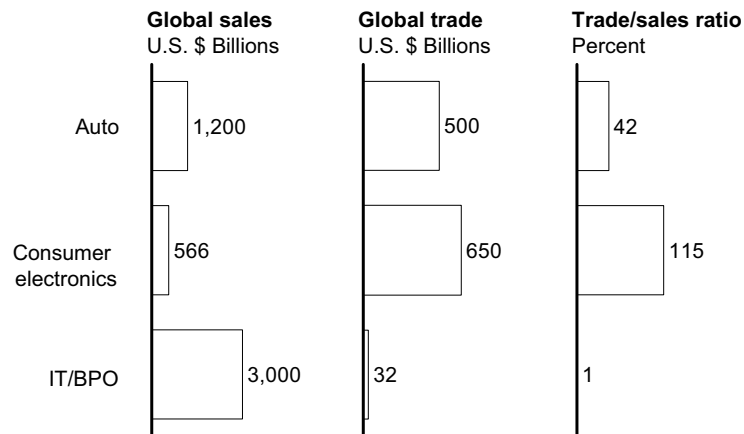


Source: McKinsey Global Institute

Exhibit 2

GLOBAL TRADE/SALES IS VERY HIGH IN CONSUMER ELECTRONICS, INDICATING A HIGH DEGREE OF GLOBAL SPREAD OF PRODUCTION

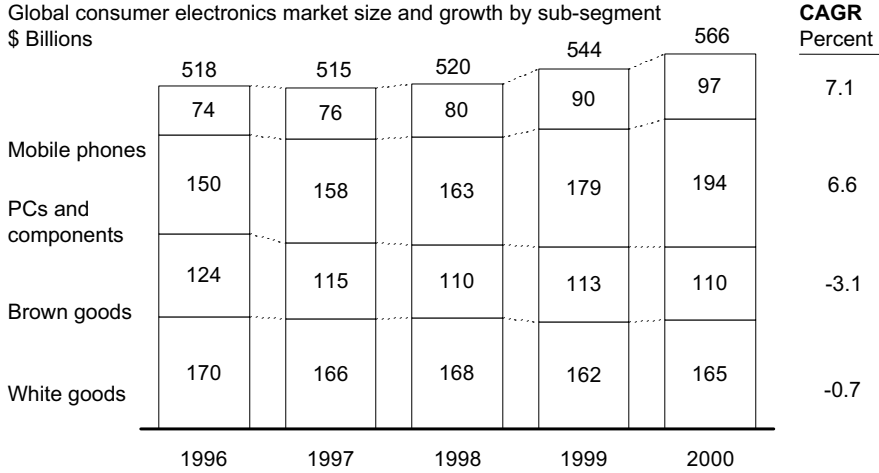
Global trade/sales ratios in consumer electronics



Source: McKinsey Global Institute

Exhibit 3

THOUGH BROWN AND WHITE GOODS STILL REPRESENT HALF OF THE GLOBAL CONSUMER ELECTRONICS MARKET, PCs AND HANDSETS DRIVE GROWTH



Source: IDC; Euromonitor; China Light Industry Yearbook; McKinsey analysis

Exhibit 4

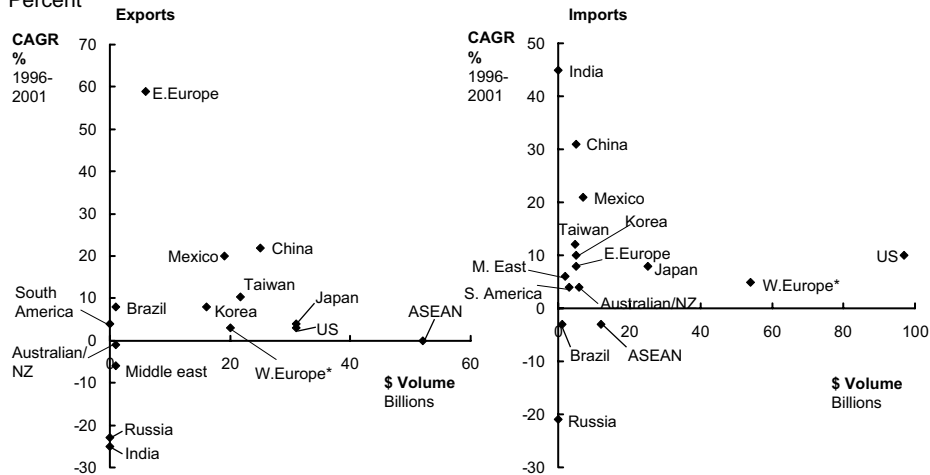
THE LARGEST CONSUMER ELECTRONICS DEMAND REGIONS ARE US, W. EUROPE, JAPAN, AND CHINA*



Exhibit 5

JAPAN, U.S. AND ASEAN ARE KEY FINISHED GOOD EXPORTERS, THOUGH CHINA, MEXICO AND E. EUROPE ARE GROWING RAPIDLY

Global consumer electronics sector finished goods trade volume vs. growth
Percent

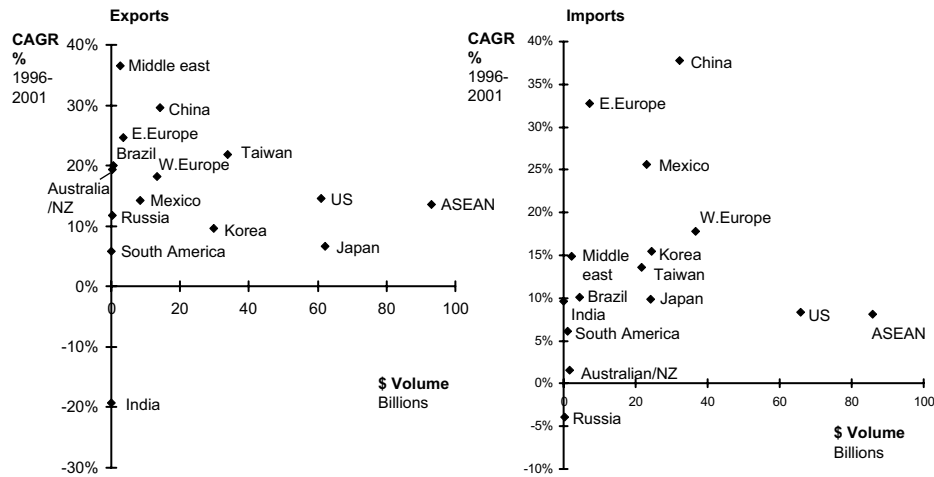


* W. Europe figure excludes Intra-European (among EU-15, Switzerland, Norway & Turkey) trade
Source: UN PCTAS Database

Exhibit 6

U.S., JAPAN AND ASEAN DRIVE COMPONENT EXPORTS

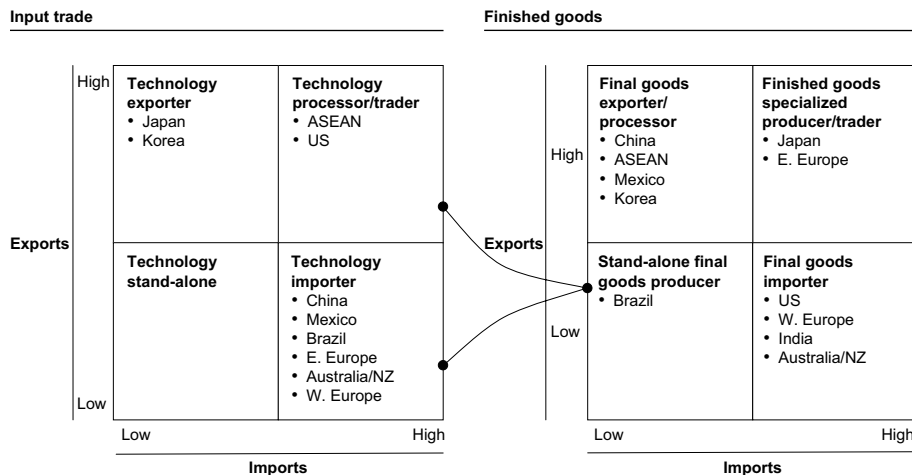
Global consumer electronics sector components goods trade volume vs. growth
Percent



* Taiwan figure a proxy based upon sum of exports received and imports sent to Thailand from other countries
Source: UN PCTAS Database

Exhibit 7

COUNTRIES' ROLE IN GLOBAL CONSUMER ELECTRONICS PRODUCTION AND CONSUMPTION CAN BE SEGMENTED INTO PATTERNS



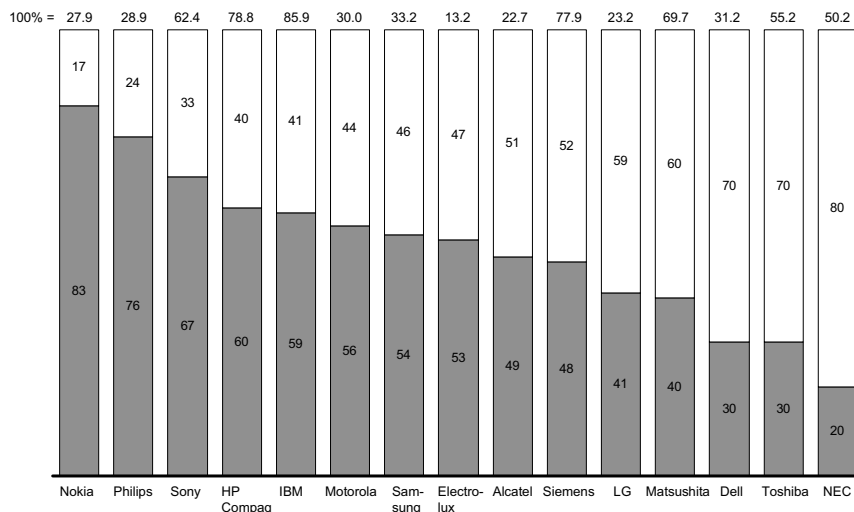
Source: McKinsey analysis

Exhibit 8

CONSUMER ELECTRONICS PLAYERS ARE HIGHLY GLOBALIZED

Domestic vs. foreign sales for key consumer electronics manufacturers*
 \$ Billions, percent

□ Domestic sales
 ■ International sales



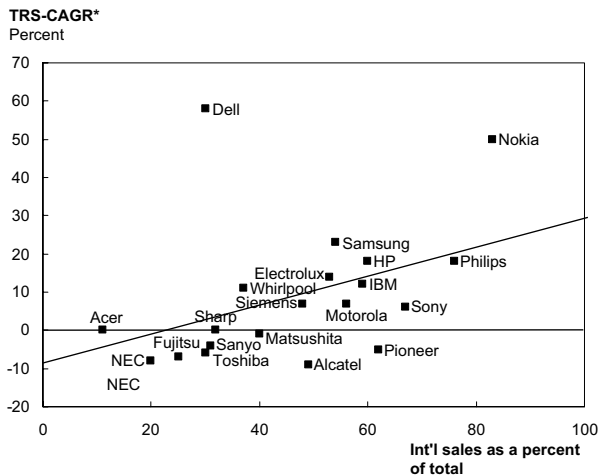
* European players domestic market is considered W. Europe

Source: Bloomberg; Company financials

Exhibit 9

HIGHLY GLOBALIZED CONSUMER ELECTRONICS PLAYERS HAVE DISPLAYED HIGHER RETURNS TO SHAREHOLDERS

International sales as a percentage of total vs. TRS-CAGR* for selected consumer electronics firms
Percent

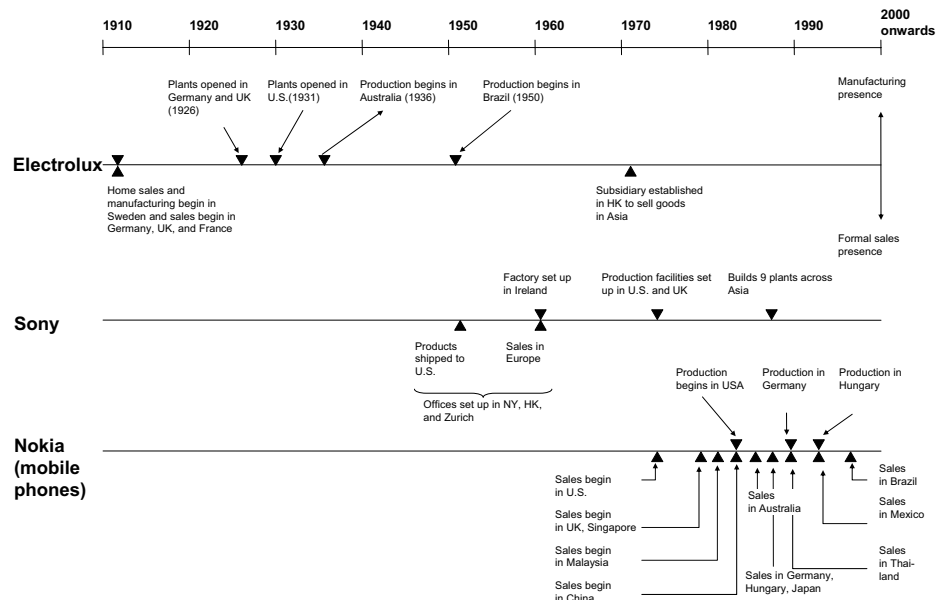


- Level of globalization and performance are somewhat correlated but there may be other causal factors driving the trend
- Generally companies that have international sales accounting for more than 40% of total sales have shown the best performance over time

* Total Return to Shareholders, over period Nov 1, 1990 till Nov 1, 2002
Source: Datastream; Bloomberg; Company financials; McKinsey analysis

Exhibit 10

GLOBALIZATION SEEMS TO BE GAINING SPEED OVER TIME



Source: Company websites

improvements in the sector. As a result, the greatest beneficiaries from this success story have been consumers, who have seen rapid technology growth and price reductions, both in China as well as globally.

- Mexico has also been rapidly integrated into the global consumer electronics value chain since NAFTA was signed in 1994. It has received over \$5 billion in FDI in the consumer electronics sector since then. Most of this has resulted from U.S. companies setting up assembly operations for final goods in Mexico destined for the U.S. market. Foreign investment in the sector has had a very positive impact on Mexico as a whole, creating over 350,000 jobs and \$14 billion in net exports. However, the spillover effects from this investment in assembly operations have been limited, as most components are sourced from the U.S. or Asia (exhibits 11 and 12).

Mexico's role in global consumer electronics hinges on its closeness to one of the largest end-user markets, the U.S. It had neither the large domestic market nor the low labor costs of China, nor does it benefit from other cost advantages seen in China (exhibits 13-16). In order for it to continue to maintain its strong position as an assembly location, Mexico will need to continue to improve productivity and focus on products that can gain real benefits from Mexico's proximity to the U.S. These benefits could consist of reduced transportation cost or time, or result from ease of interaction with the end users (exhibits 17-24).

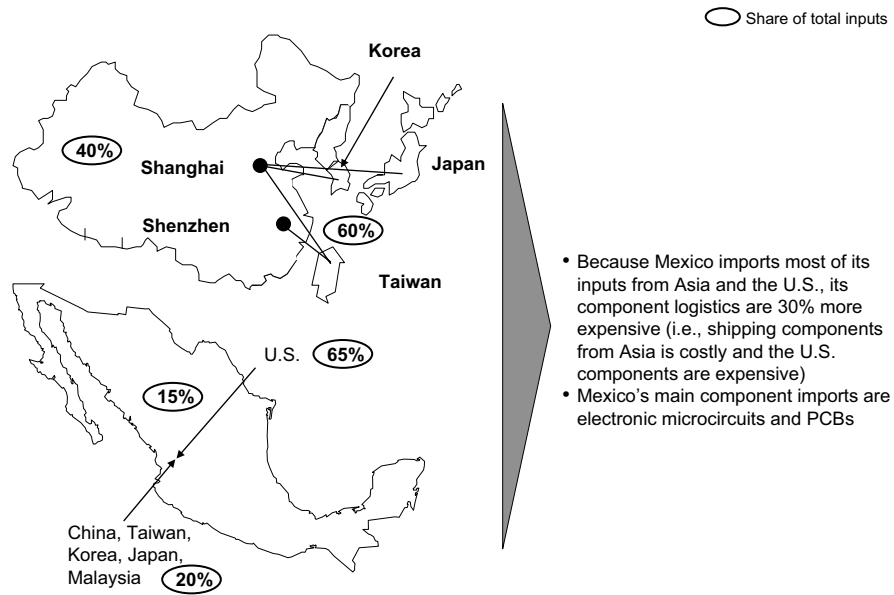
- ¶ Brazil and India are different in that, while they have opened up their domestic markets to foreign investment, they have nevertheless maintained a highly regulated environment. In both these cases, international companies have set up operations in Brazil and India in order to overcome these policy barriers and to be able to participate in the domestic market.

FDI has had a positive impact in both countries, largely as a result of the increased competition that international companies have brought to the domestic market. This has led to lower prices and higher sales to domestic consumers. However, the remaining policy barriers (e.g., high domestic sales taxes) have kept prices of domestic production above world prices and have consequently reduced the competitiveness of Brazilian and Indian products for export.

- Brazil opened up its consumer electronics sector by repealing information laws that had prohibited foreign companies from entering the domestic PC market. However, tariffs of up to 30 percent on final goods and Brazil's unique standards (such as the PAL-M TV standard) limited imports. As a result, many international players have entered Brazil, either through acquisitions or through greenfield investment. This investment has led to productivity improvements and rapid growth in output and has since created a successful export industry in mobile handsets (Exhibit 25). While increased competition has benefited consumers through declining price premiums above global market prices, very high tax rates and high production costs continue to keep Brazilian prices well above international levels. Production costs are high as a result of the investment made in high-cost locations, such as Manaus. These high costs might well erode the competitiveness of Brazil's export production over time (exhibits 26 and 27).
- India allowed foreign companies to enter the domestic market for the first

Exhibit 11

MEXICO IMPORTS MOST INPUTS FROM THE U.S. AND ASIA



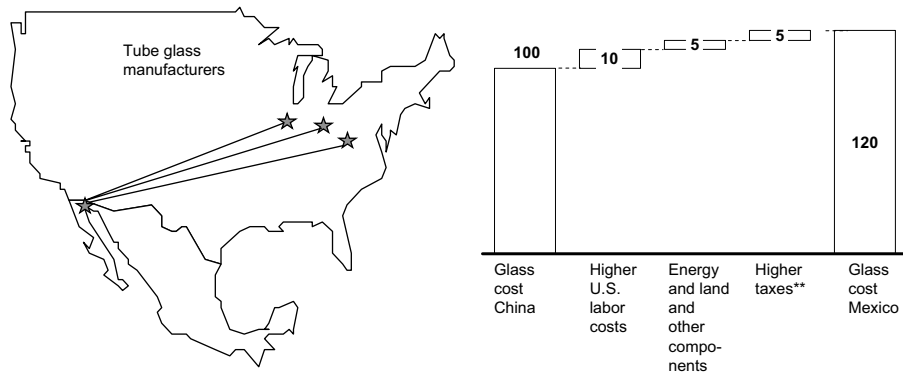
- Because Mexico imports most of its inputs from Asia and the U.S., its component logistics are 30% more expensive (i.e., shipping components from Asia is costly and the U.S. components are expensive)
- Mexico's main component imports are electronic microcircuits and PCBs

Source: Interviews

Exhibit 12

FOR MEXICO, TUBE GLASS MUST BE SOURCED FROM THE U.S., ADDING SIGNIFICANTLY TO TOTAL COST PRODUCTION*

Difference between China and Mexico Glass prices
Percent



* NAFTA rules stipulate that TVs imported from Mexico to US with non-NAFTA tubes must pay 15% import tariff

**Considering a 34% tax in the U.S. and 15% tax in China

Source: McKinsey analysis; US and China tariff schedule

Exhibit 13

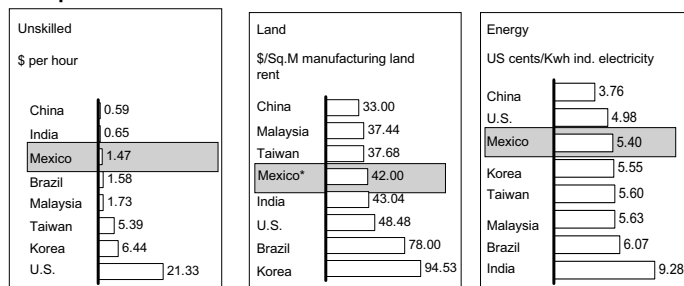
CHINA'S ADVANTAGES OVER MEXICO ARE IN INPUT COSTS, FACTOR COSTS AND TAXES

	Advantage	Description
Unit manufacturing costs	Input Costs	<ul style="list-style-type: none"> China has a more developed supply chain across all electronic industries Sources of cost advantage in inputs are logistics and factor costs Mexico loses competitiveness on items it must import from the U.S. (e.g., TV glass)
	Productivity	<ul style="list-style-type: none"> Productivity at very similar levels – per both estimates and expert interviews
	Factor costs	<ul style="list-style-type: none"> China offers distinct cost advantages in labor (skilled and unskilled), electricity and land costs
Other costs	Interaction costs	<ul style="list-style-type: none"> Mexico's geographic proximity to the U.S. as well as similar time zone lowers interaction costs with the U.S. This is especially important for newer and customized products
	Transport costs	<ul style="list-style-type: none"> Border zones provide shipping advantages However, the geographical location advantage is far from being maximized Furthermore, component logistics increase costs for Mexico
	Tariffs	<ul style="list-style-type: none"> Mexico has tariff advantage (e.g., TVs) or parity (e.g., computers) with China
	Taxes	<ul style="list-style-type: none"> Income taxes on manufacturing is much lower in China than in Mexico

Exhibit 14

OVERALL, FACTOR COSTS ARE ACROSS THE BOARD HIGHER IN MEXICO THAN IN CHINA

Factor cost comparison Mexico



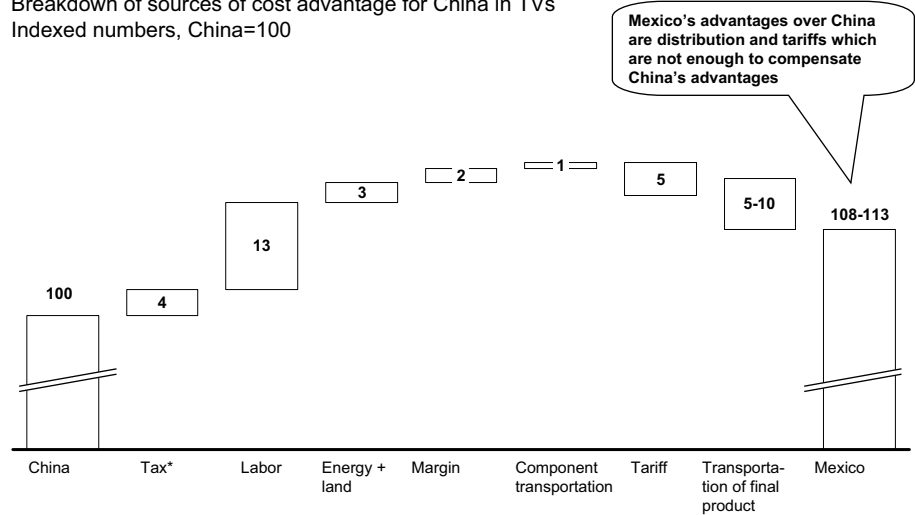
Mexico's factor costs are more expensive than China's across the board

* Average land cost in Ciudad Juarez, Chihuahua
 Source: Literature searches, EIU, ICBC, Monthly Bulletin of Earnings and Productivity Statistics (China); Taipower, WEFA WMM, DRI WEFA, Healy & Baker, ILO, Malaysian Ministry of Human Resources, Central Bank of Malaysia, State Economic Development Corporations (Malaysia), Malaysian Industrial Estates Bhd., Malaysian Statistics of Electrical Supply, Tenaga Nasional (Malaysia), Folha de SP (Brazil), Aneel (Brazil), Bancomext (Mexico), Expansion (Mexico)

Exhibit 15

CHINA HOLDS A 10 POINT LANDED COST ADVANTAGE IN TVs TO THE U.S. ESTIMATE

Breakdown of sources of cost advantage for China in TVs
Indexed numbers, China=100

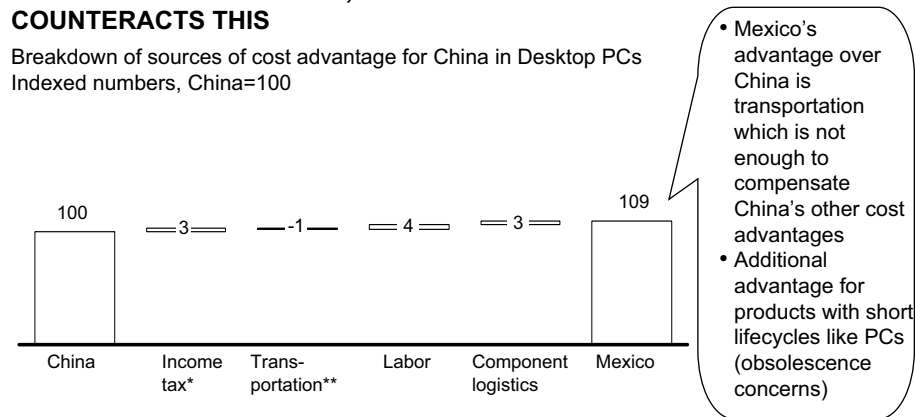


*Considering a 34% income tax in Mexico and a 15% tax in China
Source: Interviews; McKinsey analysis

Exhibit 16

CHINA ALSO HOLDS A 9 POINT LANDED COST ADVANTAGE IN DESKTOP PCs TO THE U.S., THOUGH OBSOLESCENCE COST COUNTERACTS THIS ESTIMATE

Breakdown of sources of cost advantage for China in Desktop PCs
Indexed numbers, China=100



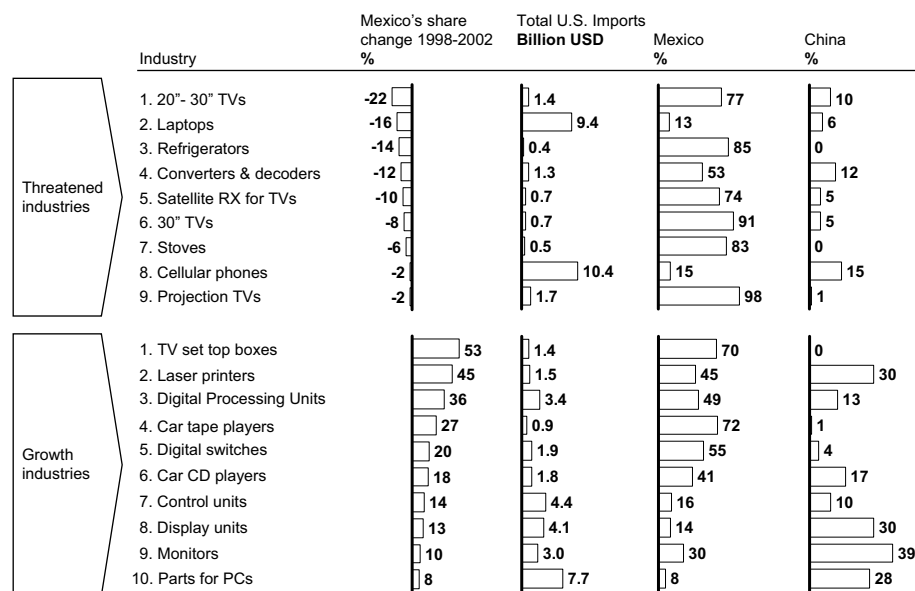
*Considering a 34% income tax in Mexico and a 0% tax in China

**Does not consider inventory costs for China; it considers transportation costs for Mexico from Guadalajara to Laredo
Source: Interviews; McKinsey analysis

Exhibit 17

SEVERAL KEY INDUSTRIES FOR MEXICO ARE THREATENED BY CHINA

Summary of Mexico's and China's share of U.S. Imports, 2002

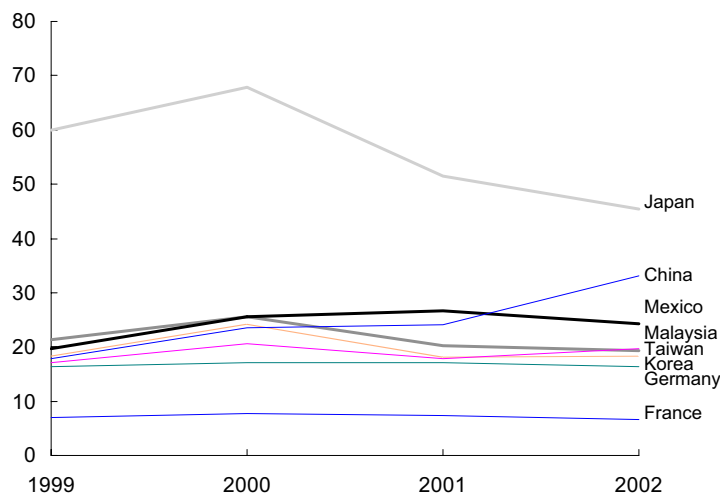


Source: US Trade online, McKinsey analysis

Exhibit 18

MEXICO'S CONSUMER ELECTRONICS EXPORTS TO THE U.S. HAD BEEN GROWING UNTIL 2001

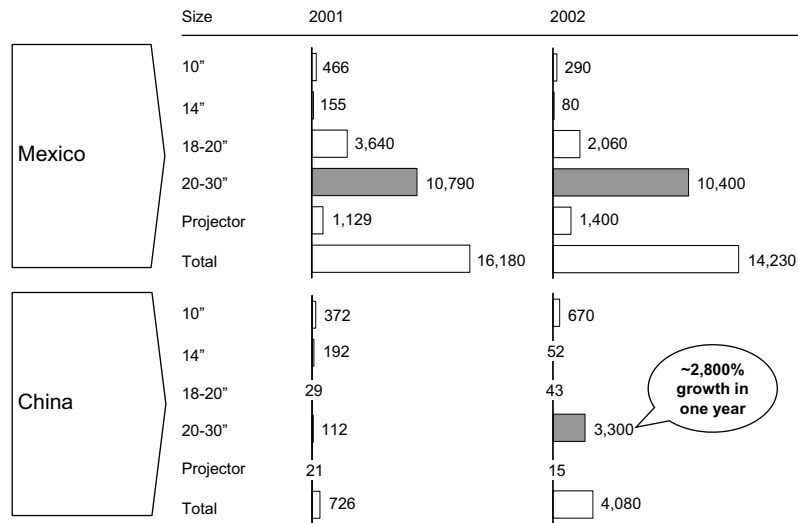
Billion USD



Note: Imports include brown goods, PCs, white goods, and telecom products
 Source: US Trade online, McKinsey analysis

Exhibit 19

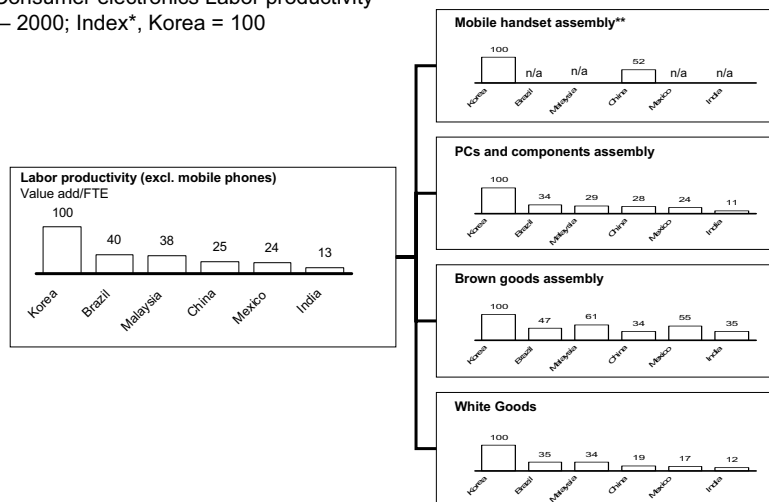
CHINA HAS RECENTLY THREATENED THE VITAL 20"-30" TV SEGMENT
 U.S. Television Imports from China and Mexico, 2001-2002
 Thousand televisions ■ Contested market



Source: US Trade online, McKinsey analysis

Exhibit 20

CHINA AND MEXICO ARE NEARLY EQUAL IN LABOR PRODUCTIVITY
 Consumer electronics Labor productivity**
 – 2000; Index*, Korea = 100



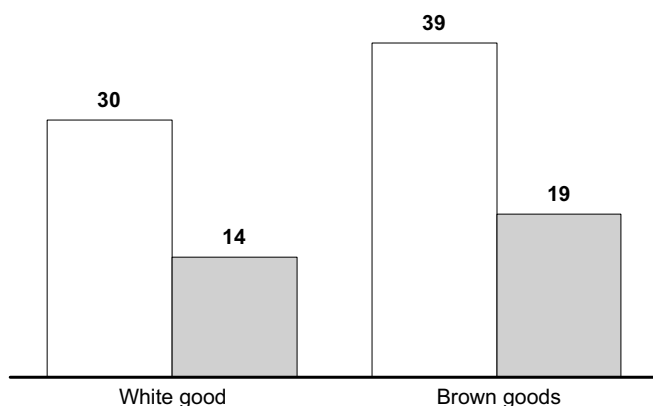
* Indexed to Korea = 100; Base measurement = RMB/worker/hour
 ** Korea's mobile handset industry definitions includes other wireless devices such as wireless broadcast transmitters and wireless closed circuit cameras; India's numbers are calculated using data of listed companies (largest); they may be biased upward because of this
 Source: China: China Electrical Industry Yearbook, China Light Industry Yearbook; Korea: National Statistical Office, Electrical Industry Association of Korea; Malaysia: Annual Survey of Manufacturing Industries, Department of Statistics; Brazil: IBGE, FIP; McKinsey Global Institute

Exhibit 21

HOWEVER, AT THE CURRENT GROWTH RATE, CHINESE BROWN GOODS PRODUCTIVITY WILL REACH MEXICO'S IN 3-4 YEARS

Productivity annual growth rate
Percent

China
Mexico



Source: INEGI; China Electrical Industry yearbook, China Light Industry yearbook, China Statistical Yearbook

Exhibit 22

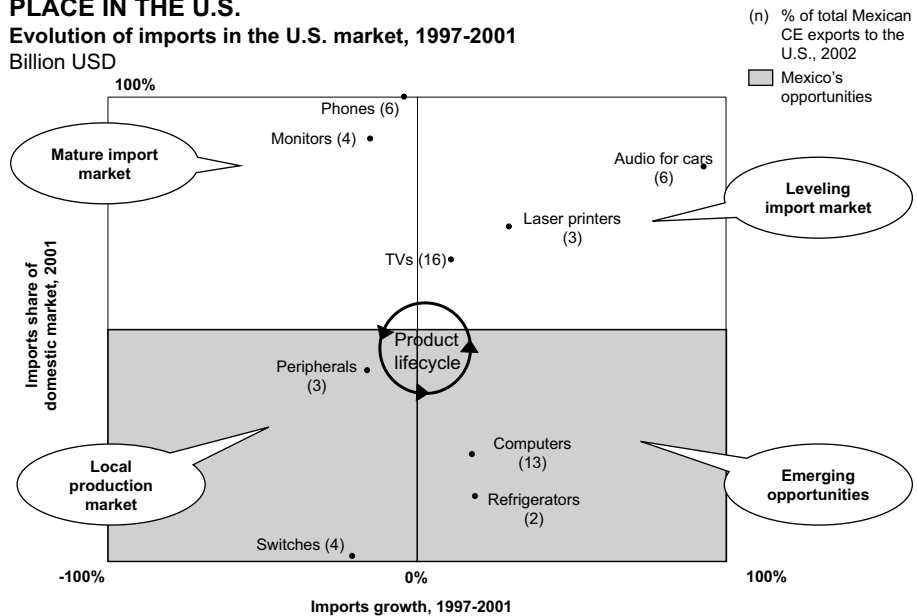
IN THE SHORT-TERM, MEXICO MUST FOCUS WHERE IT HAS NATURAL ADVANTAGES

	Rationale	Products that favor Mexico	Products that favor China	
Transport Cost – Time Sensitive	Low value/ weight, volume	<ul style="list-style-type: none"> White goods Medium/large television sets Telephone switches 	<ul style="list-style-type: none"> Laptop computers (air shipment) Portable radios Mobile phones 	
	Auto electronics	<ul style="list-style-type: none"> Mexico's auto industry has sustainable geographic advantage, they benefit from having integrated electronics supply 	<ul style="list-style-type: none"> Car CD and tape players N/A 	
	Short obsolescence cycle	<ul style="list-style-type: none"> Shipping via sea takes 6 weeks for China vs. just days for Mexico; short obsolescence cycle items lose their value to quickly 	<ul style="list-style-type: none"> Desktop computers Laptops Cellular phones 	<ul style="list-style-type: none"> White and brown goods
Interaction Sensitive	High customization/ early lifecycle	<ul style="list-style-type: none"> Due to proximity to US frequent interaction needed for early life-cycle goods will be easier 	<ul style="list-style-type: none"> Telephone switches Industrial electronics 	<ul style="list-style-type: none"> CTVs
	High demand volatility	<ul style="list-style-type: none"> Because of long lead time from China, high demand volatility items will be difficult to manage Mexico's underdeveloped supplier industries may neglect some of this advantage 	<ul style="list-style-type: none"> Desktop computers Laptops Cellular phones 	

Exhibit 23

AND CAN FIND OPPORTUNITIES WHERE PRODUCTION STILL TAKES PLACE IN THE U.S.

Evolution of imports in the U.S. market, 1997-2001
Billion USD



Source: US Census Bureau; McKinsey analysis

Exhibit 24

ANECDOTAL EVIDENCE FROM SOME KEY PLAYERS SHOWS A CHANGE IN THE PRODUCT MIX TO HIGHER VALUE ADDED PRODUCTS

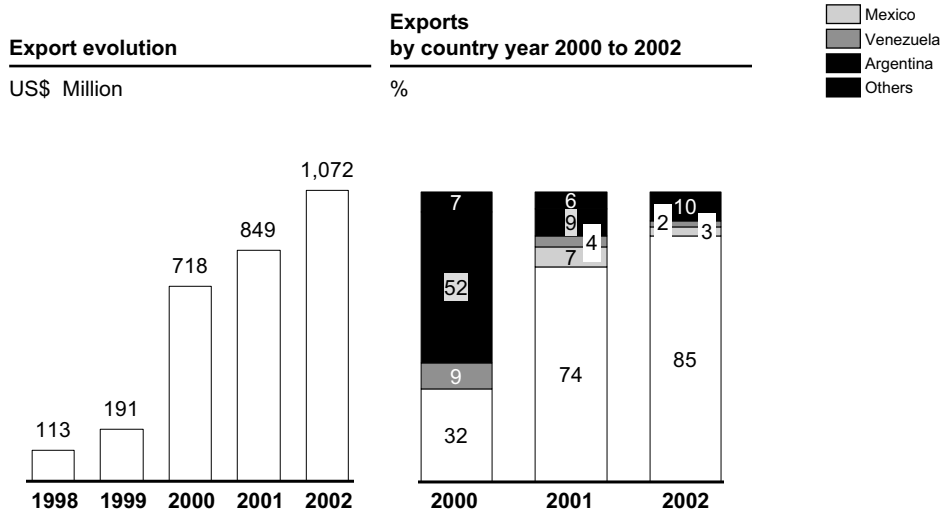
Subsector	Player	Type	Traditional products	New products
PCs	Jabil	Contract manufacturer	PCBs for control panels, energy consumption devices, PCs	Car electronics (new plant in Chihuahua)
Brown goods	TV industry in general	OEMs	Color TV with cathode ray tubes	Plasma and LCD technology TVs Car audio (CD players, speakers)
	LG	OEM	TVs, DVDs, CDs	Refrigerators (new plant in Monterrey)
White goods	GE Mabe	OEMs	Refrigerators and ranges	Refrigerators (new plant in Celaya and Vitro acquisition respectively)
	Across Whirlpool			
Telecom	Siemens	OEM	Telephones, electrical equipment, medical equipment	Refrigerators (new plant in Queretaro)

- Companies based in Mexico have to maximize their advantages to stop losing competitiveness
- In order to maximize Mexico's main advantage (geographic location), companies have to:
 - Migrate to transportation and interaction cost sensitive products
 - And/or improve their process design skills that increase flexibility and therefore the ability of producing early lifecycle products

Source: Interviews; Expansión; Veritas; McKinsey analysis

Exhibit 25

BRAZIL'S EXPORTS IN CONSUMER ELECTRONICS ARE DRIVEN BY GOODS THAT CAN BE AIR SHIPPED LIKE MOBILE HANDSETS

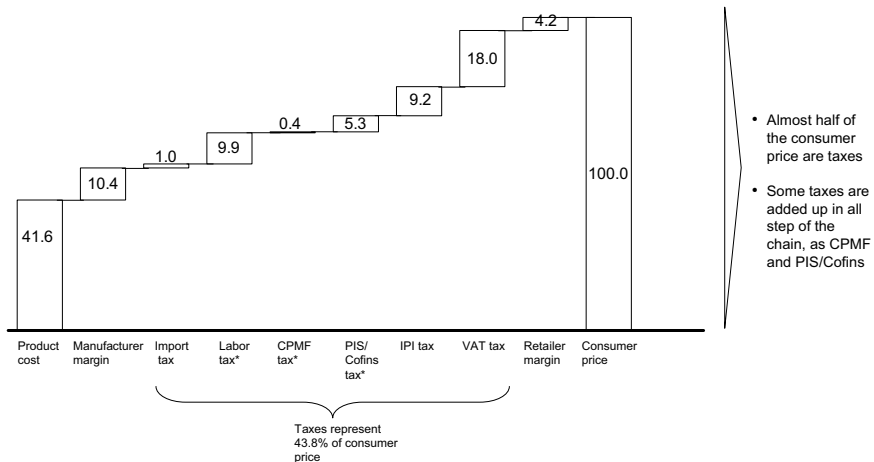


Source: Abinee

Exhibit 26

HIGH TAX LOADS IN BRAZIL SUPPRESS LOCAL DEMAND
Breakdown of price of refrigerator in Brazil

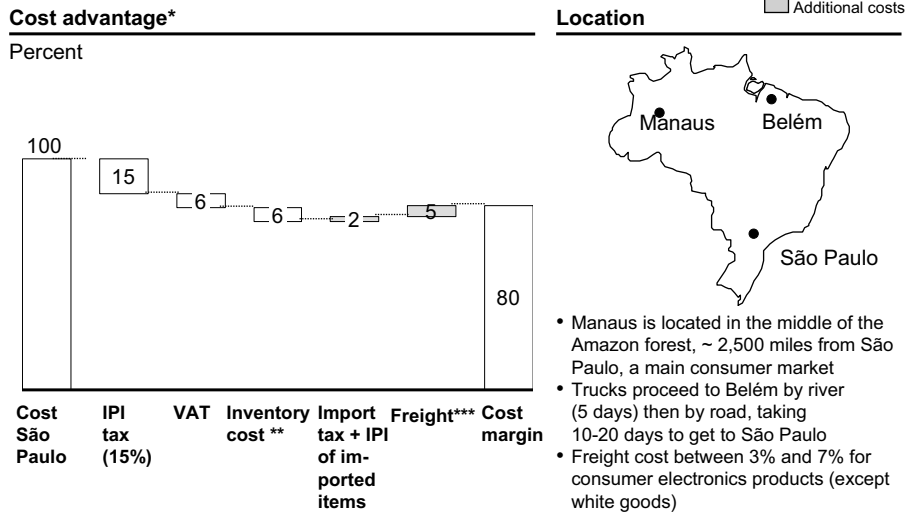
Percent



* Consider taxes paid by both manufacturer and retailer
Source: Interviews; McKinsey analysis

Exhibit 27

BRAZIL'S MANAUS FREE ZONE HAS MANY TAX ADVANTAGES, BUT MAKES EXPORT COMPETITIVENESS DIFFICULT FOR SOME GOODS

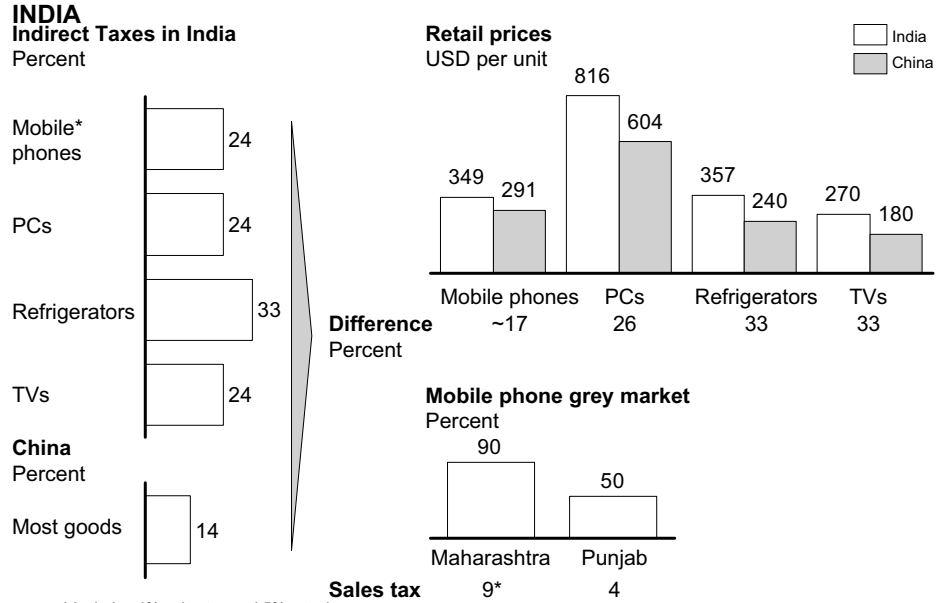


* Assuming a non-white CE product with 25% of cost as imported components and 20% margin. Labor cost differences not assumed
 ** Assume 2 month component stock and 18 days delivery to south-east
 *** Assume only extra freight cost compared to São Paulo
 Source: Interviews; McKinsey analysis

time in the early 1990s, but it continues to protect domestic production through tariffs of 30-40 percent on imports. The growth potential of India's domestic market has attracted many international companies to make direct investment. This has both increased the level of competition and helped to reduce consumer prices. However, the many remaining policy barriers – such as high indirect taxes, high and poorly enforced sales taxes resulting in informality, and distorting state-level tax incentives leading to fragmented and sub-scale production – keep domestic production prices well above world prices (exhibits 28-30). As a result, Indian consumers continue to face 30 percent higher prices than Chinese consumers. The level of penetration for a range of goods, such as refrigerators or mobile phones, is significantly below Chinese levels (exhibits 31-35).

Exhibit 28

HIGH INDIRECT TAXES CONTRIBUTE STRONGLY TO HIGHER PRICES IN INDIA

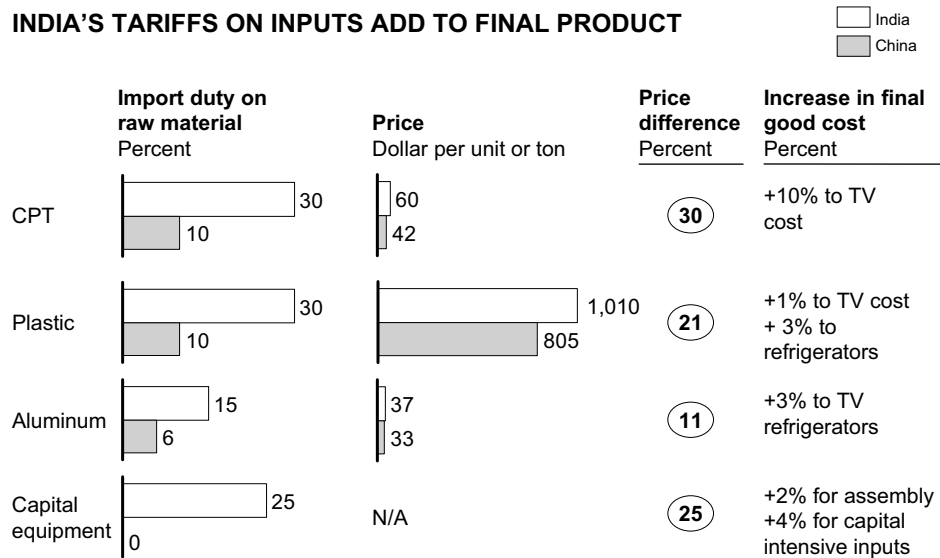


* Includes 4% sales tax and 5% octroi

Source: National statistics; literature search; McKinsey Global Institute

Exhibit 29

INDIA'S TARIFFS ON INPUTS ADD TO FINAL PRODUCT



* Note that this price difference is for a commodity Intel motherboard that is probably manufactured in India; if these parts were imported, the price would be much higher and impact on final goods price much stronger

Source: McKinsey CII report; McKinsey Global Institute

Exhibit 30

SALES TAX EXEMPTIONS DRIVE MANUFACTURING FRAGMENTATION IN INDIA

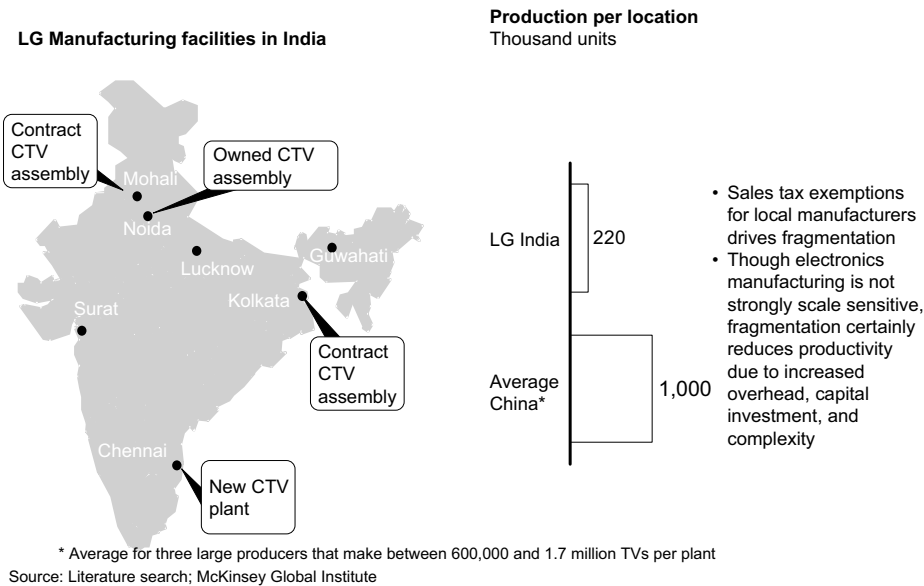
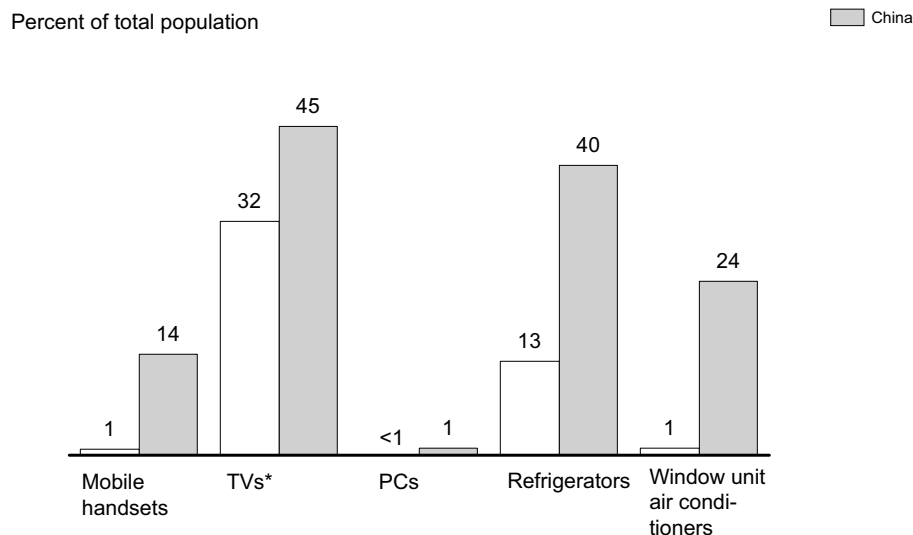


Exhibit 31

CONSUMER ELECTRONICS PENETRATION RATE IS MUCH HIGHER IN CHINA THAN IN INDIA

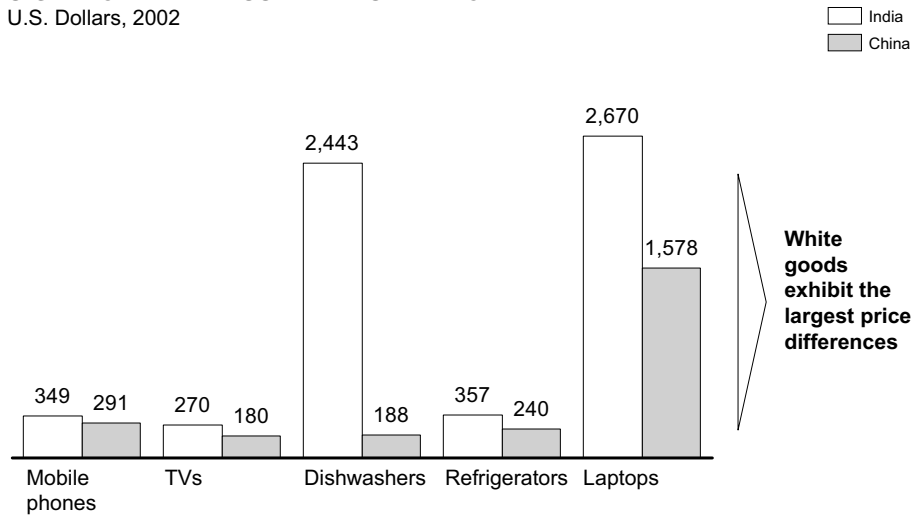


* Color
Source: Literature searches; Euromonitor

Exhibit 32

RETAIL PRICES FOR MANY CONSUMER ELECTRONICS GOODS ARE SIGNIFICANTLY LESS EXPENSIVE IN CHINA THAN IN INDIA

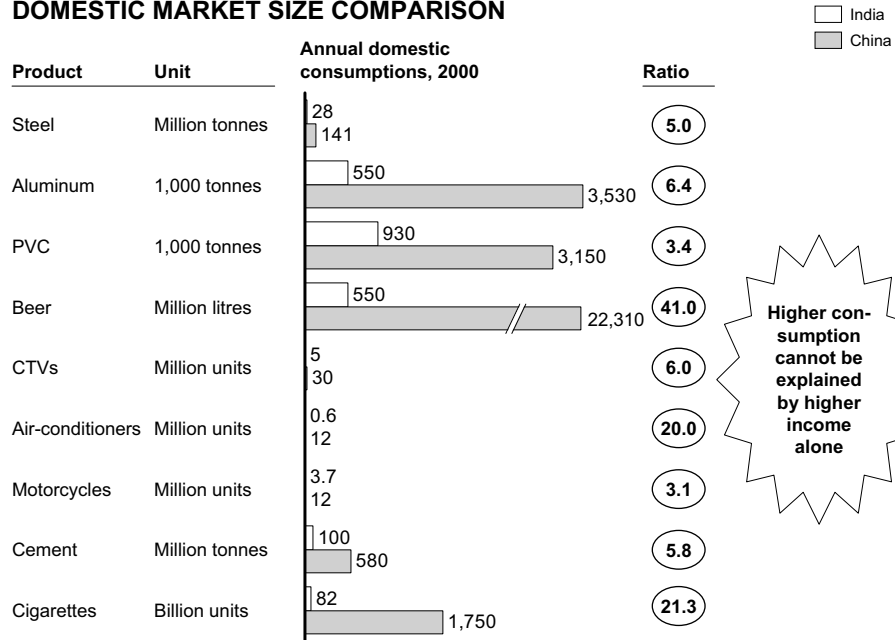
U.S. Dollars, 2002



Source: Euromonitor; National Statistics; literature search; McKinsey Global Institute

Exhibit 33

DOMESTIC MARKET SIZE COMPARISON

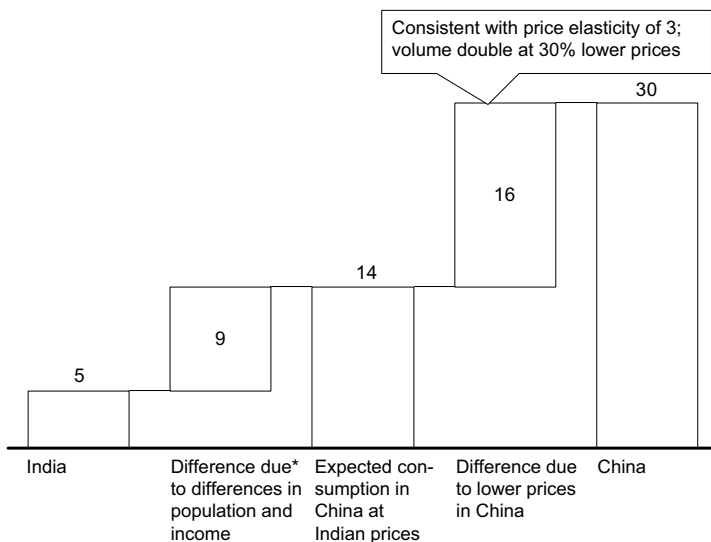


Source: China Statistical Yearbook; Industry Associations; interviews; press articles; CMIE

Exhibit 34

DRIVERS OF DIFFERENCE IN DOMESTIC CONSUMPTION IN COLOR TVs

Million units, 2000

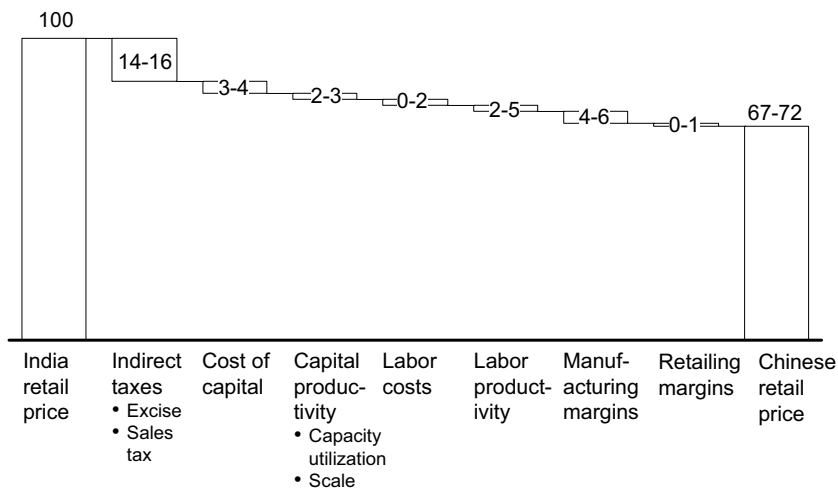


* Additional consumption in China assuming same levels of penetration across China's income categories as in India
 Source: McKinsey analysis; CETMA

Exhibit 35

DRIVERS OF OVERALL PRICE DIFFERENCES

Indian retail price indexed to 100



Source: Plant and store visits; discussions; data analysis; McKinsey analysis

Brazil Consumer Electronics Summary

EXECUTIVE SUMMARY

Until the early 1990s, information laws – that prohibited foreign players from entering the Brazilian PC market – and high tariffs protected the approximately US\$9 billion domestic Brazilian consumer electronics market. The Brazilian government attracted FDI in the early 1990s by repealing the information laws and providing significant tax incentives for companies to produce goods in Manaus. Nevertheless, high import tariffs (of 30 percent on finished goods) continued to be imposed. These tariffs, combined with unique Brazilian standards for certain products (such as the PAL-M standard for color TVs) continued to make it difficult for foreign companies to export to the Brazilian market. In order to overcome these barriers and capture market share, international companies set up production facilities in Brazil following the liberalization. As a result, FDI in Brazil has been mainly tariff-jumping market-seeking. International companies have entered Brazil mostly through acquisitions and greenfield investments; Manaus represents approximately 30 percent of all consumer electronics employment in Brazil.

Overall, the entry of FDI companies has had a positive impact in Brazil, increasing the level of competition and fostering operational improvements that have led to an annual productivity growth of six percent in white goods and four percent in brown goods. This has driven down retail prices for consumers who have benefited from increased purchasing power. Brazil has also succeeded in creating a rapidly growing mobile handset market, with 85 percent of total exports in 2002 (~US \$911 million) sold to the U.S.

The impact from FDI could potentially have been even stronger. While increased competition has benefited consumers through declining prices, the very high remaining tax rates and high production costs, particularly in Manaus, continued to keep prices 16-36 percent above world retail price levels as a result of Brazil specific standards, heavy taxes, and high import tariffs. These factors may erode Brazil's competitiveness of production for exports.

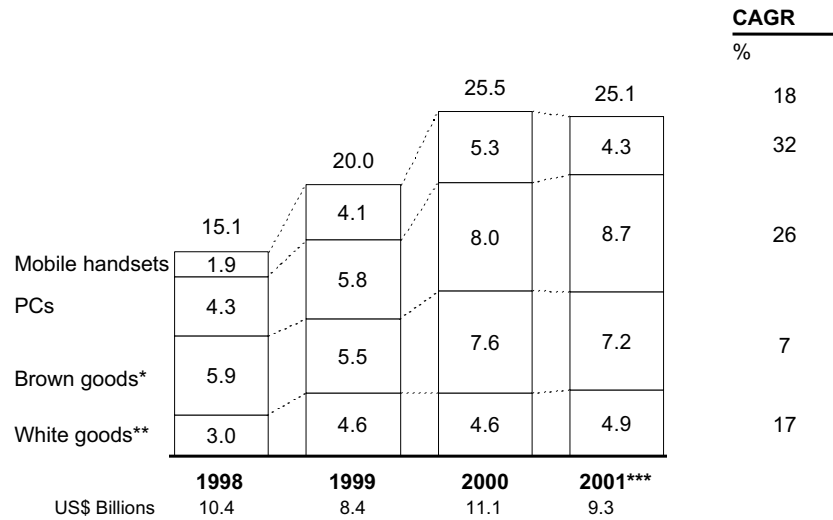
SECTOR OVERVIEW

¶ Sector overview

- Domestic consumer electronics production has fluctuated between US \$9-11 billion in the late 1990s and early 2000s; this is nearly equal to total domestic sales as net finished goods exports are less than \$500 million annually (Exhibit 1). Macroeconomic instability (e.g., the recessed market and unemployment), high interest rates, and the onset of an energy shortage in Sao Paulo have caused the growth in domestic sales to flatten/drop off.
 - Sales growth has been strong in mobile handsets, PCs, and white goods, all averaging over 17 percent CAGR 1998-2001.
 - Brazil is not a large exporter of consumer electronics, with only \$1.5 billion in finished goods exports in 2001. That said, its consumer electronics exports have been growing robustly since 1996, driven mainly

Exhibit 1

BRAZIL CONSUMER ELECTRONICS MARKET GROWTH BY SUBSEGMENT
Real R\$ Billion as of 2002



* Include electric and electronic finished products made in Manaus adjusted for total market

** Include only refrigerators, freezers, stoves and microwave ovens

*** Reflects impact of energy shortages

Source: IDC; Dataquest July 1999; Eletros; Suframa; McKinsey Global Institute

by growth in mobile handset exports (exhibits 2 and 3).

- Brazil is a large net importer in consumer electronics, due to its reliance on foreign sources of supply for key inputs (e.g., semiconductors). Overall, Brazil's consumer electronics trade balance stood at -\$3.5 billion in 2001 (exhibits 4 and 5).

¶ **FDI Overview**

- **FDI characteristics**

- FDI in the sector has fluctuated a great deal between 1996 and 2001, from less than \$100 million in 1996 to nearly \$1.2 billion in 2001. Overall, consumer electronics is a small recipient of FDI in Brazil, averaging only 3 percent of Brazil's total FDI over period under review (Exhibit 6).
- FDI companies have entered both through acquisitions and greenfield entry, as well as a small number of joint ventures. The number of international companies entering the market increased substantially in the late 1990s, encouraged by the stabilization of the currency and increasing market liberalization (exhibits 7-9).

- **FDI impact quantification.** Due to the limited availability of data we cannot make comparisons of the pre-FDI period (pre-1994) with the maturing FDI period (1994-present); furthermore, the fact that macroeconomic stabilization and FDI entry were happening simultaneously further complicates this comparison. We have therefore assessed the impact of FDI using qualitative information from interviews or comparisons with other countries.

¶ **External factors driving the level of FDI.** The factors most important in attracting FDI to Brazil were: the country's macroeconomic stabilization of the mid-1990s, its large market potential, the continuance of import barriers (which made it impossible to participate in the local market without local operations), and the liberalization of FDI-entry in the early 1990s (particularly in the PC sector). However, Brazil's infrastructure – particularly its dispersed production footprint between Manaus and Southern Brazil (which was encouraged by tax policy) – hindering the attractiveness of efficiency-seeking FDI, especially in brown goods.

- **Factors that have encouraged FDI**

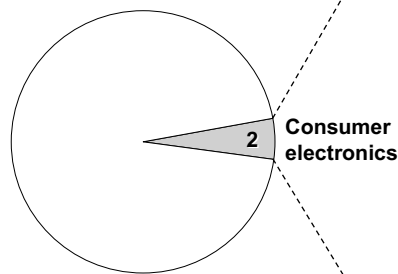
- Sector market size potential. Given its population of nearly 170 million and the lure of a potentially growing middle class (post stabilization), Brazil represents a large and developing market.
- Import barriers. Though import barriers have decreased steadily since 1995, tariffs are still high for consumer electronics goods – generally, slightly over 20 percent. Furthermore, Brazil unique standards (such as Pal-M TV standard) encourage Brazil-specific manufacturing capacity. However, the import barriers, combined with the market size potential, have encouraged FDI in Brazil.
- Country stability. The implementation of Plano Real and the subsequent currency stability was followed by heightened interest in the Brazil consumer electronics market. This is accentuated by the fact that most consumer electronics purchases in Brazil are financed, which means stabilization and market growth are highly interrelated. As a result, almost all the FDI occurred post Plano Real.

Exhibit 2

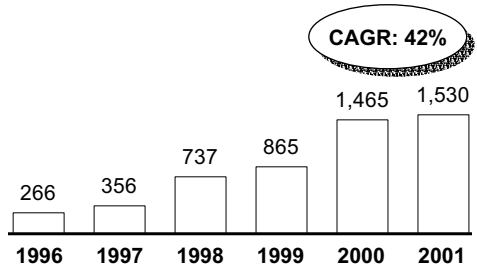
TRADE IN BRAZIL CONSUMER ELECTRONICS SECTOR

US\$ Million, 2001

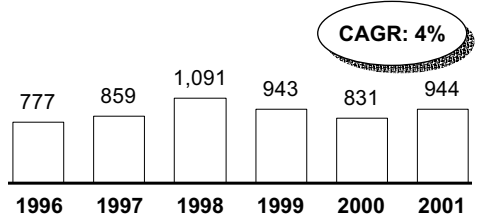
Total Brazil trade, 2000 =
US\$ 113.8 billion



Consumer Electronics Exports



Consumer Electronics Imports*



* Only finished products, not included components
Source: Abinee/Secex (Alice); Central Bank

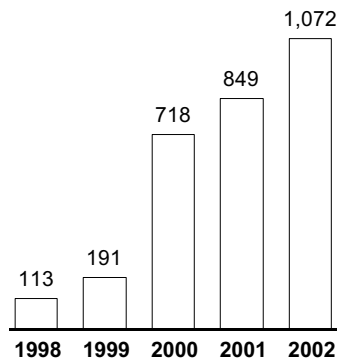
Exhibit 3

MOBILE HANDSETS ARE PUSHING EXPORT VOLUME

Export evolution US\$ Million

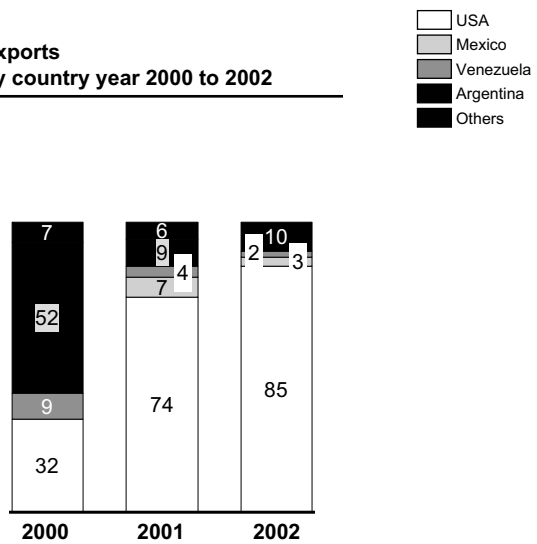
Export evolution

US\$ Million



Exports by country year 2000 to 2002

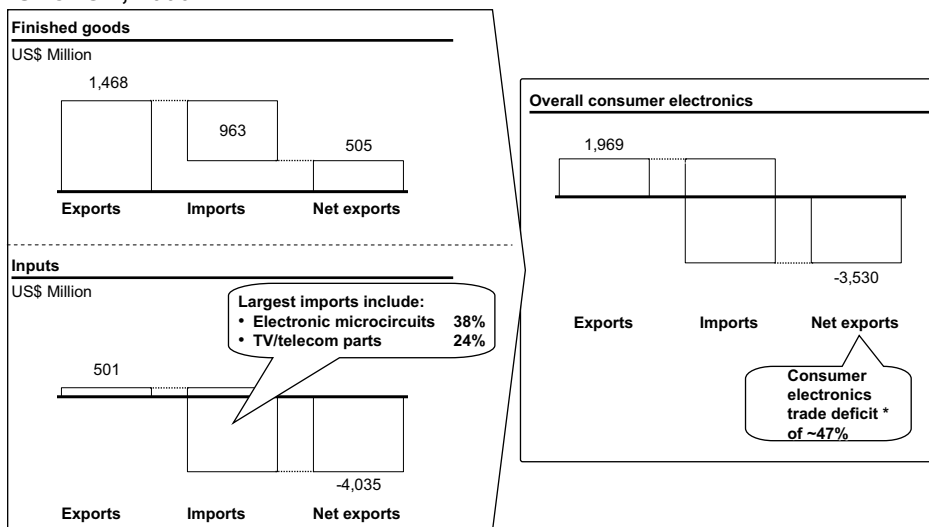
%



Source: Abinee

Exhibit 4

ANALYSIS OF NET TRADE IN BRAZILIAN CONSUMER ELECTRONICS SECTOR, 2000

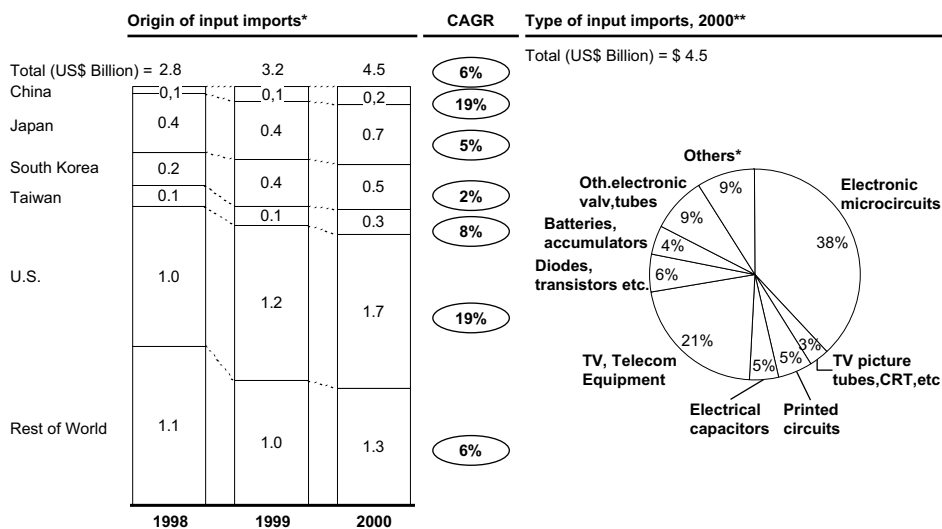


* Trade deficit overstated as some input imports are used in non-consumer electronics (e.g., medical electronics)
 Note: UN PCTAS data is used here for comparability with other countries
 Source: Secex; UN PCTAS database; McKinsey Global Institute

Exhibit 5

IMPORTS FROM ASIA ARE INCREASING

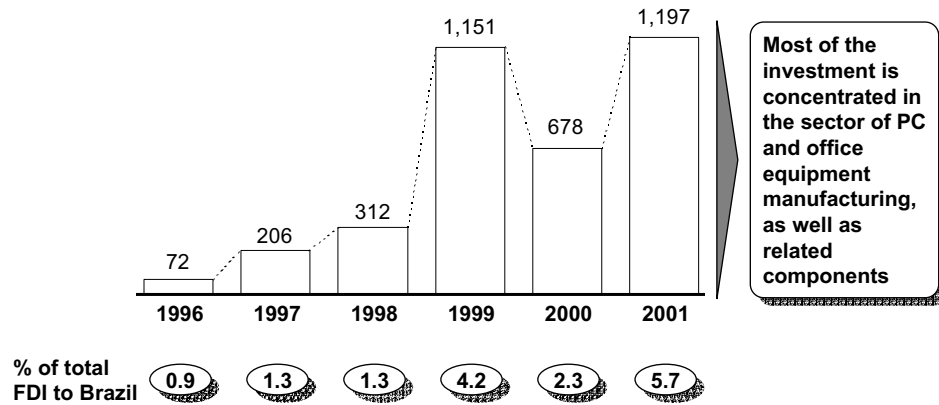
Global Brazilian imports by electronics input origin and type, %



* Input imports include other input imports besides brown goods, PCs, white goods, and telecom products
 ** Others include all the electronic inputs with percent share less than 5 percent
 Source: UN PCTAS database

Exhibit 6

PLEDGED FDI IN BRAZIL CONSUMER ELECTRONICS SECTOR*
U.S. \$ Million

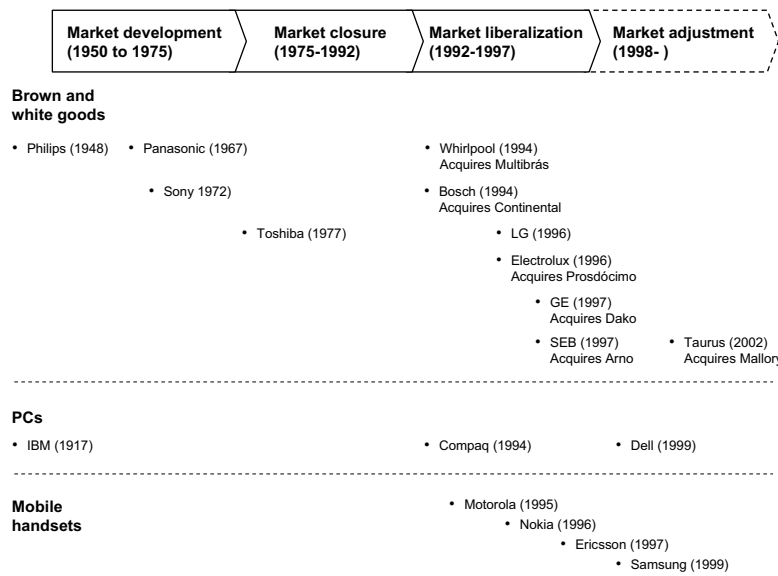


* Includes 2 main sectors: Manufacturing of office equipment, PCs and related components; Manufacturing of electronic and communication equipment; white goods are not included
Source: Brazilian Central Bank

Exhibit 7

TIMELINE OF FDI ENTRY

NOT EXHAUSTIVE



Most of the investment was made after currency stabilization in 1994

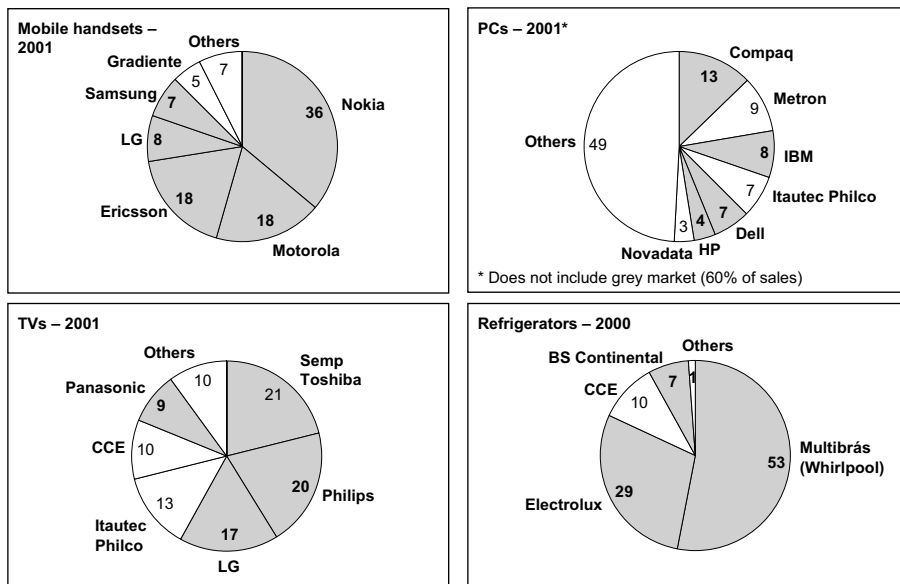
Source: Literature search; company websites

Exhibit 8

CONSUMER ELECTRONICS MARKET SHARE BY SEGMENT – BRAZIL

Percent

FDI player



Source: Communications Top 100; Computerworld; Datamark; Philco

Exhibit 9

EVOLUTION OF THE BRAZILIAN CONSUMER ELECTRONICS SECTOR – 1950-2001

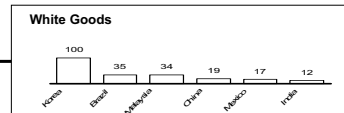
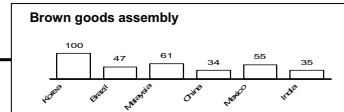
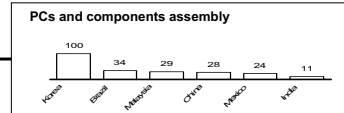
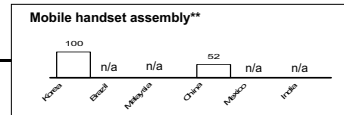
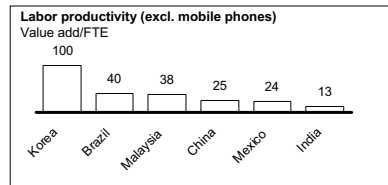
	Market development (1950 to 1975)	Market closure (1975-1992)	Market liberalization (1992-1997)	Market adjustment (1998-)
External policy	<ul style="list-style-type: none"> Incentive through market closure by government Strong FDI Focus in local market 	<ul style="list-style-type: none"> Foreign companies forbidden to participate in the market (only with local players) Imports prohibited Only local companies can import foreign products (IT), forcing transfer of technology Tax incentives to manufacture in Manaus 	<ul style="list-style-type: none"> Importation allowed Low import taxes until mid 90's FDI allowed 	<ul style="list-style-type: none"> Increase of import taxes Incentives to export Manaus tax incentives extended until 2013
Internal market	<ul style="list-style-type: none"> Entrance of foreign players building plants – among them Sony, Panasonic, HP Local companies still dominate the market Production mainly focused in TV and radio equipment, as well as small electrical appliances 	<ul style="list-style-type: none"> Concentration of production in Manaus, both finished products as well as components Low level of FDI Initial production of PCs 	<ul style="list-style-type: none"> Increase in competition Entrance of standalone foreign players as well as acquisitions of locals Beginning of production of mobile handsets Closing of several component companies in Manaus 	<ul style="list-style-type: none"> Consumer electronics retail crisis (12 firms closed in 1998) New components plants in Manaus Protect the industry from high cost raises due to new duties
Performance	<ul style="list-style-type: none"> Strong market development 	<ul style="list-style-type: none"> n/a 	<ul style="list-style-type: none"> Strong price reduction in finished goods for the increase of competition High market growth Growing trade deficit due to input imports and low exports 	<ul style="list-style-type: none"> Few players close activities (Sharp bankrupt, Cinerail/ Daewoo leaving country) after currency devaluation in 1999 Increase in mobile phone exports

Source: www.maquilaportal.com; interviews; McKinsey Global Institute

Exhibit 10

LABOR PRODUCTIVITY COMPARISON BY SEGMENT**

Index*, Korea = 100



* Indexed to Korea = 100; Base measurement = RMB/worker/hour
 ** Korea's mobile handset industry definitions includes other wireless devices such as wireless broadcast transmitters and wireless closed circuit cameras; India's numbers are calculated using data of listed companies (largest); they may be biased upward because of this
 Source: China: China Electrical Industry Yearbook; China Light Industry Yearbook; Korea: National Statistical Office, Electrical Industry Association of Korea; Malaysia: Annual Survey of Manufacturing Industries, Department of Statistics; Brazil: IBGE, FIPE; McKinsey Global Institute

- Gap with best practice. Information laws – which prohibited foreign companies from operating in the Brazilian PC market – created a very weak field of domestic competitors, particularly in PCs. When these laws were repealed in the early 1990s, Brazil drew in new international companies such as Compaq and later Dell, thus increasing competition.
- **Factors that have discouraged FDI**
 - Supplier base and infrastructure. Brazil's significant production infrastructure in high-cost Manaus – which is encouraged by government tax incentives for firms to produce there – has discouraged investment in export-oriented production in Brazil.

FDI IMPACT ON HOST COUNTRY

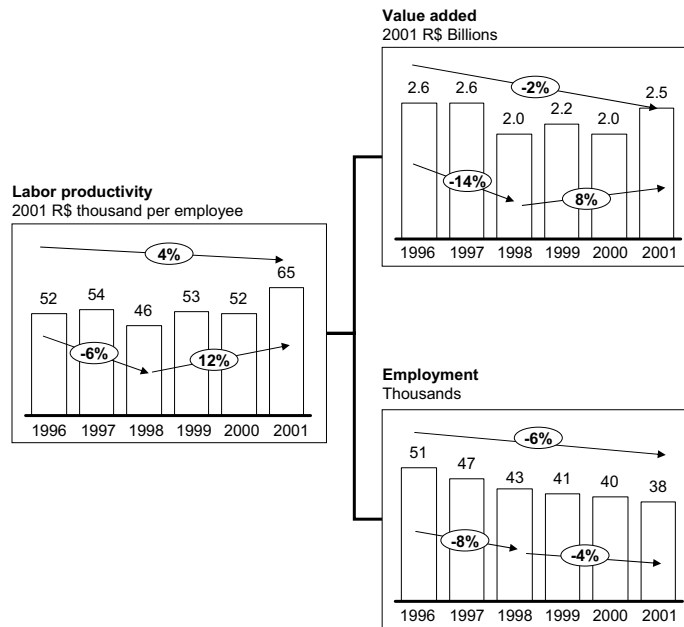
¶ Economic impact

- **Sector productivity**
 - Productivity level. The productivity of Brazilian consumer electronics sector is 40 percent that of Korea, but higher than in Mexico, China, and India. Brazil has higher productivity than China and Mexico because its production capabilities are focused on the domestic market and do not include the heavy mix of labor-intensive export goods featured in China and Mexico. China's productivity, in particular, is further reduced by the presence of unproductive state-owned enterprises (SOEs) (Exhibit 10).
 - Productivity growth. Labor productivity growth increased four percent per annum in white goods, six percent in brown goods, and twelve percent in PCs, during the years 1996-2001. However, the growth levels for white and brown goods, as good as they are, are much lower than those seen in both China and Mexico. Macroeconomic-instability and the energy crisis have had strong impacts on Brazil, as consumption declined faster than employment could be cut, especially in the period 1998-2000. PC productivity has grown at a faster rate as volumes have risen. We would expect that with the market downturn in 2002-2003 productivity growth will slow again (exhibits 11-14).
 - We attribute productivity increases to FDI based on our interviews that indicated both higher competitive intensity as well as manufacturing improvements made by some FDI companies as drivers of productivity growth (Exhibit 15).
- **Sector output**
 - Domestic demand. Domestic demand continued to grow at an average rate of 18 percent per annum from 1998-2001, with very high growth in mobile handsets and PCs, high growth in white goods, and relatively flat sales in brown goods. The strong growth in domestic demand coincided with macroeconomic stabilization and an increased availability of financing, so it is difficult to attribute it to FDI alone. The flattening off in demand seen in 2001 coincides with the return of macroeconomic-instability resulting from the massive currency devaluation in Argentina and Brazil's energy crisis (Exhibit 1).

Exhibit 11

WHITE GOODS PRODUCTIVITY 1996-2001

○ CAGR

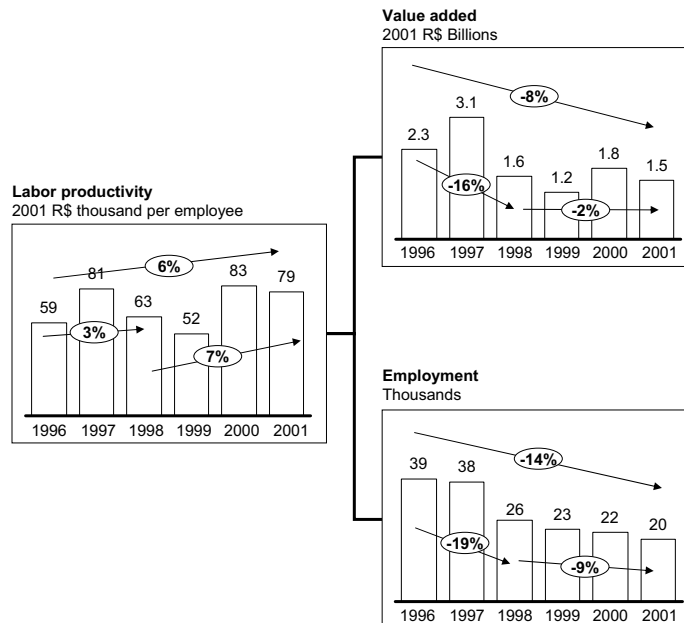


Source: IBGE; FIPE; McKinsey Global Institute

Exhibit 12

BROWN GOODS PRODUCTIVITY 1996-2001

○ CAGR

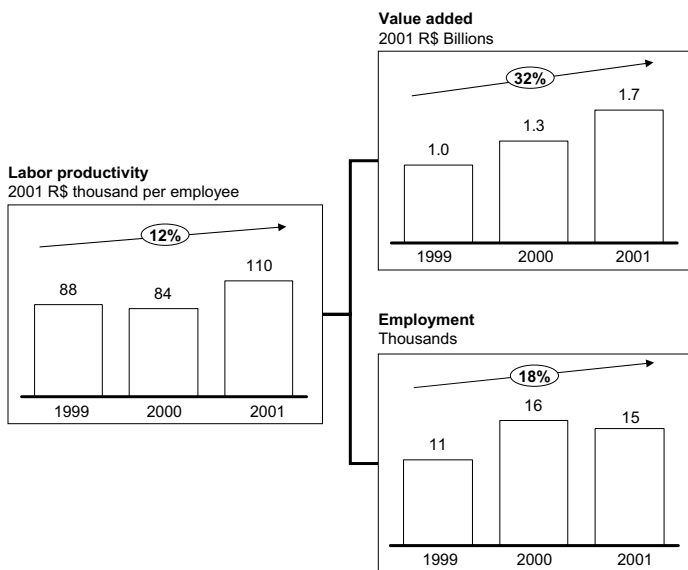


Source: IBGE; FIPE; McKinsey Global Institute

Exhibit 13

PCs* PRODUCTIVITY 1996-2001

○ CAGR



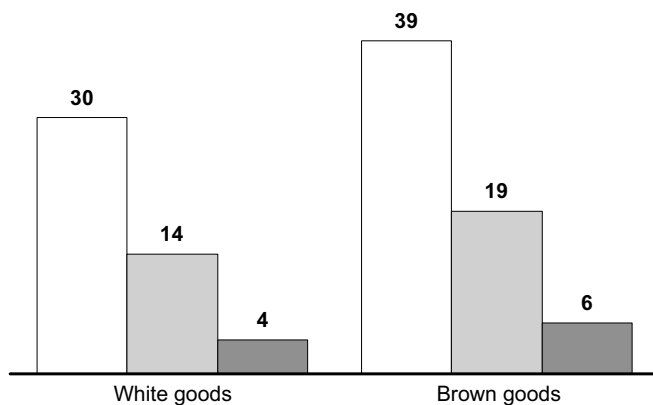
* Includes PCs, monitors and similar; printers, scanner and similar; data storage as diskettes or hard drives; keyboards
Source: IBGE; FIPE; McKinsey Global Institute

Exhibit 14

PRODUCTIVITY ANNUAL GROWTH RATE – 1996-2000/2001*

CAGR Percent

□ China
■ Mexico
■ Brazil



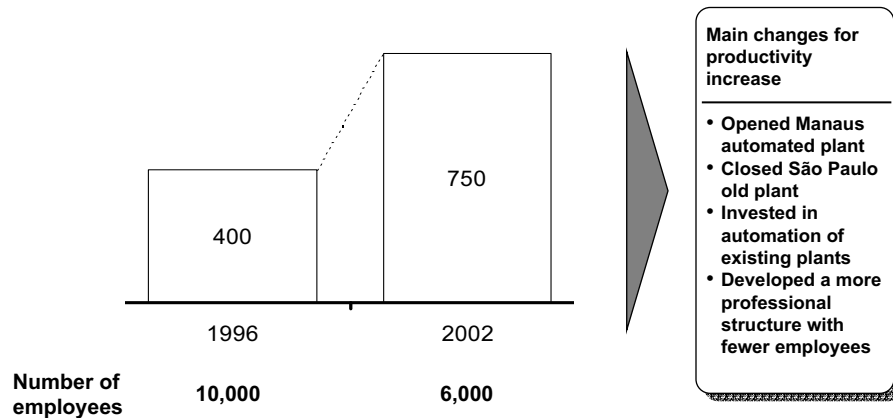
* Figures are 1996-2000 for China and 1996-2001 for Mexico and Brazil
Source: INEGI; China Electrical Industry yearbook; China Light Industry yearbook; China Statistical Yearbook; IBGE; FIPE; McKinsey Global Institute

Exhibit 15

PRODUCTIVITY INCREASE OF ACQUIRED COMPANIES - EXAMPLE

White goods produced / employee / year

DISGUISED COMPANY

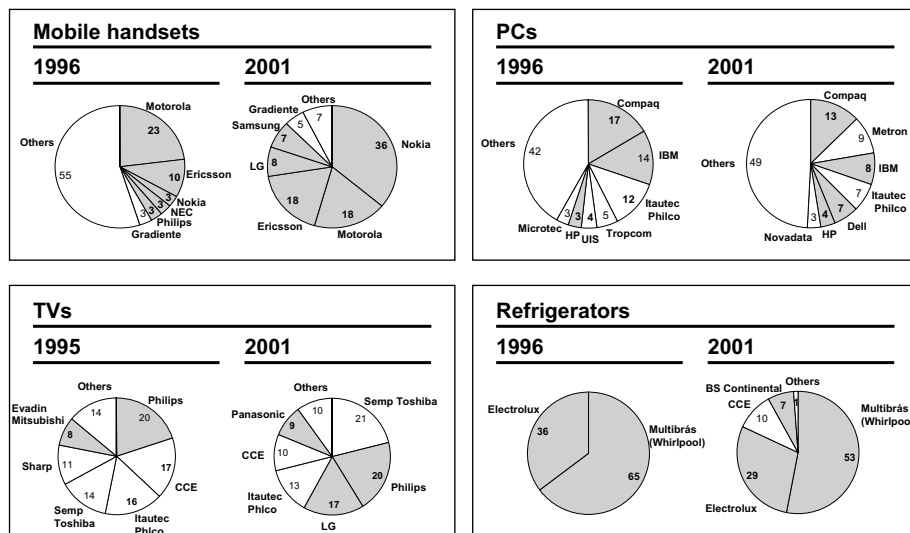


Source: Interviews

Exhibit 16

MARKET SHARE OVER TIME IN BRAZIL – CONSUMER ELECTRONICS

Percent



Source: IDC; Semp Toshiba; interviews; 100 Maiores de telecomunicações

- Export performance. Brazil's total exports have increased strongly from a relatively low level, due to growth in mobile handset exports. We attribute this growth to FDI, as at least 90 percent of mobile handset production in Brazil is controlled by multinational companies. Brazil is competitive in mobile phones because of two factors: freight costs are less important in the sub-segment; the relative weakness of the Real makes Brazilian mobile handsets relatively less expensive for foreign countries to import (exhibits 2 and 3).
- **Sector employment.** Overall sector employment has decreased in Brazil at a rate of about six percent per annum from 1996-2001 in white goods, brown goods, and PCs. We attribute part of the reduction in employment to FDI and to the economic recession. FDI companies, in some cases, reorganized and automated production, thereby cutting employment and increasing productivity (exhibits 11-13 and 15). The reduction in demand as a result of economic downturn was also a significant factor.
- **Supplier spillovers.** There is little evidence of significant supplier spillovers in Brazil. In fact, Brazil is a heavy importer of consumer electronics components.

¶ Distribution of FDI Impact

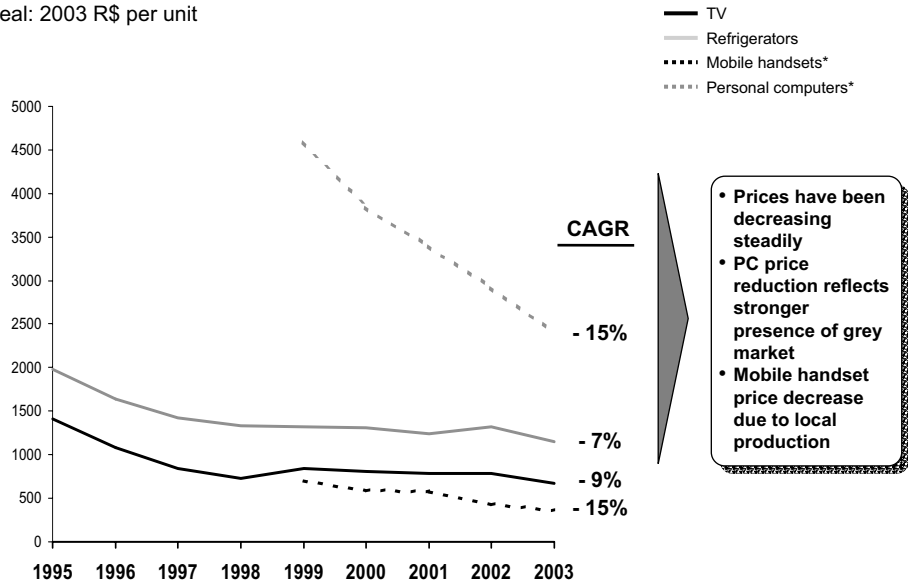
- **Companies**
 - FDI companies. FDI companies have gained share in Brazil in mobile handsets, PCs, and TVs, while slightly losing share in refrigerators. Our interviews indicate that FDI companies have mixed profitability in Brazil – with a few returning positive profits, and several others consistently unable to make a return on their cost of capital. Overall, our evidence suggests that FDI companies have benefited somewhat from entering Brazil, at least in terms of market share gains (Exhibit 16).
 - Non-FDI companies. As a result of the increased competitive intensity, particularly in the late 1990s, prices have declined as margins have shortened and market shares have changed. International companies have acquired certain domestic companies and the overall market share of domestic companies has declined (Exhibit 16).
- **Employment**
 - Level. As previously stated, employment in the sector has decreased.
 - Wage. Because of Brazil's macro-economic instability during the period under review, it is not possible to assess the impact of FDI on wages for FDI as compared to non-FDI companies.
- **Consumers**
 - Prices. Prices have fallen in Brazil at a relatively quick rate – at between 7-15 percent per annum in real terms since 1995. Prices remain above U.S. levels in Brazil, but this is almost entirely due to Brazil's high taxes. Given the rapid entry of FDI in this period – and the unclear link between macroeconomic-stabilization and prices – we attribute some of the decrease in prices to the increased competitive intensity spurred by the influx of FDI³ (Exhibit 17).

3. Our interviews confirm that the increase in FDI entry and heightened competition are directly linked.

Exhibit 17

PRICING CHANGES IN BRAZIL

Real: 2003 R\$ per unit

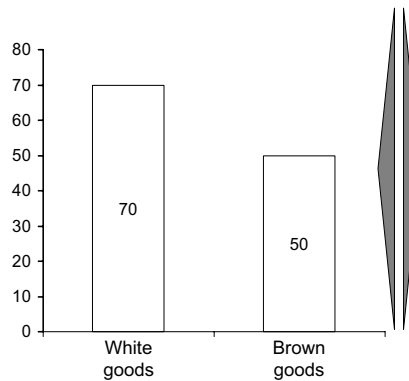


* PC and mobile handset series data available from 1999 onwards
 Source: IPC-FIPE; INPC; Extra (www.extra.com.br)

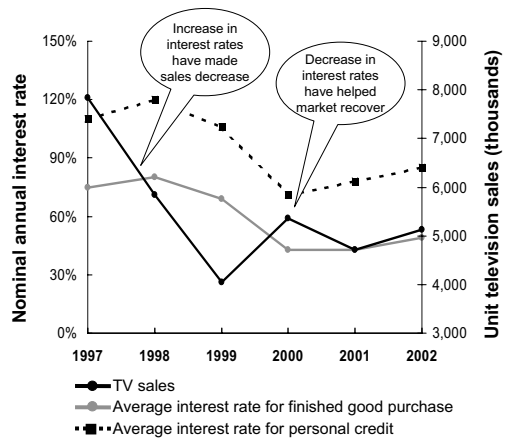
Exhibit 18

IMPORTANCE OF FINANCING IN CONSUMER SALES

Sales financed
 % of total consumer sales - 2002



TV sales x interest rates
 Sales in thousand and interest rates in percent



Source: IBGE; interviews

- Product variety and quality. FDI had a definite impact in improving the product variety and quality of PCs available in Brazil. This had been a closed market until the early 1990s due to information laws. In other segments, FDI has also increased variety and quality. Currently, new white goods products are released from one of the manufacturers or another every two to three weeks; prior to the influx of FDI, new products appeared less frequently.
- **Government.** Our analysis does not reveal what impact FDI has had on government tax receipts in Brazil.

HOW FDI HAS ACHIEVED IMPACT

- ¶ **Operational factors.** Interviews indicate that where acquisitions took place FDI companies have improved productivity by automating plants and consolidating operations. In one example, these changes induced a near doubling of unit productivity between 1996 and 2002 (Exhibit 15).
- ¶ **Industry dynamics.** The increasing number of FDI companies present in Brazil heightened the level of competition in the mid-to-late 1990s, as indicated by falling prices and changing market shares (Exhibit 16). Interview evidence suggests that profitability fell across the consumer electronics segments in Brazil during the time period under review.

EXTERNAL FACTORS THAT AFFECTED THE IMPACT OF FDI

There were a host of factors that negatively influenced the impact of FDI in Brazil, including trade barriers, government incentives, labor markets, informality, and cumbersome, heavy tax regulations. All of these factors reduced the price competitiveness of Brazilian exports (where Brazil could have been opportunistically competitive depending on exchange rate considerations). In particular, informality reduced the competitiveness of FDI in the domestic market. The relative success of Brazil in mobile handsets and compressors (e.g., those of Embraco/Whirlpool) shows Brazil's potential when the export infrastructure, labor market and volatile demand issues are addressed.

¶ **Country specific factors**

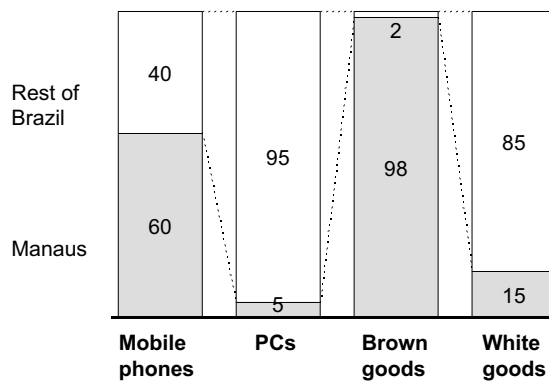
- **Key factors**
 - Country stability. Though FDI was attracted to Brazil by the promise of macroeconomic stability following the Plano Real, this macroeconomic stability was fleeting. The instability has caused large swings in demand that negatively impact productivity, as the size of the labor force is somewhat fixed in the short-term. Macroeconomic stability and demand are highly interrelated in Brazil. The majority of consumer electronics purchases are financed; the high interest rates (that come with macroeconomic instability) suppress demand (Exhibit 18). In addition to the macroeconomic instability, the 2001 energy crisis forced consumers

Exhibit 19

SECTOR PERFORMANCE – IMPORTANCE OF MANAUS IN BRAZILIAN CONSUMER ELECTRONICS PRODUCTION

Production

Percent, \$ billion



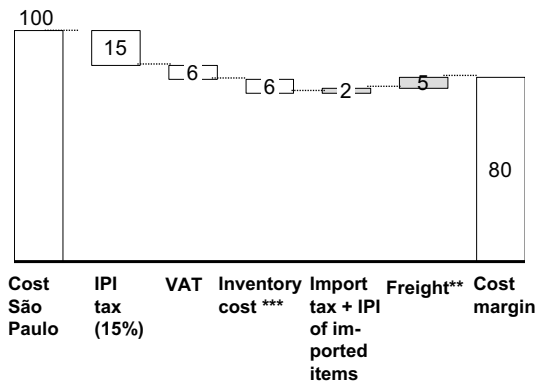
Source: Suframa; McKinsey Global Institute

Exhibit 20

THE MANAUS FREE ZONE

Cost advantage*

Percent



Location



- Manaus is located in the middle of the Amazon forest, approximately 2,500 miles from São Paulo, the main consumer market
- Trucks proceed to Belém by river (5 days) then by road, taking 10-20 days to get to São Paulo
- Freight cost between 3% and 7% for consumer electronics products (except white lines)

* Assuming non-white CE products with 25% of cost as imported components and 20% margin. Labor cost differences not assumed
 ** Assume only extra freight cost compared to São Paulo
 *** Assume 2 month component stock and 18 days delivery to south-east
 Source: Interviews; McKinsey Global Institute

to cut power consumption in Brazil⁴. This also reduced demand for energy-consuming consumer electronics products. This affected the demand less in white goods (where some consumers opted to purchase more energy efficient products) than it did in brown goods (where more purchases were potentially foregone).

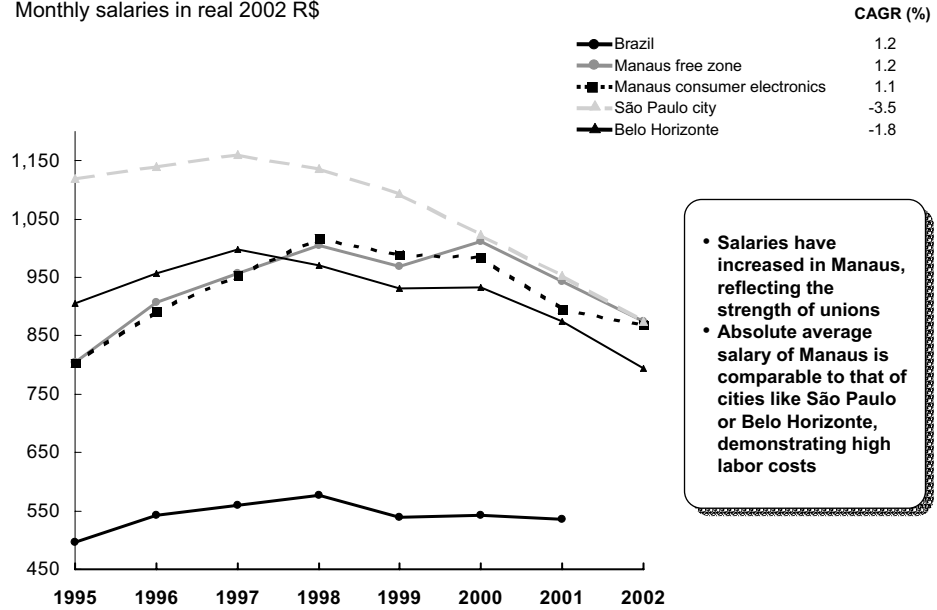
- Government incentives. Government incentives – in the form of VAT, import tariffs and other tax rebates – have encouraged production of some goods in Manaus. A high percentage of brown goods and mobile handsets are produced in Brazil; Manaus accounts for approximately 30 percent of total consumer electronics employment in Brazil. Manaus production incurs a five percent freight penalty and two percent inventory penalty (not including damage and additional obsolescence costs), as parts take up to two months to reach Manaus from Asia (exhibits 19 and 20). In addition, labor is no less expensive in Manaus than in Sao Paulo. In fact, skilled labor often needs to be imported, negating any low labor cost advantage that one might expect in a remote area (Exhibit 21).
- These factors make Brazil less competitive for exports and increases local market prices. Government incentives also treat component shipments from southern Brazil to Manaus as "exports" thus granting VAT rebates. However, components made in Manaus must pay full VAT. This incentive to make components in southern Brazil and transport them to Manaus for final assembly encourages industry dispersion.
- These incentives have proved an expensive way to increase employment in Manaus, costing the government over \$23,000 per direct job and nearly \$6,000 per indirect job created on an annual basis (Exhibit 22).
- Cumbersome and heavy tax burdens. For some goods, full tax payments can represent over 40 percent of the final good price (Exhibit 23). These taxes negatively impact FDI by suppressing demand. In many cases, the difference between U.S. and Brazilian prices is very close to the difference in tax rates between the two countries (Exhibit 24). Furthermore, in cases where rebates are offered, very cumbersome recovery regulations exist. Companies need to put aside large cash reserves for a significant period of time in order to cover these tax rebates, thereby increasing their working capital costs. Also, significant legal resources need to be dedicated to recover these rebates.
- **Secondary factors**
 - Import barriers. Import tariffs have steadily declined from 20-30 percent (depending on the product) in 1993 to around 20 percent in 2001 (exhibits 25 and 26). Even more harmful to Brazil are the unique Brazilian standards for certain products – such as PAL-M in color televisions – which mean that Brazilian production is incompatible with the standards of other markets and cannot be easily exported. Brazil regards developing local technology important and is considering a similar unique standard for digital television.

4. Most energy in Brazil is generated by hydroelectric power plants. As a result of rainfall shortages, the government required industries and consumers to reduce energy intake by 35 percent.

Exhibit 21

AVERAGE CONSUMER ELECTRONICS WAGES DEVELOPMENT

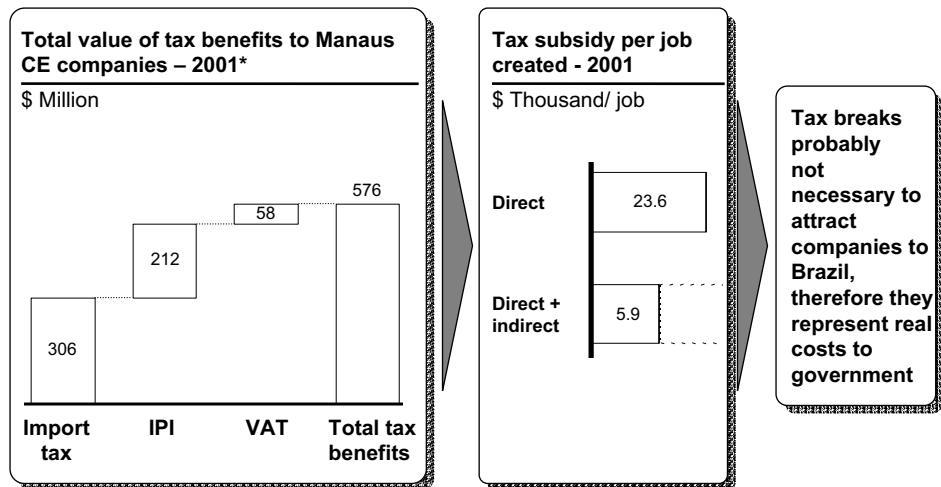
Monthly salaries in real 2002 R\$



Source: Suframa; IBGE; DIEESE

Exhibit 22

EXTERNAL FACTORS – TAX BENEFITS PROVIDED VS. JOBS CREATED IN MANAUS



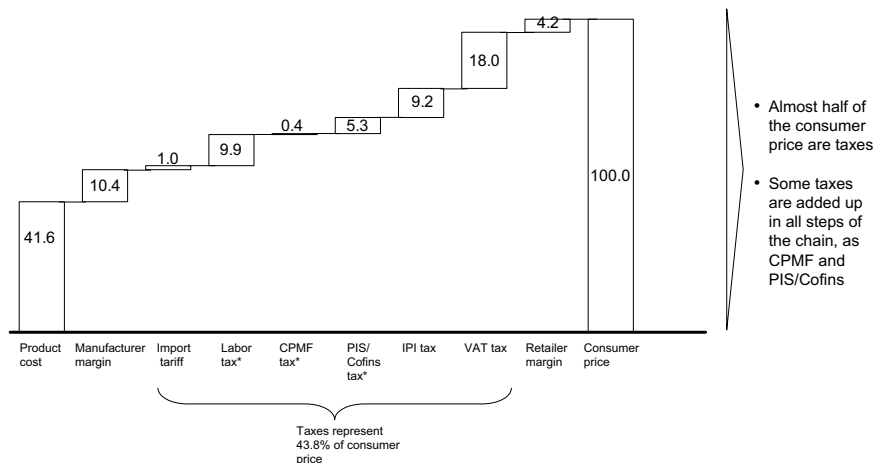
* Consider only components – capital goods are excluded. Includes all electronic sectors made in Manaus, finished products and components
 Source: Suframa; ABINEE

Exhibit 23

THE PRICE BREAKDOWN FOR A CONSUMER ELECTRONICS PRODUCT IN BRAZIL ASSUMING FULL TAXES PAYMENT*

Percent

EXAMPLE

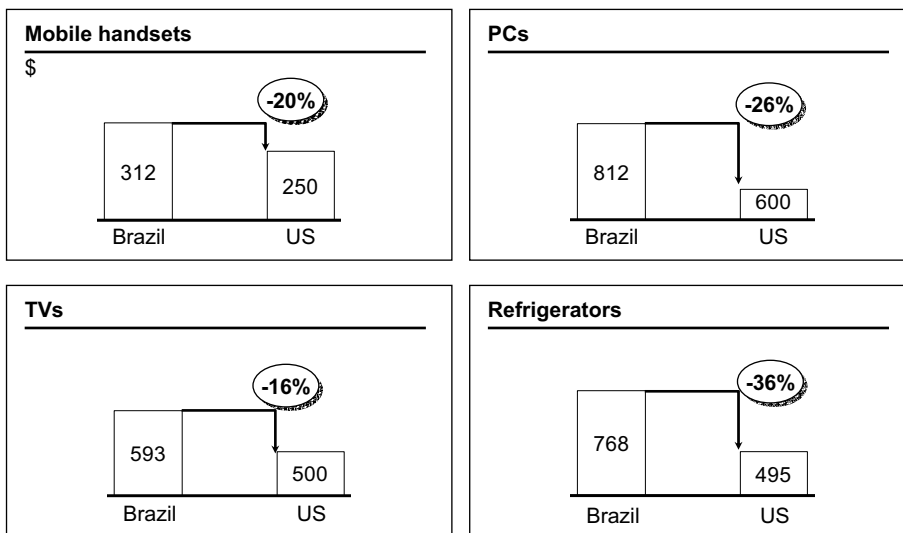


* Consider taxes paid by both manufacturer and retailer
Source: Interviews; McKinsey Global Institute

Exhibit 24

PRICE COMPARISON OF CONSUMER ELECTRONICS GOODS IN US VS. BRAZIL – 2003

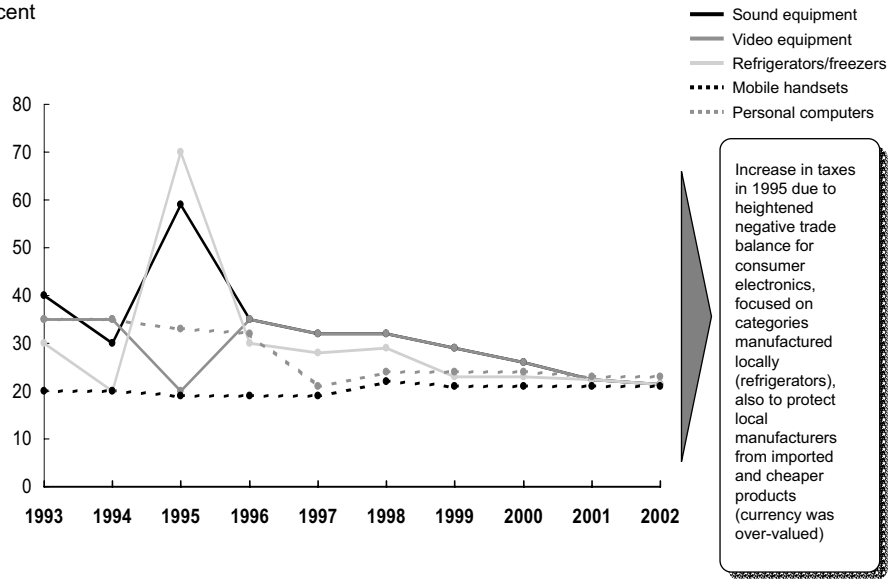
US\$ *



* R\$/US\$ rate used = 3.20
Source: US data: Best Buy; Brazil data: Ponto Frio; Extra; Lojas Americanas (Americanas.com)

Exhibit 25

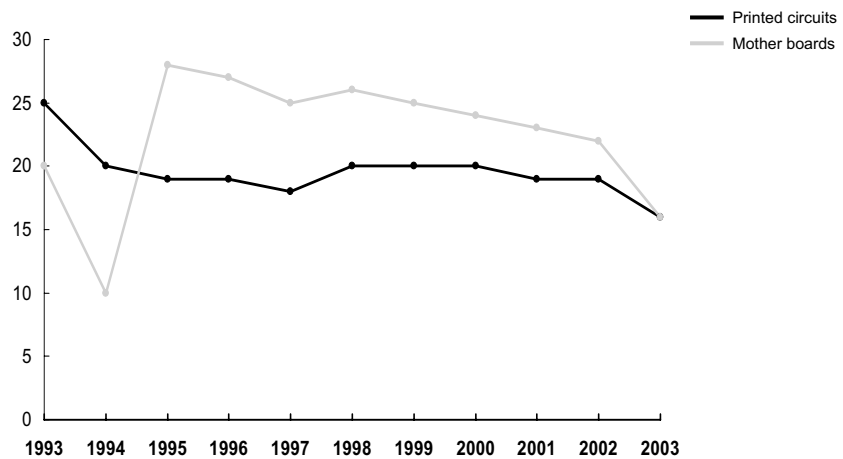
IMPORT TARIFF EVOLUTION – FINISHED PRODUCTS
Percent



Source: Camex

Exhibit 26

IMPORT TARIFF EVOLUTION – COMPONENTS
Percent



Source: Camex

-
- Informality and enforcement. PCs are often constructed from parts imported via Manaus tax-free and then assembled into a final product by a small operation that also avoids taxes, rendering formal/FDI companies uncompetitive in many market segments, and fostering a strong grey market (at least 50 percent of total production). Grey markets refer to the illicit, but technically legal, activities that are not reported to the tax authorities and the income from which goes untaxed and unreported. Interviews indicate that some Brazilian government agencies may even support the grey market by purchasing computers from grey market companies.
 - Labor market requirements. Requirements for substantial employee benefits means that total employment costs are double the level of wage compensation in Brazil. Furthermore, a limited supply of skilled electronics engineers in Brazil limits Brazil's ability to produce export goods.

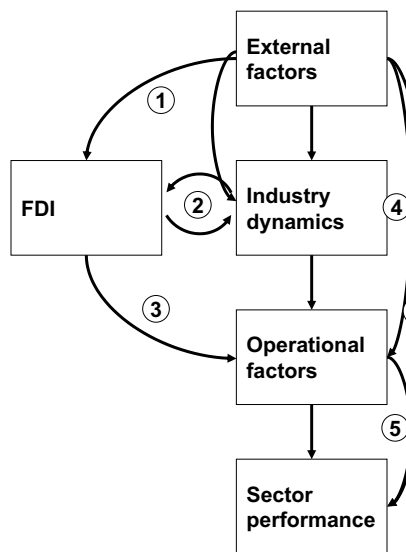
¶ **Initial sector conditions.** High inflation and the shield of a closed market (particularly for PCs) reduced competition significantly prior to FDI entry. Because the market was starting from an initial low level of competition, the impact of FDI was increased.

SUMMARY OF FDI IMPACT

FDI impact has been positive in Brazil, increasing the level of competition and fostering operational improvements, which has driven down prices for consumers. The main beneficiaries of increased FDI have been the consumers – who have benefited greatly from declining prices. In terms of productivity, employment and output, it is difficult to disentangle the impact of FDI from that of the market stabilization that coincided with increased FDI. A host of external factors have reduced the potential impact of FDI in Brazil by making Brazilian production less cost effective. These factors include Brazil's unique standards, government incentives, labor markets, informality/enforcement and cumbersome, heavy tax burdens. They have also reduced the potential demand in Brazil by keeping prices higher than they would be otherwise and have made Brazil less competitive as an exporter.

Exhibit 27

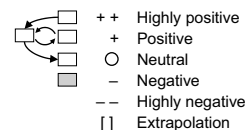
BRAZIL CONSUMER ELECTRONICS – SUMMARY



- ① FDI entry encouraged in early 1990s in PCs due to repeal of information laws entry gains speed in the second half of the 1990s as the Plano Real brings economic stability to Brazil; however, returned macro-instability and the onset of an energy crisis in Sao Paulo (which required consumers to reduce energy intake) hinder FDI performance in the early 2000s
- ② Additional players add competitive intensity, and gain share vis-à-vis local players in PCs, white and brown goods
- ③ FDI improves productivity through plant level operational improvements in some cases
- ④ Government incentives that encourage production in Manaus reduce industry efficiency in some goods; furthermore, lack of tax enforcement gives advantage to "garage production" of PCs
- ⑤ Dispersed and remote industry value chain hinders Brazil's ability to export many goods; exception is easily transportable goods like mobile handsets
- ⑥ **FDI impact has been positive in Brazil, increasing the level of competition and fostering operational improvements, which has driven down prices for consumers.** However, persistent macro-instability and the energy crisis also continue to hinder sector performance

Exhibit 28

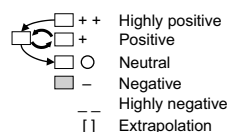
BRAZIL CONSUMER ELECTRONICS – FDI IMPACT IN HOST COUNTRY



Economic impact	Pre-stabilization (Pre-1994)	Growing FDI (1994-2001)	FDI impact	Evidence
• Sector productivity (CAGR)	N/a	+	+	• Productivity growing around 15% per year since 1994 (these numbers are brand new and need to be verified)
• Sector output (CAGR)	N/a	+	+	• Growing in PCs and handsets, down in brown and white goods; given increase in competition we attribute some of this to FDI
• Sector employment (CAGR)	N/a	[-]	[-]	• Employment drops due to FDI efficiency improvements as well as macroinstability's impact on demand
• Suppliers	N/a	[-]	[0]	• Supplier industries reduced due to trade opening in supplier industries in early 1990s (cannot be attributed to FDI)
• Impact on competitive intensity (net margin CAGR)	N/a	+	+	• Prices declining rapidly; FDI brings some new products to Brazil

Exhibit 29

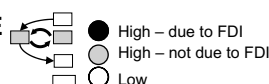
BRAZIL CONSUMER ELECTRONICS – FDI IMPACT IN HOST COUNTRY



Distributional impact	Pre-liberalization (Pre-1994)	Post-/liberalization (1994-2001)	FDI impact	Evidence
• Companies				
– MNEs	N/a	[-/+]	[+/-]	• MNEs profitability very mixed (interview results)
– Domestic companies	N/a	-	-	• Local companies such as Itautec/Philco and CCE have lost share; many others have been acquired
• Employees				
– Level of employment (CAGR)	N/a	-	[0]	• Employment relatively stable with growth in PCs and handsets offsetting declines
– Wages	N/a	[0]	[0]	• Wages in Manaus (CE zone) have been growing faster than in economy as a whole; not clear this is due to FDI
• Consumers				
– Prices	N/a	+	+	• Prices falling rapidly in period
– Selection	N/a	[+]	[+]	• FDI has had some impact on selection, but limited in many cases due to unique Brazilian standards, import barriers
• Government				
– Taxes	N/a	[0]	[0]	• No clear impact of FDI on taxes, as many rebates have been given

Exhibit 30

BRAZIL CONSUMER ELECTRONICS – COMPETITIVE INTENSITY



	Prior to focus period (pre-1994)	Post-/liberalization (1994-2001)	Evidence	Rationale for FDI contribution
Pressure on profitability	N/a	N/a	• Profitability mixed	• Cannot be directly attributed to FDI
New entrants	N/a	●	• Several new entrants in brown and white goods	• All new entrants are FDI
Weak player exits	N/a	○	• Weak player exits observed in PCs	• n/a
Pressure on prices	N/a	●	• Average price steadily declining, though may be due to downgrading of products	• n/a
Changing market shares	N/a	●	• Market share shifts significant in all four markets	• FDI players play key role, though some local players present
Pressure on product quality/variety	N/a	○	• Sony brings only 70 SKUs of 15,000 to Brazil due to import barriers and macro-instability	• Has contributed positively by bringing handsets and better PCs to market
Pressure from upstream/downstream industries	N/a	○		
Overall	N/a	●		

Exhibit 31

**BRAZIL CONSUMER ELECTRONICS—
EXTERNAL FACTORS' EFFECT ON FDI**

Level of FDI*	Impact on level of FDI	Comments	Impact on per \$ impact	Comments
Global factors				
Global industry discontinuity	0		0	
Country-specific factors				
Relative position				
• Sector Market size potential	+	• One of the largest developing markets	0	
• Prox. to large market	0		0	
• Labor costs	0		0	
• Language/culture/time zone	0		0	
(Δ in) Macro factors				
• Country stability	+	• Post stabilization many FDI companies entered Brazil due to expectation of stability	+	• However, actual instability (in spite of expectations) hurt growth of markets; on the positive side it helped exports in mobile handsets
Product market regulations				
• Import barriers	+	• High trade barriers/standards made entry through trade impossible	--	• Standards make exports of some goods impossible, even with favorable currency; increase operating costs; protect weak players
• Preferential export access	0	• FDI liberalization in PCs in early 1990s drew some new players	0	
• Recent opening to FDI	+		0	
• Remaining FDI regulation	0	• Not clear that incentive affected level of FDI, though it did cause players to locate in Manaus	0	• Draw players to Manaus, where industry is less cost effective (due to extra freight and inventory costs)
• Government incentives	0		0	
• TRIMs	0		0	
• Corporate Governance	0		0	
• Taxes and other	0		0	
Capital market deficiencies	0		0	
Labor market deficiencies	0		-	• Labor laws drive up cost of labor in Manaus, where labor should be significantly cheaper
Informality	0		-	
Supplier base/infrastructure	-		-	• Lack of tax enforcement creates strong grey market in PCs
Sector initial conditions				
Competitive intensity	0 (M)		0 (M)	
Gap to best practice	+(M)	• Especially important in PCs	+(M)	• Leaves more room for productivity growth (all else equal); one white goods manufacturer nearly doubled productivity

Exhibit 32

**BRAZIL CONSUMER ELECTRONICS –
FDI IMPACT SUMMARY**

Level of FDI relative to sector*	FDI impact on host country	Level of FDI** relative to GDP	External Factor impact on	
			Level of FDI	Per \$ impact of FDI
	30		0.11	
Economic impact		Global factors		
• Sector productivity	+	Global industry discontinuity	0	0
• Sector output	+	Relative position		
• Sector employment	[-]	• Sector market size potential	+	0
• Suppliers	[0]	• Prox. to large market	0	0
Impact on competitive intensity	+	• Labor costs	0	0
Distributional impact		• Language/culture/time zone	0	0
• Companies		Macro factors		
– MNEs	[+/-]	• Country stability	+	+
– Domestic	-	Product market regulations		
• Employees		• Import barriers	+	--
– Level	[0]	• Preferential export access	0	0
– Wages	[0]	• Recent opening to FDI	+	0
• Consumers		• Remaining FDI restriction	0	-
– Prices	+	• Government incentives	0	0
– (Selection)	[+]	• TRIMs	0	0
• Government		• Corporate governance	0	0
– Taxes	[0]	• Taxes and other	0	0
		Capital markets	0	0
		Labor markets	0	-
		Informality	0	-
		Supplier base/infrastructure	-	-
		Sector initial conditions		
		Competitive intensity	0 (M)	0 (M)
		Gap to best practice	+(M)	+(M)

* Average annual FDI/sector value added
** Average (sector FDI inflow/total GDP) in key era analyzed

Exhibit 33**BRAZIL CONSUMER ELECTRONICS – FDI OVERVIEW**

• Total FDI inflow (1996-2001)	\$3.6 billion
– Annual average*	\$0.6 billion
– Annual average as a share of sector value added	30%
– Annual average per sector employee	\$5,880
– Annual average as a share of GDP	0.11%
• Entry motive (percent of total)	
– Market seeking	100%
– Efficiency seeking	0%
• Entry mode (percent of total)	
– Acquisitions	35% (white goods)
– JVs	5%
– Greenfield	60%

* Includes 2 main sectors: Manufacturing of office equipment, PCs and related components; Manufacturing of electronic and communication equipment; white goods are not included
 Source: Brazilian Central Bank; IBGE; Interviews; McKinsey Global Institute

Mexico Consumer Electronics Summary

EXECUTIVE SUMMARY

Mexican consumer electronics production grew strongly during the 1990s, comprised primarily of exports to the U.S. During this time companies (mainly, but not exclusively, American) set up export operations in Mexico to take advantage of Mexico's low factor costs, proximity to the U.S. markets, and recent entry into NAFTA⁵. FDI to the sector topped US\$5 billion since 1994 and was mainly efficiency-seeking. PC and peripherals production facilities were based around Guadalajara, while audio and visual equipment operations were located along the Mexico-U.S. border. In general, international companies entered through greenfield investment, with the exception of American white goods companies, which acquired existing plants.

FDI impact in the consumer electronics sector in Mexico has been very positive, boosting output by an average of 27 percent annually, resulting in the creation of an additional 350,000 jobs in the sector. It has also fostered a robust export market with a net trade balance of roughly US \$2 billion in 2000. Mexico's focus on final assembly and processing has limited spillover impact on suppliers. Mexican operations are primarily assembly/processing and are closely integrated into North American supply chains and rely on the import of a number of consumer electronics components from China. Both of these factors have inhibited the creation of a robust local supplier base.

Mexico's role in the global consumer electronics sector hinges on its closeness to one of the largest end user markets, the U.S. It does not have a large domestic market, nor the low labor costs, tax advantages, and strongly integrated supply chain of China. The recent economic downturn in U.S. consumer electronics combined with China's entry into the WTO has begun to erode growth in Mexico's consumer electronics sector. In order for it to continue to maintain its strong position as an assembly location, Mexico will need to continue to improve productivity and focus on products that can gain real benefits from Mexico's proximity to the U.S. These benefits could consist of reduced transportation costs or time or result from ease of interaction with the end users.

SECTOR OVERVIEW

¶ Sector overview

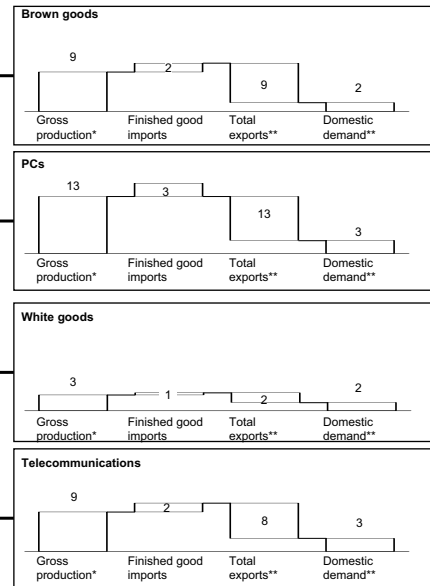
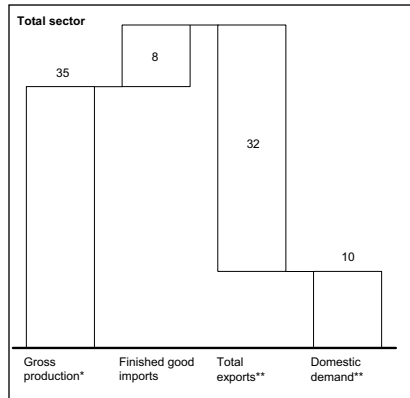
- The Mexican consumer electronics market grew strongly in the 1990s due to a surge in consumer electronics exports as international companies set up export operations to take advantage of Mexico's low factor costs, proximity to the U.S. markets, and entry into NAFTA.
 - Total production of the sector was nearly US \$35 billion in 2001, with a very high percentage of local production being exported; 95 percent of the exports went to the U.S. (Exhibit 1). Production is spread across all goods, but is especially strong in TVs and PCs.
 - The local market in Mexico is about \$10 billion (Exhibit 2).

5. Mexico joined NAFTA in 1994.

Exhibit 1

CONSUMER ELECTRONICS GROSS PRODUCTION BREAKDOWN IN MEXICO – 2001

\$ Billions



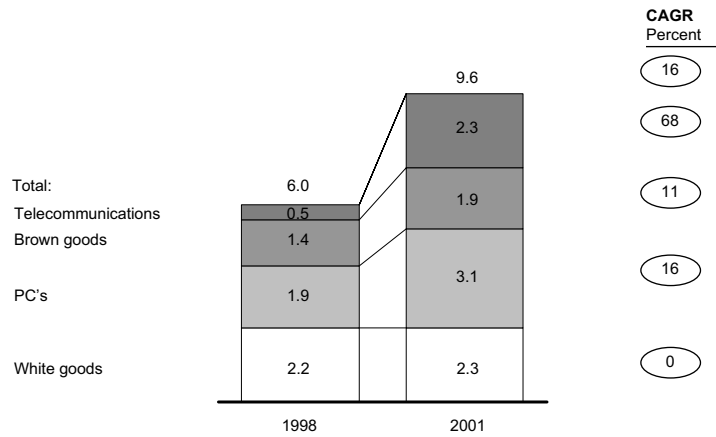
* Includes domestic input, imported input and value added
 ** Includes finished and intermediate goods

Source: INEGI

Exhibit 2

CONSUMER ELECTRONICS MEXICO MARKET SIZE AND GROWTH – 1998-2001

\$ Billions



Note: Domestic market Includes finished goods and input
 Source: INEGI

- Total value added in production was \$5.3 billion in 2001.
- The sector's growth leveled off in 2001 after increasing by over 20 percent per year between 1996 and 2000 (Exhibit 3). This was caused both by a cooling in U.S. market demand and China's gaining market share in U.S. consumer electronics (exhibits 4-6). Mexico continued to perform strongly in a host of product segments vis-à-vis China. It gained market share in set-top boxes and laser printers, among other industries, during the period 1998-2002. However, China took market share from Mexico in several important industries – especially TVs. China's gains in market share accelerated markedly in 2002, as demonstrated by its nearly 3,000 percent year-on-year growth in television exports to the U.S.
- Mexico's consumer electronics sector can be characterized as "final assembly/processing" focused. A relatively low percentage of total value-added occurs in Mexico (Exhibit 7). Domestic value add is only 15 percent of the total production value add, and domestic inputs represent only an additional 14 percent of the total production value add.

¶ **FDI Overview**

- **FDI characteristics**
 - FDI to the sector averaged approximately \$700 million per year from 1994 to 2001, with the entrance of a large number of contract manufacturers post-1994 (exhibits 8 and 9). FDI in the consumer electronics sector averaged seven percent of total FDI investments over this period. However, FDI in the consumer electronics sector was volatile, ranging between two percent and twelve percent of total FDI.
 - Most major global companies have entered the Mexican consumer electronics market and have dislodged (or acquired) all but one local player (Alaska in PCs).
 - FDI is split among the four segments with high degrees of fluctuation from year to year (Exhibit 10).
 - FDI plays primarily an efficiency-seeking role in Mexico, though FDI companies certainly sell to the local market as well.
- **FDI impact quantification.** Because data on the consumer electronics sector are scarce, we have relied primarily on interviews to make assessments of the impact of FDI. The data analysis period we have used is usually 1996-2001, for which data is readily available. We have stated wherever this is not the case.

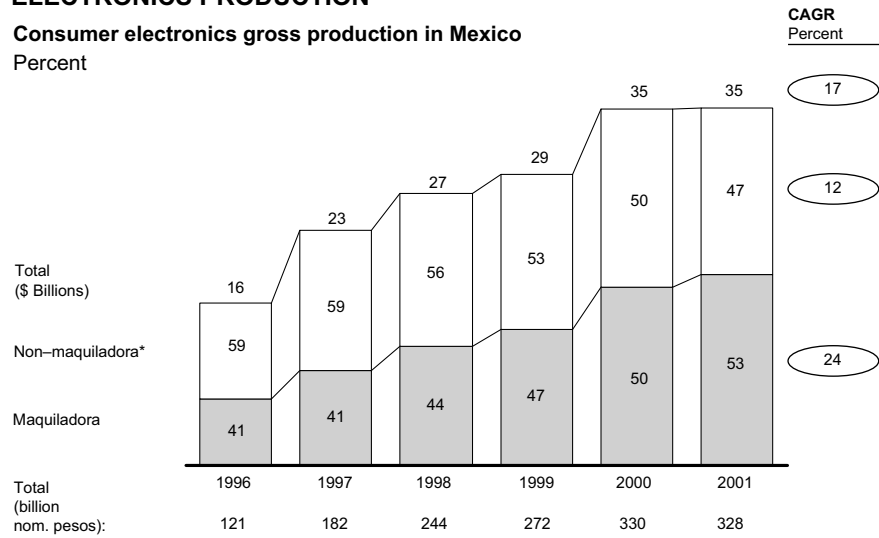
¶ **External factors driving the level of FDI.** The key factors that drove FDI in Mexico all relate to efficiency-seeking – Mexico's low labor costs, its geographic proximity to the U.S., and its signing of NAFTA. Each of these factors have contributed significantly to Mexico's attractiveness and cost competitiveness as a production location. In more recent times, its lack of developed supplier industries and China's increasing integration into the consumer electronics value chain have begun to harm Mexico's attractiveness for FDI.

- **Global factors.** China has become increasingly integrated into the world trading system and is starting to erode Mexico's competitiveness in attracting FDI in some consumer electronics segments. This can be seen particularly in some brown goods, such as TVs, where China is rapidly gaining share and will therefore likely receive the incremental FDI needed to expand its production further (Exhibit 6).

Exhibit 3

MAQUILADORA VS. NON-MAQUILADORAS IN MEXICAN CONSUMER ELECTRONICS PRODUCTION

Consumer electronics gross production in Mexico
Percent



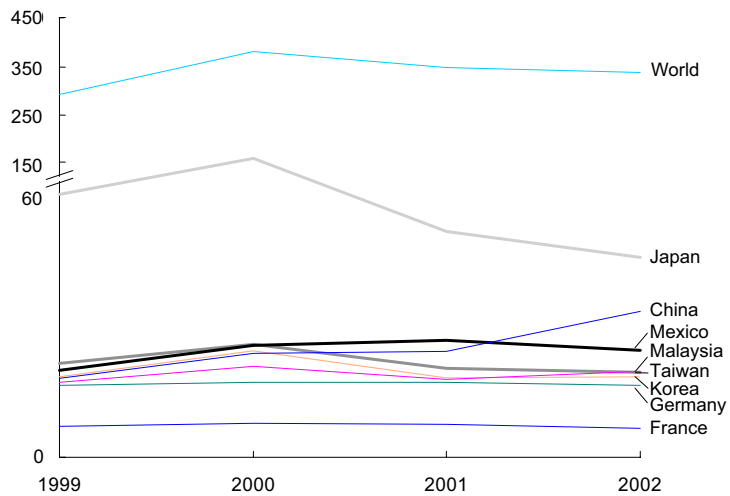
* Includes the production of all Mexican based companies except for *maquiladoras*; the non-*maquiladora* production was adjusted based on the growth of the sector from 1994-2001

Source: INEGI

Exhibit 4

ORIGIN OF CONSUMER ELECTRONICS U.S. IMPORTS, 1999-2002

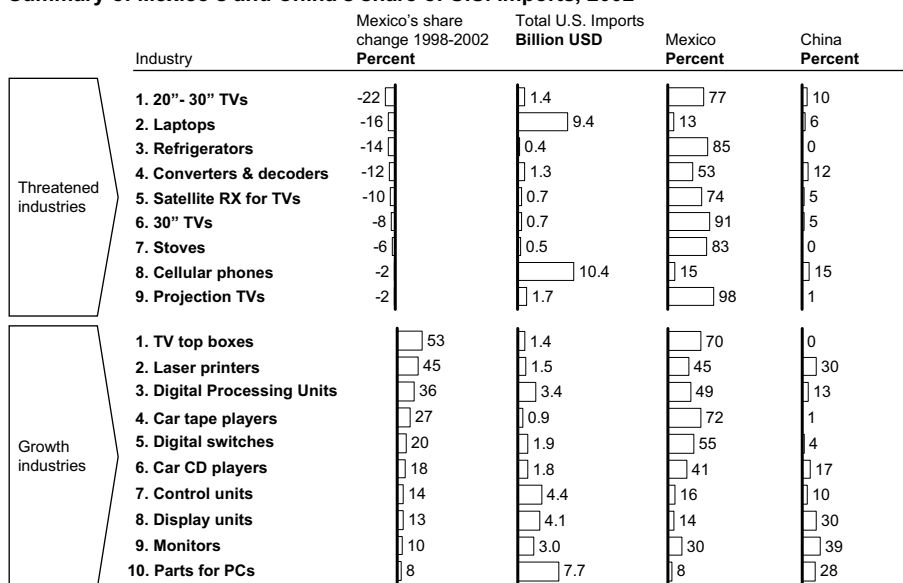
\$ Billions



Note: *Input imports include brown goods, PCs, white goods and telecom products
Source: U.S. Trade online; McKinsey Global Institute

Exhibit 5

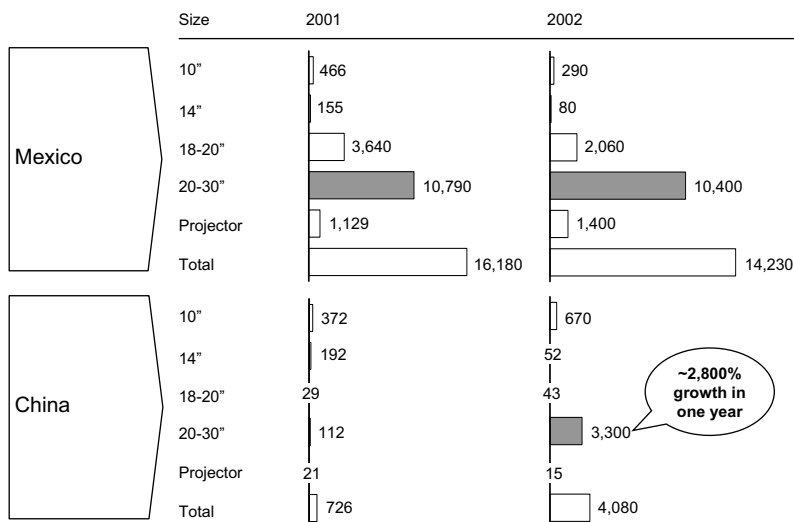
SEVERAL KEY INDUSTRIES FOR MEXICO ARE THREATENED BY CHINA
Summary of Mexico's and China's share of U.S. imports, 2002



Source: US Trade online; McKinsey Global Institute

Exhibit 6

CHINA HAS RECENTLY THREATENED THE VITAL 20"-30" TV SEGMENT
 U.S. Television Imports from China and Mexico, 2001-2002
 Thousand televisions

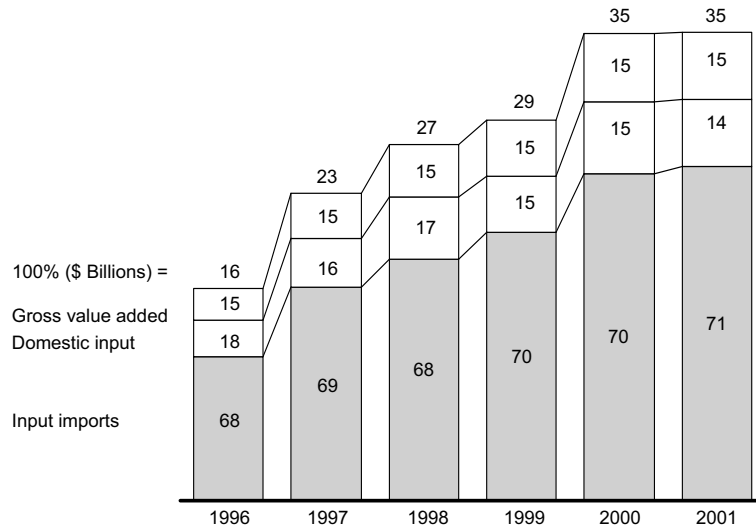


Source: US Trade online; McKinsey Global Institute

Exhibit 7

DOMESTIC VALUE ADD IN CONSUMER ELECTRONICS PRODUCTION IN MEXICO

Percent, \$ Billions



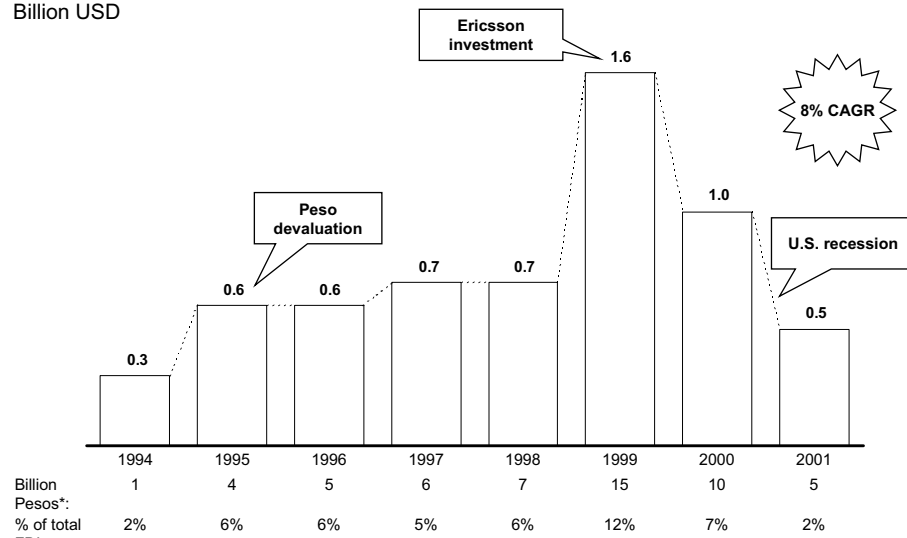
Source: INEGI

Exhibit 8

FOREIGN PLAYERS HAVE CONTINUED TO INVEST IN MEXICO

FDI in consumer electronics in Mexico

Billion USD



Billion Pesos*	1	4	5	6	7	15	10	5
% of total FDI	2%	6%	6%	5%	6%	12%	7%	2%

*The original data is in USD; therefore pesos were calculated multiplying dollars by each year's average nominal currency exchange rate

Source: Secretaría de Economía; McKinsey Global Institute

Exhibit 9

KEY PLAYERS ENTRY INTO MEXICO CONSUMER ELECTRONICS INDUSTRY

NOT EXHAUSTIVE

Contract manufacturing era

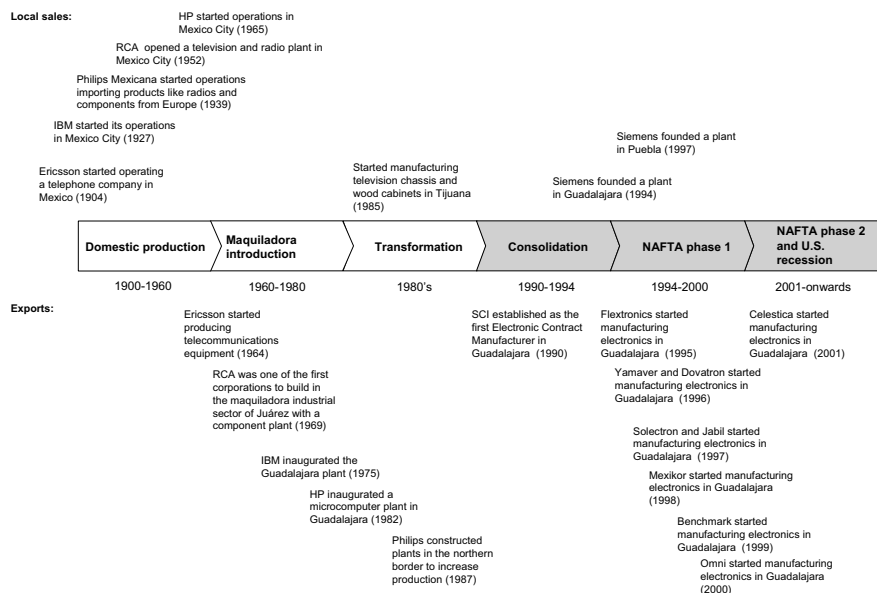
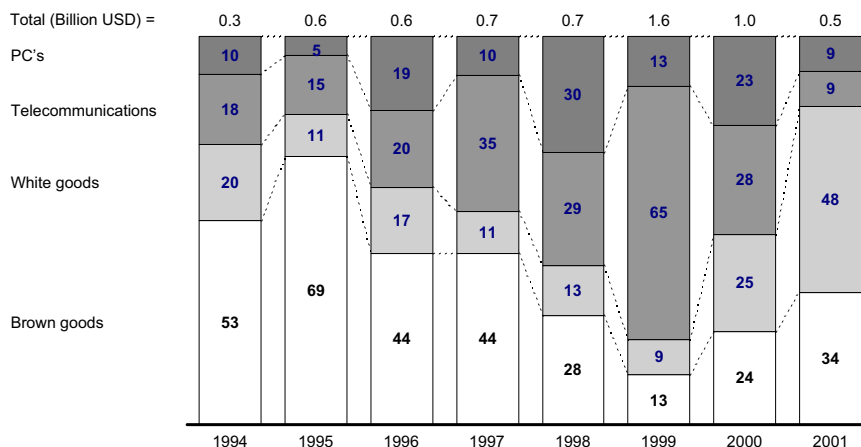


Exhibit 10

BROWN GOODS AND TELECOMMUNICATIONS HAVE ATTRACTED MOST FDI OVER THE PAST DECADE

Evolution of FDI by subsector
Percent



Source: Secretaría de Economía

- **Country specific factors**

Three country-specific factors have encouraged FDI and three have discouraged it.

- Proximity to large market. Mexico's proximity to the U.S. is the first key factor that has encourages FDI. Its location eases communication and reduces shipping costs and transportation time. This has been a key factor in attracting investment into the maquiladora zones⁶ on the border (where TVs are produced) as well as the PC production zone in Guadalajara.
- Labor costs. Mexico's labor costs are second factor in its favor. Though they are not the lowest in the world, they do provide a significant advantage over U.S. costs at approximately 10 percent U.S. levels.
- Preferential export access. The third factor in its favor is that NAFTA provides preferential access to U.S. markets. Though Mexico was already a strong exporter to the U.S. prior to its signing NAFTA, its exports to the U.S. have grown strongly since 1994 and many U.S. companies have since made direct investment in Mexico since that date.
- Supplier base. The first of the factors discouraging FDI is that Mexico's supplier base is not as developed as China's. China benefits greatly from the fact that Taiwan and Hong Kong based companies have established basic supplier industries in China. Mexico is relatively disadvantaged as it relies on American supply chain and Asian imports for most components, without large local component production.
- Infrastructure. Mexico faces problems in shipment of its goods. The threat of theft occurring during the transportation of goods adds one percent to overall goods costs due to increased security needs. This reduces Mexico's competitiveness vis-à-vis China.
- Labor market deficiencies. Under any circumstances, Mexico will have higher cost labor than Asian rivals such as China. However, labor costs are inflated by the requirement that has been imposed by the government for companies to provide a high level of benefits.

- **Initial sector conditions**

Given that the majority of Mexico's FDI is efficiency-seeking, the initial conditions of the sector were not a major factor in attracting FDI in the period under review.

6. *Maquiladoras* were first established by the Mexican government in 1965 as part of the Border Industrialization program to help increase employment opportunities for Mexican workers and to boost the overall economy. *Maquiladoras* are foreign-owned assembly plants that were allowed to import free of duty, on a temporary basis, machinery and materials for production or assembly by Mexican labor and then to re-export the products, primarily back to the U.S. This allowed foreign-owned companies to decrease their cost base by taking advantage of Mexico's lower labor costs. Most plants are located on the Mexico-U.S. border.

FDI IMPACT ON HOST COUNTRY

¶ Economic impact

- **Sector productivity.** Mexico's overall sector productivity equals that of China and is about one-quarter that of Korea. Compared to Korea, in both China and Mexico the product mix reduces the productivity; in both, there is concentration labor intensive assembly (accounting for 60 percent of production in Mexico and 40 percent in China). China's productivity is further lowered by its significant component of state-owned enterprises (SOEs), which have lower productivity (Exhibit 11).
- Productivity in the sector has been growing at an overall rate of 16 percent per annum. At the sub-segment level, productivity growth in white goods is 14 percent per annum and in brown goods 19 percent per annum. In both cases this is roughly half the rate of productivity growth seen in these sub-segments in China over the same period (exhibits 12 and 13).
- **Sector output.** Sector output continued to grow at an average of 27 percent per annum in value add terms from 1996-2001, though it leveled off in 2001 (Exhibit 12). This growth can be attributed largely to FDI, as it is fueled by exports of FDI companies.

- Export performance. The level of Mexico's consumer electronics exports to the U.S. had been growing until 2002, when it declined slightly. China's level of exports to the U.S. has grown continuously. For many high-volume commodity goods, China holds a production cost advantage over Mexico. This is due mainly to lower factor costs, a more integrated local supply chain, and tax advantages. Mexico's productivity – which is approximately equal to China's – cannot compensate for China's production advantages (Exhibit 14).

Supplier industries are much less developed in Mexico than in China. As a result, its component logistics are more complex and costly; just-in-time production⁷ more difficult to achieve. Furthermore, in some cases Mexico imports components from the U.S., which implies higher transport costs than would be incurred if the goods were produced locally and implicit labor costs (exhibits 15 and 16). An example of this is television tubes, where under NAFTA rules, all TVs imported from Mexico to the U.S. that include tubes produced outside NAFTA attract a 15 percent tariff. This virtually requires NAFTA sourcing for tubes and glass; Mexico's sole source for tube glass are plants located in the Midwest of the United States.

Chinese labor costs for skilled and unskilled labor are about 30 percent those of Mexico. Furthermore, energy and land costs are also significantly cheaper in China (Exhibit 17).

Productivity – though growing in Mexico – is growing even more rapidly in China, and the productivity levels in the two countries are now nearly equal (exhibits 13 and 14).

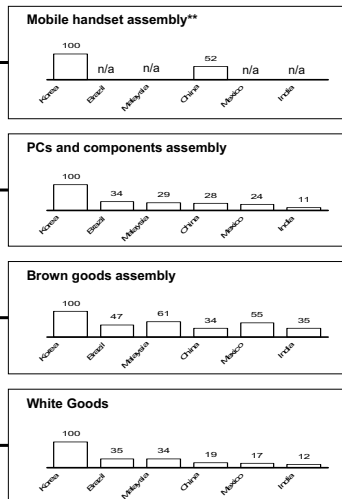
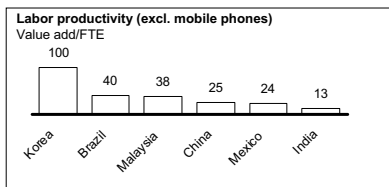
Multinational corporations, particularly those located in China's special economic zones (SEZs), qualify for lower tax rates in China – both in the

7. Here just-in-time refers to producing the required parts, at the required time, in the required amount, and at each step in the production process in order to decrease inventory costs.

Exhibit 11

LABOR PRODUCTIVITY COMPARISON BY SEGMENT**

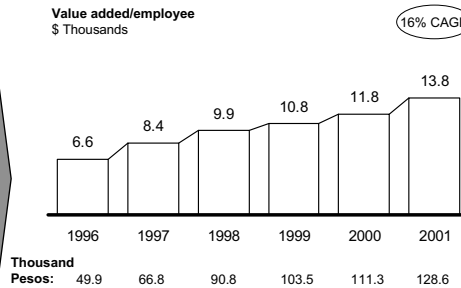
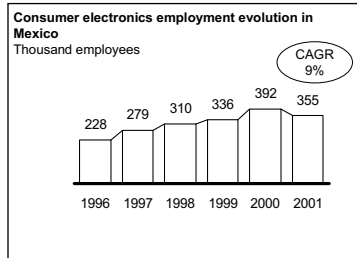
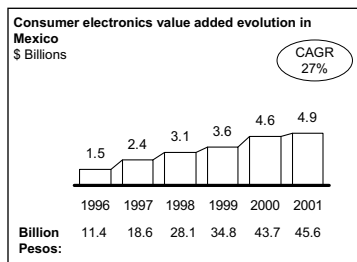
Index*, Korea = 100



* Indexed to Korea = 100; Base measurement = RMB/worker/hour
 ** Korea's mobile handset industry definitions includes other wireless devices such as wireless broadcast transmitters and wireless closed circuit cameras; India's numbers are calculated using data of listed companies (largest); they may be biased upward because of this
 Source: China: China Electrical Industry Yearbook; China Light Industry Yearbook; Korea: National Statistical Office; Electrical Industry Association of Korea; Malaysia: Annual Survey of Manufacturing Industries; Department of Statistics; Brazil: IBGE, FIPE; McKinsey Global Institute

Exhibit 12

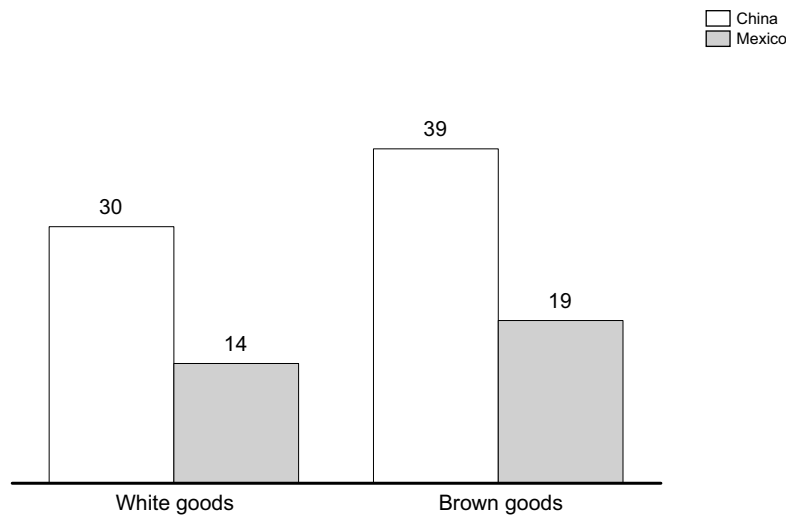
CONSUMER ELECTRONICS PRODUCTIVITY GROWTH IN MEXICO – 1996-2001



* Dollars are calculated by dividing pesos/year's average currency exchange rate
 Source: INEGI

Exhibit 13**PRODUCTIVITY ANNUAL GROWTH RATE – 1996-2001**

Percent



Source: INEGI; China Electrical Industry yearbook; China Light Industry yearbook; China Statistical Yearbook

Exhibit 14**SUMMARY OF EXPORT COMPETITIVENESS**










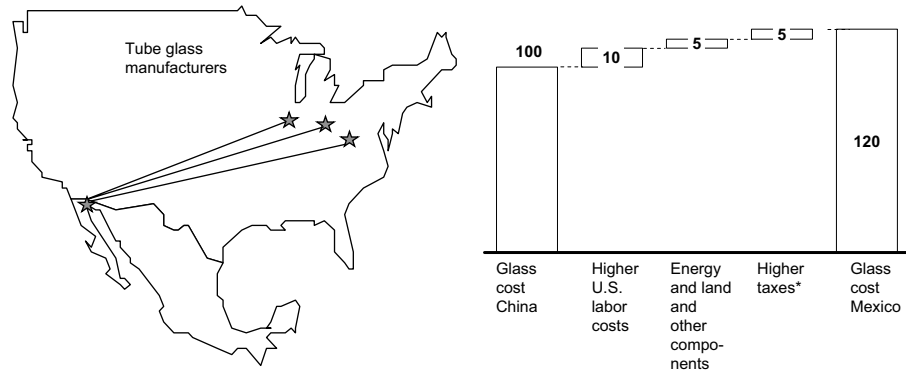
	Advantage	Description
Unit manufacturing costs		<ul style="list-style-type: none"> China has a more developed supply chain across all electronic industries Sources of cost advantage in inputs are logistics and factor costs Mexico loses competitiveness on items it must import from the U.S. (e.g., TV glass)
	 < = 	<ul style="list-style-type: none"> Productivity at very similar levels – per both estimates and expert interviews
		<ul style="list-style-type: none"> China offers distinct cost advantages in labor (skilled and unskilled), electricity and land costs
Other costs		<ul style="list-style-type: none"> Mexico's geographic proximity to the U.S. as well as similar time zone lower interaction costs with the U.S. This is especially important for newer and customized products
		<ul style="list-style-type: none"> Border zones provide shipping advantage However, the geographical location advantage is far from being maximized Furthermore, component logistics increase costs for Mexico
	 = > 	<ul style="list-style-type: none"> Mexico has tariff advantage (e.g., TVs) or parity (e.g., computers) with China
		<ul style="list-style-type: none"> Income taxes on manufacturing are much lower in China than in Mexico

Exhibit 15

TUBE GLASS MUST BE SOURCED FROM THE U.S., ADDING SIGNIFICANTLY TO TOTAL COST PRODUCTION

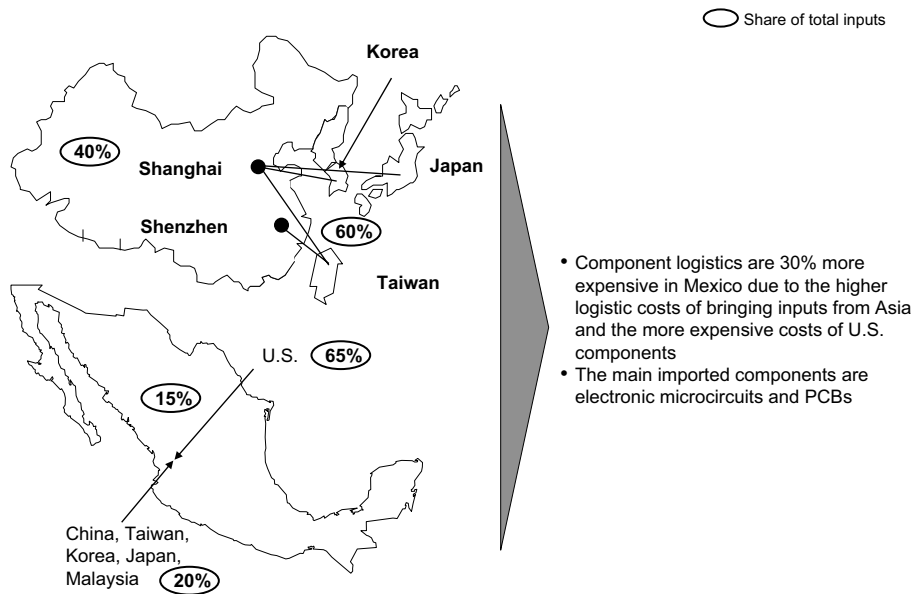
Percent



*Considering a 34% tax in the U.S. and 15% tax in China
Source: McKinsey Global Institute

Exhibit 16

MEXICO IMPORTS MOST INPUTS FROM THE U.S. AND ASIA



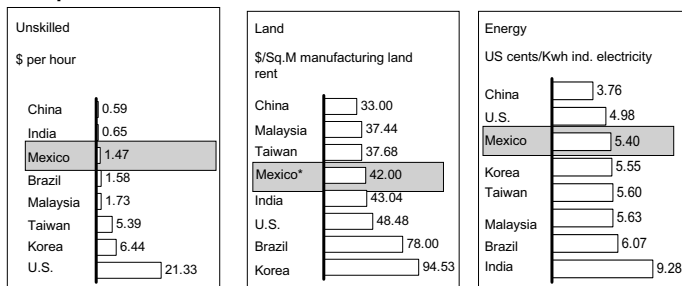
- Component logistics are 30% more expensive in Mexico due to the higher logistic costs of bringing inputs from Asia and the more expensive costs of U.S. components
- The main imported components are electronic microcircuits and PCBs

Source: Interviews

Exhibit 17

OVERALL, FACTOR COSTS ARE HIGHER IN MEXICO THAN IN CHINA, ACROSS THE BOARD

Factor cost comparison Mexico



Mexico's factor costs are more expensive than China's across the board

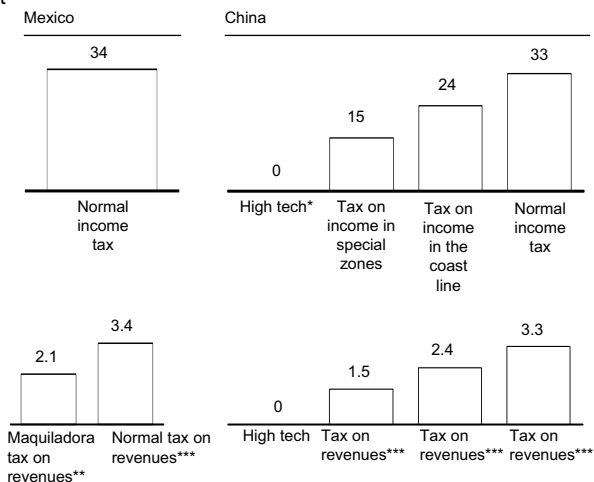
* Average land cost in Ciudad Juarez, Chihuahua
 Source: Lit search; EIU; ICBC; Monthly Bulletin of Earnings and Productivity Statistics (China); Taipower; WEFA WMM; DRI WEFA, Healy & Baker; ILO; Malaysian Ministry of Human Resources; Central Bank of Malaysia; State Economic Development Corporations (Malaysia); Malaysian Industrial Estates Bhd.; Malaysian Statistics of Electrical Supply; Tenaga Nasional (Malaysia); Folha de SP (Brazil); Aneel (Brazil); Bancomext (Mexico); Expansion (Mexico)

Exhibit 18

HIGHER TAXES CONTRIBUTE TO THE HIGHER TOTAL COST

Tax burden on manufacturers/exporters

Percent



- China has a 0 - 3% cost advantage due to tax breaks
- The more capital intensive the good, the greater China's advantage

*For the first 2 years

**For maquiladora (main exporter) considering the "Safe Harbor" scheme which taxes 34% on the higher of 6.5% of total assets or 6.9% of total costs, and considering that total costs are 90% of revenues

***Considering a 10% profit margin

Source: Interviews; literature searches; McKinsey Global Institute

short and long term. Tax averages 10-15 percent (and sometimes 0 percent) in China while Mexican facilities are usually subject to U.S. or Mexican tax rates of 34 percent (Exhibit 18).

- Overall, for the U.S., China has approximately a 10 percent landed cost advantage over Mexico in both TVs and PCs (exhibits 19 and 20).
- **Sector employment.** Employment has grown at the rate of 9 percent per year from 1996-2001 in Mexico and represents over 350,000 jobs. Given the predominance of FDI export production in the total, FDI has had a strong impact on employment (Exhibit 12).
- **Supplier spillovers.** FDI has not been as successful in creating supplier spillover benefits in Mexico as it has in China. Imported inputs still represent 70 percent of total production value in Mexico; in China it is closer to 50 percent. There are still no supplier industries in Mexico in such areas as semiconductors, glass for TVs, and hard drives.

¶ Distribution of FDI Impact

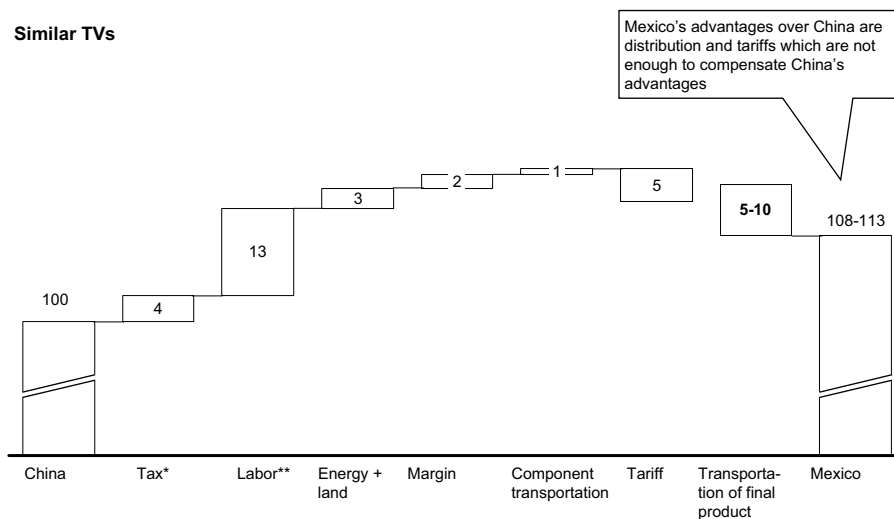
- **Companies**
 - FDI companies. Its not clear how much incremental profitability FDI companies gained due to their export activities from Mexico – given that the consumer electronics market in the U.S. (the major destination of the exports) is quite competitive; the incremental profits due to relocation are likely to have been eroded. FDI companies essentially control market share in all segments in the Mexican domestic market, as the two large white good companies were acquired in the 1990s, and the rest have exited the market (Exhibit 21). The only exception to this is Alaska, a Mexican manufacturer of PCs.
 - Non-FDI companies. Domestic companies have not played a role in the export market. Nearly all the Mexican companies exited the market in the early 1990s as the market was liberalized, limiting the impact FDI could have had on them potentially.
- **Employment**
 - Employment level. Mexican workers have been one of the biggest beneficiaries of FDI in the consumer electronics sector, with over 350,000 jobs having been created there. Moving forward, a key question is whether this job creation will continue (Exhibit 12).
 - Wages. Our data spans the period 1996-2001, where real wage growth was modest. We have no data on how wages were affected by FDI prior to this period (Exhibit 22).
- **Consumers**
 - Prices. It is not possible to isolate the effect of FDI on prices in this sector as FDI has been focused primarily on exports; market liberalization brought both FDI and increased trade. Mexico's prices are within 10-20 percent of U.S. prices in white and brown goods, and sometimes even lower than U.S. prices. However, in PCs and mobile handsets, Mexican prices are considerably higher than in the U.S.
 - Product variety/quality. The same problem facing the examination of FDI's price impact also applies to product variety and quality.

Exhibit 19

U.S. TV PRICE STRUCTURE – CHINA VS. MEXICO

Indexed numbers

Similar TVs



Mexico's advantages over China are distribution and tariffs which are not enough to compensate China's advantages

* Considering a 34% income tax in Mexico and a 15% tax in China; includes taxes throughout the value chain

** Includes taxes throughout value chain; includes labor throughout the value chain

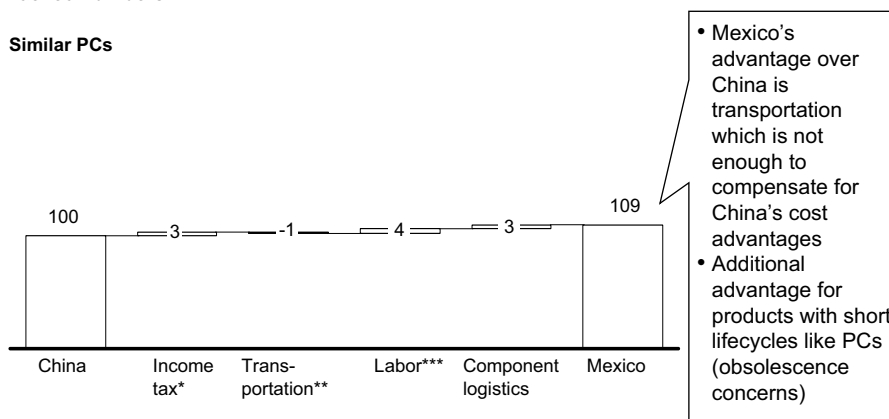
Source: Interviews; McKinsey Global Institute

Exhibit 20

U.S. PC PRICE STRUCTURE – CHINA VS. MEXICO

Indexed numbers

Similar PCs



- Mexico's advantage over China is transportation which is not enough to compensate for China's cost advantages
- Additional advantage for products with short lifecycles like PCs (obsolescence concerns)

* Considering a 34% income tax in Mexico and a 0% tax in China

** Does not consider inventory costs for China; it considers transportation costs for Mexico from Guadalajara to Laredo

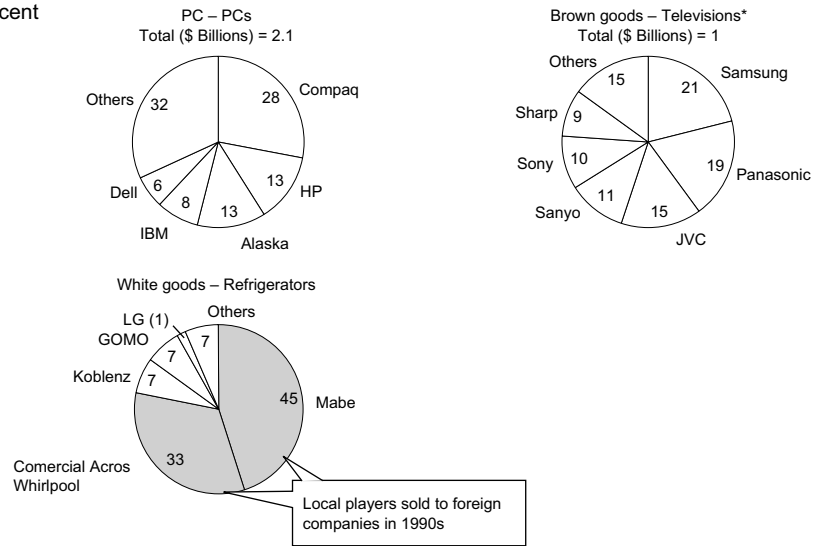
*** Labor cost disadvantage much lower because many of the parts are imported from Asia

Source: Interviews; McKinsey Global Institute

Exhibit 21

CONSUMER ELECTRONICS MARKET SHARE BY SUBSECTOR IN MEXICO – 2000

Percent



* Share of production not sales

Source: Euromonitor; Expansión; Gobierno de Baja California; McKinsey Global Institute

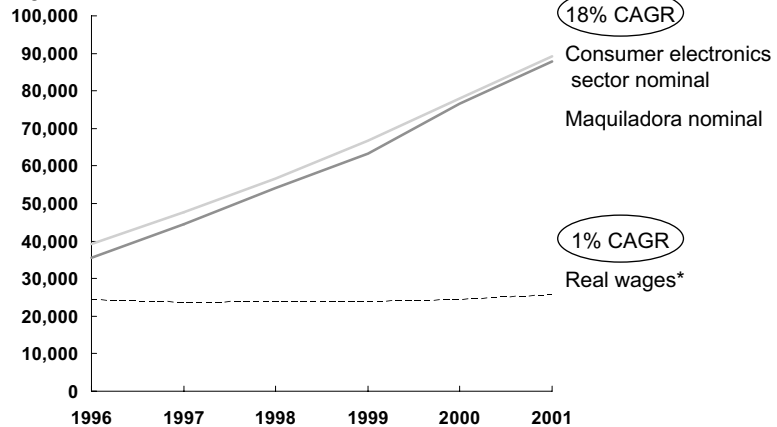
Exhibit 22

WAGES HAVE GROWN SIMILAR TO INFLATION

Consumer electronics wages evolution in Mexico

Pesos

Average annual wage



*Calculated using manufacturing salaries deflator

Source: INEGI

- **Government.** Given that many companies in the maquiladora zones do not pay tariffs on components, income taxes, and property taxes to the Mexican government, the impact of the consumer electronics industry on Mexican tax income has probably been small. Other taxes such as payroll taxes may have provided some benefits.

HOW FDI HAS ACHIEVED IMPACT

- ¶ **Operational factors.** FDI achieved its greatest impact in Mexico by moving production – and the process knowledge, technology, and management capabilities that went with them – to Mexico. This transfer of operations required capital. FDI also brought access to export channels in the U.S. market through the established distribution and brands of U.S. companies.
- ¶ **Industry dynamics.** When introduced in the early 1990s following market liberalization, FDI brought increased competition, higher productivity, lower prices, and better products to Mexico. In the process, it also eliminated many local Mexican competitors who had been supplying the market when it was closed to foreign companies.

EXTERNAL FACTORS THAT AFFECTED THE IMPACT OF FDI

Mexico's external environment was relatively liberal – and did not strongly affect the impact of FDI. The main factors hindering FDI in Mexico is its level of infrastructure and the lack of supplier industries.

¶ Country specific factors

- **Infrastructure.** Because roadways are insecure in Mexico (with frequent incidents of theft), one percent is added to costs to pay for the additional security required. Mexican freight prices are generally much higher than U.S. prices for similar distances.
- **Supplier industries.** Supplier industries are not well developed in Mexico. The resulting inventory-carrying costs of imported inputs add to the total costs. Without well-developed supplier industries, Mexico also loses the potential benefits of collaboration between suppliers and final goods producers.

- ¶ **Initial sector conditions.** These did not affect FDI, as foreign investment was mostly made for efficiency-seeking reasons.

SUMMARY OF FDI IMPACT

FDI impact has been very positive in Mexico helping to boost output and employment, bringing advanced production techniques, technologies, and management skills to the country, and in providing access to export markets (especially to the U.S.). Efficiency-seeking FDI (which is a large proportion of the total in Mexico) is made in order to lower production costs; production will therefore be moved if and when Mexico no longer offers those relative cost

advantages. It is likely that in the future more of the efficiency-seeking FDI for commodity goods production will flow to China, as China holds manufacturing cost advantages in many commodity consumer electronics goods. In order to continue to be attractive to FDI, Mexico will need to maximize the advantages of its proximity to the U.S. market. To do so it needs to improve its infrastructure and become more focused on goods sensitive to transport costs and those requiring greater interaction with (and proximity to) the consumers (exhibits 23 and 24).

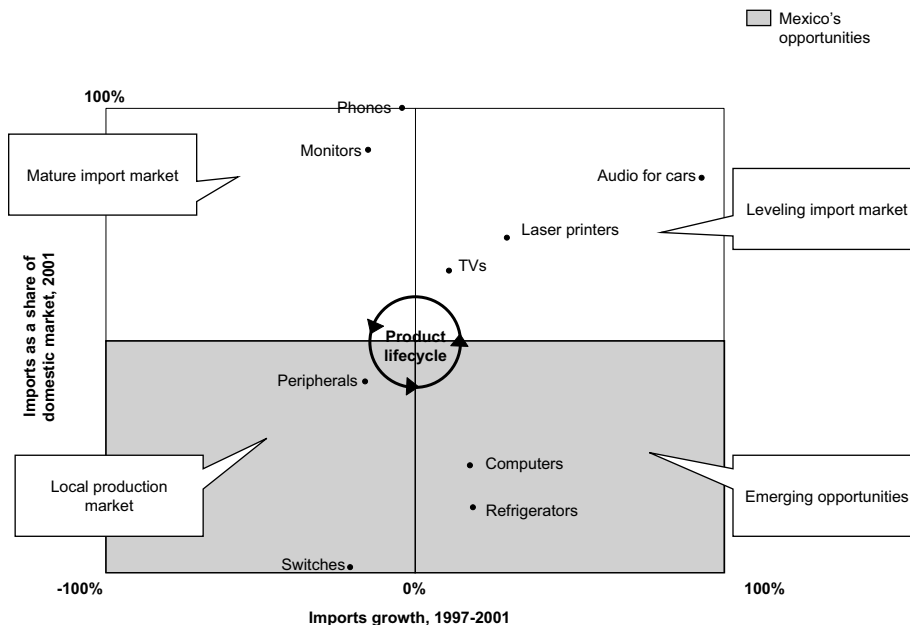
Exhibit 23

MEXICO SOURCES OF COMPETITIVE ADVANTAGE IN CONSUMER ELECTRONICS

		Rationale	Products that favor Mexico	Products that favor China
Transport Cost – Time Sensitive	Low value/weight, volume	<ul style="list-style-type: none"> Goods that have low value/weight ratio are relatively more expensive to ship 	<ul style="list-style-type: none"> White goods Medium/large television sets Telephone switches 	<ul style="list-style-type: none"> Laptop computers (air shipment) Portable radios Mobile phones
	Auto electronics	<ul style="list-style-type: none"> Mexico's auto industry has sustainable geographic advantage, they benefit from having integrated electronics supply 	<ul style="list-style-type: none"> Car CD and tape players 	<ul style="list-style-type: none"> N/A
	Short obsolescence cycle	<ul style="list-style-type: none"> Shipping via sea takes 6 weeks for China vs. just days for Mexico; short obsolescence cycle items lose their value to quickly 	<ul style="list-style-type: none"> Desktop computers Laptops Cellular phones 	<ul style="list-style-type: none"> White and brown goods
Interaction Sensitive	High customization/early lifecycle	<ul style="list-style-type: none"> Due to proximity to U.S. frequent interaction needed for early life-cycle goods will be easier 	<ul style="list-style-type: none"> Telephone switches Industrial electronics 	<ul style="list-style-type: none"> CTVs
	High demand volatility	<ul style="list-style-type: none"> Because of long lead time from China, high demand volatility items will be difficult to manage Mexico's underdeveloped supplier industries may neglect some of this advantage 	<ul style="list-style-type: none"> Desktop computers Laptops Cellular phones 	

Exhibit 24

POTENTIAL OPPORTUNITIES FOR MEXICO CONSUMER ELECTRONICS



Source: U.S. Census Bureau; McKinsey Global Institute

Exhibit 25

MEXICO CONSUMER ELECTRONICS – SUMMARY

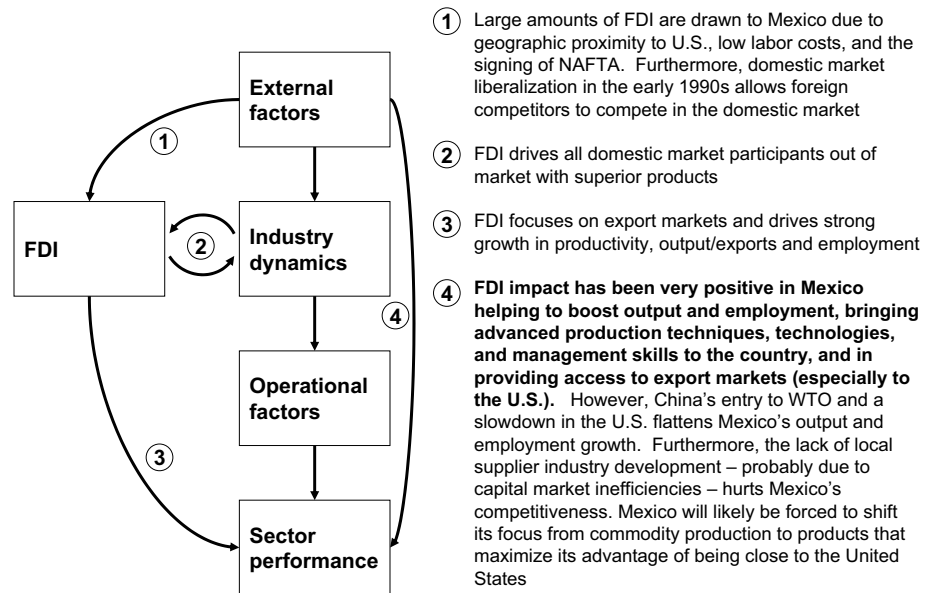


Exhibit 26

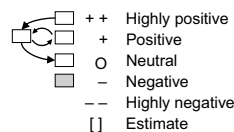
MEXICO CONSUMER ELECTRONICS – FDI OVERVIEW



• Total FDI inflow (1994-2001)	\$6 billion
– Annual average	\$0.75 billion
– Annual average as a share of sector value added	15%
– Annual average per sector employee	\$2,800
– Annual average as a share of GDP	0.12%
• Entry motive (percent of total)	
– Market seeking	5%
– Efficiency seeking	95%
• Entry mode (percent of total)	
– Acquisitions	5%
– JVs	0%
– Greenfield	95%

Exhibit 27

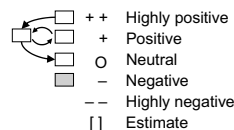
MEXICO CONSUMER ELECTRONICS – FDI IMPACT IN HOST COUNTRY



Distributional impact	Pre-liberalization (Pre-1990)	Post-NAFTA/liberalization (1990-2001)	FDI impact	Evidence
• Sector productivity (CAGR)	n/a	+	+	• Sector productivity growth rapid, though remains focused on lower value add assembly
• Sector output (CAGR)	n/a	++	++	• Sector output growth very high, exports to U.S. account for over 70% of total output
• Sector employment (CAGR)	n/a	++	++	• Over 350,000 jobs in electronics sector, with a rate of growth of 9% over time period
• Suppliers	n/a	O	O	• Most of content is still imported; very minimal supply base building in Mexico
Impact on competitive intensity (net margin CAGR)	n/a	[+]	[+]	• FDI players partially contributed to increased competitive intensity; sector competitive intensity increased radically after policy liberalization

Exhibit 28

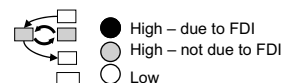
MEXICO CONSUMER ELECTRONICS – FDI IMPACT IN HOST COUNTRY (CONTINUED)



Distributional impact	Pre-liberalization (Pre-1990)	Post-NAFTA/liberalization (1990-2001)	FDI impact	Evidence
• Companies				
– MNEs	n/a	[+]	[+]	• MNEs profitability not known, but initially should have gained from lower factor costs (though likely competed away by now)
– Domestic companies	n/a	--	[0/-]	• Local companies did not survive opening up of the market to imports • However, this impact is attributable to policy change, not largely efficiency-seeking FDI production in Mexico
• Employees				
– Level of employment (CAGR)	n/a	++	++	• Over 350,000 jobs in electronics sector, with a rate of growth of 9% over time period
– Wages	n/a	[O]	[O]	• No evidence on changes in wages
• Consumers				
– Prices	n/a	[+]	[O]	• Prices declined after policy liberalization, yet this is not attributable to efficiency seeking FDI
– Selection	n/a	[+]	[+]	
• Government				
– Taxes	n/a	[O]	[O]	• Due to taxation rules, maquila production does not pay Mexican income tax, meaning tax benefits have been extremely low (limited to payroll type taxes)

Exhibit 29

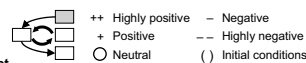
**MEXICO CONSUMER ELECTRONICS –
COMPETITIVE INTENSITY**



	Prior to focus period (1980-1995)	End of focus period (1994-2001)	Evidence	Rationale for FDI contribution
Pressure on profitability	n/a	n/a	• Profitability data not available for any players in market	• n/a
New entrants	n/a	●	• New entrants across all segments which were formerly closed	• All new entrants are FDI
Weak player exits	n/a	●	• All Mexican CE players except one exit	• Due to the entrance of FDI
Pressure on prices	n/a	n/a	• Historical prices difficult to track in Mexico	• n/a
Changing market shares	n/a	n/a	• Historical market share not available	• n/a
Pressure on product quality/variety	n/a	◐	• Large variety of CE products available in Mexico	• n/a
Pressure from upstream/downstream industries	n/a	○		
Overall	n/a	◐		

Exhibit 30

**MEXICO CONSUMER ELECTRONICS –
EXTERNAL FACTORS' EFFECT ON FDI**



Level of FDI*	Impact on level of FDI	Comments	Impact on per \$ impact	Comments	
Global factors					
Global industry discontinuity	-	• Continuing disaggregation of value chain may shift some ops from Mexico to China	○		
Country-specific factors					
	Relative position				
	• Sector Market size potential	○	• Market seeking not major driver	○	
	• Prox. to large market	++	• U.S. proximity drives investment	○	
	• Labor costs	+	• Low labor costs relative to U.S.	○	
	• Language/culture/time zone	○		○	
	(Δ in) Macro factors				
	• Country stability	+	• Liberal policies and more stable peso increased attractiveness to FDI	○	
	Product market regulations				
	• Import barriers	○		○	
	• Preferential export access	++	• NAFTA crucial factor in drawing more FDI	○	
	• Recent opening to FDI	○		○	
	• Remaining FDI regulation	○		○	
	• Government incentives	○		○	
• TRIMs	○		○		
• Corporate Governance	○		○		
• Taxes/other	○		○		
Capital deficiencies	○		○		
Labor market deficiencies	-	• Labor market does have some rigidities, but lack of skilled labor may be a factor	○		
Informality	○		○		
Supplier base/infrastructure	-	• Underdeveloped supplier base starting to hurt Mexico vis-à-vis China	-	• Decreases efficiency and opportunity for FDI-driven exports; insecure physical infrastructure increases costs	
Sector initial conditions					
Competitive intensity	○ (M)		○ (M)		
Gap to best practice	○ (M)		○ (M)		

Exhibit 31

MEXICO CONSUMER ELECTRONICS – FDI IMPACT SUMMARY

[] Estimate ++ Highly positive – Negative
+ Positive -- Highly negative
O Neutral () Initial conditions

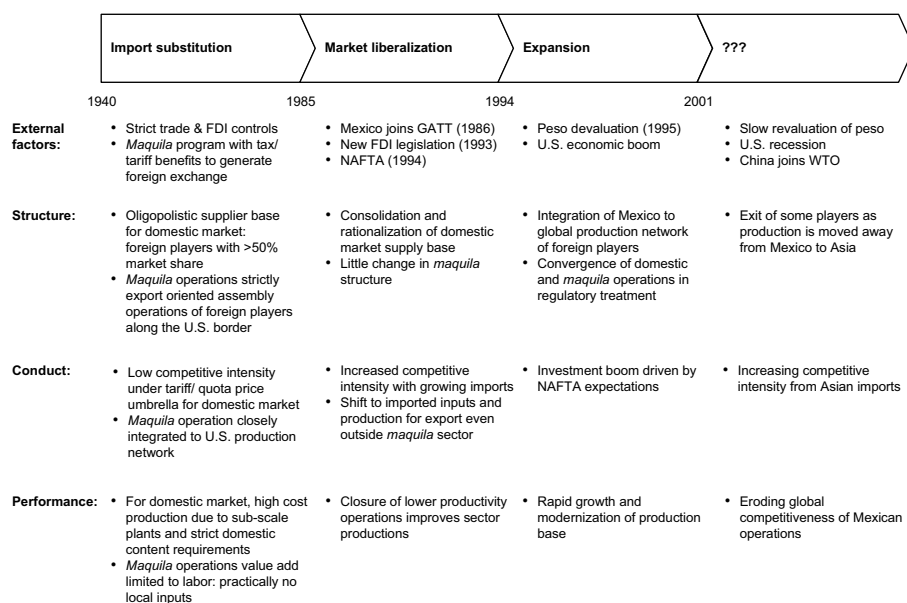
Level of FDI relative to sector*	FDI impact on host country		Level of FDI** relative to GDP	External Factor impact on	
	15%			Level of FDI	Per \$ impact of FDI
Economic impact			Global factors		
• Sector productivity	+		Global industry discontinuity Relative position • Sector market size potential • Prox. to large market • Labor costs • Language/culture/time zone	–	O
• Sector output	++			O	O
• Sector employment	++			+	O
• Suppliers	O			O	O
Impact on competitive intensity	[+]		Macro factors		
Distributional impact			• Country stability	+	O
• Companies			Product market regulations		
– MNEs	[+]		• Import barriers	O	O
– Domestic	[0/-]		• Preferential export access	++	O
• Employees			• Recent opening to FDI	O	O
– Level	++		• Remaining FDI restriction	O	O
– Wages	[O]		• Government incentives	O	O
• Consumers			• TRIMs	O	O
– Prices	[O]		• Corporate governance	O	O
– (Selection)	[+]		• Taxes/other	O	O
• Government			Capital deficiencies	O	O
– Taxes	[O]		Labor market deficiencies	–	O
			Informality	O	O
			Supplier base/ infrastructure	–	–
			Sector initial conditions		
			• Competitive intensity	O (M)	O (M)
			• Gap to best practice	O (M)	O (M)

* Average annual FDI/sector value added

** Average (sector FDI inflow/total GDP) in key era analyzed

Exhibit 32

EVOLUTION OF THE MEXICAN CONSUMER ELECTRONICS SECTOR



China Consumer Electronics Summary

79

EXECUTIVE SUMMARY

The US \$40 billion Chinese domestic consumer electronics market has been growing annually at 20 percent, attracting a flood of market-seeking FDI in the past 10 years. China's low labor costs, combined with a skilled labor force who have been able to develop/maintain a comparative advantage in consumer electronics, have made China an attractive production location, particularly for PC and peripheral components (e.g., motherboards and keyboards). Market-seeking and efficiency-seeking FDI, concentrated primarily in brown goods, white goods, and mobile handsets, have created a virtuous cycle of rapid growth in the Chinese consumer electronics sector, which is steadily transitioning from pure assembly operations to cover the full value chain of parts production, including some semiconductors.

FDI impact has had a very positive on the sector in China, helping it build a more robust supplier base, bring in new technologies, and increase the product selection. It has contributed 3.2 percent growth in employment and has fostered operational improvements that have led to 39 percent productivity growth in brown goods and 30 percent in white goods. The international companies' interaction with domestic companies has created a genuine global success story. These international companies played a critical role in establishing China as the production base for the global distribution of their consumer electronics products, moving their full supply value chain to China. The domestic companies have in turn created a very competitive industry dynamic that has led to rapid productivity growth among all sector's companies and has created razor-thin margins in the Chinese markets. Chinese consumers and consumers world-wide are the real beneficiaries of this highly competitive market.

China is a prime success story of how FDI together with a thriving domestically owned sector have led to the creation of one of the leading production centers for consumer electronics, including the full value chain of parts production.

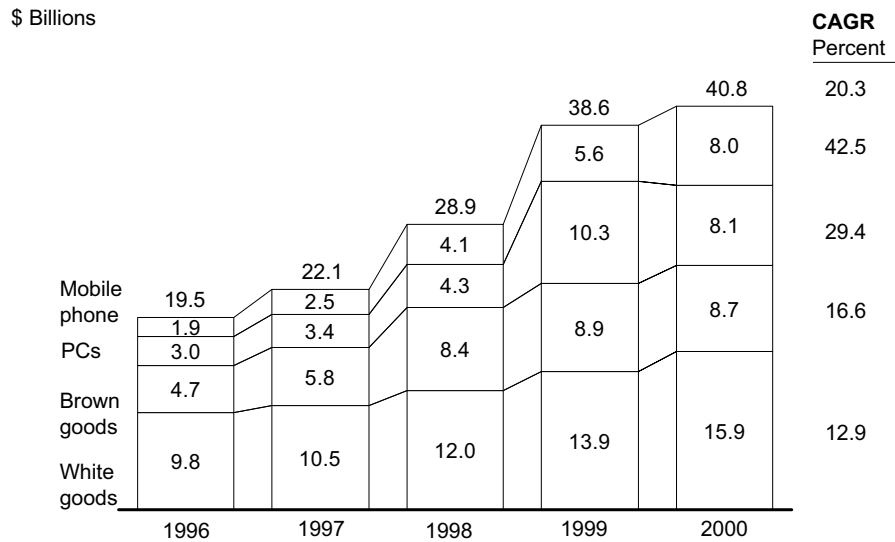
SECTOR OVERVIEW

¶ **Sector overview.** The Chinese consumer electronics sector has experienced a period of rapid growth since 1995. This has been driven both by strong domestic demand and surging exports.

- Total finished goods production in the sector in China was over \$60 billion in 2000.
- The domestic market (defined to include mobile phone handsets, PCs and peripherals, brown goods, and white goods) is approximately \$40 billion and has grown at approximately 20 percent per annum since 1995. The white goods market is the largest at nearly \$16 billion in 2000, while brown goods, PCs, and mobile handsets each contribute approximately \$8 billion (Exhibit 1).
- Consumer electronics exports have surged, growing to \$25 billion in 2000. Imports have increased more rapidly over the time period under review, as many technological inputs (e.g., semiconductors) still need to be imported

Exhibit 1

CHINA CONSUMER ELECTRONICS MARKET GROWTH BY SUBSEGMENT

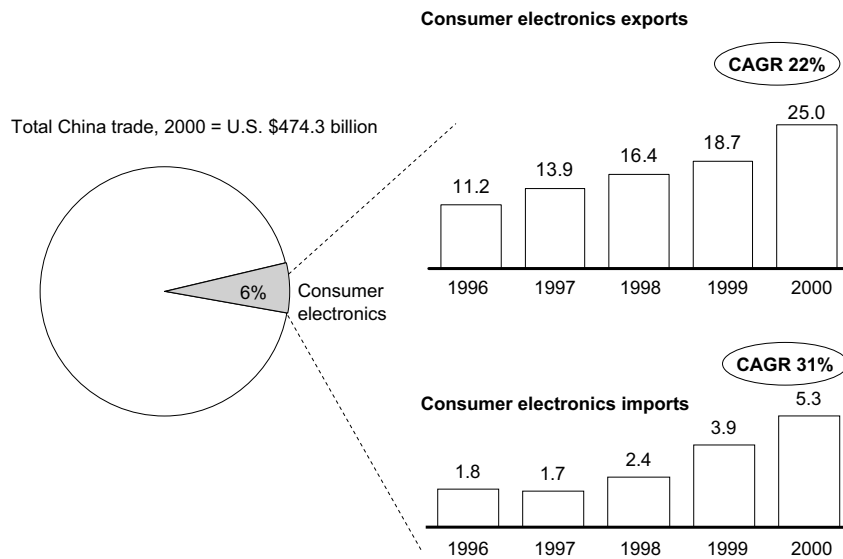


Source: China Light Industry Yearbook; UN PC TAS; McKinsey Analysis

Exhibit 2

FINISHED GOODS TRADE IN CHINA CONSUMER ELECTRONICS SECTOR

\$ Billions, 2000



Source: UN PCTAS database

at this point (exhibits 2 and 3).

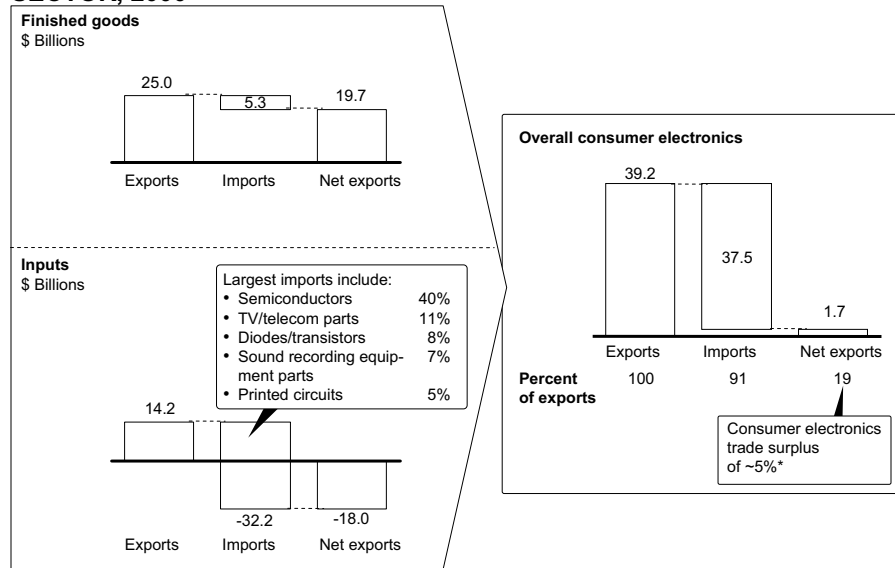
- Value add in the domestic market appears to be increasing as supplier industries are built up in China, indicating that China is creating (albeit slowly) a role for itself as more than just a final goods assembler. A majority of component imports are used for products consumed in the fast growing domestic market (Exhibit 4). Value add in trade has expanded from \$8 billion to \$12.8 billion over the time period. Value add in China was approximately 20 percent in final production, and another 30 percent in inputs – representing \$12 billion and \$18 billion in 2000, respectively.

¶ **FDI Overview.** China's market has attracted a large number of international companies that have contributed very significant levels of FDI to the consumer electronics sector. China has acquired FDI both from market-seeking investment, due to its large local market, as well as efficiency-seeking investment for companies, looking to gain from low factor costs.

- **FDI characteristics**
 - FDI flows to the consumer electronics sector have been extremely large, reaching nearly \$14 billion in 2001. This figure was driven by considerable commitments from investors, particularly in inputs (e.g., semiconductors) but also in final goods (Exhibit 5). FDI to China averaged 15 percent of GDP and \$6.5 billion per annum over the period under review, as compared to an average of under \$1 billion per annum in Mexico, Brazil, and India.
 - Nearly all the international companies that have entered China have done so across a number of product segments. They have, in general, chosen to enter through joint ventures with local companies, whether this is required by the government (as in mobile phones and formerly in PCs) or not (as in brown and white goods) (Exhibit 6). More recently, a few international companies have established wholly-owned subsidiaries (e.g., Dell).
 - Investors from Japan, Europe, the U.S., and Korea have established production facilities in China for mobile handsets, white goods, and brown goods for sale primarily in the domestic market (market-seeking FDI). In contrast, investors from Taiwan and Hong Kong have established production in China to capitalize on efficiency gains, particularly important in PCs and peripherals, primarily for global sale of their products (efficiency-seeking FDI).
 - Most of the efficiency-seeking FDI in consumer electronics has been focused on two geographical areas – Shenzhen, in southern China, which dominated early on and, more recently, Shanghai, which has since been a large recipient of FDI. Market-seeking FDI has been slightly more scattered, with joint ventures being established in various regions of China.
- **FDI impact quantification.** Given that FDI inflow has been relatively smooth, we do not depend on contrasting two periods to highlight the impact of FDI; instead we will use comparisons of FDI dominated sectors to non-FDI dominated sectors and FDI-companies to non-FDI companies to attempt to isolate the impact of FDI.

Exhibit 3

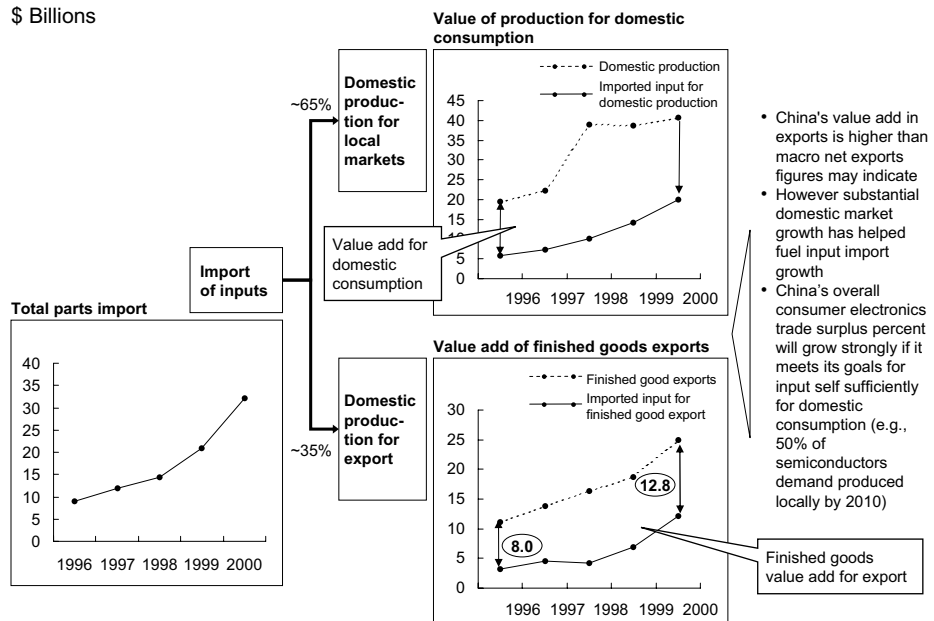
ANALYSIS OF NET TRADE IN CHINESE CONSUMER ELECTRONICS SECTOR, 2000



* Actual trade balance in consumer electronics may be higher, as some input imports (e.g. semiconductors, diodes, printed circuit boards) are used in other sectors (e.g. telecom infrastructure, medical devices)
Source: UN PCTAS database; McKinsey analysis

Exhibit 4

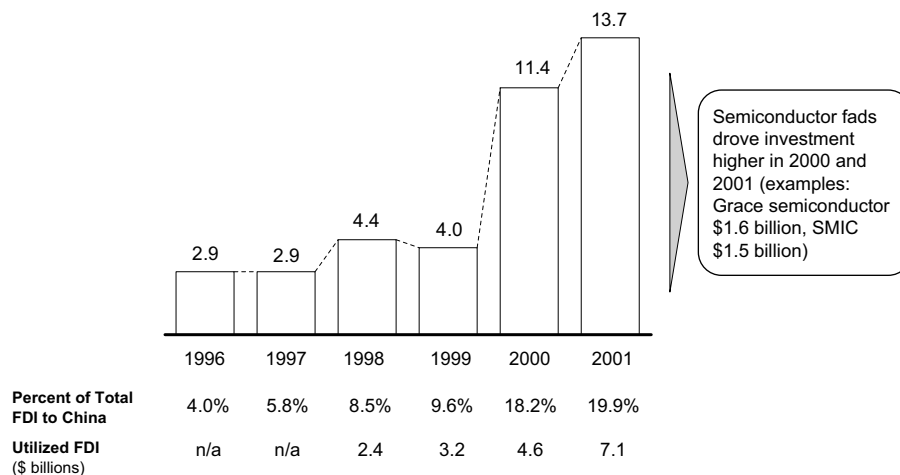
USES OF CHINA'S CONSUMER ELECTRONICS INPUT IMPORTS



Source: UN PCTAS database; McKinsey analysis

Exhibit 5**COMMITTED FDI IN CHINA CONSUMER ELECTRONICS SECTOR***

\$ Billions



* Includes Electronics and Telecommunications Equipment
 Source: China Foreign Trade and Economy Yearbook

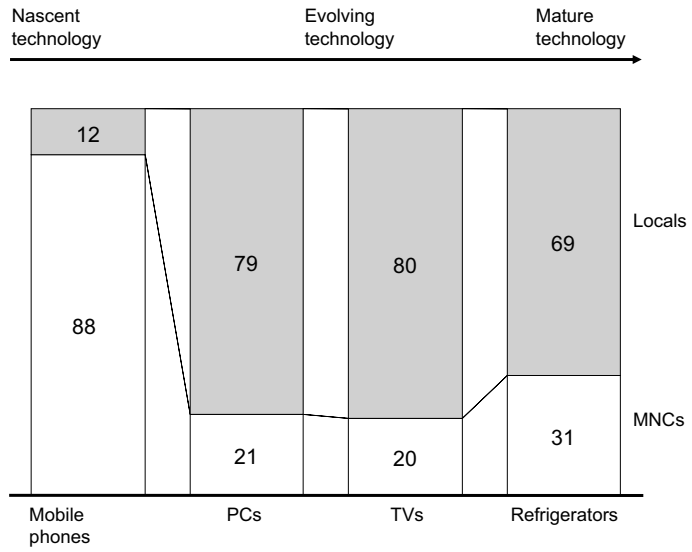
Exhibit 6**OWNERSHIP PROFILE OF MAJOR CONSUMER ELECTRONICS PLAYERS IN CHINA**

	Foreign owned	JV	Non-FDI
Mobile phone	<ul style="list-style-type: none"> Motorola 	<ul style="list-style-type: none"> Motorola/Eastcom Nokia/Capitel, Southern Siemens/MIH subsidiaries Samsung/Kejian SAGEM/Bird* 	<ul style="list-style-type: none"> TCL
PC's	<ul style="list-style-type: none"> HP Dell 	<ul style="list-style-type: none"> IBM/Great Wall Toshiba/Toshiba Computer (Shanghai) Epson/Start Taiwan GVC/TCL 	<ul style="list-style-type: none"> Legend Founder Tongfang
Brown goods		<ul style="list-style-type: none"> Sony/SVA (Jingxing) Philips/Suzhou CTV Toshiba/Dalian Daxian Great Wall Electronics/TCL 	<ul style="list-style-type: none"> Changhong Konka Hisense Skyworth Haier Panda Xoceco
White goods	<ul style="list-style-type: none"> Siemens 	<ul style="list-style-type: none"> Samsung/Suzhou Xiangxuehai Electrolux/Changsha Zhongyi LG/Chunlan Mitsubishi/Haier Sanyo/Kelon, Rongshida Sigma/Meiling Hong Leong (SG)/Xinfei Toshiba Carrier/Midea 	<ul style="list-style-type: none"> Changling Gree

* Bird began as a standalone Chinese company in 1992 (mobile handset production began in 1999), and only recently (November 2002) entered a JV with France's Sagem (Bird-Sagem Electronics) to boost production capacity
 Source: Company data, literature search

Exhibit 7

MARKET SHARE OF LOCAL PLAYERS VS. MNCS IN SELECTED PRODUCTS



Source: China Statistical Yearbook; MII; Gartner; Sino Market Research; McKinsey analysis

- FDI dominated vs. non-FDI dominated. We will highlight the differences in the performance of the subsegments to isolate the impact of FDI (Exhibit 7).
 - FDI dominated. Mobile handsets where FDI players currently control over 80 percent of the market.
 - Non-FDI dominated. White goods and brown goods have approximately 70 percent and 80 percent non-FDI player share, respectively.
 - Mixed. Though non-FDI players dominate the PC market in China, exports represent over half of production and are dominated by FDI players. We, therefore, classify this as a mixed industry.
- FDI-companies vs. non-FDI companies. In many cases we have no company level data, and we cannot make direct comparisons between these two segments.

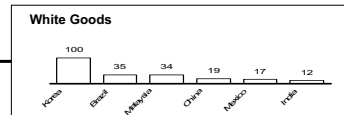
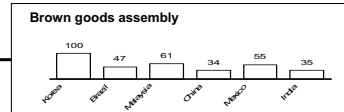
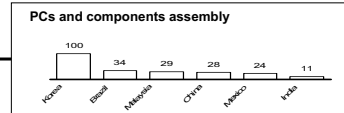
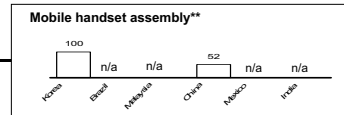
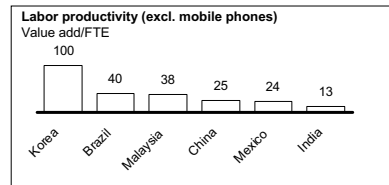
¶ **External Factors driving the level of FDI.** China's market size was the key to drawing market-seeking, and labor costs strongly attracted efficiency-seeking FDI. Furthermore, as supplier industries and export friendly infrastructure (in special economic zones – SEZs) developed in China, they reinforced China's strong ability to attract FDI.

- **Global factors.** As China becomes more integrated into world trade, companies have increasingly sought to offshore commodity production to lower cost locations. This has benefited China, which has extremely low labor costs combined with a skilled labor force. This has enabled China to maintain and develop a comparative advantage in consumer electronics production. Over time, these factors have encouraged production to move away from the relatively higher cost border zones to cheaper regions. As PC companies outsourced production increasingly to contract manufacturers, cost competition in manufacturing forced more production to lower cost locations, also benefiting China.
- **Primary and secondary country-specific factors.** A number of country-specific factors have contributed to China's consumer electronics sector being attractive for FDI. We have divided these into primary and secondary factors.
 - The first of the two primary factors is that China's consumer electronics market is very large – over \$40 billion in 2000 – and has grown rapidly in recent years. The sheer size and growth of the market has been key in attracting market-seeking FDI.
 - The second of the primary factors is its low labor costs – less than one-third the level of Mexico and Brazil and on par with India. This has proved highly attractive to efficiency-seeking FDI.
 - A secondary factor is China's cultural and linguistic links with Hong Kong and Taiwan – which have been key sources of investment, increasing the overall level of FDI. Hong Kong was particularly supportive in building the low-end electronics industries (e.g., calculators, computer speakers).
 - Another factor has been that the clustering of supplier industries in particular areas has created greater scale-building these industries. This has produced a virtuous cycle that has attracted other suppliers to these areas, as well as final goods manufacturers, which have relocated to the

Exhibit 8

LABOR PRODUCTIVITY COMPARISON BY SEGMENT**

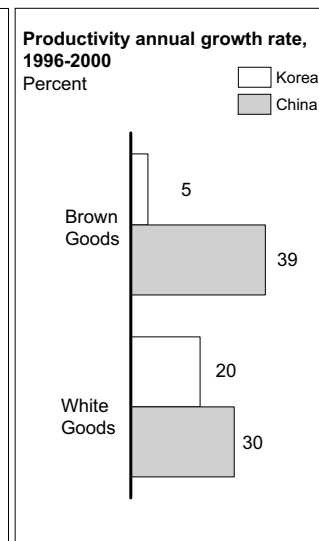
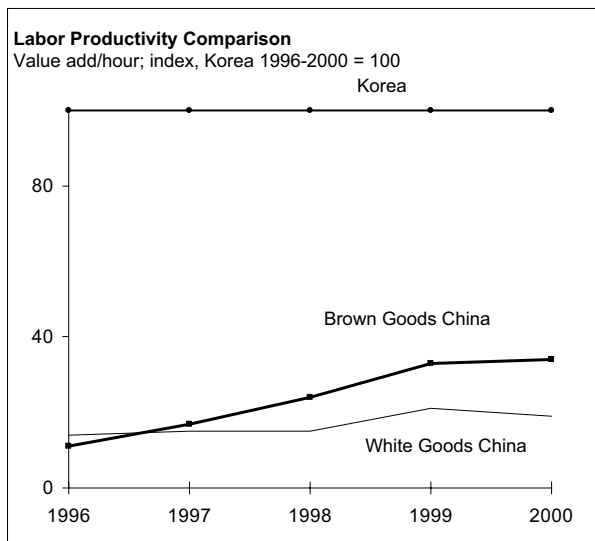
Index*, Korea = 100



* Indexed to Korea = 100; Base measurement = RMB/worker/hour
 ** Korea's mobile handset industry definitions includes other wireless devices such as wireless broadcast transmitters and wireless closed circuit cameras; India's numbers are calculated using data of listed companies (largest); they may be biased upward because of this
 Source: China: China Electrical Industry Yearbook, China Light Industry Yearbook; Korea: National Statistical Office, Electrical Industry Association of Korea; Malaysia: Annual Survey of Manufacturing Industries, Department of Statistics; Brazil: IBGE, FIPE; McKinsey Global Institute

Exhibit 9

LABOR PRODUCTIVITY GROWTH IN CHINA VS. KOREA – 1996-2000



Source: China Electrical Industry yearbook; China Light Industry yearbook; China Statistical Yearbook; Korea National Statistics Office

clusters. As a result, foreign companies find China more attractive than other developing markets due to the relative ease of integrating its operations in China.

- A secondary factor that has been of negative influence is that of industry structure and governance. Large amounts of capital have been made available to state-owned enterprises (SOEs), distorting the markets development. The large presence of SOEs in the sector has probably decreased FDI marginally, as this has prevented international companies who have entered from growing as large as they might have otherwise done.
- **Initial sector conditions.** Though competitive intensity in the sector has generally been high, there were a number of gaps with best practice in technology and productivity that created an opportunity for international companies and has served to attract FDI into China.

FDI IMPACT ON HOST COUNTRY

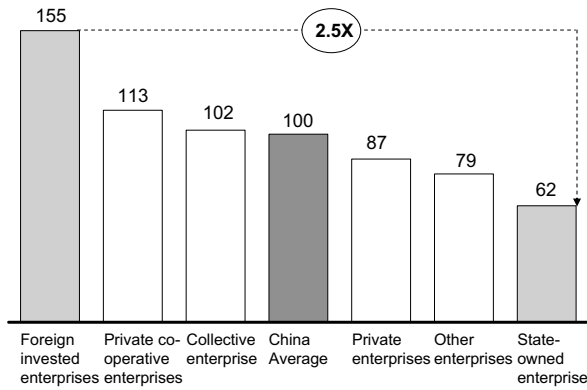
¶ **Economic impact.** Overall, China's productivity in the sector is 25 percent that of Korean levels in 2000, and at-par with Mexico's. Non-FDI segments display lower productivity than FDI segments, though the non-FDI segments are also seeing very rapid productivity growth. Output growth is most rapid in the FDI-segments, but this is likely due to industry-specific reasons (mobile handsets are products that are relatively nascent). Employment is declining rapidly in the non-FDI segments, while increasing in the FDI segment – again this may partially be due to industry-specific characteristics.

- **Sector productivity.** Mobile handsets displayed the highest labor productivity at 52 percent of Korea's level. This is also the sub-segment most dominated by FDI. Though the non-FDI dominated sectors have lower productivity – at 34 percent for brown goods and 19 percent for white goods – these two sectors are seeing productivity increase rapidly (exhibits 8 and 9). Furthermore, a comparison of non-FDI companies compared to FDI-companies in the broader electronics and electrical sector shows the latter having 2.5 times the productivity of the former (Exhibit 10).
- **Sector output.** All four sub-segments have grown – but those with larger FDI influence (mobile handset and PCs) have grown much more rapidly than those with a smaller FDI-influence. Again, this is likely to be due to the product mix, given the relatively nascent state of PC and handset products. FDI companies produce 80 percent of exports, and exports represent around 40 percent of production. From this standpoint, FDI is quite an important contributor to output (exhibits 11 and 12).
- **Sector employment.** Again, the sectors with more FDI influence have seen growing employment while the sectors with smaller FDI influence have witnessed decreases in employment. This is due both to the large output growth in the more nascent mobile handset and PC products, as well as the ongoing restructuring of state owned enterprises (SOEs) in the white and brown goods segments, where substantial overcapacity exists (Exhibit 13). FDI can be considered to have made an important contribution to employment.

Exhibit 10

LABOR PRODUCTIVITY BY OWNERSHIP STRUCTURE IN THE ELECTRONICS INDUSTRY*

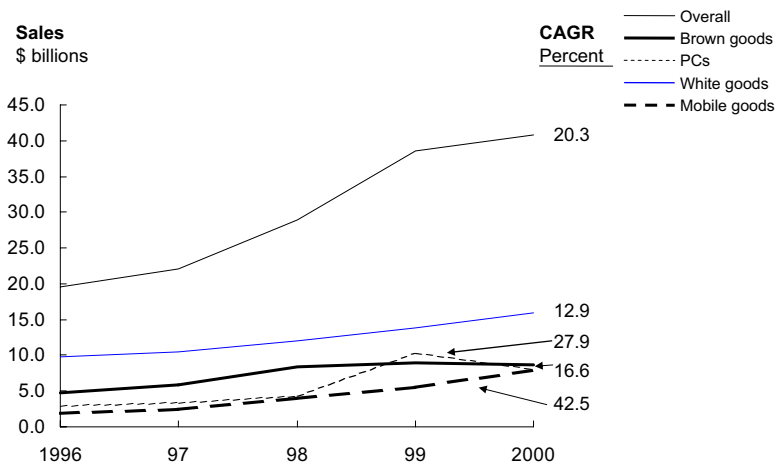
Index, China sector average = 100



* These figures are not directly comparable to productivity numbers on the prior page as they include a broader industry description (electronics industry as a whole including industrial electronics)
 Source: China Electrical Industry yearbook, McKinsey analysis

Exhibit 11

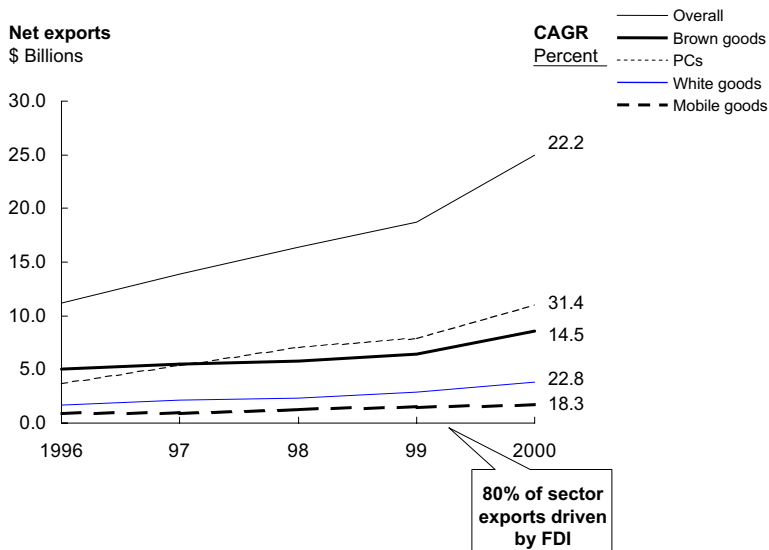
SALES GROWTH BY SUBSEGMENT



Source: China Electronic Industry Yearbook; China Light Industry Yearbook; McKinsey analysis

Exhibit 12

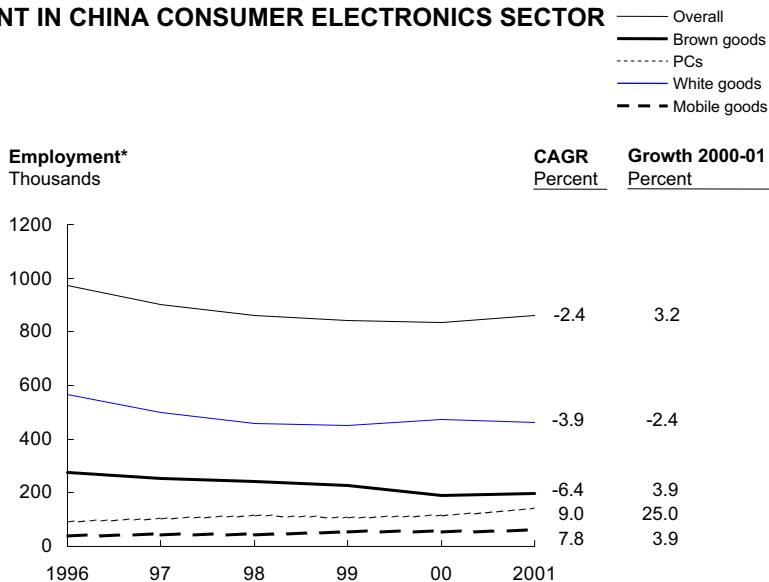
EXPORT GROWTH BY SUBSEGMENT



Source: UN PCTAS database

Exhibit 13

EMPLOYMENT IN CHINA CONSUMER ELECTRONICS SECTOR



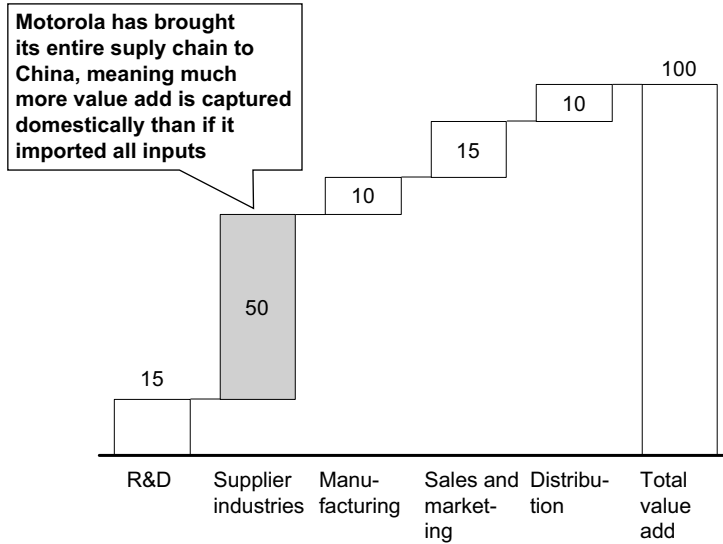
* Employment figures are reported figures from industry yearbooks
 Source: China Light Industry Yearbook; China Electrical Industry Yearbook; UN PCTAS database; McKinsey Analysis

Exhibit 14

IMPORTANCE OF BUILDING UPSTREAM INDUSTRIES TO HOST ECONOMY

ESTIMATE

Percent



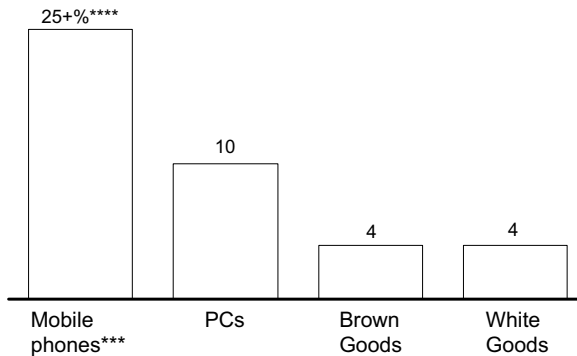
Source: Company financials; Expert interviews; McKinsey analysis

Exhibit 15

PROFITABILITY IN CHINA

Emerging technology → Evolving technology → Mature technology

ROIC 1998-2001*
Percent



* These are approximate ROIC estimates as detailed financials for fully accurate estimates not available
 ** Mobile phone based on TCL, Bird, Nokia, Samsung; PCs based on Legend, Founder, Tongfang, Great Wall, Start; Brown Goods based on Konka, Skyworth, TCL, Hisense, Changhong, Panda, Xococo; White Goods based on Haier, Rongsheng, Changling, Meilin
 *** Based on very rough estimates of gross and net profit margins and capital turns for 2001
 **** Based on 2001 returns of ~25%

Source: Company financials; Analyst interviews; McKinsey analysis

- **Supplier spillovers.** FDI companies have been crucial in creating supplier industries in China. For example, Motorola created an end-to-end production capability in China, which included setting up its supply chain in China. Taiwan and Hong Kong investors were crucial to setting up some elements of the PC supply chain in China. Supplier industries are an important contributor of total value add in consumer electronics – with over 50 percent of value added being contributed in this portion of the value chain (exhibits 4 and 14).
- Disaggregating the value chain in consumer electronics was also important for establishing Chinese (non-FDI) finished goods suppliers in both PCs and mobile handsets in China. The presence of component suppliers allowed for the faster development of competitive local companies such as Legend in PCs and Bird and TCL in mobile handsets⁸.

¶ **Distribution of FDI Impact**

Benefits from FDI have been spread quite evenly across companies, consumers, and workers in the Chinese consumer electronics sector. Non-FDI companies seem to have benefited from the presence of FDI companies through the transfer of technology. In some cases this was facilitated through joint venture requirements and in others Chinese companies have emerged with strong technology by a process of imitation.

- **Companies**
 - FDI companies. FDI companies have had very mixed performance in China – they have in some cases been quite profitable and attained high market share (e.g., Motorola and Nokia); in others they have retained high profitability but have only gained a small market shares through niche strategies (e.g., Dell in PCs) and in certain other cases they have been unprofitable and have gained only a small market share (e.g., Whirlpool in white goods). Overall, the performance can be characterized as mixed (Exhibit 15).
 - Non-FDI companies. Non-FDI companies have been successful in maintaining market share and even gained market share from FDI-companies in some segments. Non-FDI companies are able to maintain strong market share positions in the Chinese market through a combination of capabilities, governance issues, and government policies. For example, non-FDI companies dominate brown and white goods due to their stronger distribution channels. SOE corporate governance also allows certain of these companies to stay in business despite their low margins. In mobile handsets, the technology favors FDI-companies while distribution channels do not favor local players, as they generally cannot rely on existing networks. In PCs, a long set of factors favor local companies, including the presence of established distribution channels, government purchases, low IP protection (which allows some non-FDI companies to cut costs through installing pirated software). Certain trade regulations

8. TCL has always been a standalone Chinese company (no foreign investors). Bird also originated as a standalone Chinese company in 1992 (mobile handset production began in 1999) and only recently entered into a joint venture with France's Sagem in November 2002 (Bird-Sagem Electronics) in order to boost its production capacity.

Exhibit 16

MARKET SHARE DYNAMICS IN CHINESE CONSUMER ELECTRONICS – TOP 5 PLAYERS

FDI player

Mobile handsets		PCs	
1997	2002	1996	2001
1. Motorola 39.9%	1. Motorola 23.8%	1. IBM 10.2%	1. Legend 26.9%
2. Nokia 26.2%	2. Nokia 17.1%	2. Compaq 10.1%	2. Founder 8.8%
3. Ericsson 21.9%	3. Bird* 9.6%	3. Legend 9.2%	3. Tongfang 8.1%
4. Panasonic 2.7%	4. TCL 9.4%	4. Hewlett-Packard 8.4%	4. Start 4.8%
5. NEC 1.2%	5. Siemens 8.7%	5. Great Wall 3.3%	5. IBM 4.7%
6. Siemens 1.0%	6. Samsung 8.0%	6. AST research 3.2%	6. Dell 4.5%
	7. Ericsson 3.0%	7. Acer 3.0%	7. Great Wall 4.2%
	8. Philips 2.7%	8. Digital Equipment 2.8%	8. Hisense 3.6%
	9. Alcatel 2.5%	9. Tontru 1.6%	9. HP 3.1%
		10. Dell 1.6%	10. TCL 4.6%

TVs		Refrigerators	
1996	2001	1996	2001
1. Changhong 20.5%	1. Changhong 16.3%	1. Haier 29.0%	1. Haier 25.3%
2. Panasonic 13.3%	2. TCL 12.8%	2. Rongsheng 15.9%	2. Rongsheng 11.1%
3. Konka 12.2%	3. Konka 12.4%	3. Meilin 13.2%	3. Electrolux 10.7%
4. Beijing 7.1%	4. Hisense 9.3%	4. Xinfei 10.6%	4. Mellin 9.5%
5. TCL 6.2%	5. Skyworth 7.5%	5. Shangling 9.3%	5. Siemens 9.0%
6. Sony 5.5%	6. Haier 6.5%	6. Changling 5.5%	6. Xinfel 6.8%
7. Panda 4.6%	7. Sony 3.7%	7. Hualing 3.2%	7. Changling 5.9%
8. Toshiba 4.2%	8. Panda 3.5%	8. Shuanglu 2.0%	8. Samsung 4.5%
9. Xococo 2.7%	9. Toshiba 3.4%	9. Bole 2.0%	9. LG 3.7%
10. Jinxing 2.7%	10. Xococo 3.2%	10. Wanbao 1.4%	10. Rongshida 2.5%

* Bird began as a standalone Chinese company in 1992 (mobile handset production began in 1999), and only recently (November 2002) entered a JV with France's Sagem (Bird-Sagem Electronics) to boost production capacity
 Source: Sino Market Research; BNP Paribas; Literature searches; McKinsey Global Institute

Exhibit 17

FACTORS EXPLAINING FDI PLAYERS vs. NON-FDI PLAYERS MARKET SHARES IN CHINA

++ } Non-FDI player favored
 + }
 0 } Not a factor
 -- } FDI player favored

	Operational factors			Willingness to accept low margin	External factors					
	Marketing branding	Distribution	Technology		Government financial support	Corporate governance	JV regulations	IP protection	Trade barriers	Income levels
Mobile handset	-	0	--	0	0	0	+	+	0	0
PCs	+	+	-	+	+	+	+	+	+	0
Brown goods	+	++	0	++	+	++	0	+	0	++
White goods	+	+	0	++	+	++	0	+	0	+

- Both capabilities and government policies aimed at creating/sustaining local champions has led to market share dominance in 3 of 4 segments for Chinese players

Source: McKinsey Global Institute

have also reinforced this advantage, in that the government started to enforce import tariffs in the late 1990s, which hurt foreign companies whose products were being imported through the gray market (exhibits 16 and 17).

Domestic companies have gained technology from foreign companies in many cases. This has happened both through joint ventures – as the government requires this of foreign companies in many cases in exchange for their entry into the local market – and through collaboration with FDI companies (Exhibit 18).

China is the world's largest mobile handset market. FDI-companies such as Motorola and Nokia had dominated the market between 1996-2000. Companies such as TCL have since gained share rapidly. Such local companies have moved from almost zero market share in 1999 to a reported share of up to 50 percent of the total market in 2003. The sector demonstrates the Chinese companies' strengths in dominating distribution and being able to acquire technology.

- **Employment**

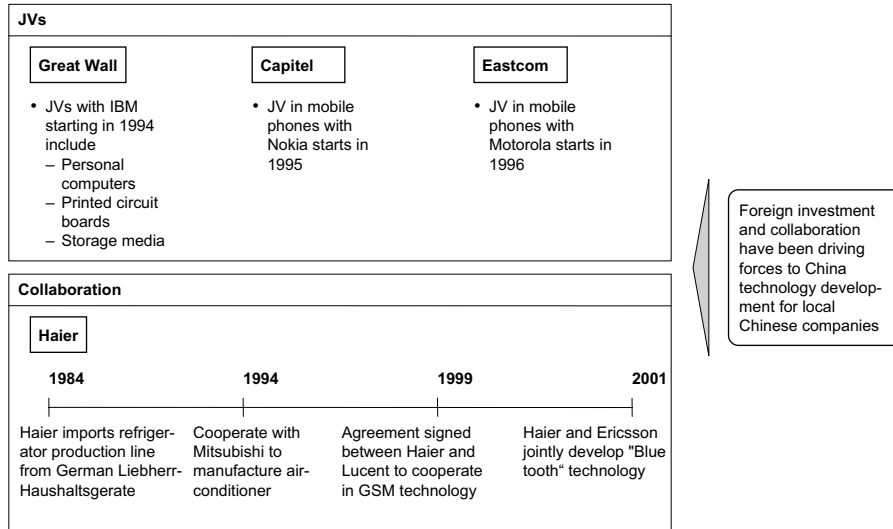
- Employment level. As detailed previously, employment grew in the FDI-influenced sectors (because of the product mix and export production) and declined in the non-FDI dominated sectors. SOE restructuring was the key reason for this employment decline.
- Wages. We have no evidence on differential in wages in this case.

- **Consumers**

- Prices. Prices have declined steadily in this area – especially in the non-FDI sectors. For example, in televisions, a price war raged through the early 2000s. This price war was caused by overcapacity for the non-FDI companies, who aggressively cut prices (Exhibit 19). Prices for goods are generally cheaper or on par with the ultra competitive U.S. market. Non-FDI brand TVs sold for 15 percent below U.S. retail prices, while foreign brand TVs were significantly more expensive. Foreign branded PCs were 15 percent below U.S. retail prices, while domestic brand PCs were even lower priced. Only in refrigerators, were Chinese prices higher. Here Chinese domestic brands are 17 percent more expensive than U.S. prices and foreign brands 35 percent more expensive (Exhibit 20).
- For mobile handsets, price competition has not been quite as aggressive to date, as companies compete on brand and design, though price competition is now picking up. Overall, the household appliance deflator – our closest available approximation for consumer electronics prices in China – has declined by an average of 5 percent per annum between 1996-2001.
- Product variety and quality. FDI companies have clearly added to product variety – both through higher technology products and design improvements. For example, in refrigerators Electrolux has a product tailored to the Chinese market that integrates a picture frame designed to hold a wedding photo into the front of the unit. It recognizes that Chinese families often receive a refrigerator as a wedding gift and keep it in the living room of their home. Other companies, such as Sony, have focused on high-end products, such as high-picture quality flat screen TVs.

Exhibit 18

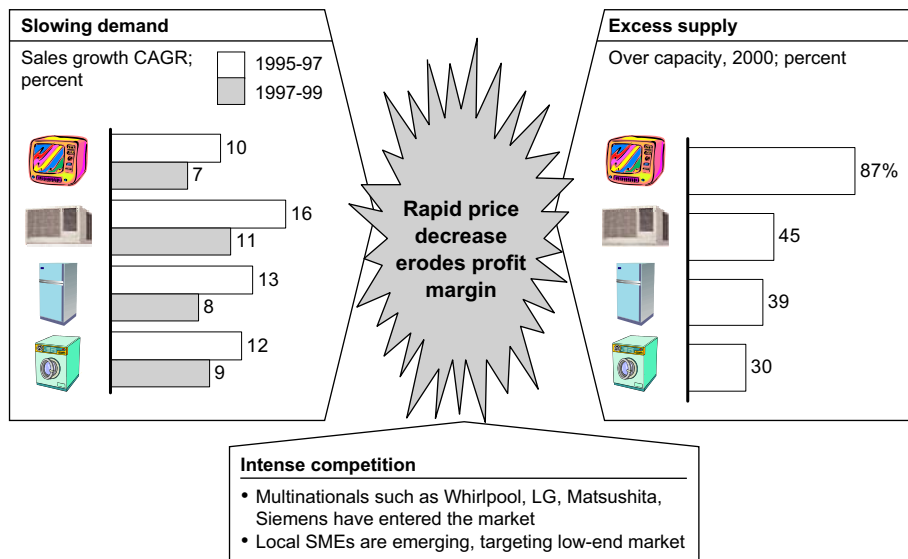
FDI/FOREIGN COLLABORATION BETWEEN CHINESE COMPANIES AND MNCs



Source: Company reports; McKinsey analysis

Exhibit 19

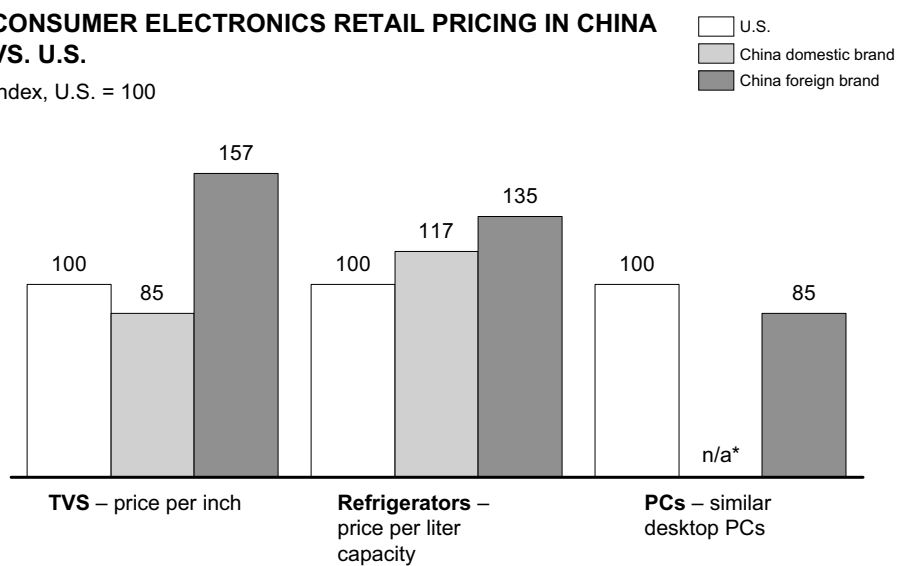
CHINA'S WHITE GOODS AND BROWN GOODS DEMAND AND SUPPLY



Source: China Statistical Yearbook; Report from China Light Industry Information Center; McKinsey analysis

Exhibit 20**CONSUMER ELECTRONICS RETAIL PRICING IN CHINA
VS. U.S.**

Index, U.S. = 100



* Difficult to find exactly comparable U.S. PCs to domestic brand Chinese PCs
Source: Store visits; retailer Web sites

Exhibit 21**EXPORTS IN CHINESE CONSUMER ELECTRONICS SECTOR**

Top foreign invested enterprise consumer electronics exporters – 2000
\$ Billions

<u>Company</u>	<u>Sub-segment</u>	<u>Exports</u>
① Samsung	White, Brown, Mobile	1.5
② Nokia	Mobile	1.1
③ Motorola	Mobile	1.1
④ Seagate	PCs	1.1
⑤ Epson	PCs	1.0
⑥ Philips	Brown	0.6
⑦ Top Victory	PCs (monitors)	0.6
⑧ Flextronics	PCs	0.5
⑨ LG	White, Brown, Mobile	0.5
⑩ Ximmao Technology/ Elite Group	PCs (monitors)	0.5

- Foreign investment enterprises responsible for 80% of industry exports
- These companies provide China access to new markets that it would probably not export to otherwise

Source: Chinese National Statistics

- **Government.** Data on the consumer electronics sector's contribution to government tax receipts is not available. Given that many companies' receive significant tax breaks in SEZs, the tax impact here is likely to be muted. Foreign companies income taxes on expatriate salaries represent a somewhat significant source of revenue for the Chinese government. Overall, the government probably benefits a small amount from the presence of FDI companies.

HOW FDI HAS ACHIEVED IMPACT

¶ Operational factors

- One key impact of FDI has been to bring China new technologies across all sub-segments; this has helped improve the product mix (impacting sales and productivity) while also allowing export growth.
- Direct improvements in productivity have occurred either through the higher productivity of foreign plants (e.g., PC production at Dell) or through "strategic OEMing", where foreign OEMs take a joint venture in Chinese operations and then improve productivity of its manufacturing operations in order to reduce cost (as seen in brown and white goods production).
- FDI companies are responsible for 80 percent of China's consumer electronics exports, a unique benefit given that Chinese companies do not have established brand and distribution in foreign markets (Exhibit 21).

¶ **Industry dynamics.** Local companies already compete strongly against each other. FDI simply added to this level of competition. In fact, the non-FDI dominated sectors display the highest level of competition and the FDI-dominated sector (mobile handsets) has displayed a somewhat lower level of competition. As non-FDI companies have entered the handset market competition in this sub-segment has increased (Exhibit 16).

EXTERNAL FACTORS THAT AFFECTED THE IMPACT OF FDI

Overall, external factors have had both positive and negative effects on the impact of FDI. On the positive side, China's market size and growing supplier industries allowed companies to achieve higher impact in China through economies of scale and better integration. However, state-ownership and weak IP protection have impacted FDI's performance negatively in some sub-segments.

¶ Country specific factors

- **Positive impact**
 - Market size and attractiveness. China's consumer electronics market is large. This has been spurred on by high competition, low taxes, and stable and high GDP growth. This large market allows for the building of scale in both supplier and final goods industries, which helped improve the efficiency of foreign direct investment.
 - Infrastructure. Good infrastructure is especially important in attracting efficiency-seeking FDI. This was provided in business friendly SEZs – areas provided with good access to important inputs, such as electricity

Exhibit 22

CHINESE CONSUMER ELECTRONICS COMPANIES' PROFITABILITY VS. SHARE OWNERSHIP

Corporate governance

Number of companies* =

	7	6	8
State shares	7	29	30
Legal person	36	29	33
Free float**	57	42	37
	Higher profit-ability (ROIC>10%)	Moderate profit-ability (10%>ROIC>0%)	Low profit-ability (0%>ROIC)

* Higher profitability companies include Legend, Haier, Tongfang, Skyworth, Founder, Midea and Gree; Moderate profitability companies include TCL, Konka, HiSense, Changhong, Little Swan and Amoi-sonic; Low profitability companies include Great Wall, Rongsheng, Panda, Start, Xocoeco, Changling, Meilin and Duckling

** Shares of a public company that are freely available to the investing public

Source: Company financials; McKinsey Analysis

and telephone systems, and providing eased entry with simplified legislative requirements. This enhances China's competitiveness by reducing time to market.

- Supplier industry crowding-in. The growing supplier industries have made China increasingly attractive to investment and helps reduce costs through better integration. As the supplier base grows, this serves attracts further finished goods and supplier industry investment (economies of scale and scope) creating a virtuous cycle.
- **Neutral impact**
 - Incentives. "Sweeteners" offered in the form of tax breaks did little to improve competitiveness or increase the impact of FDI. Even without these, China was already attractive to market-seeking and efficiency-seeking FDI.
 - Joint venture requirements and the local champions policy. China put in place a joint venture policy in mobile phones⁹ to encourage technology transfer and the creation of "local champions". This policy appears to have had little impact on the level of FDI, though local champions (e.g., TCL) have been created.
 - Trade barriers. In the late 1990s the Chinese government cracked down on the grey market (in which foreign branded PCs, not manufactured locally, were imported into China). This market was avoiding tariffs that fluctuated between 10-20 percent. However, the enforcement of the trade tariff did not affect international companies manufacturing in China using FDI, only those who were seeking to export to China. Today China does not have an import tariff on PCs.
- **Negative impact**
 - Corporate governance regulations and state ownership. Shareholder governance is weak in China. Companies are subject to little shareholder discipline, which means that some of them survive with low and even negative earnings for several years or more. The impact of this on Chinese companies is evidenced by the fact that shares in the Chinese B shares market (the foreign investors market) trade at a fraction of the level of those in the Chinese A market (the local investor market). This distorts the market, reducing the impact of potential productivity gains (Exhibit 22).
 - Intellectual property protection. The lack of IP protection reduces the potential competition of FDI companies in the PC segment. For instance, certain local companies install pirated versions of Windows on their PCs, giving them a cost/price advantage.

¶ **Sector initial conditions**

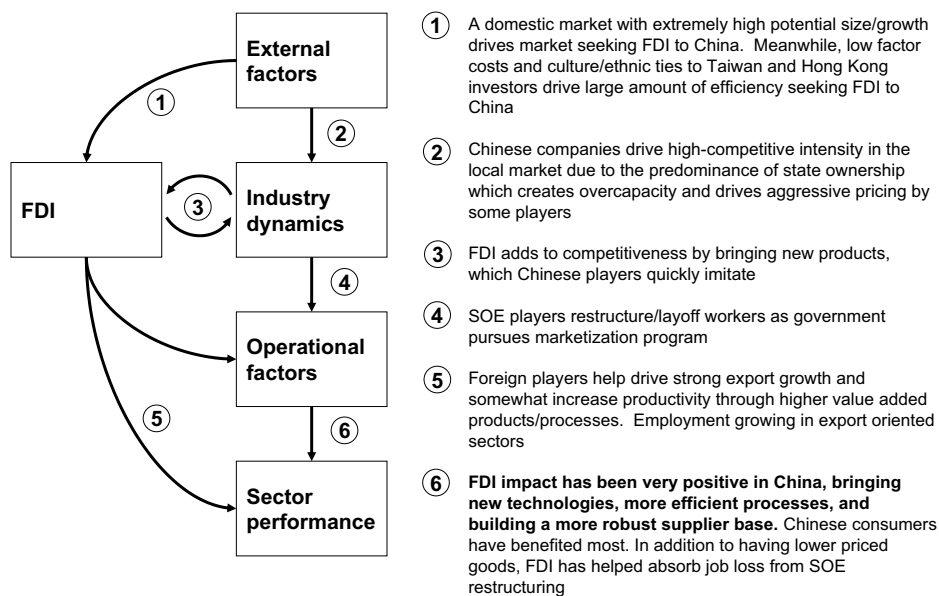
- **Competitive intensity.** The high competitive intensity of the Chinese market has increased the impact of FDI, as non-FDI companies have quickly imitated new products and adaptations as brought to market by foreign companies. For example, in mobile handsets, local companies like TCL have launched designs based on those currently available from international companies in order to gain share.

9. As was previously the case in computers, though the regulations have recently been liberalized.

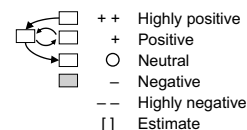
- **Closing the gap with best practice.** As mentioned earlier, many non-FDI SOEs – especially in brown and white goods – operate at low levels of productivity. Through strategic OEMing, FDI has improved productivity in these operations. Furthermore, FDI companies have 2.5 times the productivity of non-FDI companies, and have thus improved the overall productivity of the sector as they have gained market share.

SUMMARY OF FDI IMPACT

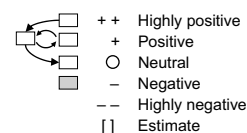
FDI impact has been very positive in China, bringing new technologies, more efficient processes, and building a more robust supplier base. In particular, this increased supplier base has created crowding in effects in China. Its access to export channels via established brand and sales channels have played a crucial role in driving Chinese exports. FDI has only marginally added to competitive intensity (through new designs and high-end niche strategies), as non-FDI players fuel competitive intensity in China. Chinese consumers have benefited most dramatically with a wide-variety of competitively priced goods available in China. Furthermore, FDI has helped dampen effects on Chinese workers, as growth in export-oriented employment has helped absorb job loss from SOE restructuring.

Exhibit 23
CHINA CONSUMER ELECTRONICS – SUMMARY

Exhibit 24
CHINA CONSUMER ELECTRONICS – FDI OVERVIEW


• Total FDI inflow (1996-2001)	\$23 billion
– Annual average	\$3.8 billion
– Annual average as a share of sector value added	29% (lag effect)
– Annual average per sector employee	\$4,400
– Annual average as a share of GDP	0.33%
• Entry motive (percent of total)	
– Market seeking	65%
– Efficiency seeking	35%
• Entry mode (percent of total)	
– Acquisitions	0%
– JVs	60%
– Greenfield	40%

Exhibit 25**CHINA CONSUMER ELECTRONICS – FDI IMPACT
IN HOST COUNTRY**

Economic impact	Early FDI (1980-1995)	Mature FDI (1996-2001)	FDI impact	Evidence
• Sector productivity (CAGR)	n/a	++	+	<ul style="list-style-type: none"> Mobile phones sector (FDI dominated) highest productivity sector Productivity growth very steep across all segments FDI players 2.5X higher productivity than non-FDI players
• Sector output (CAGR)	n/a	++	++	<ul style="list-style-type: none"> Non-FDI enterprises still dominate domestic market output, but FDI enterprises account for 80+% of exports (which is 40+% of total output)
• Sector employment (CAGR)	n/a	-	+	<ul style="list-style-type: none"> Employment growing in PCs (due to exports) and handsets (FDI-dominated); in white and brown goods employment (non-FDI dominated) employment is shrinking
• Suppliers	n/a	++	++	<ul style="list-style-type: none"> Significant supplier base building in PC/handset sector by FDI players; also some in brown and white goods
• Impact on competitive intensity	n/a	++	+	<ul style="list-style-type: none"> Many FDI players present in China, add to competition through higher technology products and niche strategies; Chinese players are still drivers of competition overall

Exhibit 26**CHINA CONSUMER ELECTRONICS – FDI IMPACT
IN HOST COUNTRY (CONTINUED)**

Distributional impact	Early FDI (1980-1995)	Mature FDI (1996-2001)	FDI impact	Evidence
• Companies				
– MNEs	n/a	+/-	+/-	<ul style="list-style-type: none"> Mixed profitability for FDI players with mobile phone players performing well, others performing poorly
– Domestic companies	n/a	+	+	<ul style="list-style-type: none"> Local companies have gained through foreign presence by imitating technology. This has in some cases been facilitated by JV requirements Share losses to MNCs only in some minor subsegments (e.g. refrigerators)
• Employees				
– Level of employment (CAGR)	n/a	+	+	<ul style="list-style-type: none"> See prior page for evidence
– Wages	n/a	[O]	[O]	<ul style="list-style-type: none"> No evidence on changes in wages
• Consumers				
– Prices	n/a	+	O	<ul style="list-style-type: none"> Local players drive low prices in CE
– Selection	n/a	+	+	<ul style="list-style-type: none"> FDI brings high-technology, specialized goods across sub-sectors (e.g. high end TVs, mobile phones)
• Government				
– Taxes	n/a	[+]	[+]	<ul style="list-style-type: none"> Tax burden very low on FDI players as well as locals; however, should be marginal gain in taxes due to some taxes on export-oriented FDI

Exhibit 27

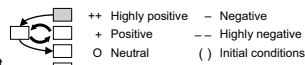
CHINA CONSUMER ELECTRONICS – COMPETITIVE INTENSITY



	Prior to focus period (1980-1995)	End of focus period (1996-2001)	Evidence	Rationale for FDI contribution
Pressure on profitability	n/a	○	• Profitability low in all subsegments except mobile phones	• FDI players are not drivers of low profits; in fact, are dominant in highest profit segment
New entrants	n/a	◐	• New entrants in all segments	• FDI players in all segments, as well as Chinese
Weak player exits	n/a	◑	• Some weak player exits	• SOE restructuring drives exits, with government pushes SOEs towards more private ownership
Pressure on prices	n/a	◑	• Price drops have been significant in CE over the listed time period (25-50+%)	• Over-capacity in SOEs drives pricing
Changing market shares	n/a	◑	• Market share shifts pronounced across all 4 segments	• Driven by SOEs in all except white goods
Pressure on product quality/variety	n/a	◐	• New products on market such as mobile handsets; high-end brown and white goods	• MNCs generally bring these products and Chinese players imitate
Pressure from upstream/downstream industries	n/a	○		
Overall	n/a	◐	• Competitive intensity is high as evidenced by low profitability and declining prices	• Overcapacity/aggressive SOEs generally drive competition

Exhibit 28

CHINA CONSUMER ELECTRONICS – EXTERNAL FACTORS’ EFFECT ON FDI



Level of FDI*	Impact on level of FDI	Comments	Impact on per \$ impact	Comments	
Global factors					
Global industry discontinuity	+	• Continued value chain disaggregation opens opportunity for China	○		
Country-specific factors	Relative position				
	• Sector Market size potential	++	• 4th largest CE market in world	++	• Allows for building of scale
	• Prox. to large market	○		○	
	• Labor costs	++	• Important for efficiency seekers	○	• Increases export competitiveness
	• Language/culture/time zone	+	• Taiwanese/Hong Kongese key investors; Location good for E. Asia, where CE center of gravity resides	○	
	(A in) Macro factors				
	• Country stability	+	• Stable currency and country environment attracts investors	○	
	Product market regulations				
	• Trade regulations	○		○	
	• Preferential export access	+	• WTO entry	○	
• Recent opening to FDI	○		○		
• Remaining FDI regulation	○		○		
• Government incentives	○	• Incentives present, but not crucial to FDI decision for most	○		
• TRIMs	○		○		
• Corporate Governance	-	• Strong competition from unprofitable SOEs may have reduced FDI, though most foreign players present	--	• Some Chinese players survive with low profitability due to weak shareholder protection, state ownership	
• Taxes/other	○		-	• Weak IP protection, government purchases boost local players in PCs	
Capital deficiencies	○	• Although capital may have been scarce for private entrepreneurs it was more than compensated for by capital available to SOEs	○		
Labor market deficiencies	○		○		
Informality	○		○		
Supplier base/infrastructure	++	• Supplier industry strength becoming powerful attractor of additional FDI	++	• Increases efficiency and opportunity for FDI-driven exports	
Sector initial conditions	Competitive intensity	O(H)	• Competitive intensity was already high in China, but most players came anyway due to size of opportunity	+ (H)	• High competitive intensity increases the speed of diffusion of new technologies
	Gap to best practice	+(M)	• Chance to bring higher value add products attracted foreign players	+ (M)	• Low initial productivity levels has allowed for more long-hanging productivity improvement opportunities to be captured by FDI

Exhibit 29

**CHINA CONSUMER ELECTRONICS –
FDI IMPACT SUMMARY**

[] Estimate ++ Highly positive – Negative
+ Positive -- Highly negative
O Neutral () Initial conditions

Level of FDI relative to sector*	FDI impact on host country		Level of FDI** relative to GDP	External Factor impact on	
	29%			Level of FDI	Per \$ impact of FDI
Economic impact			Global factors	0.33	
• Sector productivity	+		• Global industry discontinuity	+	O
• Sector output	++		• Relative position		
• Sector employment	+		• Sector market size potential	++	++
• Suppliers	++		• Prox. to large market	O	O
Impact on competitive intensity	+		• Labor costs	++	O
Distributional impact			• Language/culture/time zone	+	O
• Companies			• Macro factors		
– MNEs	+/-		• Country stability	+	O
– Domestic	+		• Product market regulations		
• Employees			• Import barriers	O	O
– Level	+		• Preferential export access	+	O
– Wages	[O]		• Recent opening to FDI	O	O
• Consumers			• Remaining FDI restriction	O	O
– Prices	O		• Government incentives	O	O
– (Selection)	+		• TRIMs	O	O
• Government			• Corporate governance	–	--
– Taxes	[+]		• Taxes/other	O	–
* Average annual FDI/sector value added			• Capital markets	O	O
** Average (sector FDI inflow/total GDP) in key era analyzed			• Labor markets	O	O
			• Informality	O	O
			• Supplier base/infrastructure	++	++
			• Sector initial conditions		
			• Competitive intensity	O (H)	+ (H)
			• Gap to best practice	+ (M)	+ (M)

India Consumer Electronics Summary

EXECUTIVE SUMMARY

In the early 1990s, the Indian government opened up its previously protected US \$8 billion domestic consumer electronics market to international investment. Since then, India has received around US \$300 million in FDI per year. Though this represents 20 percent of the total FDI to India during this period, it is only half the level of annual investment achieved in Mexico and Brazil and just 8 percent of the investment in China. This inflow of FDI has been made in large to overcome import tariffs that range from 30 to 50 percent of product value.

Overall, the impact of FDI in India has been positive. The sector's output and productivity have increased as a result of the implementation of improved manufacturing techniques in the companies acquired by international companies and the higher productivity levels of newly constructed multinational company plants. Consumers have received the greatest benefits from the entry of international investment. Prices have declined as a result of increased competition and the product selection has increased. The spillover effects upon suppliers have been limited as most investment has been in assembly operations and these have relied on imported inputs. Domestic incumbent companies, with lower productivity levels, have been impacted negatively by the increased competition. Their market share and employment levels have both declined.

However, the remaining constraints on both foreign as well as domestic players have severely increased the production costs and limited productivity growth, thus keeping the impact of FDI below its potential. High policy barriers – high indirect taxes, high and poorly enforced sales taxes causing informality, and distorting state-level tax incentives leading to fragmented and sub-scale production – keep prices of domestic production above world prices. As a result, Indian consumers continue to face 30 percent higher prices than Chinese consumers, and the goods have a significantly lower penetration rate, including refrigerators and mobile phones.

OVERVIEW

¶ Sector overview

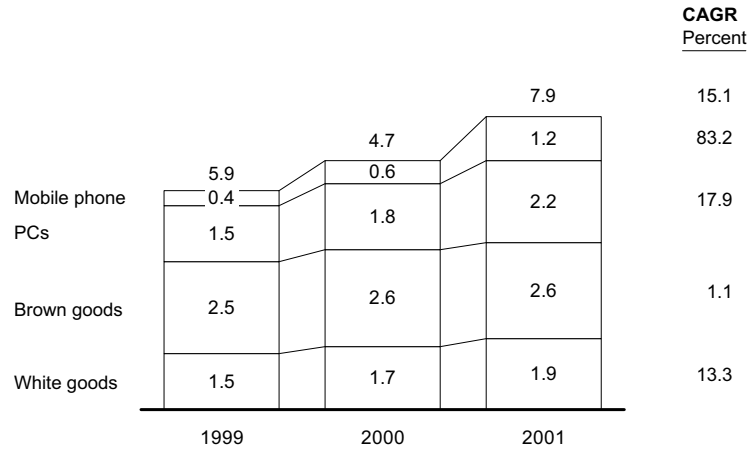
The size of the Indian consumer electronics sector was approximately \$8 billion in size in 2001. Exports are not a major factor in Indian consumer electronics, generating a mere \$100 million in 1999.¹⁰

- Brown goods are the biggest sub-segment in India, though mobile handsets are the fastest growing portion of the market overall, with an annual growth rate of over 80 percent from 1999-2001 (Exhibit 1).
- Finished goods exports are declining, having halved in value between 1996 and 1999. Imports have tripled over the same time period, rising from \$235 million to \$715 million (Exhibit 2).

10. 2001 is the last year for which the U.N. publishes data for India.

Exhibit 1

INDIA CONSUMER ELECTRONICS MARKET SIZE BY SEGMENT
\$ Billions

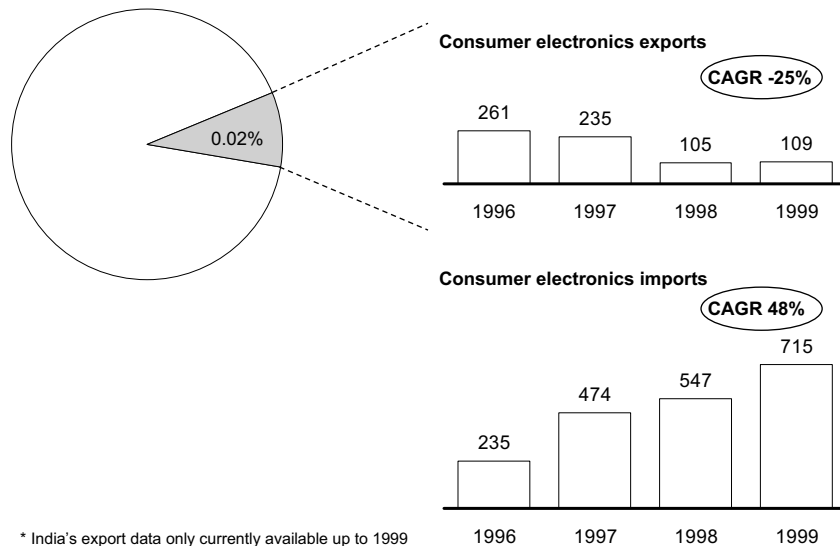


Source: MAIT; ELCINA; literature search; McKinsey Global Institute

Exhibit 2

INDIA CONSUMER ELECTRONICS FINISHED GOODS TRADE*
\$ Millions

Total India exports, 2000 = \$44 billion



* India's export data only currently available up to 1999
Source: UN PCTAS database

¶ FDI Overview

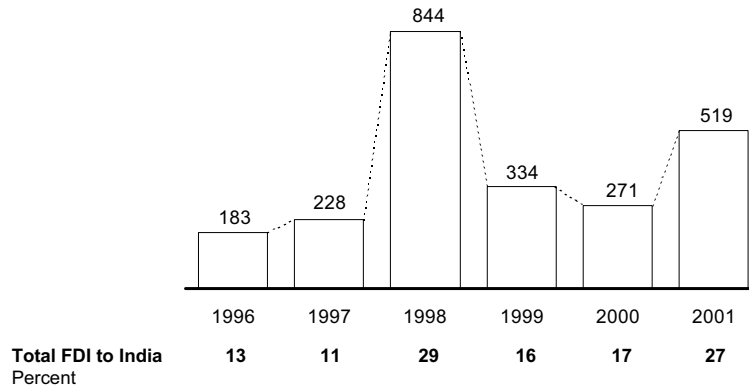
- FDI levels
 - FDI in the sector has averaged around \$300 million per year between 1996-2001. Though this is small compared with Mexico, China, and even Brazil, at 20 percent of the total annual FDI to India, it represents a significant share of this total (Exhibit 3).
 - International companies have entered India both through joint ventures and through standalone ventures, the majority having followed the latter course (Exhibit 4).
 - The pace of foreign direct investment has increased since the mid-1990s, following India's adoption of more liberal policies towards FDI. The entry of LG and Samsung in the mid-1990s was especially notable as their entry markedly increased the level of competition in the market (exhibits 5 and 6).
- FDI impact. Due to the limited availability of data, it is not possible to make thorough comparison of the pre-FDI period (pre-1994) with the maturing FDI period (1994 to present). We have therefore assessed the impact of FDI using qualitative information gained from interviews and comparisons with other countries.

¶ **External factors driving the level of FDI.** Probably the three factors most important in attracting FDI to India were, the potential market size (though much of this potential has yet to be realized), continuing import barriers (which made it impossible to participate in the local market without possessing local operations), and the liberalization of FDI-entry in the early 1990s. However, several factors serve to continue to repel further FDI – particularly, efficiency-seeking FDI. These factors include high indirect taxes, which have suppressed domestic demand, labor market inflexibilities, and a very poor export infrastructure. Overall, India's level of FDI is probably well below what it could be potentially due to these negative factors (Exhibit 7).

- Factors that have encouraged FDI
 - Market potential. Given its more than 1 billion population, India has a very large market potential for consumer electronics. Though currently this market is only \$8 billion, its full potential could be double this size or more; this would represent a larger market than Brazil and Mexico combined. Prior to FDI liberalization, the Indian market lacked products that other developing countries already have access to. For example, until recently black and white TVs played a much larger role in the Indian market than they did in other comparable markets. FDI has helped advance the market towards flat picture tube products of the 20-21" size range.
 - Policy liberalization. The Indian government began its program of market liberalization in the early 1990s. Players such as LG, Samsung, and Matsushita, among others, entered the Indian market in the mid-to-late 1990s.
 - Import barriers. Rates of protection in India average 30-40 percent for consumer electronics goods like TVs, PCs, and refrigerators. Given that there are local players already participating in each of these segments and that Indian consumers are extremely price sensitive, it is imperative

Exhibit 3

FDI IN INDIA CONSUMER ELECTRONICS SECTOR*
\$ Millions



* Our FDI definition includes Domestic Appliances, Electronics and Electrical equipment and Computer
Source: RBI India annual reports

Exhibit 4

PLAYERS PRODUCING IN INDIA'S OWNERSHIP STRUCTURES

	Foreign-owned	JV	Indian-owned
Mobile phones****	• None	• None	• None
PCs and components	• Hewlett-Packard India		• Wipro • HCL Info Systems* • CMC • Vintron
Brown goods	• Phillips India • LG Electronics India • Samsung India	• Matsushita Television and Audio India	• BPL • Mirc Electronics • Videocon International
White goods	• Whirlpool India • LG Electronics India • Samsung India	• Amtrex Hitachi • Electrolux Kelvinator	• Symphony Comfort Systems • Videocon Appliances • Godrej Appliances*** • Voltas**

* Previously joint ventured with HP (until 1997)
** Had alliance with GE, terminated in 2001
*** Contract manufacturers refrigerators for LG and Samsung
**** All mobile handsets currently imported; no production in India
Source: Literature search; company shareholding information

Exhibit 5

MULTINATIONAL COMPANY ENTRY IN INDIA CONSUMER ELECTRONICS

	Entry date	Revenue, 2001 \$ Millions	Key products
Phillips	1930	315	<ul style="list-style-type: none"> Lamps Audio equipment
Hewlett-Packard	1976	317	<ul style="list-style-type: none"> PCs and servers
LG	1994	362	<ul style="list-style-type: none"> Televisions Refrigerators Washing machines Air conditioners Monitors
Samsung	1995		<ul style="list-style-type: none"> Televisions Refrigerators Microwave ovens Air conditioners VCD/DVD players
Electrolux	1995	85	<ul style="list-style-type: none"> Refrigerators
Whirlpool	1995	228	<ul style="list-style-type: none"> Refrigerators Washing machines
Matsushita	1996	36	<ul style="list-style-type: none"> Televisions
Hitachi	1998	74	<ul style="list-style-type: none"> Room air conditioners

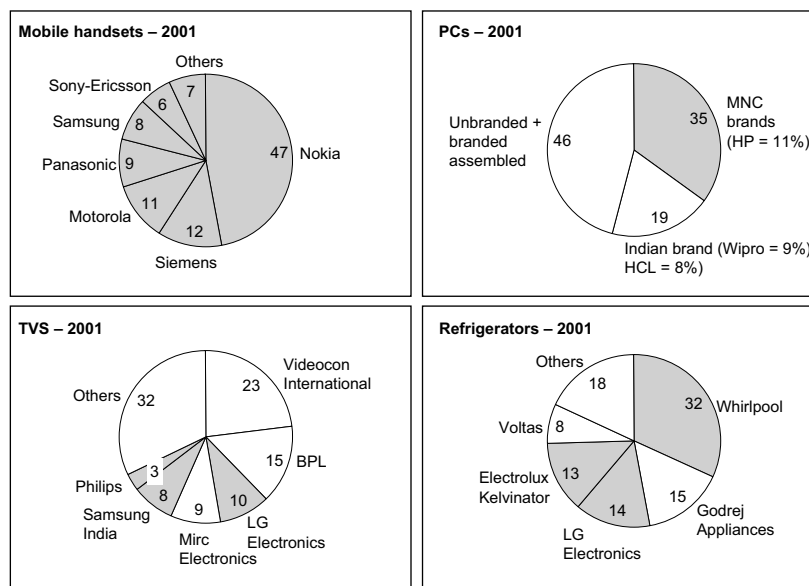
Source: Company financials; company websites

Exhibit 6

MARKET SHARE BY CONSUMER ELECTRONICS SEGMENT IN INDIA

Percent

FDI-company



Source: IDC; Center for Monitoring the Indian Economy

Exhibit 7

EXTERNAL FACTORS THAT HINDER INDIA CONSUMER ELECTRONICS PERFORMANCE

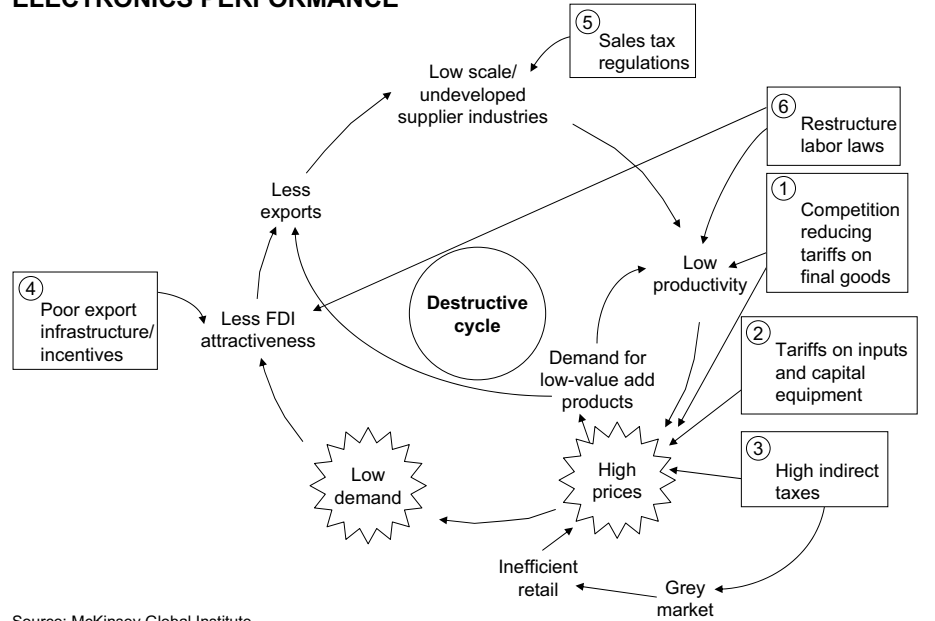
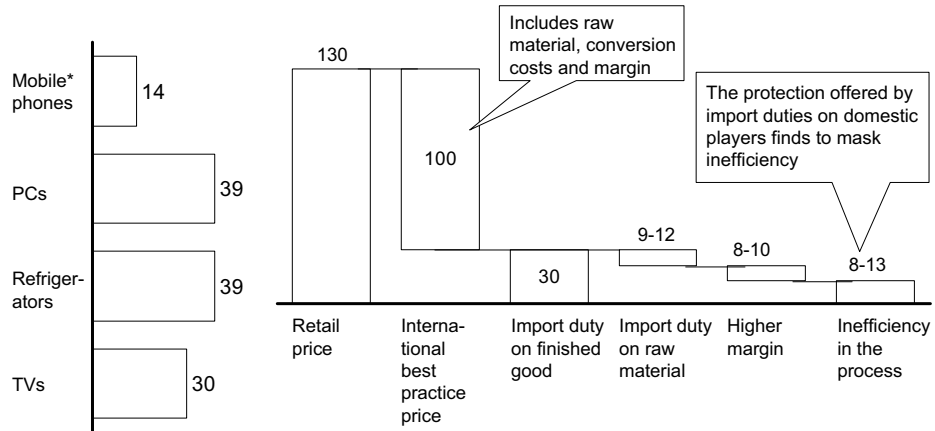


Exhibit 8

TARIFFS ON FINAL GOODS AND EFFECT ON COMPETITION

Average tariff/effective rate of protection on final goods
Percent

TV example – Colour TV price breakdown
Index, International Best Practice = 100



Source: McKinsey CII report

to set up operations in India to play in the consumer electronics market (exhibits 8 and 9).

- Competitive intensity. Players in the market earned 8 percent net margins on sales before the entry of the Korean companies, making the market attractive to FDI.
- **Factors that have discouraged FDI**
 - High indirect taxes. India has high indirect taxes on goods – over 30 percent in some cases. These raise the final prices of goods and suppresses market demand. This not only reduces market-seeking FDI but reduces India's attractiveness to efficiency-seeking FDI (Exhibit 10).
 - Labor market deficiencies. Strict labor laws prevent Indian companies from retrenching labor easily. This is another factor that makes India a far less attractive location for efficiency-seeking FDI than China (Exhibit 11).
 - Infrastructure. India's export infrastructure is far less advanced than China's. For example, exporting goods from India to the U.S. takes up to three weeks longer than it does to export goods from China (Exhibit 12). Also, the electricity infrastructure is unreliable and this constrains growth.

FDI IMPACT ON INDIA

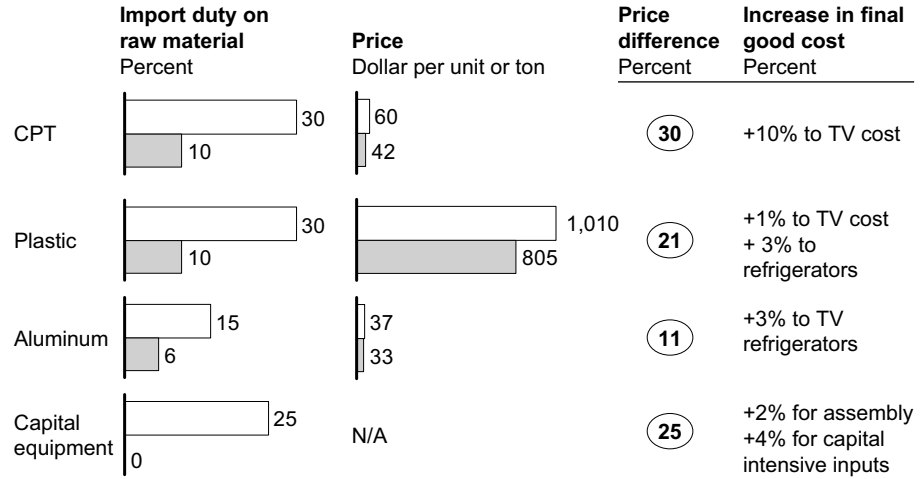
¶ Economic impact

- **Sector productivity.** Labor productivity of consumer electronics in India is about half that of China, and only 13 percent of Korean levels. Some of the productivity disadvantage vis-à-vis China and Mexico can be traced to the production mix. The product mix in India included more low-end goods, such as smaller and black and white televisions. However, India does not manufacture export-oriented goods (as does China) which are often more labor intensive, so this helps counteract the effects of product mix effect vis-à-vis China. Interview evidence shows that there are also physical productivity differences of between 10-50 percent between India and China plants with similar goods (Exhibit 13).
Interview evidence indicates that FDI has had a positive impact on productivity, both through direct effects and increased competition. For example, one FDI player improved the productivity of a contract manufacturer by nearly four times by implementing improved manufacturing techniques. Furthermore, because of heightened competition, players such as Whirlpool and Philips have recently reduced their workforces in India. The catalyst has been the heightened competition resulting from the entry of the Korean players.
- **Sector output**
 - Domestic demand. Domestic demand continued to grow at an average of 15 percent per annum from 1999-2001, with very high growth in mobile handsets, high growth in PCs and white goods, and flat sales in brown goods. Given FDI's contribution to decreasing prices, which led to market growth in the brown and white goods segments, we attribute some of the sector output growth in these segments to FDI (Exhibit 1).
 - Export performance. India's level of exports is meager. It is a net importer of finished goods in consumer electronics (Exhibit 2). FDI has not

Exhibit 9

TARIFFS ON INPUTS AND EFFECT ON FINAL GOOD COST

India
China

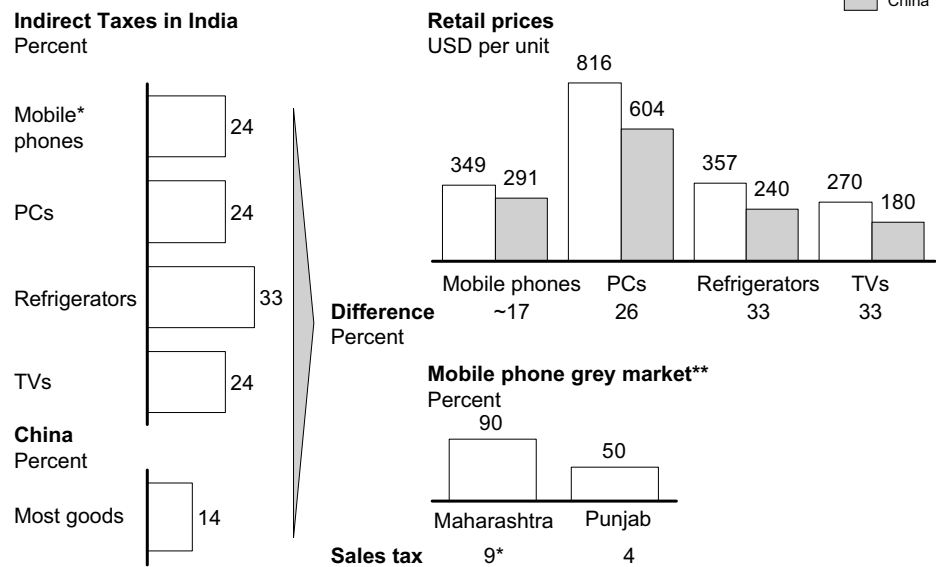


Source: McKinsey CII report; McKinsey Global Institute

Exhibit 10

INDIRECT TAXES, PRICES AND THE GREY MARKET IN INDIA

India
China



* Includes 4% sales tax and 5% octroi

** Grey markets refer to the illicit, but technically legal, activities that are not reported to the tax authorities and the income from which goes untaxed and unreported.

Source: National statistics; literature search; McKinsey Global Institute

Exhibit 11

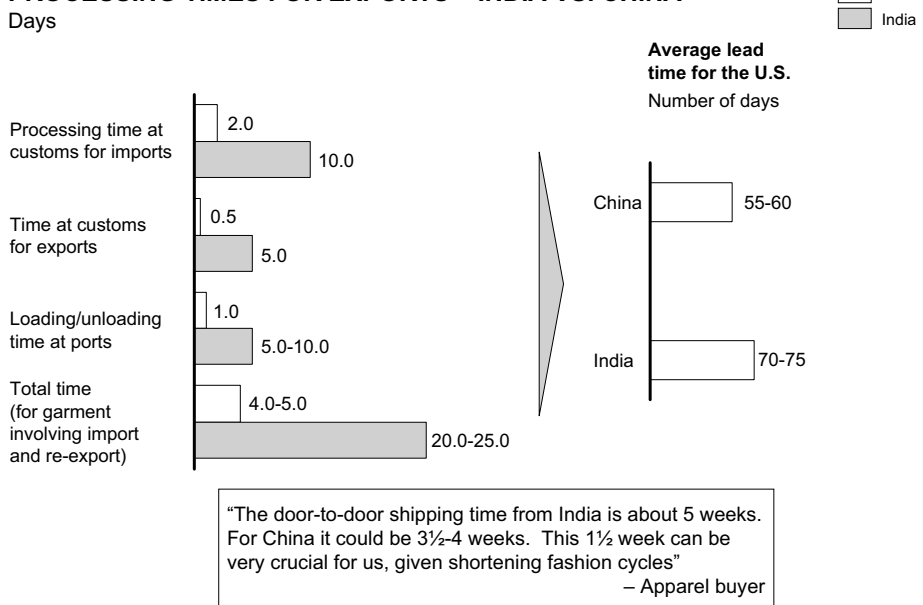
LABOR LAWS – INDIA VS. CHINA

	China	India
Barriers to retrenchment	<ul style="list-style-type: none"> Chinese enterprises given autonomy to retrench workers with one month notice period 	<ul style="list-style-type: none"> Government approval required to close a company Retrenchment of workers for poor performance leads to litigation or trouble with labour unions
Labour unions	<ul style="list-style-type: none"> Union activity largely subdued 	<ul style="list-style-type: none"> Power of labour unions hinders functioning of large companies forcing fragmentation of production capacity
Wage structure	<ul style="list-style-type: none"> Enterprises granted autonomy to establish internal wage systems (e.g., can link wages to productivity or output) 	<ul style="list-style-type: none"> Productivity linked wages difficult to implement in large enterprises due to power of unions Wages partly linked to output in small enterprises
Nature of employment	<ul style="list-style-type: none"> Contract workers permitted in all industries No lifetime employment even in SOEs in China 	<ul style="list-style-type: none"> Labour can be hired on contract only for a maximum of 11 months beyond which they have to be made permanent employees

Source: China Hand – EIU

Exhibit 12

PROCESSING TIMES FOR EXPORTS – INDIA VS. CHINA

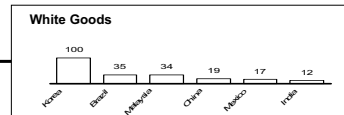
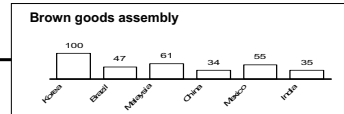
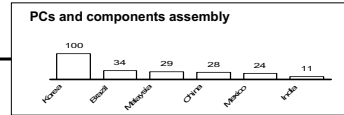
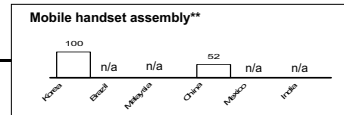
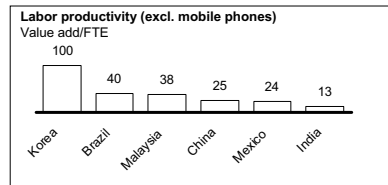


Source: Interviews; CII-Worldbank study

Exhibit 13

LABOR PRODUCTIVITY COMPARISON BY SEGMENT**

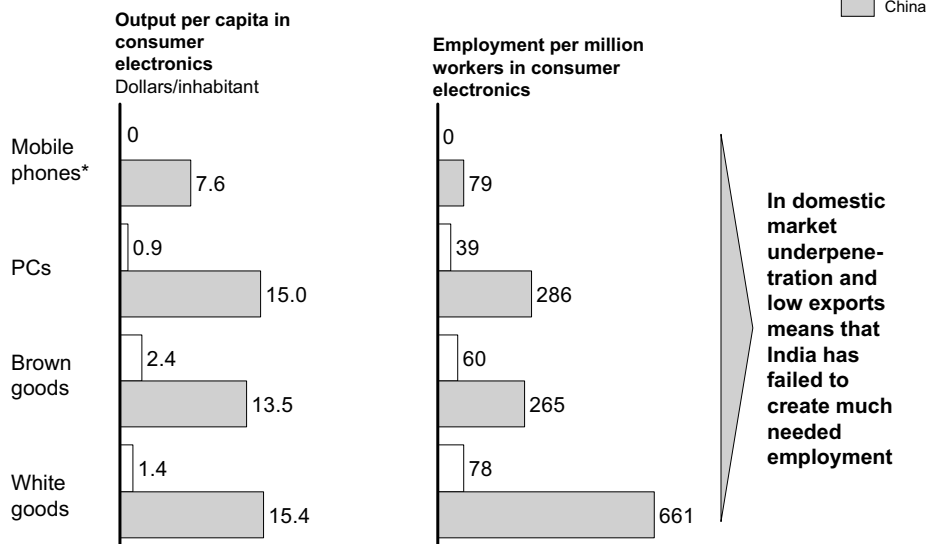
Index*, Korea = 100



* Indexed to Korea = 100; Base measurement = RMB/worker/hour
 ** Korea's mobile handset industry definitions includes other wireless devices such as wireless broadcast transmitters and wireless closed circuit cameras; India's numbers are calculated using data of listed companies (largest); they may be biased upward because of this
 Source: China: China Electrical Industry Yearbook, China Light Industry Yearbook; Korea: National Statistical Office, Electrical Industry Association of Korea; Malaysia: Annual Survey of Manufacturing Industries, Department of Statistics; Brazil: IBGE, FIPE; McKinsey Global Institute

Exhibit 14

INDIA CONSUMER ELECTRONICS EMPLOYMENT



* All mobile handset currently imported, no production in India
 Source: McKinsey Global Institute

improved India's export performance in the time period under review, though our interviews indicate that Korean players might look to export certain products from India in the future (perhaps as a second source to China).

- **Sector employment.** No data is available on sector level employment for Indian consumer electronics. Because there is a combination of output growth and productivity improvement over the time period, employment change is ambiguous. In terms of employment level, India has certainly under-performed vis-à-vis China, creating only 15 percent as many jobs per million workers, due to both lower domestic demand as well as exports (Exhibit 14).
- **Supplier spillovers.** We have not observed evidence of significant supplier spillovers in India. Supplier markets are well developed in India for mechanical components, such as metals and plastics; however, for higher-end components the supplier markets are relatively undeveloped. These components include TV tubes (where there are few suppliers), integrated circuits, and printed circuit boards (which are imported).

¶ **Distribution of FDI Impact**

- **Companies**
 - FDI companies. International companies have gained market share through FDI in all segments in India (Exhibit 15). LG and Samsung, in particular, have done so successfully by providing goods tailored to the local needs at a significantly lower price, backed by strong advertising campaigns. Our measurement of company profitability, backed by interview evidence, suggests that while the Korean companies have been profitable, other FDI-players have not been as profitable and are far below what an expected risk-adjusted rate of return might be assumed to be (Exhibit 16).
 - Non-FDI companies. Local companies have suffered both from lost market share and reduced profitability after the entry of international companies into India. Profitability has declined from 7-8 percent net margins before the entry of LG and Samsung to near zero following their entry. Data until 2001 indicate that none of the FDI players were returning a risk-adjusted cost of capital. Interviews suggest that the profitability of local companies has continued to decline in 2002 (Exhibit 16).
- **Employment**
 - Increased competition has reduced employment in the sector, thereby increasing productivity. There is no data available from which to make a comparison of wage levels in FDI companies compared to non-FDI companies.
- **Consumers**
 - Prices. The consumer has been the clearly gained from FDI in India: prices have been reduced considerably due to increased competition. For example, in 2001 alone TVs price dropped 9 percent and washing machines and air conditioners each dropped 10 percent. LG and Samsung have been key in driving these prices down as they have produced goods at significantly lower prices that compete directly with

Exhibit 15

MARKET SHARE EVOLUTION BY SEGMENT IN INDIA CONSUMER ELECTRONICS

Percent

FDI company

Mobile handsets	
1996	2001
N/A	1. Nokia 47
	2. Siemens 12
	3. Motorola 11
	4. Panasonic 9
	5. Samsung 8
	6. Sony Ericsson 6
	7. Others 7

Computers and its peripherals		
1996	2001	
1. HCL Infosystems 15	1. Tech Pacific Technology (distributor) 14	
2. Wipro 15	2. Hewlett Packard 11	
3. Zenith Computers 4	3. Wipro 9	
4. CMC 1	4. HCL Infosystems 8	
5. Rolta India 1	5. CMC 3	
6. Others 63	6. Rolta India 3	
	7. Compuage Infocom 3	
	8. Zenith Computers 3	
	9. Others 46	

Televisions		
1996	2001	
1. Videocon International 25	1. Videocon International 23	
2. BPL 22	2. BPL 15	
3. Mirc Electronics 11	3. LG Electronics 10	
4. Philips 8	4. Mirc Electronics 9	
5. Others 34	5. Samsung India 8	
	6. Philips 3	
	7. Others 32	

Refrigerators		
1996	2001	
1. Godrej Appliances 44	1. Whirlpool 32	
2. Whirlpool 21	2. Godrej Appliances 15	
3. Voltas 20	3. LG Electronics 14	
4. Electrolux Kelvinator 1	4. Electrolux Kelvinator 13	
5. Others 15	5. Voltas 8	
	6. Others 18	

Source: Center for Monitoring the Indian Economy; IDC

Exhibit 16

INDIA CONSUMER ELECTRONICS MARKET PROFITABILITY*

Percent

FDI company

Winners	ROIC – 1998-2001	Industry focus
LG**	23	Brown/white
HCL Infosystems	20	PCs
Mirc	12	Brown goods
BPL	12	Brown goods
Videocon Appliances	12	White goods
Samtel	12	Brown goods

Losers	ROIC – 1998-2001	Industry focus
Godrej	-3	White goods
Amtrex-Hitachi	-2	White goods
Electrolux/Kelvinator	-1	White goods
Matsushita	1	Brown goods
Whirlpool of India	2	White goods
Philips India	7	Brown goods/ other***

* These are approximate ROIC estimates in some cases as detailed financials for fully accurate estimates not available

** ROIC for 2001 only; analysis of balance sheet indicates that this profit figure may not account for some expenses allocated to Korea that should be allocated to India

*** About 50% of Philips India sales include non-CE items such as lamps

Source: Company financials; McKinsey Global Institute

those of local players (and are well adapted to the local market demand needs). LG, in particular, is widely cited as driving price reductions in televisions, having reduced their own prices by nearly 20 percent in one year, leading other companies in India to respond similarly (Exhibit 17). Similar price decreases and corresponding increase in volumes can also be seen in other consumer electronics sub-segments. The growth in sales volumes resulting from these price reductions indicates a price elasticity of at least 1-2 for consumer electronics in India (Exhibit 18).

- Product variety and quality. The variety of goods has expanded following FDI in India, with FDI companies bringing newer and more advanced products, such as flat-screen televisions, to the market.
- **Government.** It is not clear what the impact of FDI is on government tax receipts in India.

HOW FDI HAS ACHIEVED IMPACT

- ¶ **Operational factors.** FDI has improved productivity in two ways. First, it has ensured the introduction of improved manufacturing techniques. Secondly, it has invested in greenfield operations that have improved productivity through the use of efficient production processes. Both these factors are seen in the Korean entrants.
- ¶ **Industry dynamics.** As profitability has decreased with falling prices, FDI and non-FDI companies have responded by attempting to improve and consolidate the operations of their plants, trimming headcounts. This is a direct response to the price reductions arising from Korean FDI.

EXTERNAL FACTORS THAT AFFECTED THE IMPACT OF FDI

The factors that have reduced the impact of FDI in India fall into two categories – those that have reduced the total market size (and have thus lessened its ability to build scale in India) and those that have reduced export capability. Falling into the first category are import barriers and indirect taxes, as well as sales tax regulations. All these lead to higher prices in India. Falling into the later category is the poor export infrastructure and restrictive labor laws, both of which make manufacturing in India more expensive than elsewhere. All other things being equal, a dollar of FDI in India has less impact than it does in China, as in India it does not create the incremental export opportunities seen in China (and FDI is often the key to consumer electronics exports).

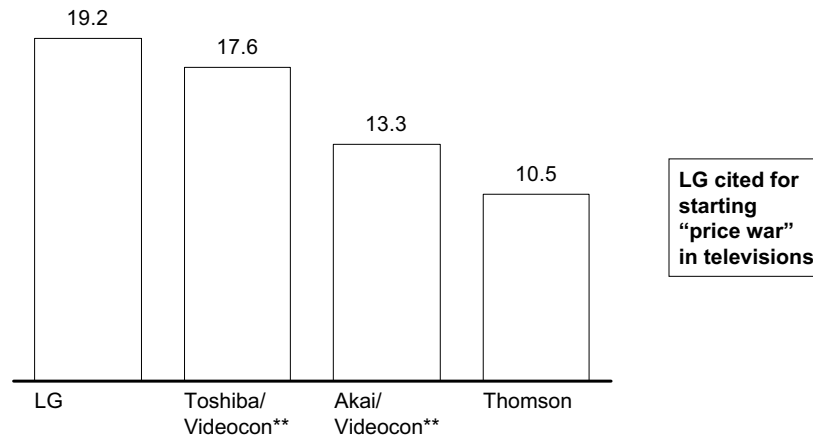
¶ **Country specific factors**

- **Import barriers.** These both inflate prices, by increasing the costs of inputs, and reduce the competitive pressures on final goods. Tariffs in India often range from 30-50 percent (exhibits 8 and 9).
- **Indirect taxes.** As mentioned earlier, indirect taxes are extremely high in India; they suppress market demand (Exhibit 10).

Exhibit 17

TV PRICE REDUCTION IN 2001 FOR SELECTED INDIA CONSUMER ELECTRONICS PLAYERS*

Percent



* Price reduction in TVs measured as change in price/volume

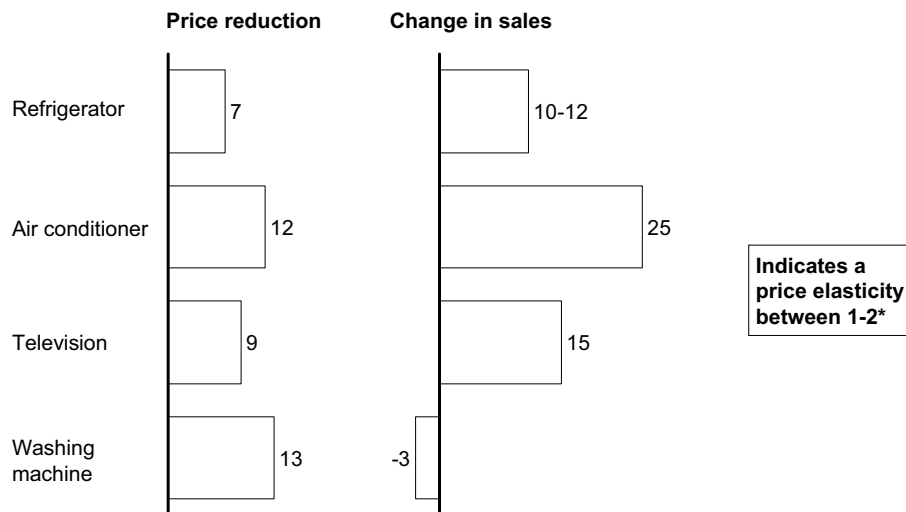
** Toshiba and Akai brands are produced under license by Videocon International

Source: Literature search

Exhibit 18

PRICE REDUCTION VS. CHANGE IN DEMAND IN INDIA CONSUMER ELECTRONICS – 2001

Price reductions and change in demand, 2001; Percent



* Assumes a GDP per capita growth of 4% and an income elasticity of 1

Source: CETMA; literature search

- **Sales tax regulations.** In addition to adding to the price of final goods, these regulations reduce productivity by creating a less efficient retail grey market (illicit, though not technically illegal activities that are not reported to the tax authorities and the income from which thereby goes untaxed and unreported). This activity encourages the fragmentation of manufacturing capacity. The grey market thrives for easily concealable goods such as mobile handsets, which can be transported easily, thereby avoiding the differences in sales tax imposed by the various states. Furthermore, because manufacturers often receive rebates for local manufacturing, fragmentation of operations is encouraged and the resulting volume per plant in India is lower than in other countries (Exhibit 19).
- **Infrastructure.** Export processing is slow in India, thus hindering potential exporters ability to compete with locations such as China (Exhibit 12).
- **Labor laws.** These increase the cost of operating in India. Strong unions prevent retrenchment, increase costs and decrease productivity vis-à-vis China (Exhibit 11).
- **Informality.** Informality plays a particularly strong role in the PC segments, because the many "garage players" evade taxes. Furthermore, informality in retail – encouraged by high sales taxes – makes the retail distribution chain less productive and potentially more costly.

¶ **Initial conditions in the sector**

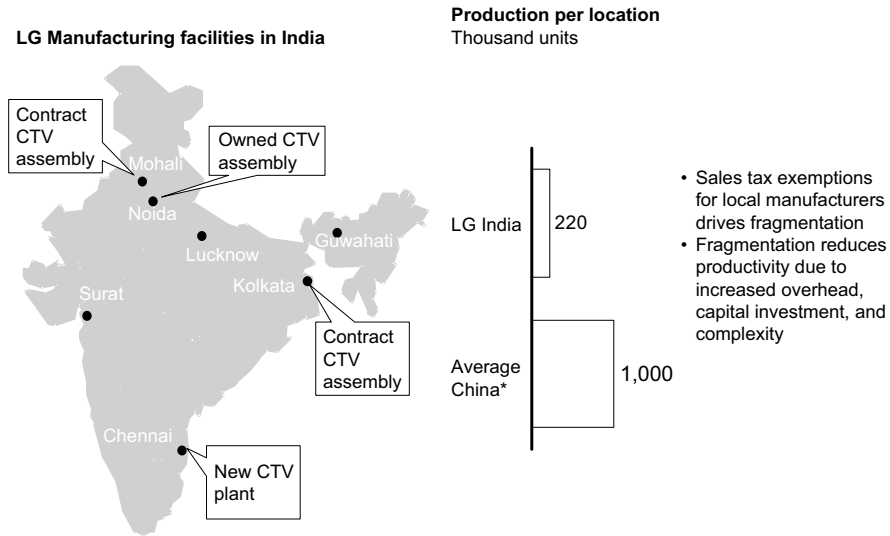
- **Closing the gap with best practice.** Because Indian companies' product portfolios were not as broad as FDI companies, the increased competition FDI has brought has improved the product range (e.g., by introducing flat-screen televisions). The initial gap allowed FDI to have a higher impact than it might otherwise.

SUMMARY OF FDI IMPACT

FDI impact has been positive in India and has greatly benefited consumers as productivity gains and increased competition have driven prices down. While non-FDI players have lost market share to FDI players, no companies in the industry (perhaps with the exception of LG and Samsung) appear to be achieving adequate returns on their cost of capital. FDI's impact on exports has been very small. Exporters prefer manufacturing in China to doing so in India for several reasons, including China's large market size (which allows for the building of scale locally with better developed suppliers), better export infrastructure, and more favorable labor laws. The Indian government could help advance both the Indian consumer electronics domestic markets and its export markets by taking steps to decrease the levels of indirect taxes and improve the country's export infrastructure and labor laws.

Exhibit 19

SALES TAX EXEMPTIONS IMPACT ON MANUFACTURING FRAGMENTATION



* Average for three large producers that make between 600,000 and 1.7 million TVs per plant
Source: Literature search; McKinsey Global Institute

Exhibit 20

INDIA CONSUMER ELECTRONICS – SUMMARY

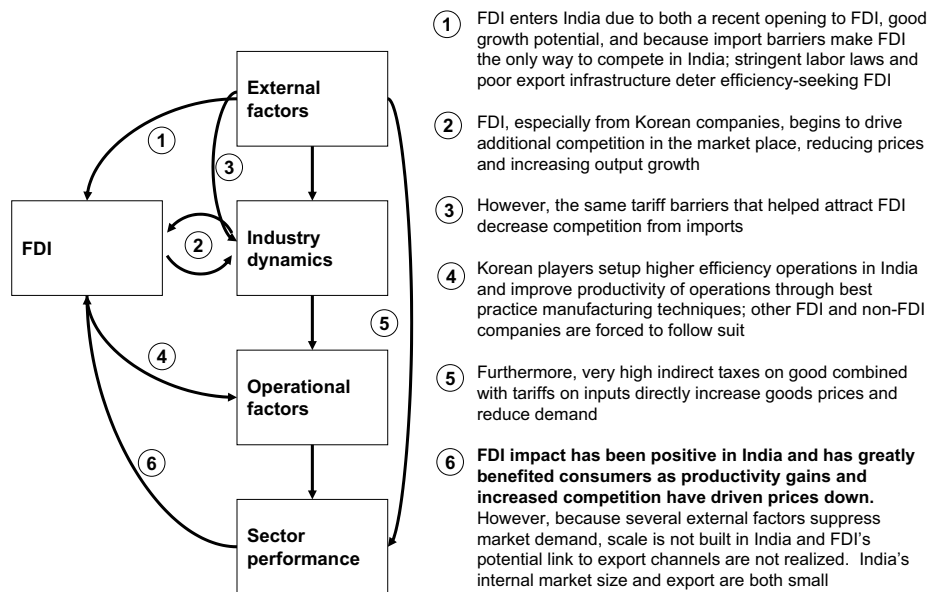


Exhibit 21

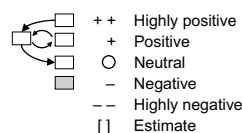
INDIA CONSUMER ELECTRONICS – FDI OVERVIEW



• Total FDI inflow (1996-2001)	\$2.4 billion
– Annual average	\$0.4 billion
– Annual average as a share of sector value added	35%
– Annual average per sector employee	\$4,100
– Annual average as a share of GDP	0.08%
• Entry motive (percent of total)	
– Market seeking	100%
– Efficiency seeking	0%
• Entry mode (percent of total)	
– Acquisitions	0%
– JVs	20%
– Greenfield	80%

Exhibit 22

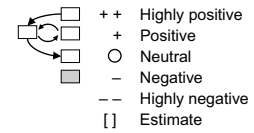
INDIA CONSUMER ELECTRONICS – FDI IMPACT IN HOST COUNTRY



Economic impact	Pre-liberal-ization (Pre-1994)	Post-liberal-ization (1994-2001)	FDI impact	Evidence
• Sector productivity (CAGR)	n/a	[+]	[+]	• Productivity still low by international standards; FDI still has small market share
• Sector output (CAGR)	n/a	+	+	• India's output far below what would be expected at development levels; FDI has helped bring competition that has started to improve penetration
• Sector employment (CAGR)	n/a	[O]	[O]	• Sector employment at about 15% of China's levels, but may have grown slight with market growth. Not clear this is attributable to FDI
• Suppliers	n/a	[O]	[O]	• Supplier industries in some inputs like television tubes, not driven by FDI (hypothesis to be tested)
Impact on competitive intensity (net margin CAGR)	n/a	+	+	• FDI suppliers drive "price wars" in some segments

Exhibit 23

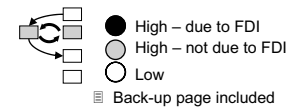
**INDIA CONSUMER ELECTRONICS – FDI IMPACT
IN HOST COUNTRY (CONTINUED)**



Economic impact	Pre-liberalization (Pre-1994)	Post-liberalization (1994-2001)	FDI impact	Evidence
• Companies				
– MNEs	n/a	-/+	-/+	• MNEs profitability very low (except LG who is new); gaining share in some segments
– Domestic companies	n/a	O/-	O/-	• Local companies have mixed profitability but are losing share to MNCs in some segments (e.g., white goods)
• Employees				
– Level of employment (CAGR)	n/a	[+]	[+]	• Sector employment at about 15% of China's levels, but may have grown slight with market growth. Not clear this is attributable to FDI
– Wages	n/a	[O]	[O]	• No evidence on changes in wages
• Consumers				
– Prices	n/a	+	+	• Prices falling due to multinational company presence
– Selection	n/a	[+]	[+]	• FDI has brought some more advanced products (e.g., flat screen TVs)
• Government				
– Taxes	n/a	[O]	[O]	• No clear impact of FDI on taxes

Exhibit 24

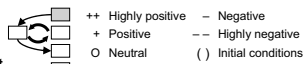
INDIA CONSUMER ELECTRONICS – COMPETITIVE INTENSITY



	Prior to focus period (pre-1994)	Post-liberalization (1994-2001)	Evidence	Rationale for FDI contribution
Pressure on profitability	n/a	●	• Industry profitability moderate and stable over time period	• Entry of FDI players spurred on price reductions which influenced profitability
New entrants	n/a	◐	• Several new entrants in brown and white goods	• All new entrants are FDI
Weak player exits	n/a	○	• No weak player exits observed	• N/a
Pressure on prices	n/a	◐	• Price pressure strong in brown and white goods, driven by FDI entry	• FDI players – especially Korean companies – are the strongest contributors to price reductions
Changing market shares	n/a	◐	• Leading players losing market share in three of four markets	• FDI players are biggest gainers
Pressure on product quality/variety	n/a	◐	• Shift from small, black and white televisions to larger color televisions	• Happens during period where more FDI players are entering
Pressure from upstream/downstream industries	n/a	○		
Overall	n/a	◐		

Exhibit 25

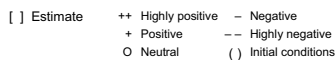
INDIA CONSUMER ELECTRONICS – EXTERNAL FACTORS’ EFFECT ON FDI



Level of FDI*	Impact on level of FDI	Comments	Impact on per \$ impact	Comments
Global factors				
Global industry discontinuity	O	Global industry restructuring does not benefit India due to barriers that deter efficiency seeking FDI	O	
Relative position				
• Sector Market size potential	+	• Market still small but room for growth	O	
• Prox. to large market	O		O	
• Labor costs	O	• Low labor costs but did not draw efficiency seeking FDI due to other external factors	O	
• Language/culture/time zone	O		O	
() in Macro factors	O	• Macro factors not as favorable as China (large deficit, more political instability)	O	
• Country stability				
Country-specific factors				
Product market regulations				
• Import barriers	++	• High trade barriers made entry through trade impossible	--	• Add to high prices, which reduce market size and decrease scale building for export as in China; protect weaker companies
• Preferential export access	O		O	
• Recent opening to FDI	+	• FDI liberalization continues to draw FDI through mid-1990s	O	
• Remaining FDI regulation	O		O	
• Government incentives	O		O	
• TRIMs	O		O	
• Corporate Governance	O		O	
• Taxes and other	--	• High indirect taxes suppress demand	--	• High indirect taxes lead to high prices, which reduce market size and decrease scale building for export as in China. Also sales tax regulations encourage fragmentation of operations
Capital deficiencies	O		O	
Labor market deficiencies	-	• Labor market does have some rigidities, which partially account for lack of efficiency seeking FDI	-	• Decreases efficiency and opportunity for FDI-driven exports (which market seekers might pursue as complement to their strategy)
Informality	O		O	
Supplier base/infrastructure	-	• Underdeveloped export infrastructure repel some efficiency seeking FDI	-	• Decreases efficiency and opportunity for FDI-driven exports (which market seekers might pursue as complement to their strategy)
Sector initial conditions				
Competitive intensity	+(M)	• Lower competitive intensity drew some FDI in the early nineties	O(M)	
Gap to best practice	+(H)	• Very high gap to best practice in products and productivity	+(H)	• Allows for more productivity growth per \$ FDI

Exhibit 26

INDIA CONSUMER ELECTRONICS – FDI IMPACT SUMMARY



Level of FDI relative to sector*	FDI impact on host country		Level of FDI** relative to GDP	External Factor impact on	
	35%			Level of FDI of FDI	Per \$ impact of FDI
Economic impact			Global factors		
• Sector productivity	[+]		Global industry discontinuity	O	O
• Sector output	+		Relative position		
• Sector employment	[O]		• Sector market size potential	+	O
• Suppliers	[O]		• Prox. to large market	O	O
Impact on competitive intensity	+		• Labor costs	O	O
Distributional impact			• Language/culture/time zone	O	O
• Companies			Macro factors		
– FDI	+/-		• Country stability	O	O
– Non-FDI	O/-		Product market regulations		
• Employees			• Import barriers	++	--
– Level	[+]		• Preferential export access	O	O
– Wages	[O]		• Recent opening to FDI	+	O
• Consumers			• Remaining FDI restriction	O	O
– Prices	+		• Government incentives	O	O
– Selection	[+]		• TRIMs	O	O
• Government			• Corporate governance	O	O
– Taxes	[O]		• Taxes and other	--	--
			Capital deficiencies	O	O
			Labor market deficiencies	-	-
			Informality	O	O
			Supplier base/ infrastructure	-	-
			Sector initial conditions		
			Competitive intensity	+(M)	O(M)
			Gap to best practice	+(H)	+(H)

* Average annual FDI/sector value added
 ** Average (sector FDI inflow/total GDP) in key era analyzed

Preface to the Food Retail Sector Cases

1

The food retail sectors in Brazil and Mexico are similar in market size and average income level. Both received significant FDI in the second half of 1990s (Exhibit 1). This preface provides the background information necessary for a full understanding of the comparative cases.

BACKGROUND AND DEFINITIONS

FDI typology. All FDI in food retail has been market-seeking; the motive for international companies to enter the Brazilian and Mexican markets has been to grow by gaining market share in the local markets. Among all the sectors studied here, the local nature of consumer food preferences and the need for a local food product supplier base makes food retail the sector where success most depends on local market knowledge.

Global food retail market trends. Large retailers in developed economies have seen their domestic markets mature. In the mid-1990s, many of these leading global players expanded rapidly into foreign markets (Exhibit 2). Three players, Ahold, Carrefour, and Wal-Mart led this trend, and two of the three (Carrefour and Wal-Mart) are present in both Brazil and Mexico. While these two companies have different approaches to global expansion, their entry methods and subsequent performance illustrate the role that local market conditions play in shaping the strategy and outcome, as evident in such areas as the entry options and acquisition opportunities that are available to them (Exhibit 3).

Sector segmentation. We have used two sets of variables to segment the food retail market: modern versus traditional formats and formal versus informal businesses (Exhibit 4).

¶ **Modern versus traditional distinction refers to the store format of each retailer.** Modern formats (e.g., hypermarkets, supermarkets, discount stores, and mini-markets) refer to self-service formats in which a customer can select his or her own merchandise. Traditional formats (e.g., counter stores, street vendors, street markets) refer to non-self-service formats in which a customer requires an employee to help customer select his or her merchandise.

¶ **Formal versus informal distinction refers to the level of tax compliance.** Formal retailers comply with tax and legal obligations (e.g., Value Added tax, social security, health standards) while informal retailers do not.

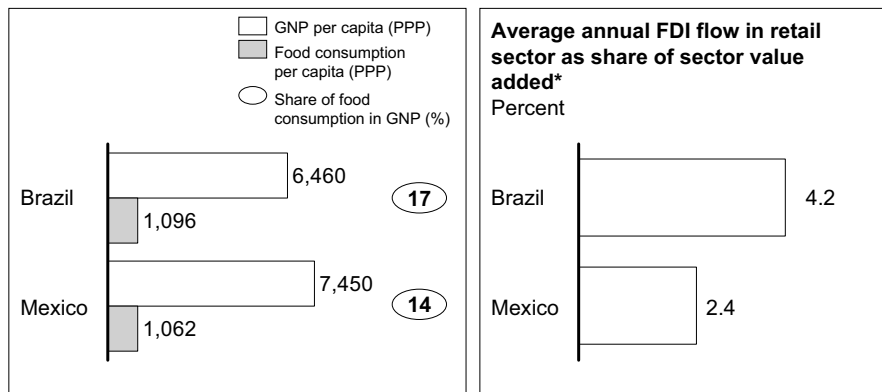
The cases of Brazil and Mexico illustrate that there is no set relationship between the two segmentations. The dominant retailers in Brazil are modern informal retailers (i.e., modern self-service retailers that do not fully comply with fiscal requirements) that gain a significant advantage over their formal competitors from the savings gained from underreporting sales (thus avoiding the high levels of Value Added taxes on foodstuffs) and from underreporting salaries (avoiding significant employee-related taxes and required benefits). In Mexico, in contrast, most food is exempt from Value Added tax and, as a result, there are no significant modern informal players. In fact, while informality is the rule among small-scale traditional players, many traditional retailers in urban areas choose to register and comply with fiscal requirements.

Exhibit 1

COMPARISON OF LEVEL OF DEVELOPMENT AND RETAIL FDI FLOWS IN BRAZIL VS. MEXICO

Brazil and Mexico have similar per capita income and food consumption . . .

. . . and both received similar amounts of FDI in retail



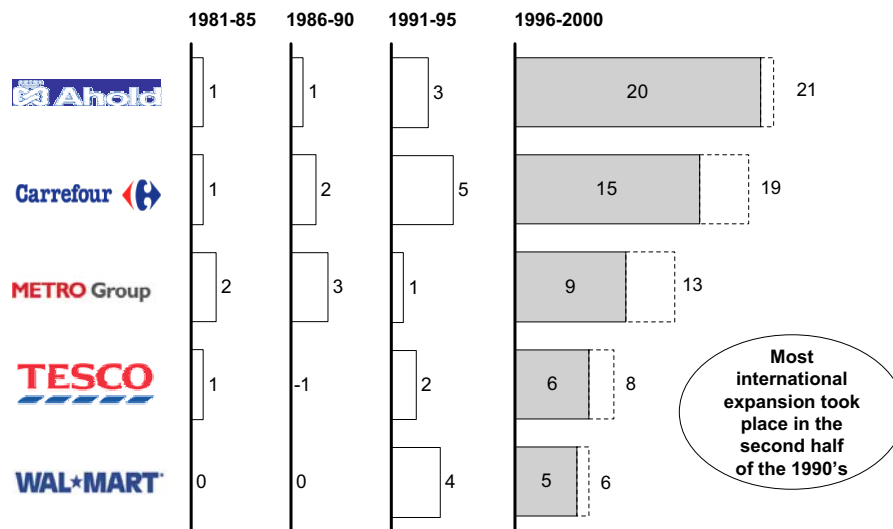
* Average FDI from 1996-2001 as share of 2001 food retail value added
 Source: Government sources

Exhibit 2

INTERNATIONAL EXPANSION BY TOP GLOBAL FOOD RETAILERS

Number of new countries entered

2001-02



Source: Annual reports

Exhibit 3

ENTRY METHODS FOR INTERNATIONAL EXPANSION

■ Required JV entry

WAL-MART Greenfield

JV/Acquisition

Developed	<ul style="list-style-type: none"> Japan 	<ul style="list-style-type: none"> Canada U.K. Germany
Developing		<ul style="list-style-type: none"> Mexico China Brazil*

Most international expansion through JV or acquisition

Carrefour

Developed	<ul style="list-style-type: none"> Portugal Singapore Japan 	<ul style="list-style-type: none"> South Korea Spain Italy 	<ul style="list-style-type: none"> Switzerland Greece** Belgium**
Developing	<ul style="list-style-type: none"> Brazil Poland Chile Czech Republic 	<ul style="list-style-type: none"> Slovakia Thailand Argentina 	<ul style="list-style-type: none"> Dominican Republic Mexico Colombia China Romania

Most international expansion through greenfield entry. Some entry into developing markets through JV and into developed market through acquisition of Promodes in 1999

Ahold

Developed		<ul style="list-style-type: none"> U.S. Denmark Norway Portugal 	<ul style="list-style-type: none"> Spain Sweden
Developing	<ul style="list-style-type: none"> Czech Republic Latvia Lithuania 	<ul style="list-style-type: none"> Malaysia Morocco 	<ul style="list-style-type: none"> Slovakia Peru Thailand Costa Rica El Salvador

Typically pursued a JV/acquisition strategy for new international market entry

* Greenfield stores with initial financial partner
 ** Entered through acquisition of Promodes
 Source: Company reports

Exhibit 4

INFORMALITY IN FOOD RETAIL IN BRAZIL AND MEXICO

■ MGI definition of informality

		Characteristics of the business activity		
		Full reporting of all business revenues and employment	Registered as a business entity but partial reporting of business revenues and employment	Not registered as a business entity
Type of companies	Modern	<ul style="list-style-type: none"> Food retail: Exists in Brazil and Mexico 	<ul style="list-style-type: none"> Food retail: Significant in Brazil but not in Mexico 	
	Traditional	<ul style="list-style-type: none"> Food retail: Exists in Mexico 	<ul style="list-style-type: none"> Food retail: Significant in Mexico but not Brazil 	

- Key threat to more productive formal retailers in Brazil since reap significant advantages from being informal
- Not common in Mexico since unable to beat more productive large formal players due to small benefits of informality

- Traditional players in Mexico deliver on convenience, but likely lack capital to grow
- Convenient modern retailers in Brazil limit the growth of the traditional sector

- In Mexico, tax burden on food retail is low and many traditional retailers in urban areas choose to register and avoid audit risks

Source: Interviews; McKinsey

Employment in the traditional sector. In developing countries, employment in the traditional food retail sector tends to be more sensitive to general macroeconomic conditions than most other sectors. In the absence of unemployment benefits, joining an existing family business or selling food products on the streets are two of the few options open to workers who lose their jobs elsewhere. This should be kept in mind when interpreting changes in employment in the traditional segment.

SOURCES

Data. Productivity, output, and employment estimates were based on data from both industry association sources that provided in-depth information on the leading modern players, as well as government statistical sources (household and employment surveys and, in Mexico, the commercial census). We have used this data to incorporate the traditional sector and informal players in our estimates.

Interviews. Industry dynamics (including estimates of underreporting by informal players) and the impact of external factors on the sector were based on interviews with company executives, government officials, industry analysts, and industry associations. (Exhibit 5).

Exhibit 5
SOURCES OF INFORMATION FOR THE FOOD RETAIL SECTOR

	Brazil	Mexico
Key data sources	<ul style="list-style-type: none"> • ABRAS (food retail trade organization) • PNAD (government household survey) • IBGE (government statistics/price indices) • MGI Brazil 1997 study • Past McKinsey work based on interviews with informal retailers 	<ul style="list-style-type: none"> • ANTAD (retail trade organization) • INEGI (government statistics including national accounts, commercial census, and household/employment surveys) • Nielsen packaged goods channel penetration data • Company annual reports
Interviews	<ul style="list-style-type: none"> • Retailers: 5 <ul style="list-style-type: none"> – Expansion – Operations – Finance – Purchasing – Investor relations • Suppliers/wholesalers: 4 • Trade organizations: 4 <ul style="list-style-type: none"> – VP of International Relations for ABRAS – VP of Technology and Knowledge for ABRAS – President of ABAD (wholesale organization) – AC Nielsen • Government: 3 <ul style="list-style-type: none"> – Devel. bank official: Large retailer financing – Devel. bank official: Small retailer financing – Past President of Brazilian IRS (Receta Federal) • Industry analysts: 4 • McKinsey 	<ul style="list-style-type: none"> • Modern retailers: 3 <ul style="list-style-type: none"> – COO – Store manager (2) • Traditional retailers: 12 • Suppliers: 5 <ul style="list-style-type: none"> – Packaged food products (3) – Fresh food product (1) – Beverage (1) • Industry association: 1 • Industry analysts: 1 • Government: 1 • McKinsey

Food Retail Sector Synthesis

7

Food retailing is a sector that is critical to all the economies studied. FDI can help capture the substantial opportunities for improvement in the sector, particularly in developing countries. Beyond being one of the largest sectors in the economies studied and a major employer, food retail can have a major influence on other sectors of the economy, such as food processing. Food retailers who have sought international expansion as a means of expanding their markets made substantial investment in new markets in the mid and late 1990s.

Our examination of the Brazilian and Mexican markets reveals that the initial market conditions are of critical influence on both the performance of the foreign players in these markets and in terms of the impact FDI has in the sector.

¶ FDI has significant potential for improving the performance of the food retail sector in developing economies. Food consumption is a significant part of all economies, particularly developing economies, where it represents 20-50 percent of total consumption (Exhibit 1). Further, the food retail sector is a major source of employment in both developed and developing economies (Exhibit 2). As is typical in the case in non-tradable sectors, in many countries productivity is significantly below global best practice levels (Exhibit 3). Given the critical role of scale in retail productivity, there is a large opportunity for FDI to play a role in providing the capital and management capabilities necessary to increase scale and sector performance. Scale plays a particularly important role in purchasing and distribution. FDI can also play a smaller role in increasing tax revenues in the sector by acquiring informal competitors (Exhibit 4).

¶ The internationalization of the food retail industry has increased sharply in recent years. This expansion has been led by a small number of leading retail companies. These companies have adopted a diverse range of strategies in carrying out this international expansion. As yet, there is relatively little consolidation in international markets.

International activity in the food retail sector expanded greatly in the last half of the 1990s, having been at a low level historically (Exhibit 5). The saturation of domestic markets, opening up of economies to FDI, and changed regulation, drove this internationalization of the food retail industry (exhibits 6 and 7). However, food retail remains predominantly a local business. This is due to such factors as the prevalence of local consumption preferences, in combination with the historical development of the local supplier bases. As a result, currently only six of the top ten food retailers have significant international operations and three of them (Wal-Mart, Carrefour, and Ahold) have driven international activity through particularly aggressive expansion overseas in the second half of the 1990s (exhibits 8 and 9).

Each of these food retailers adopted its own expansion path and timing (Exhibit 10). French retailer Carrefour first expanded abroad to neighboring Belgium in the late 1960s; Dutch retailer Ahold initiated its international activity ten years later overseas in the United States; U.S. retailer Wal-Mart first ventured abroad to nearby Mexico in 1991. Global retailers' entry strategies differ as well. Wal-Mart typically partnered or acquired; Carrefour primarily entered through Greenfield investments and to a lesser degree through joint ventures; in general, Ahold took a joint venture or acquisition strategy

Exhibit 1

FOOD CONSUMPTION IN KEY DEVELOPED AND DEVELOPING MARKETS

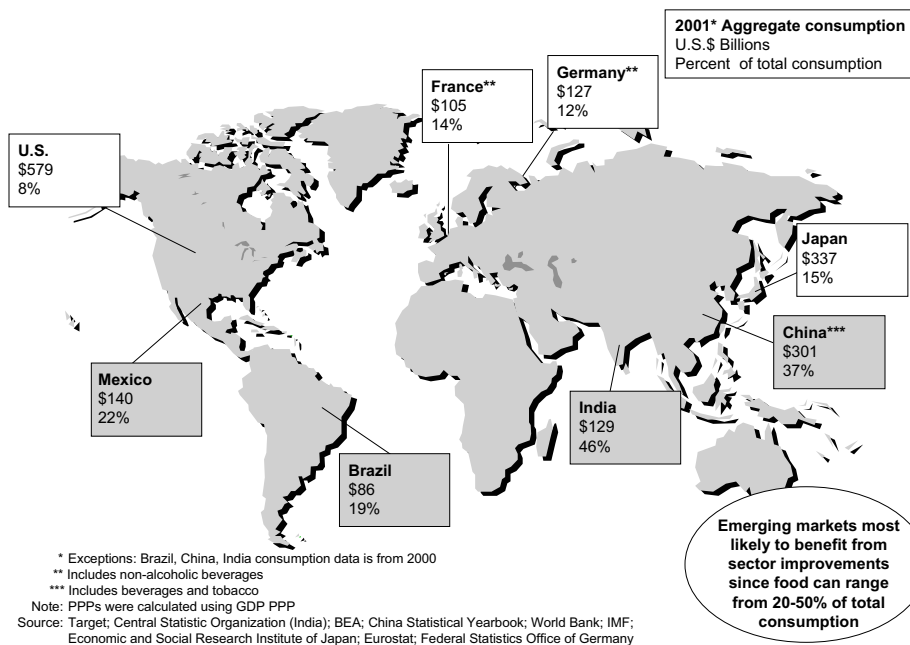


Exhibit 2

SHARE OF EMPLOYMENT IN RETAIL



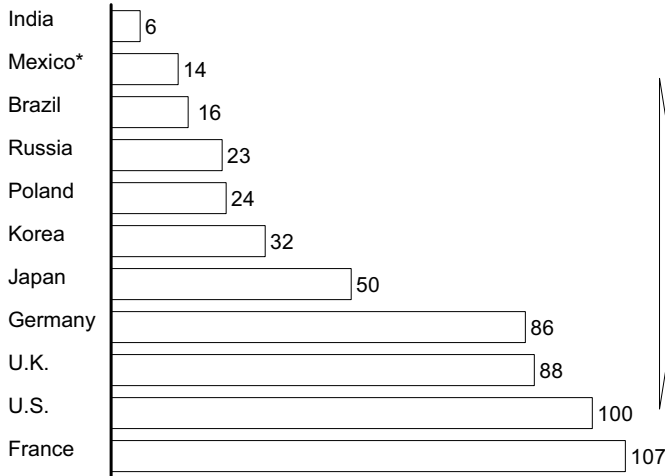
* Excludes automotive retail/gas stations
 Note: 1) Employment data refers to formal market employees except Brazil food retail, which includes large informal market
 2) Year of retail employment data varies from 1995-2001, depending on the year in which the MGI study was conducted
 Source: Local government sources; McKinsey Global Institute

Exhibit 3

LABOR PRODUCTIVITY IN THE RETAIL SECTOR

ESTIMATE

Indexed to U.S. = 100



- Major differences in productivity exist across countries
- Since retail is a non-traded sector, cross border trade cannot equalize productivity differences across borders, thereby heightening the importance of FDI to play this role

*Rough estimate

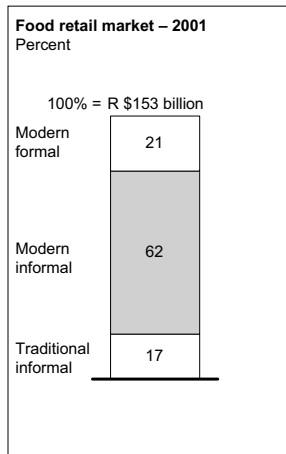
Note: 1) Productivity data refers to total retail, general merchandise retail, or food retail
 2) Year of retail productivity results varies from 1995-2001, depending on the year in which the MGI study was conducted
 Source: Local government sources; McKinsey Global Institute

Exhibit 4

POTENTIAL INCREMENTAL TAX REVENUE FROM FORMALIZING INFORMAL MODERN RETAILERS

BRAZIL ESTIMATE

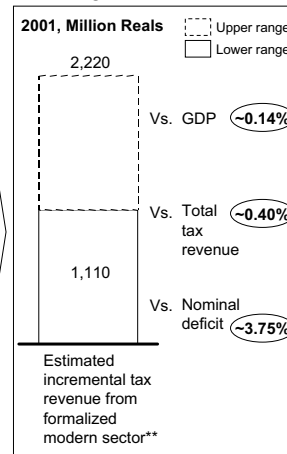
Modern informal food retailers dominate the Brazilian market . . .



. . . and gain significant advantage through tax evasion

Tax	Evasion advantage* Percent gross sales
Taxes on sales • VAT • Other fed taxes • Transaction fees	~3.5 to 4.5
Taxes on salaries • Social security	~1 to 2
Taxes on income • Income tax	~1 to 1
Range of advantage	~3.5 to 7.5
Percent	

Formalizing the modern informal sector could contribute somewhat to reducing the deficit



* Assumes approximately 30% underreporting of sales and salaries

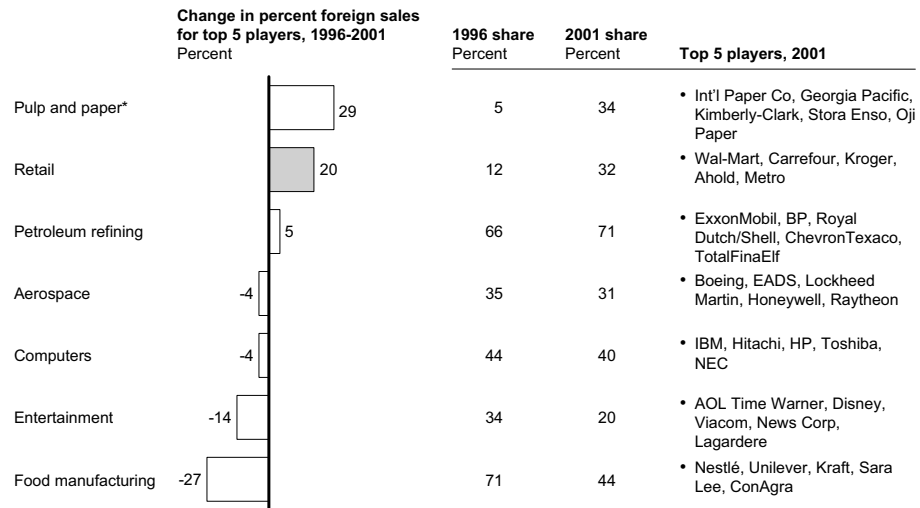
** U.S. \$475 million-950 million

Note: Comparison with GDP, total tax, and deficit uses the midpoint of the range of incremental tax revenue

Source: ABRAS; PNAD; Banco Central; WDI; interviews; McKinsey

Exhibit 5

DEVELOPMENT OF INTERNATIONAL ACTIVITY AMONG TOP PLAYERS BY SECTOR



* Royal Dutch/Shell, ConAgra and Oji Paper not included because foreign sales n/a
 Note: Other foreign retailers not necessarily as global as top 5
 Source: Hoover's; Global Vantage; annual reports

Exhibit 6

FORCES DRIVING INCREASE IN INTERNATIONALIZATION OF RETAIL



Source: Analyst reports; McKinsey

Exhibit 7

CHANGES IN VARIOUS REGULATIONS RELEVANT TO THE RETAIL SECTOR

● High
○ Low
■ Changes in regulations with negative impact on retailers

Type	Changes occurring	Speed of change	Impact on retailers
Zoning	<ul style="list-style-type: none"> Japan: relaxation of large scale store law France, Italy, Netherlands: reinforcement of zoning and urbanization laws 	○	<ul style="list-style-type: none"> New foreign entry, e.g., Wal-Mart into Japan (to verify timing)
Import/export	<ul style="list-style-type: none"> North America: NAFTA phasing out tariffs Latin America: formation of regional trade blocs Asia: formation of regional trade blocs Brazil: reduction in import duties Europe: relaxation of trading restrictions in preparation for Common Market 	◐	<ul style="list-style-type: none"> Increased cross-border trade, e.g., Wal-Mart, between U.S. and Mexico
Operations	<ul style="list-style-type: none"> Germany, U.K., Japan: liberalization of shopping hours 	◐	<ul style="list-style-type: none"> Supermarkets and large chains open more hours/week
Labor	<ul style="list-style-type: none"> France, Germany: continuing reductions in working hours/week 	○	<ul style="list-style-type: none"> Labor more expensive to hire for retailers
Ownership	<ul style="list-style-type: none"> Indonesia: foreign investors allowed to operate in retail Korea: relaxation of FDI restrictions Mexico: laws on foreign ownership revoked Eastern Europe: official encouragement of foreign investment 	◐	<ul style="list-style-type: none"> Foreign entry, e.g., Wal-Mart into Indonesia; Tesco, Rewe into Eastern Europe; Price Costco, into Korea

* Includes food and nonfood retailers
Source: Literature searches

Numerous regulations changing in favor of retailers

Exhibit 8

TOP FOOD RETAILERS WORLDWIDE

□ Domestic sales
■ Foreign sales
⋯ Global retailer

Company	Sales, 2001 \$ Billions		Home country
1. WAL*MART	32	218	U.S.
2. Carrefour	28	62	France
3. Ahold	40	58	Netherlands
4. Kroger		50	U.S.
5. METRO Group	18	43	Germany
6. TARGET		40	U.S.
7. Albertsons.com		38	U.S.
8. mark		36	U.S.
9. Safeway	3	34	U.S.
10. COSTCO	6	34	U.S.

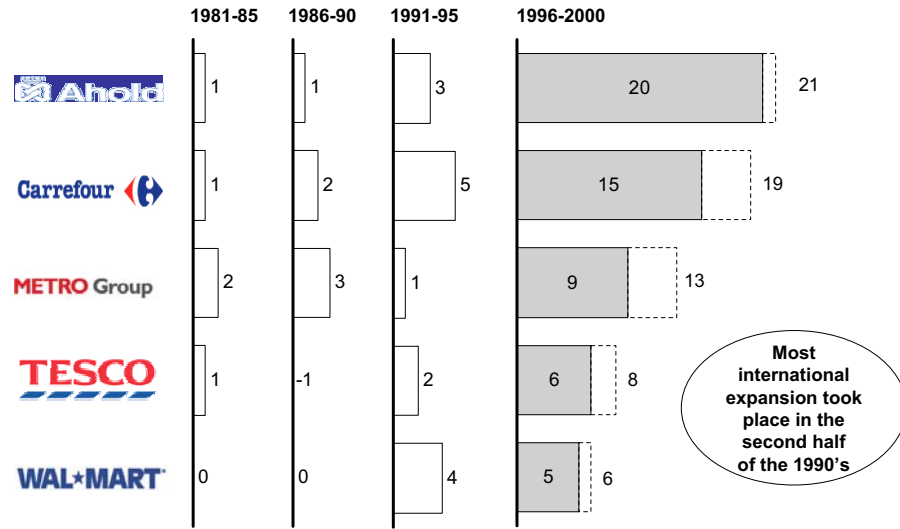
Source: Annual reports; Stores magazine

Exhibit 9

INTERNATIONAL EXPANSION BY TOP GLOBAL FOOD RETAILERS

Number of new countries entered

2001-02

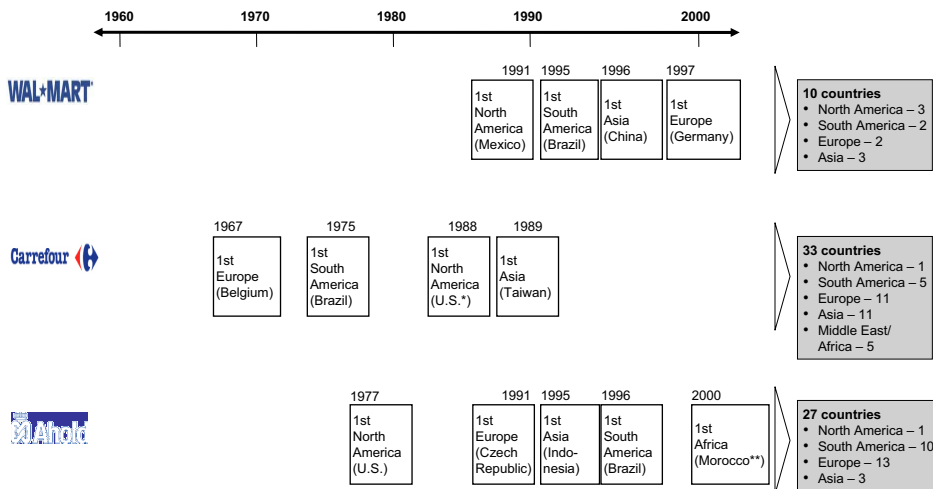


Source: Annual reports

Exhibit 10

PATHS AND TIMING FOR EXPANSION INTO NEW INTERNATIONAL MARKETS

Key expansion out of home market



* Exited in 1993

** Exited in 2002

Source: Company reports

(Exhibit 11). All these top players tend to use multiple entry modes in order to adapt to local conditions (Exhibit 12). For example, both Wal-Mart and Carrefour extended beyond their core formats to open medium-sized, low-priced stores with narrow selections in Brazil in order to be able to compete against tough informal players for low income consumers.

As a result of expansion abroad, the international operations of these companies have been a significant driver of sales and profits; however, returns from abroad tend to lag domestic performance, and no single food retailer has emerged as a consistent winner across all regions or markets (exhibits 13-15).

- ¶ Our study of the markets in Brazil and Mexico shows that while the overall impact of foreign investments in the food retail sector has been positive in both countries, the initial differences in the local conditions within the sector had a critical influence on this impact. Differences in the regulatory environment and the initial level of competitive intensity led to differences in outcomes in the two countries.

Brazil and Mexico are at a similar stage of economic development and both received similar amounts of FDI relative to GDP during the second half of the 1990s (Exhibit 16). In both cases, foreign direct investment has introduced productivity improvements in supply chain management and marketing. It has also benefited consumers, by contributing to making a broader selection of products available in both countries, and by lowering prices in Mexico.

- In Brazil the greater level of competition from modern informal retailers led the formal retailers to highly value access to foreign capital, which led to the higher level of foreign penetration in Brazil than in Mexico. In Brazil, the high levels of Value Added tax (VAT) are poorly enforced and this has provided the environment in which modern informal retailers have been able to dominate more than half of the total food retail market. Because of their significant cost advantage resulting from tax evasion, they provide very tough low-cost competition to modern retailers. As a result the modern retailers have had low operating margins and now have significant investment needs. This has placed a high premium on capital, making the formal retailers attractive acquisition targets for incoming international retailers. Carrefour has been present in Brazil since the mid-1970s; today, 90 percent of the modern formal sector has some element of foreign ownership.

In Mexico, the four leading modern retailers had relatively high margins and were expanding the format at the expense of traditional retailers. These entrenched players were disinclined to sell to the incoming international retailers, despite many offers being made. As a result, to date only one of the top four Mexican food retailers has been acquired by an international company (in the late 1990s). Currently the international share of the modern segment remains less than 30 percent (Exhibit 17).

- In Brazil, the impact of FDI has come from the improved operations introduced by the international companies. International retailers provided the capital to enable the formal players to execute the acquisitions and investments necessary for improving productivity in what was already a highly competitive environment (Exhibit 18).

Exhibit 11

ENTRY METHODS FOR INTERNATIONAL EXPANSION

Required JV entry

	Greenfield	JV/Acquisition	
WAL-MART			
Developed	• Japan	• Canada • U.K. • Germany	Most international expansion through JV or acquisition
Developing		• Mexico • China • Brazil*	
Carrefour			
Developed	• Portugal • South Korea • Singapore • Spain • Japan • Italy	• Switzerland • Greece** • Belgium**	Most international expansion through greenfield entry. Some entry into developing markets through JV and into developed market through acquisition of Promodes in 1999
Developing	• Brazil • Slovakia • Dominican Republic • Poland • Thailand • Chile • Argentina • Czech Republic	• Mexico • Tunisia • Mauritius • Colombia • Turkey • China • Malaysia • Romania • Taiwan	
Ahold			
Developed		• U.S. • Denmark • Norway • Portugal	Typically pursued a JV/acquisition strategy for new international market entry
Developing	• Czech Republic • Malaysia • Latvia • Morocco • Lithuania	• Slovakia • Guatemala • Chile • Peru • Paraguay • Indonesia • Thailand • Argentina • Nicaragua • Costa Rica • Brazil • Estonia • El Salvador	

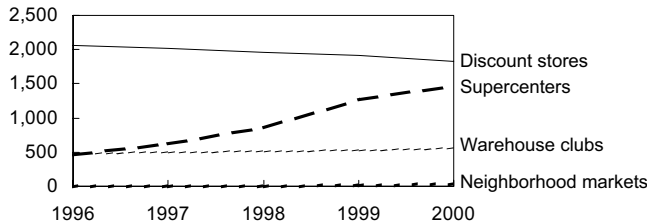
* Greenfield stores with initial financial partner
 ** Entered through acquisition of Promodes
 Source: Company reports

Exhibit 12

FORMAT DEVELOPMENT OF TOP FOOD RETAILERS

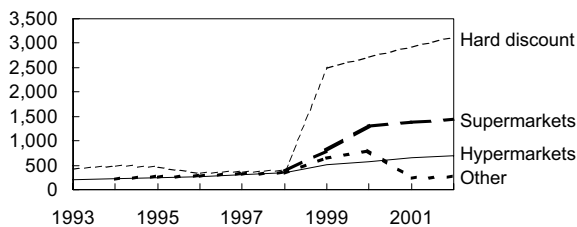
Number of stores

WAL-MART



Traditionally strong in discount stores (large stores without food offering), but recent growth in super-centers (large stores with food offering)

Carrefour



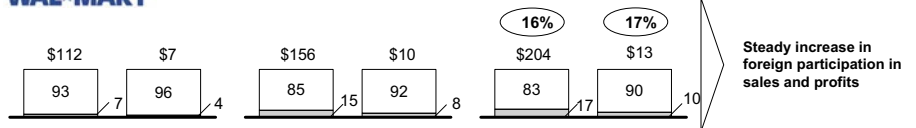
Traditionally strong in hypermarkets, but recent greenfield growth in hard discount (mid-sized with food and non-food offering) and acquisitions of supermarkets

Exhibit 13

DEVELOPMENT OF DOMESTIC VS. FOREIGN PERFORMANCE

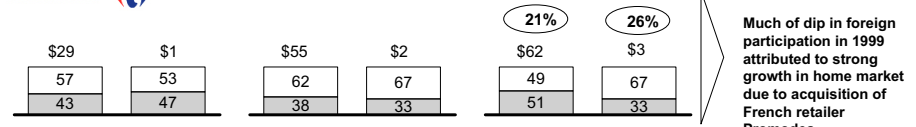
US dollars, billions; percent

WAL-MART*



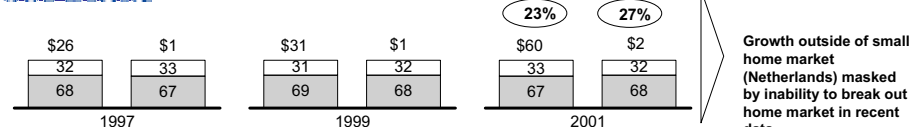
Steady increase in foreign participation in sales and profits

Carrefour



Much of dip in foreign participation in 1999 attributed to strong growth in home market due to acquisition of French retailer Promodes

Ahold***



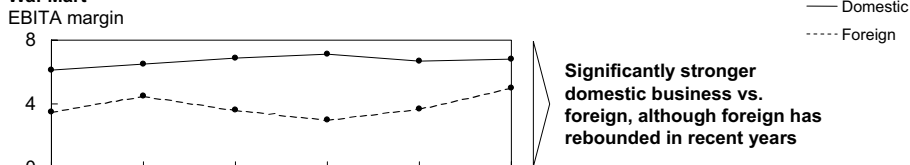
Growth outside of small home market (Netherlands) masked by inability to break out home market in recent data

* Excludes distribution business, which represents approximately 5% of Wal-Mart's total business
 ** Wal-Mart = EBITA, Carrefour = EBIT, Ahold = EBIT
 *** Ahold margins for 1999 and 2001 represent breakout of Europe vs. non-Europe due to unavailable data on home market, the Netherlands
 Source: Company reports

Exhibit 14

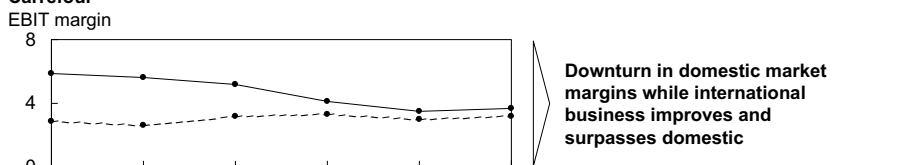
COMPARISON OF PROFITABILITY DOMESTIC VS. FOREIGN OPERATIONS

Wal-Mart*



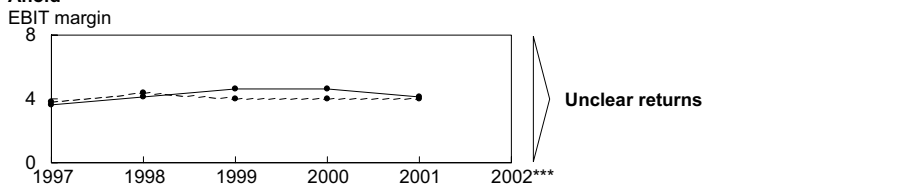
Significantly stronger domestic business vs. foreign, although foreign has rebounded in recent years

Carrefour



Downturn in domestic market margins while international business improves and surpasses domestic

Ahold**



Unclear returns

* Excludes distribution business, which represents 5% of Wal-Mart's total business
 ** Ahold margins for 1999-2002 represent breakout of Europe vs. non-Europe due to unavailable data on home market, the Netherlands
 *** Ahold results for 2002 misstated in financial reports
 Source: Annual reports

Exhibit 15

PRESENCE OF TOP GLOBAL PLAYERS IN KEY MARKETS

● Dominant
○ Solid
— Modest

	North America	South America	Europe	Asia
WAL*MART	●	—	○	—
Carrefour	—	○	○	○
Ahold	○	○	○	—
METRO Group			○	—
Safeway	○			
COSTCO	○		—	—
TESCO	—		○	—

While major global retailers have entered most major geographic regions, they still do not dominate those markets

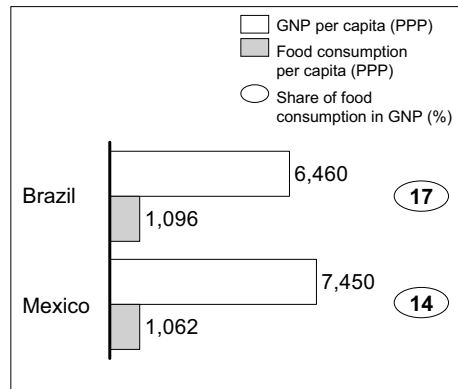
Source: Goldman Sachs; interviews; McKinsey

Exhibit 16

COMPARISON OF LEVEL OF DEVELOPMENT AND RETAIL FDI FLOWS IN BRAZIL VS. MEXICO

Brazil and Mexico have similar per capita income and food consumption . . .

. . . and both received similar amounts of FDI in retail



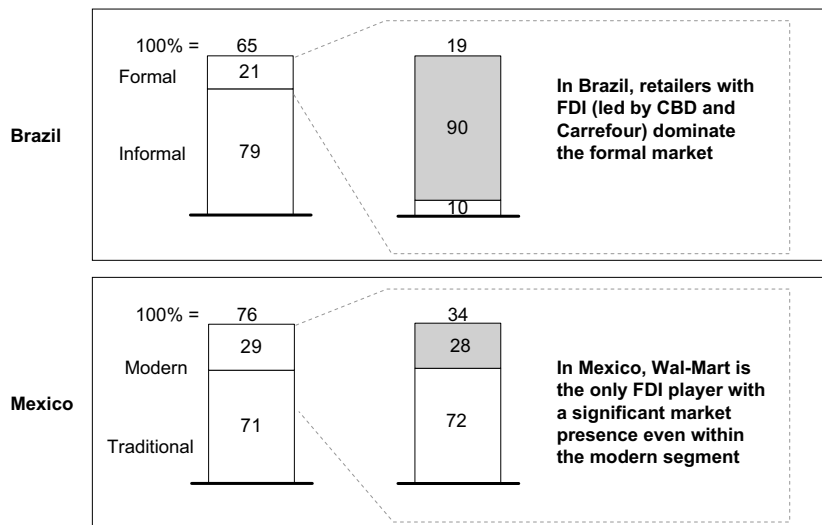
* Average FDI from 1996-2001 as share of 2001 food retail value added
Source: Government sources

Exhibit 17

COMPARISON OF THE FOOD RETAIL MARKET IN BRAZIL VS. MEXICO – 2001

U.S. \$ Billions, percent

■ Retailers with FDI



Source: ABRAS; PNAD; interviews; McKinsey analysis

Exhibit 18

FDI IMPACT IN FOOD RETAIL IN BRAZIL

Roles of FDI

Capital	<ul style="list-style-type: none"> Foreign capital funded greenfield expansion and acquisition (e.g., CBD used part of Casino's capital for acquisitions and new stores) Foreign capital funded operational improvements (e.g., CBD used part of Casino's capital for in-store renovations and distribution centers)
Best practice	<ul style="list-style-type: none"> Improvements in technology for logistics and inventory management (e.g., Wal-Mart introduced improved EDI) Improvements in technology/processes for competitor assessment (e.g., Wal-Mart introduced improved tech/processes for scanning competitors' prices) Introduction of technology/processes for large format retail (e.g., Carrefour managers had hypermarket expertise)
Innovation	<ul style="list-style-type: none"> Introduction of new formats (Carrefour introduced the hypermarket in the early stage of FDI, Carrefour and Wal-Mart introduced the discount store recently)

Mechanism

Operations	
Mix shift	<ul style="list-style-type: none"> Shift toward formal players' higher productivity formats through greenfield expansion Introduction of best practice to acquired retailers (e.g., significant improvements in logistics technology for centralized distribution)
Increase in productivity (retailers)	<ul style="list-style-type: none"> Scale gains through greenfield expansion and acquisitions (e.g., CBD improved purchasing power due to growth fueled by Casino's capital) Introduction of higher productivity formats (e.g., Carrefour opened hypermarkets) Introduction of best practice processes (e.g., Carrefour managers knew how to optimize employees in a hypermarket)
Increase in productivity (suppliers)	<ul style="list-style-type: none"> Small increase in investments in logistics technology (e.g., for advanced forecasting) and category management technology
Industry dynamics	
Increase in competition intensity	<ul style="list-style-type: none"> Introduction of best practice processes forced other retailers to improve operations to compete (e.g., CBD hired the ex-President of Carrefour to run its hypermarkets) Introduction of higher productivity formats led other retailers to improve operations/copy format to compete (e.g., CBD modeled hypermarkets after Carrefour hypermarkets; Casa Sendas opened a discount store)

Source: Interviews; McKinsey Global Institute

In Mexico, Wal-Mart has radically increased competitive intensity in the local market through aggressive pricing and the transfer of best practice operations and supply chain management systems. The impact of this has been seen in lower prices for consumers, though, as yet, it has not impacted overall sector productivity. However, leading domestic incumbents have initiated similar operational changes that are likely to lead to a large impact on sector performance going in the years to come (Exhibit 19).

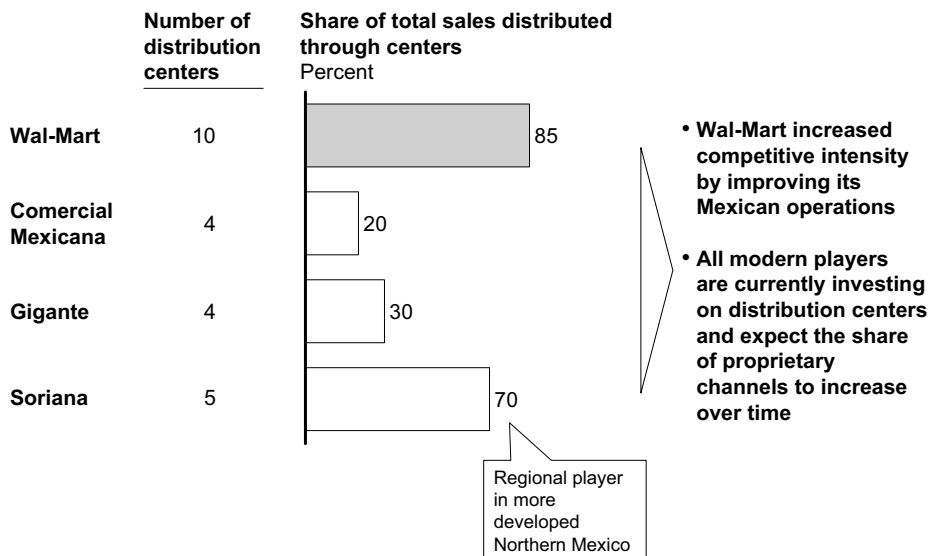
- In Brazil, the high levels of VAT and its inadequate enforcement by the taxation regime authorities have limited the impact of international players on the sector. VAT on food is levied at an average of 12-13 percent on food sales. These high levels of taxes create a significant cost benefit for the modern informal players who can reduce costs, both directly, by avoiding paying VAT and indirectly, through their access to informal suppliers (who might not sell to formal players who require a full invoice). While informal players have contributed to the increased competitive intensity, their labor productivity lags significantly that of the formal competitors and puts a drag on sector performance. Their lower productivity is largely due to the lack of scale in purchasing and distribution. International entrants have attempted to gain share by acquiring these informal players – but have so far failed to do so successfully. Despite being able to obtain productivity improvements of over 30 percent on acquisition targets, the targets' profit margins evaporate because of the weight of tax obligations. This also means that any benefits from formalization of the sector will go to the government in the form of higher taxes rather than to consumer through lower prices (exhibits 20-22).
- There is clear contrast in the performance of Carrefour and Wal-Mart in the two countries. Success in food retail requires a balance of strong local knowledge (achieved either by partnering with or by acquiring a local player or by having been present in the country for some time) and global capabilities (achieved through the transfer of talent and or technology, knowledge of and exposure to best practices, or contract expertise) (Exhibit 23).

Carrefour entered early into Brazil in 1975 when it was very successful in its introduction of the hypermarket format to the country. The format had a particularly strong value proposition during hyperinflation of the 1980s and early 1990s (consumers could make all purchases in one place at the beginning of the month). Its early success is also attributed to it being the "first mover", enabling it to over time acquire local knowledge before others arrived. Recently, however, Carrefour has lost some of its distinctiveness in hypermarkets as others have entered the format. It has also been less aggressive in its acquisitions and greenfield growth than other formal players (Exhibit 24). In Mexico, its initial joint venture with multi-format Gigante did not succeed, partly because of disagreements over format mix, and it has grown slowly through greenfield expansion since then.

Exhibit 19

RELIANCE ON PROPRIETARY DISTRIBUTION CENTERS AMONG TOP MODERN FOOD RETAILERS IN MEXICO – 2002

ROUGH ESTIMATES



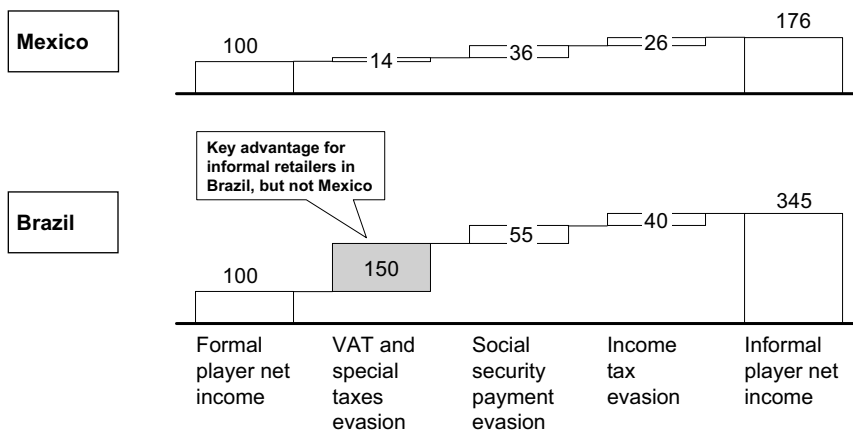
Source: Interviews

Exhibit 20

BENEFITS FROM INFORMALITY ARE LOWER IN MEXICO THAN IN BRAZIL

ROUGH ESTIMATE

Indexed to formal sector net margin = 100



Note: Analysis modeled for a representative supermarket – informal sector assumption is that 30% net sales and employee costs go unreported
 Source: McKinsey analysis

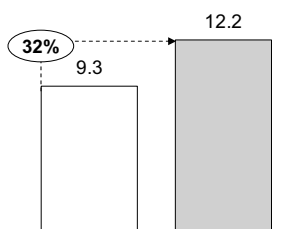
Exhibit 21

CHANGE IN PRODUCTIVITY AND PROFITABILITY WHEN AN INFORMAL RETAILER IS ACQUIRED BY A LARGE FORMAL RETAILER

ACTUAL EXAMPLE - BRAZIL

Despite a 32% increase in labor productivity* . . .
Reals

. . . the net margin evaporates
Percent



Acquisition	Pre	Post	Percent change	Acquisition	Pre	Post	Percent change
Number of employees	1,460	1,095	-25%	Gross sales R\$ millions	180	144	-20%
Hours worked/year/employee	2,328	2,328	0%	Net sales R\$ millions	163	125	-24%
				Gross margin Percent	19	25	+29%

Note: 1) See next page for more detail on causes for observed changes. 2) Margins based on net sales.

* Gross margin per employee hour

Source: ABRAS; PNAD; store visits; interviews; McKinsey

Exhibit 22

DETAIL OF CHANGE IN PRODUCTIVITY AND PROFITABILITY WHEN AN INFORMAL RETAILER IS ACQUIRED BY A LARGE FORMAL RETAILER

	Pre acquisition	Post acquisition	Explanation	ACTUAL EXAMPLE BRAZIL
Despite a 32% increase in labor productivity . . .	• Number of employees*	1,460 → 1,095 (-25%)	• Centralization and reduction of customer service employees, but small increase in employees at HQ	
	• Hours worked/year/employee	2,328 → 2,328 (No change)	• Remaining employees work the same number of hours on average**	
	• Labor productivity Gross margin/hour	9.3 → 12.2 (+32%)		
. . . sales decline and net margin evaporates	• Gross sales R \$ Millions	180 → 144 (-20%)	• Higher prices/less pricing flexibility, lower volume • Decrease in service level • Decrease in product customization	
	• Net sales R \$ Millions	163 → 125 (-24%)	• Full tax compliance	
	• Gross margin*** Percent	19 → 25 (+32%)	• Decreased COGS (inclusion in centralized purchasing/distribution and elimination of wholesaler)	
	• Net margin*** Percent	4.9 → 0.3 (-95%)	• Higher prices • Much higher centralized and store costs (6.5%) and full tax compliance (4.5%); but improved COGS/deals from centralized distribution (8%)	

* Estimate. Actual data not available.

** Undocumented "informal" hours become documented, legal overtime

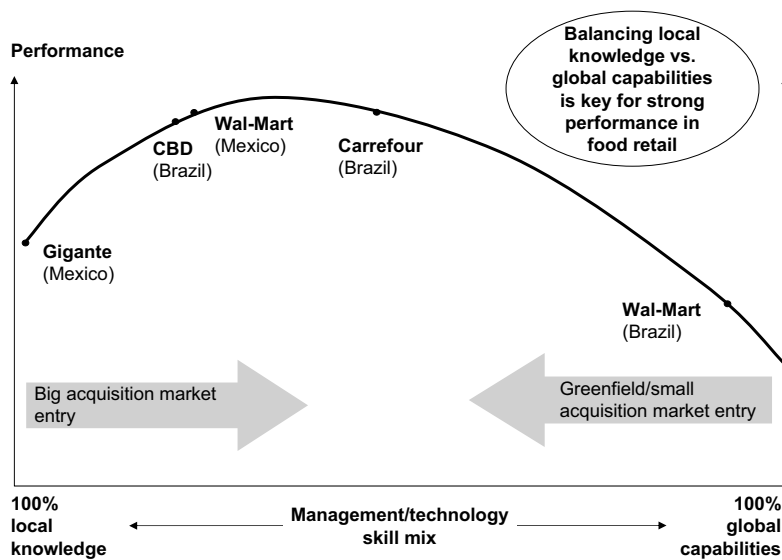
*** Based on net sales

Note: Figures are rounded.

Source: ABRAS; PNAD; store visits; interviews; McKinsey

Exhibit 23

COMPARISON OF FOOD RETAILER PERFORMANCE AND MIX OF LOCAL KNOWLEDGE AND GLOBAL CAPABILITIES

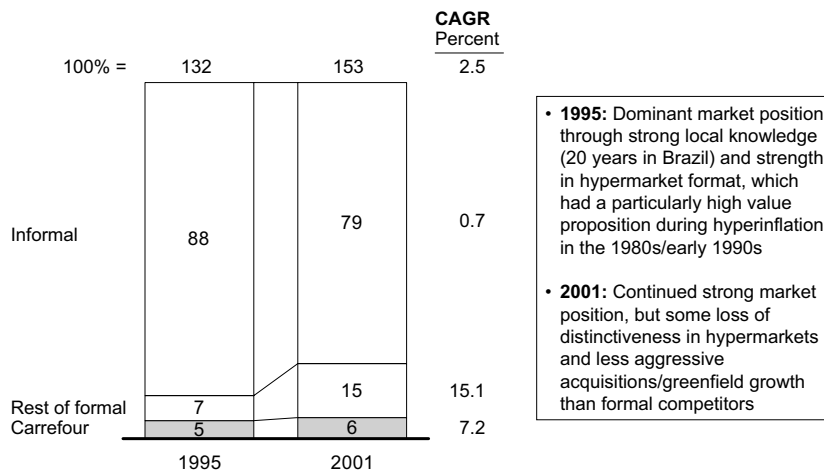


Source: Interviews; McKinsey

Exhibit 24

CARREFOUR'S PERFORMANCE IN BRAZIL

2001 reals; billions; percent

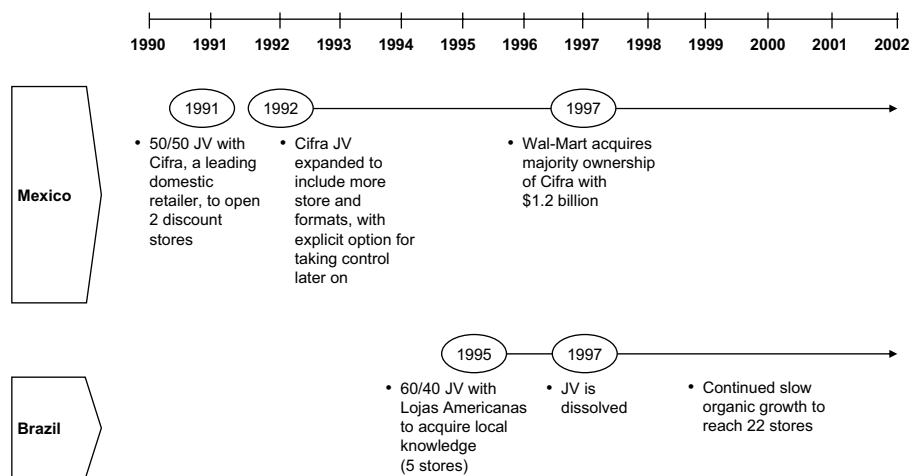


Source: ABRAS; PNAD; interviews; McKinsey analysis

Wal-Mart entered Mexico very successfully, being the first international player and acquiring a leading domestic retailer. It was unable to repeat this experience when it entered Brazil, where there was no leading domestic retailer available for acquisition. Its initial smaller-scale joint venture failed and slow greenfield expansion has not provided it with the scale necessary to offer lower prices than its large formal competitors and informal competitors (exhibits 25-26).

Exhibit 25

WAL-MART'S ENTRY INTO MEXICO AND BRAZIL

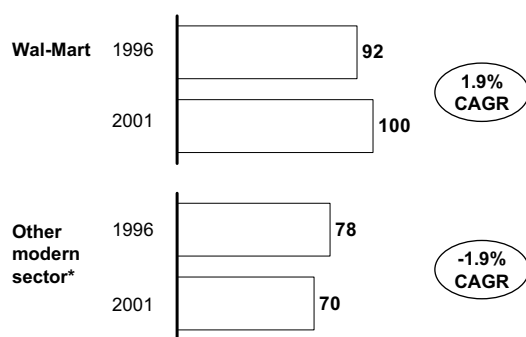


Source: Interviews

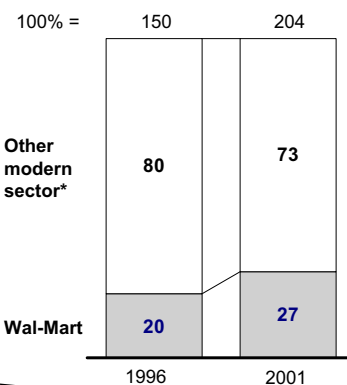
Exhibit 26

WAL-MART'S PERFORMANCE IN MEXICO

In Mexico, Wal-Mart has rapidly increased productivity . . . Mexican pesos of 2001 per hour worked



. . . and gained market share of modern retail market
Total sales in Mexican pesos of 2001



Key to Wal-Mart's strong performance was early entry and successful JV partnership, acquisition, and integration of a leading domestic retailer

* Includes self service formats (hyper-and supermarkets and convenience stores) that represent 30% of total Mexican food retail market
Source: McKinsey analysis

Brazil Food Retail Summary

EXECUTIVE SUMMARY

In the Brazilian food retail sector, 90 percent of the modern formal sector currently has some foreign ownership. Carrefour has been present since mid-1970s, at which time it introduced the hypermarket format to Brazil. Many other retailers (including Wal-Mart, Ahold, and Casino) have since entered Brazil, most during the global retail expansion of the late-1990s. They have done so either through joint ventures or by taking equity in local companies. This high level of international involvement in the sector is a consequence of the market conditions that created high demand for foreign capital among formal companies. High levels of Value Added tax (VAT) and poor enforcement have led modern informal retailers to capture more than half of the total food retail market. As a result of their significant cost advantages resulting from tax evasion, informal retailers provide very tough competition to formal retailers who, as a result, have faced low operating margins and have had significant investment needs. This put a high premium on scarce capital, which made formal retailers attractive acquisition targets for international food retailers.

The entry of foreign companies has overall had a positive impact on the Brazilian food retail sector. Foreign investors contributed the capital that allowed formal companies to implement productivity improvements across the board (in technology, distribution, and category management) and gain share by acquiring modern informal companies. This has contributed to the four percent sector productivity growth annually since 1995. Sector output has also increased during the time, though this is also due in part to improved macroeconomic conditions.

However, the tax-evading informal segment has limited the expansion of international retailers and has restricted higher productivity growth to the formal sector. Informal company labor productivity lags significantly behind formal competitors and puts a drag on sector performance; this is largely due to their lack of scale. The acquisition of informal companies by foreign entrants was not successful and such acquisitions have now stopped. Despite being able to obtain over 30 percent productivity improvements up in the acquisition targets, international companies have found that the profit margins evaporate because of the weight of tax obligations. This also means that any benefits from productivity improvements and the formalization of the sector will go to the government in the form of higher taxes rather than to consumer in the form of lower prices.

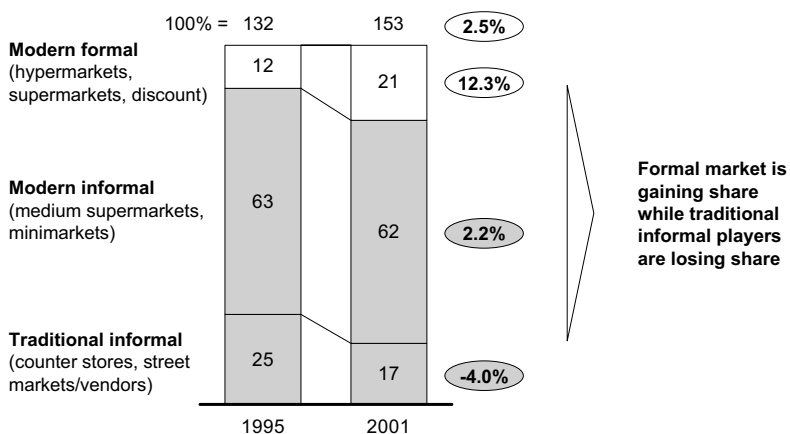
SECTOR OVERVIEW

- ¶ **Sector overview.** The Brazil food retail market is a ~\$65 billion dollar (\$153 billion Real) market where sales are growing at 2.5 percent annually. Informal retailers that evade Brazil's high taxes and legal obligations dominate the market, with modern informal companies capturing a market share approximately 60 percent (exhibits 1 and 2)
 - **Modern formats.** Modern channel formats, representing approximately 85 percent of the total market and growing at four percent annually, include hypermarkets, supermarkets, discount stores, and mini-markets (markets with fewer than four checkouts/store).
 - Formal retailers in the modern channel, which operate supermarkets and sometimes hypermarkets and discount stores, make up approximately 20 percent of the market and are gaining share quickly (12 percent annual growth) through greenfield expansion and acquisitions (Exhibit 3). The chief formal retailers are CBD, Carrefour, Sonae, Ahold, Casa Sendas, Wal-Mart, Jeronimo Martins (prior to selling its operations to CBD in 2002), and Zaffari.
 - Informal retailers in modern formats operate supermarkets and mini-markets. They dominate the sector and are growing at 2 percent a year. These retailers vary from larger regional chains (~10 stores) to much smaller establishments. Most tend to have high levels of service and a well-tailored assortment of produce.
 - **Traditional formats.** The traditional channel, considered to be entirely informal, is divided between counter stores, which include various food specialists, non-self service food outlets, and street markets and street vendors. Traditional channel formats are all losing share at four percent a year.
- ¶ **FDI overview.** During the mid to late-1990s, foreign direct investment entered Brazil's formal food retail segment for market-seeking purposes. It has since come to dominate the segment (Exhibit 4). In this study, we have chosen to focus on the second wave of FDI that took place from 1995-2001, which we have called "Mature FDI"(Exhibit 5). We have calibrated the impact of FDI in this period by comparison with an earlier period (1975-1994). Average annual FDI flows to the entire retail sector during this period represented approximately 0.13 percent of GDP in 2001.
 - **Early FDI (1975-1994).** The early period of FDI was led by Carrefour who entered the southeast of Brazil through greenfield investment in hypermarkets in 1975 (Exhibit 6). Carrefour introduced this format to Brazil. The second foreign entrant arrived nearly fifteen years later when Sonae entered the market in 1989 through a joint venture with a dominant southern-based food retailer. It eventually acquired its partner.
 - **Mature FDI (1995-2001).** The mature period of FDI, our focus here, began with the entry of Wal-Mart in 1995 through greenfield investment in new stores, made with the support of a local financial partner. Ahold and Jeronimo Martins followed soon after through joint ventures with regional companies dominant in the northeast and Sao Paulo, respectively. It ultimately acquired these companies. In 1999, Casino took a stake of approximately 25 percent in the then number two retail company in Brazil,

Exhibit 1

BRAZIL FOOD RETAIL MARKET SIZE
Percent; 2001 Reals; Billions

□ Formal
■ Informal
○ CAGR

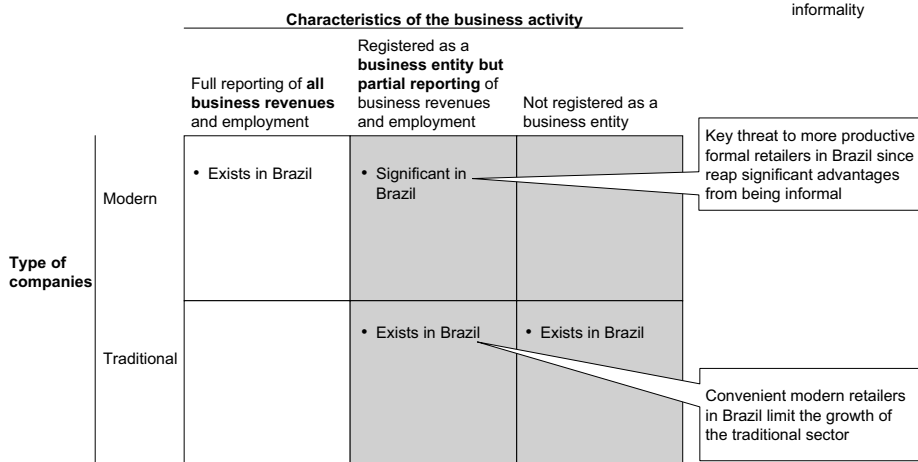


Source: ABRAS; PNAD; interviews; McKinsey analysis

Exhibit 2

INFORMALITY IN FOOD RETAIL IN BRAZIL

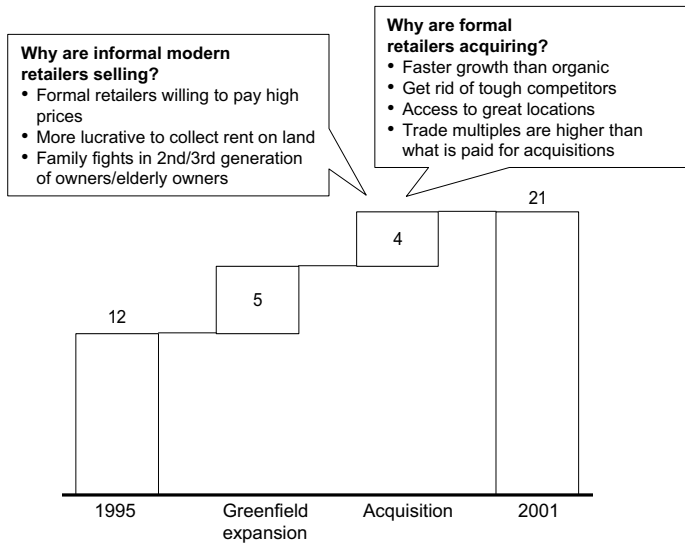
■ MGI definition of informality



Source: Interviews; McKinsey

Exhibit 3

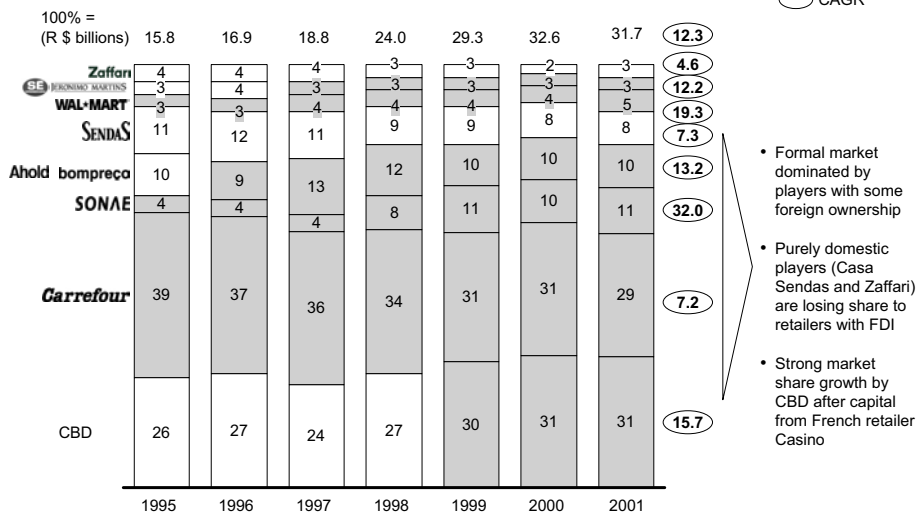
BREAKOUT OF MARKET SHARE GROWTH OF FORMAL MARKET
Percent



Note: Minimal growth in sales from existing stores
Source: ABRAS; interviews; McKinsey

Exhibit 4

FORMAL FOOD RETAIL MARKET
Percent; 2001



Notes: 1) Sales deflated using IPCA "Food in the Home" price index
2) 1995-97 Wal-Mart sales not reported to ABRAS; sales listed based on average sales/store in 1998 and applied to number of stores
Source: ABRAS; IBGE; McKinsey

Exhibit 5

ERA ANALYSIS OF THE BRAZIL FOOD RETAIL SECTOR

Focus period

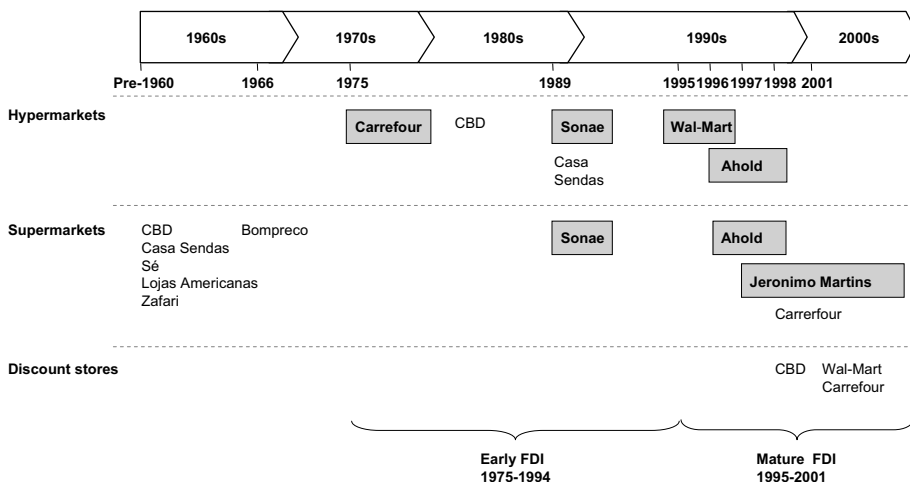
	Early FDI (1975-94)	Mature FDI (1995-2001)	
	Competitive stagnation Pre-1995	Increased competition 1995-99	Strategic adjustment 2000-01
External	<ul style="list-style-type: none"> Hyperinflation High taxes for retailers 	<ul style="list-style-type: none"> Stabilization of hyperinflation High taxes for retailers Currency devaluation 	<ul style="list-style-type: none"> Moderate inflation High taxes for retailers Increase in interest rates
Industry dynamics	<ul style="list-style-type: none"> Brazilian retailers dominate the market Entry of Carrefour, Sonae Introduction of the hypermarket by Carrefour Large retailers invest financial gains in low prices Small/mid-sized retailers unable to compete on price 	<ul style="list-style-type: none"> Entry of Wal-Mart, Ahold, Jeronimo Martins Retailers adopt multi-format approach Heavy consolidation Increase in competition Small/mid-sized retailers able to compete on price 	<ul style="list-style-type: none"> No major new retailer entrants in food retail Introduction of discount stores Slowed pace of consolidation Small/mid-sized retailers able to compete on price
Performance	<ul style="list-style-type: none"> High profitability due to financial gains made possible from hyperinflation 	<ul style="list-style-type: none"> Profitability from financial gains decreased significantly with stabilization Increase in profitability from operational efficiency 	<ul style="list-style-type: none"> Stagnating profitability as retailers struggle to integrate newly acquired companies

Source: Lafis; analyst reports; McKinsey analysis

Exhibit 6

MARKET ENTRY OF FORMAL FOOD RETAILERS

Initial entry of foreign players



Note: 1) French retailer Casino also entered the market (1999) by taking a ~25% financial stake in CBD
 2) Wal-Mart and Carrefour introduced the discount store to Brazil; CBD's version is a hybrid between small supermarkets and discount stores

Source: Analyst reports; annual reports; interviews

CBD, which is concentrated in the southeast (Exhibit 7).

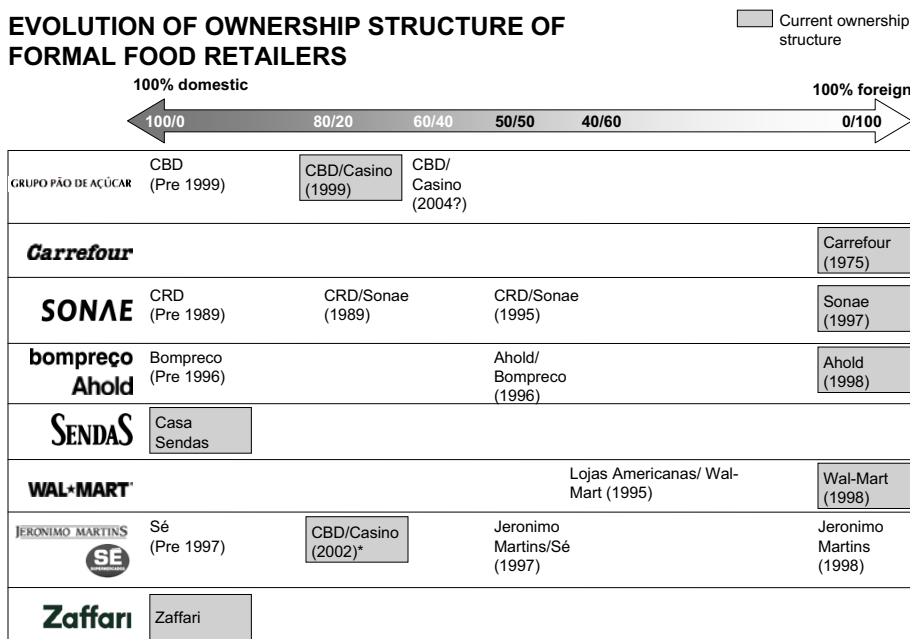
- ¶ **External factors that helped to determine the level of FDI.** Initially, the global drive for retail growth and Brazil's large market size, combined with the fact that domestic companies were restricted by the lack of affordable capital available to them, led international retailers to invest in Brazil. The continued investment was driven in part by the highly competitive market, which led to significant acquisitions of tough informal competitors (e.g., Carrefour acquired approximately ten chains in three years), as well as the need for operational improvements in existing stores (e.g., CBD used a significant portion of Casino's capital for in-store technology and merchandising/visual improvements).
- **Global factors.** In the mid-1990s, global food retailers were starting to seek international growth opportunities as they perceived that their domestic markets were maturing.
 - **Country specific factors.** Relative to other countries, Brazil's large market size (US \$65 billion) and, to a lesser degree, its language (two of the six international retailers are Portuguese) made Brazil an attractive market for foreign food retailers. An additional factor is that the macroeconomic stability following Plano Real stabilized the level of inflation and made the Brazilian market more appealing. Further, the lack of affordable local capital available to domestic companies drove CBD in particular to look abroad (to Casino) for capital. However, the low penetration of automobiles in Brazil limited the potential growth of hypermarkets post-hyperinflation, as the format lost some of its initial value proposition when customers no longer needed to purchase all their goods in one go as soon as they had been paid.
 - **Sector initial conditions.** The high level of competition in the food retail market drove FDI retailers to invest in growth and operational improvements in order to better compete, both with other formal companies as well as with the thriving informal market (Exhibit 8). In addition, the large gap to best practice productivity between with FDI companies and the others created clear investment opportunities (e.g., purchasing economies, or improved logistics technology) for the FDI retailers, particularly after when acquiring an informal company.

FDI IMPACT ON HOST COUNTRY

- ¶ **Economic impact.** The economic impact of FDI was concentrated in its significant contribution to productivity growth. Labor productivity grew at a rate of four percent annually, largely due to a shift in the industry profile toward the more productive formal companies, which gained share both through acquisitions as well as greenfield investments. Sales in the Brazilian food retail sector grew at approximately 2.5 percent a year from 1995-2001. Employment decreased 0.7 percent a year.

Exhibit 7

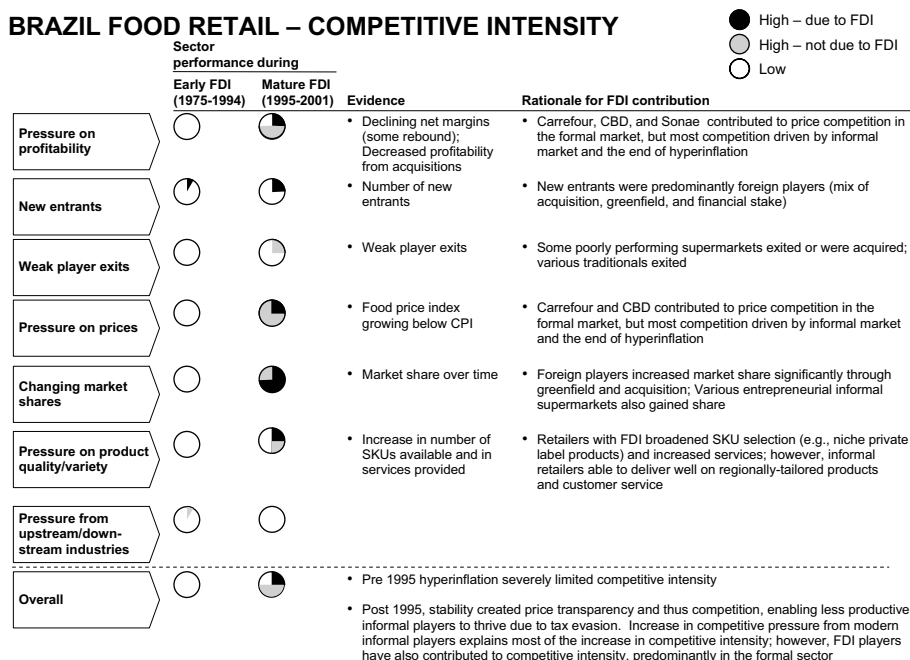
EVOLUTION OF OWNERSHIP STRUCTURE OF FORMAL FOOD RETAILERS



* Jeronimo Martins/Sé was acquired by CBD/Casino in 2002.
Source: Analyst report; company reports; interviews

Exhibit 8

BRAZIL FOOD RETAIL – COMPETITIVE INTENSITY



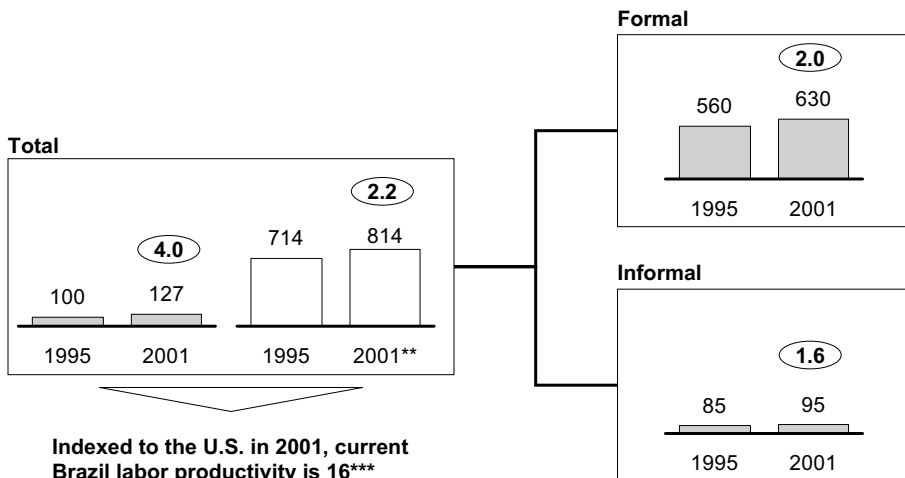
- **Sector productivity.** Labor productivity in Brazil is 16 percent that of the U.S. and is growing at approximately 4.0 percent a year, compared to 2.2 percent a year in the U.S. (Exhibit 9). Productivity in the formal segment grew at 2.0 percent a year and in the informal segment at 1.6 percent a year. FDI has played a key role in the productivity increase in the sector, which has been due largely to the shift in the industry mix toward companies with FDI. Approximately 60 percent of the increase could not have happened without FDI (Exhibit 10).
 - **Sector output (sales).** The growth in output of 2.5 percent a year in the retail sector is roughly on par with Brazil's GDP growth of 2.1 percent a year and higher than its population growth, of 1.7 percent a year over the period under review. Formal market output increased 12.3 percent annually, of which approximately half is accounted for by acquisitions of modern informal companies. Informal market output grew at 0.7 percent annually, with the strongest growth among entrepreneurial modern informal retailers (Exhibit 1). As a result of slower output growth of the informal sector, the sector as a whole experienced a shift from informal toward formal companies. There is no evidence that FDI played a role in sector output growth since output growth has been roughly on par with GDP growth.
 - **Sector employment.** Sector employment decreased by 0.7 percent a year. Formal employment increased 13.5 percent a year; much of this increase is due to the segment having acquired employees through the acquisitions of informal companies. Informal employment decreased at 1.3 percent annually. Most of the employment decrease is in the least productive format – counter stores. The impact of FDI on employment appears to be a very small but positive due to hiring employees for greenfield expansion.
 - **Supplier spillovers.** Suppliers made some small productivity improvements through operational improvements (e.g. forecasting technology). The improvements, particularly those in modern food manufacturers, have been helped by pressure from FDI companies. There is no evidence available of any impact on supplier employment.
- ¶ **Distribution of FDI impact.** The government benefited the most from FDI due to the incremental tax collection from retailers that had been informal when acquired by formal retailers. Certain formal retailers also improved their performance due to FDI.
- **Companies**
 - FDI companies. Retailers with FDI have had mixed success in Brazil, with Carrefour being historically strong, but with CBD performing best in recent years. Retailers with FDI have struggled to compete with the informal market and recent attempts to acquire informal companies have largely not been successful (exhibits 11-14). Carrefour has been in Brazil for over 25 years, enabling it to understand local consumers and practically be considered a 'local' company. While it still holds a dominant market position, its market share relative to other formal companies has dropped from 39 percent to 29 percent due to slower acquisition and greenfield growth, as well as losing some of its distinctiveness in the hypermarket format as other retailers copied this. During the hyperinflation of the 1980s and early 1990s, significant

Exhibit 9

LABOR PRODUCTIVITY* IN FOOD RETAIL

Indexed to Brazil 1995 = 100

■ Brazil
□ U.S.
○ CAGR



Indexed to the U.S. in 2001, current Brazil labor productivity is 16***

* Gross margin per employee hour
 ** Assumes growth in 2001 is equal to 1995-2000 CAGR of 2.2%
 *** (127/814)

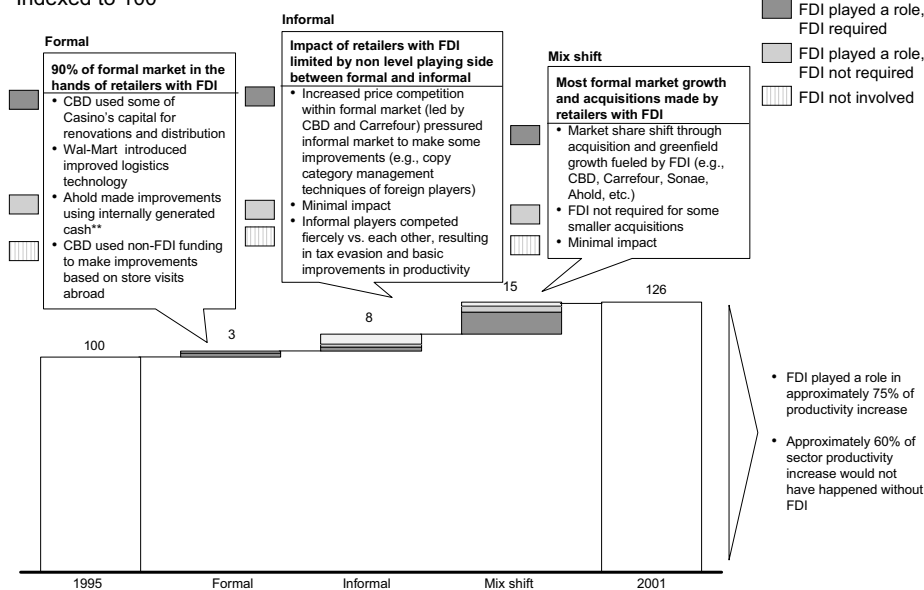
Source: ABRAS; PNAD; BLS; company reports; interviews; McKinsey

Exhibit 10

FOOD RETAIL LABOR PRODUCTIVITY*

Indexed to 100

EXAMPLES



* Gross margin per employee hour
 ** Ahold entered by partnering with and then acquiring a dominant local player in the Northeast
 Source: Company reports; interviews; McKinsey

Exhibit 11

PERFORMANCE OF RETAILERS WITH FDI

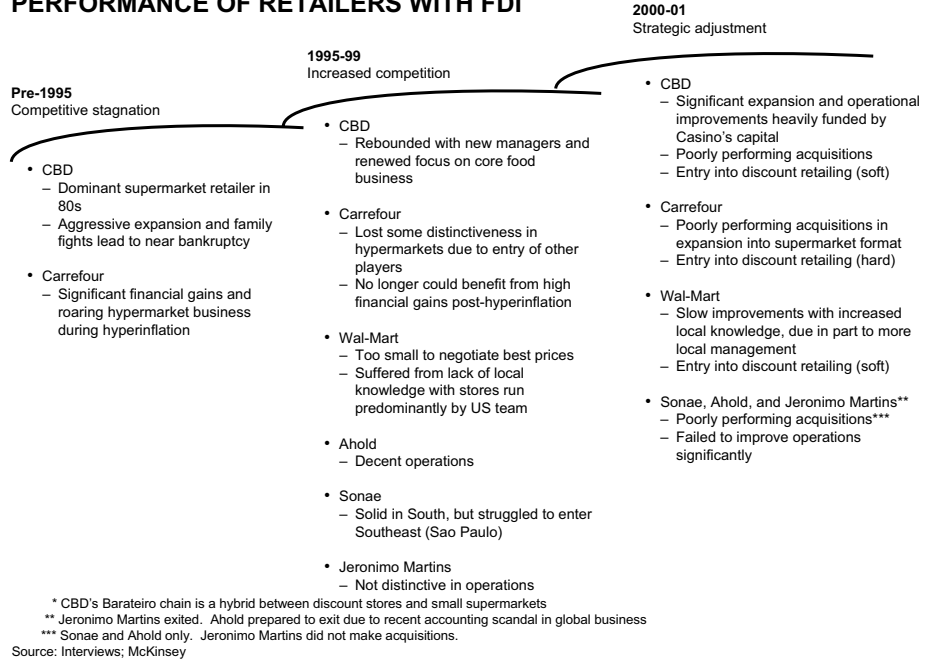


Exhibit 12

PERFORMANCE OF LISTED RETAILERS WITH FDI

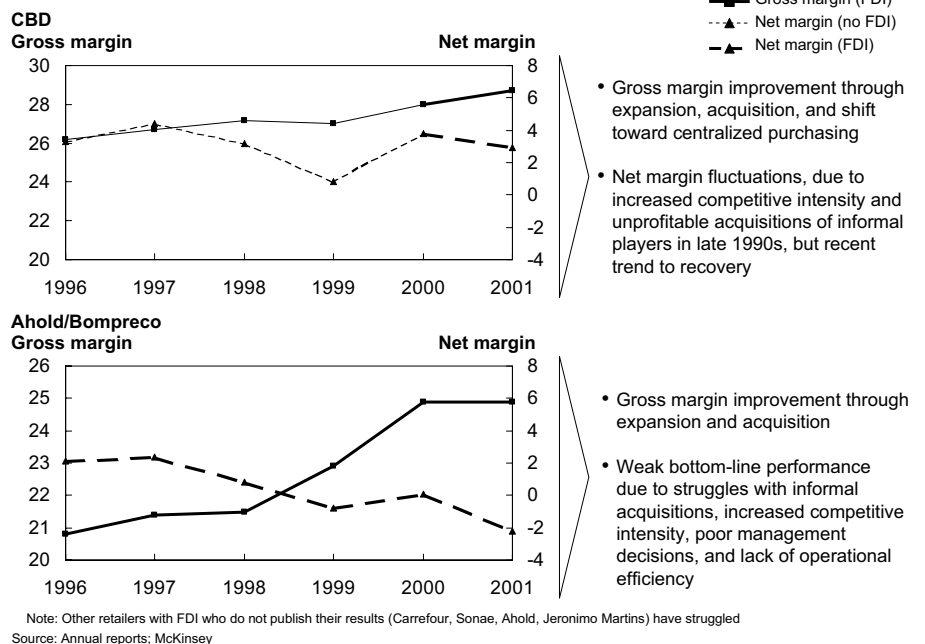


Exhibit 13

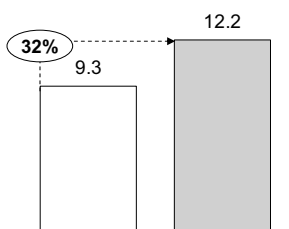
CHANGE IN PRODUCTIVITY AND PROFITABILITY WHEN AN INFORMAL RETAILER IS ACQUIRED BY A LARGE FORMAL RETAILER

ACTUAL EXAMPLE - BRAZIL

○ Percent change

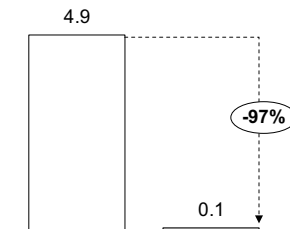
Despite a 32% increase in labor productivity* . . .

Reals



. . . the net margin evaporates

Percent



Acquisition	Pre	Post	Change	Acquisition	Pre	Post	Change
Number of employees	1,460	1,095	-25%	Gross sales R\$ millions	180	144	-20%
Hours worked/year/employee	2,328	2,328	0%	Net sales R\$ millions	163	125	-24%
				Gross margin Percent	19	25	29%

Note: 1) See next page for more detail on causes for observed changes. 2) Margins based on net sales.

* Gross margin per employee hour

Source: ABRAS; PNAD; store visits; interviews; McKinsey

Exhibit 14

DETAIL OF CHANGE IN PRODUCTIVITY AND PROFITABILITY WHEN AN INFORMAL RETAILER IS ACQUIRED BY A LARGE FORMAL RETAILER

ACTUAL EXAMPLE BRAZIL

	Pre acquisition	Post acquisition	Explanation
Despite a 32% increase in labor productivity . . .	• Number of employees*	1,460 → 1,095 (-25%)	• Centralization and reduction of customer service employees, but small increase in employees at HQ
	• Hours worked/year/employee	2,328 → 2,328 (No change)	• Remaining employees work the same number of hours on average**
	• Labor productivity Gross margin/hour	9.3 → 12.2 (+32%)	
. . . sales decline and net margin evaporates	• Gross sales R \$ Millions	180 → 144 (-20%)	• Higher prices/less pricing flexibility, lower volume • Decrease in service level • Decrease in product customization
	• Net sales R \$ Millions	163 → 125 (-24%)	• Full tax compliance
	• Gross margin*** Percent	19 → 25 (+32%)	• Decreased COGS (inclusion in centralized purchasing/distribution and elimination of wholesaler)
	• Net margin*** Percent	4.9 → 0.1 (-97%)	• Higher prices • Much higher centralized and store costs (7.5%) and full tax compliance (5%); but improved COGS/deals from centralized distribution (8%)

* Estimate. Actual data not available.

** Undocumented "informal" hours become documented, legal overtime

*** Based on net sales

Note: Figures are rounded.

Source: ABRAS; PNAD; store visits; interviews; McKinsey

financial gains bolstered its profitability. Recently, however, it felt the pains of the unprofitable acquisition of informal companies when it entered the supermarket format.

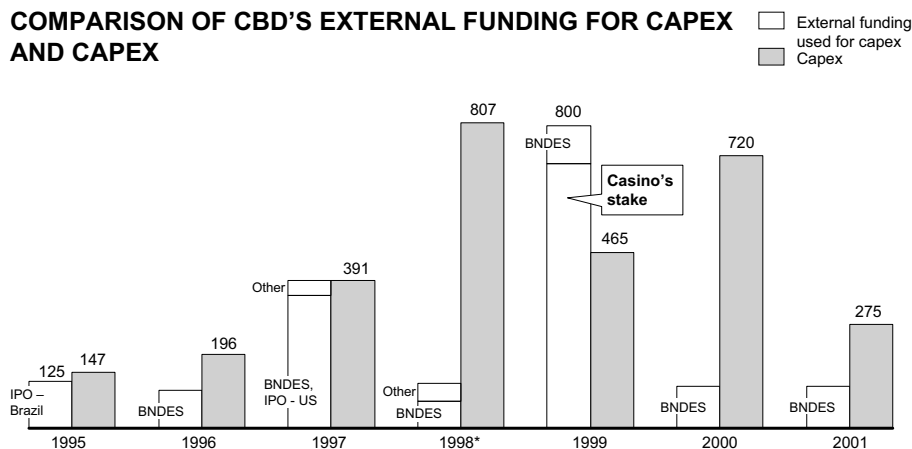
CBD, a local company 25 percent owned by Casino, recently overtook Carrefour as the top retailer in Brazil. Having rebounded from various problems in the early 1990s, CBD has thrived in recent years, increasing its market share among formal companies from 26 percent to 31 percent due to its strong local knowledge, global expertise (e.g., from store visits in Europe and hiring of experienced hypermarket management from Carrefour in Brazil), and the influx of foreign capital from Casino (in 1999) which it has used for growth and improvements (Exhibit 15). However, CBD also suffered from unprofitable acquisitions of informal companies, and its profitability lags that of global best practice firms.

Other foreign retailers, that have had much shorter experience in Brazil, have not fared as well. Wal-Mart is still small in Brazil (22 stores), putting it at a disadvantage versus larger firms who have greater purchasing power. It started with major difficulties, some stemming from having a U.S.-based leadership team with limited experience of Brazil, and after shifting toward a more local leadership, is only now just breaking even. Sonae has had solid operations in the south, but has struggled in its expansion into Sao Paulo in the southeast, having paid high prices for acquisitions that have not performed well. While Ahold has been solid in the northeast, it has not operated efficiently enough to really take advantage of this less competitive region. Jeronimo Martins experienced varying profitability due to changes introduced by a new management team and has now exited.

- Non-FDI companies. Many modern informal retailers are the most profitable retailers in Brazil. The most successful ones, who may have up to 10-12 stores concentrated in a regional, benefit from purchasing and scale economies (relative to small companies) and close relationships with customers (relative to large companies), while staying small enough to evade taxes. Lack of capital is typically not a problem due to their high level of retained earnings and a desire to cap growth to conceal informal practices. However, informal companies still feel some competitive pressures from the operational improvements of companies with FDI.
- **Employees**
 - Level. FDI appears to have had a very small positive impact on employment levels due to the employees FDI companies have hired for greenfield expansion.
 - Wages. There is no evidence of a change in wages due to FDI. However, there is a shift toward more benefits and less 'cash in pocket' when an employee moves from a formal FDI company from an informal one, as in the case of an acquisition.
- **Consumers**
 - Price decline. Food prices grew more slowly in Brazil than prices in the overall economy but the impact of FDI is minimal. Foreign companies increased competition (predominantly within the formal market), which put pressure on prices; however, foreign companies also had to increase prices in the informal chains they acquired to compensate for full tax compliance (Exhibit 16).

Exhibit 15

COMPARISON OF CBD'S EXTERNAL FUNDING FOR CAPEX AND CAPEX



- CBD relied heavily on Casino's capital for growth and operational improvements (Casino's capital ~25% of capex since 1995)
- Foreign capital played a significant role in lifting informality (acquisitions ~20% capex since 1995)

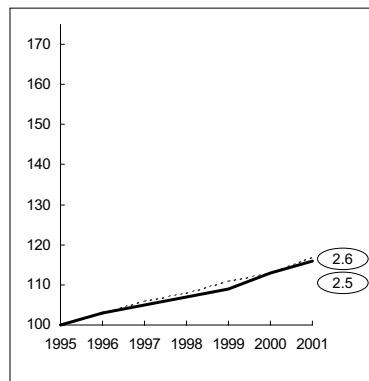
* Inconsistency in financial statements: Notes state that 80% of capex was funded internally by operating cash flow; however, analysis of financial statements suggests that approximately half of capex might have been funded externally (BNDES, other third parties, and debentures). However, per interview with BNDES official, CBD would not have been able to get the amount of Casino's investment from BNDES
 Note: CBD gets approximately R \$200 million-400 million from BNDES every 18 months
 Source: CBD 20-F; interviews; McKinsey

Exhibit 16

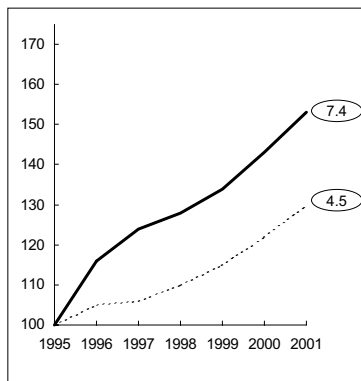
COMPARISON OF PRICES
 Indexed; 1995 = 100

- CAGR
- CPI
- Food*

In the US, food prices grew at approximately the same pace as overall economy prices



In Brazil, food prices grew more slowly than overall economy prices



- Role of FDI in Brazil is not clear**
- Decrease in prices due to competitive intensity from retailers with FDI (impact primarily in formal market)
 - Increase in prices in informal stores acquired by retailers with FDI (to compensate for full tax compliance)

* Refers to "food and beverages" in the U.S. and "food in the home" in Brazil
 Source: BLS; IBGE (IPCA)

- Product selection and quality. International retailers increased the product selection (e.g., with niche private label products); however, it is unclear whether this happened at a rate faster than natural market progression. Undoubtedly, though, they are responsible for increasing the number of products sold in one place (e.g., in hypermarkets).
- **Government.** Tax revenue from retailers increased by approximately US \$100 million-200 million between 1995 and 2001 through the acquisitions of informal retailers (that had earlier been evading VAT and taxes on salaries). FDI companies are responsible for the majority of this increased tax revenue, since it is they that have made nearly all the acquisitions (Exhibit 17).

HOW FDI HAS ACHIEVED IMPACT

FDI achieved impact through improved operations (primarily by infusing capital for growth and improvements) and through increased competition (primarily in the formal market) (Exhibit 18).

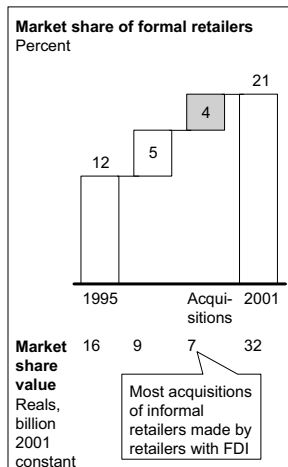
- ¶ **Operational factors.** FDI's most important role was the provision of capital. International retailers also introduced some best practice technologies and improved category management and processes, but were not distinctive innovators during the period under review. Notably, even some of the international companies bringing FDI are not considered models of global best practice (e.g., in Portugal, where Sonae leads its home market, the average modern company lags modern formats in France by 40 percent).
- **Capital.** FDI's provision of capital funded the shift in format mix toward more productive formats away from the informal segment. The mix shift, half of which was achieved through acquisitions funded primarily by FDI, led to improved purchasing economies. FDI companies also made operational improvements. The operational improvements were primarily in the area of technology, distribution, and category management (e.g., CBD used a significant portion of Casino's capital for distribution centers and in-store renovations of information systems and the store environment).
- **Technology and innovation.** FDI also introduced best practice in the form of technology (e.g., Wal-Mart introduced a better form of FDI) as well as new innovative formats (although not concentrated in the focus period). In the early stage of FDI, Carrefour introduced the innovation of the hypermarket format; however, its innovation between 1995-2001 was limited to variations of the discount format, which is still new and unproven thus far in Brazil.
- **Management skills.** Local retailers in Brazil benefited particularly from the managerial skills and processes of large format retailers (e.g., CBD hired the ex-President of Carrefour Brazil to lead its hypermarket division).
- **Product mix and marketing.** Retailers with FDI introduced improved category management, some of which was copied by local informal companies.

Exhibit 17

INCREMENTAL TAX REVENUE FROM FORMALIZED RETAILERS

ESTIMATE

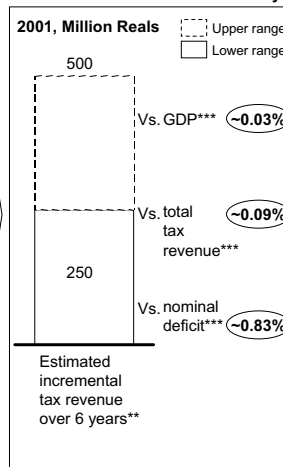
Formal retailers acquired informal retailers . . .



. . . and eliminated tax evasion advantage by complying fully with tax obligations . . .

Tax	Evasion advantage* Percent gross sales
Taxes on sales	~3.5 to 4.5
• VAT	
• Other fed taxes	
• Transaction fees	
Taxes on salaries	~1 to 2
• Social security	
Taxes on income	~1 to 1
• Income tax	
Range of advantage	~3.5 to 7.5
Percent	

. . . which resulted in additional tax revenue for the government, but still a small amount vs. the total economy

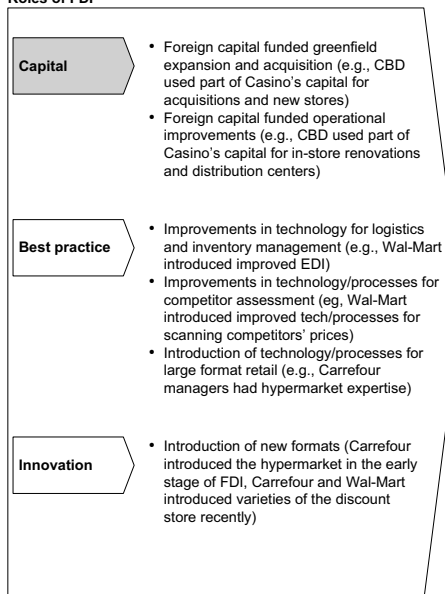


* Assumes approximately 30% underreporting of sales and salaries
 ** Approximately \$100-200 million USD
 *** Refers to midpoint of total incremental tax revenue over 6 years as a percent of 2001 GDP, total tax revenue, and nominal deficit
 Source: ABRAS; Banco Central; WDI; interviews; McKinsey

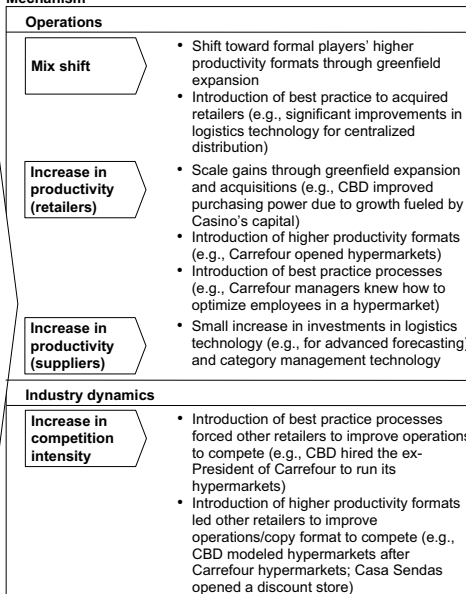
Exhibit 18

MECHANISMS BY WHICH FDI ACHIEVED IMPACT

Roles of FDI



Mechanism



Source: Interviews; McKinsey Global Institute

¶ **Industry dynamics.** Competitive intensity has been strong since hyperinflation ended due to significant competition between formal companies and strong competitive pressure from low-cost informal retailers (Exhibit 8). International retailers' growth and improvements increased competitive pressures, primarily on formal retailers. Evidence of the impact of FDI on increasing competitive intensity is the increased price competitiveness in the formal market, market share increases among FDI companies, and the increased range of goods and services offered by FDI companies. International retailers acquired modern informal companies to eliminate some of their toughest competitors and to improve scale.

EXTERNAL FACTORS THAT AFFECTED THE IMPACT OF FDI

The impact of FDI on Brazil's food retail sector was strengthened by the economy's stability following Plano Real, the initial high level of competitive intensity, and the sector's large gap with international best practice. The main factor that hampered FDI was Brazil's large informal market.

¶ **Country-specific factors.** Country stability strengthened the per dollar impact of FDI in Brazil, while informality weakened it.

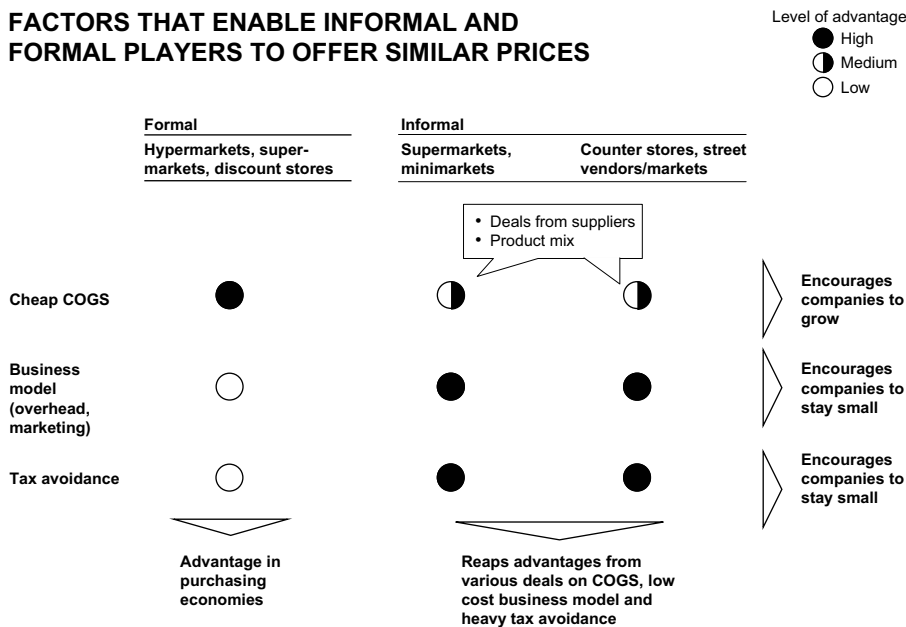
- **Economic stability** (post-hyperinflation) enabled price transparency and thus greater competition, which strengthened the need for operational investments.
- **Informality.** Overall informality limited the impact of FDI on sector productivity. Less productive informal companies were not driven out of the market because their tax evasion compensated for their lower productivity. However, due to their informal practices, some less productive informal retailers were able to push formal companies to improve. Informal companies derive their advantage over formal companies through tax avoidance (particularly evasion of VAT and taxes on salaries) by underreporting sales and salaries (Exhibit 19). The only way formal companies can compete is by their stronger purchasing power and through productivity improvements. However, the magnitude of the tax benefit enjoyed by informal retailers is very hard to overcome (Exhibit 20). This is especially so given that informal companies have access to cheap products (made and distributed by informal manufacturers that are again quite profitable because they operate informally), which formal companies cannot purchase, making international companies' advantage smaller than it would be otherwise (Exhibit 21). International companies tried to compete by acquiring informal companies. However, this strategy has proven to be unsuccessful, as benefits of scale cannot compensate for the previous level of tax evasion. As a result acquisitions have now slowed significantly (exhibits 13, 14 and 22).

¶ **Initial sector conditions.** Overall, the initial competitive intensity and large gap with best practices contributed positively to the per dollar impact of FDI.

- **High competitive intensity.** This increased the speed of the reaction to competitive pressure (although more so in the formal market).

Exhibit 19

FACTORS THAT ENABLE INFORMAL AND FORMAL PLAYERS TO OFFER SIMILAR PRICES



Source: Interviews; McKinsey

Exhibit 20

COMPARISON OF PROFITABILITY OF A LARGE FORMAL PLAYER AND A SMALLER INFORMAL PLAYER EXAMPLE

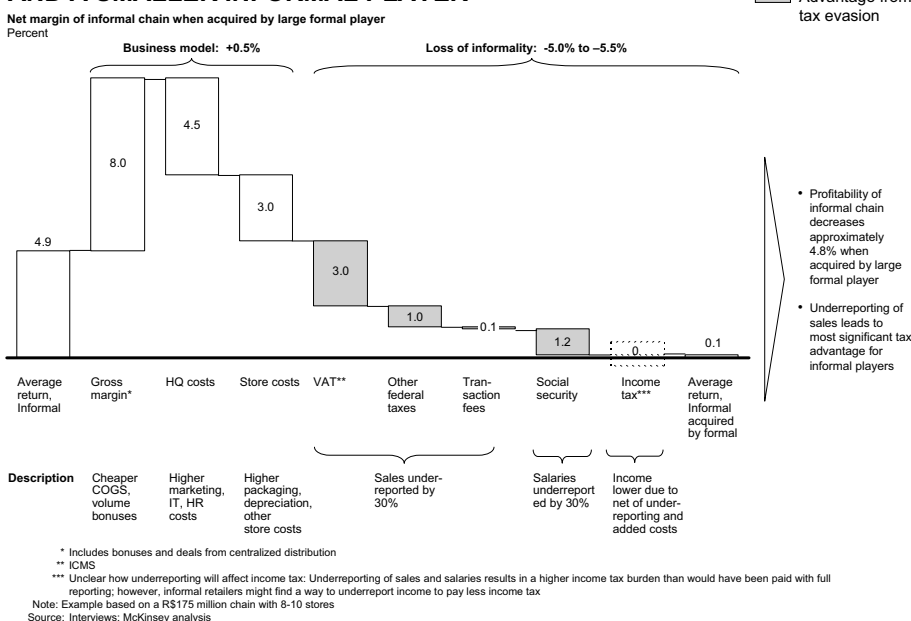
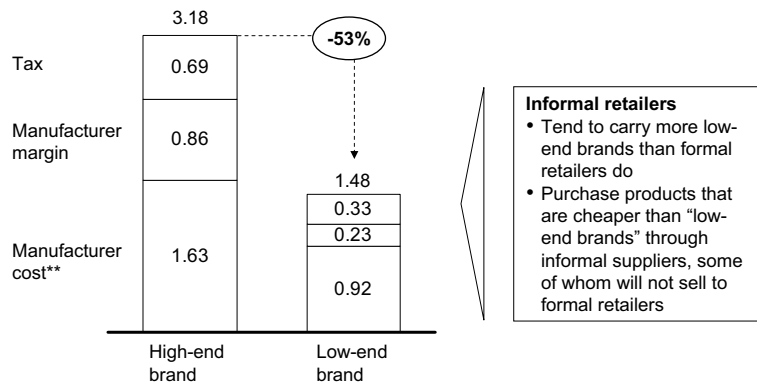


Exhibit 21

COMPARISON OF COST OF HIGH-END AND LOW-END BRANDS FOR A FORMAL RETAILER

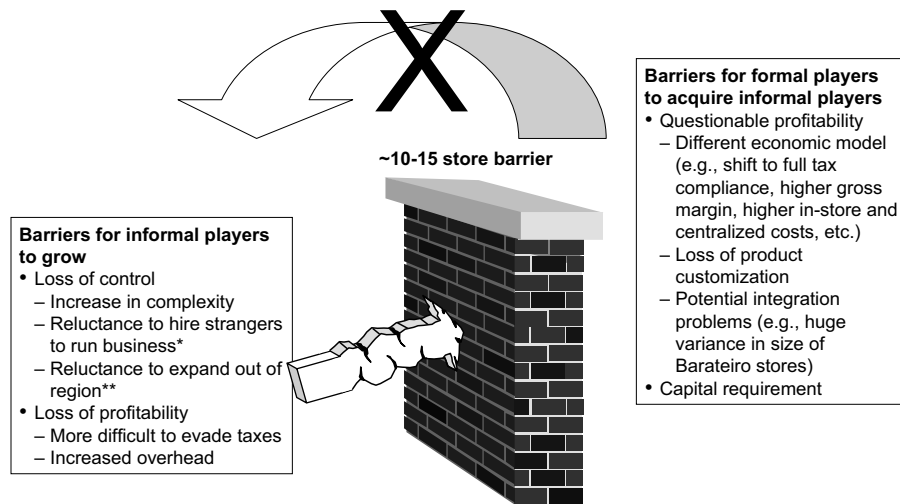
Example of comparable cleaning products*



* Not necessarily of identical quality
 ** Includes raw materials, packaging, production, and logistics
 Source: McKinsey analysis

Exhibit 22

RATIONALE FOR CONTINUED EXISTENCE OF INFORMALITY IN FOOD RETAIL IN BRAZIL



* Higher risk of theft and more difficult to hide tax evasion
 ** Less local knowledge of ways to evade local laws/taxes
 Source: Interviews; McKinsey

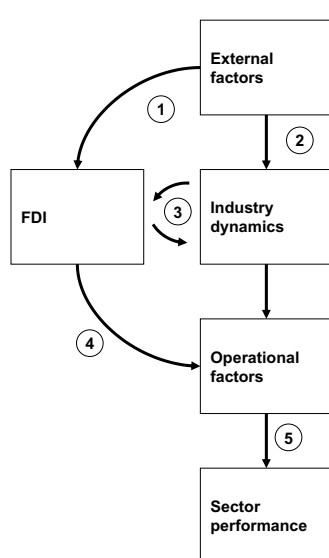
-
- Significant gap with best practice productivity. This enabled global retailers to implement significant operational improvements (e.g., purchasing economies and improved logistics technology) in acquired informal companies.

SUMMARY OF FDI IMPACT

Overall, FDI has had a positive impact on the food retail sector in Brazil, predominantly in the form of contributing to sector productivity growth. FDI contributed capital that was otherwise not available, and introduced some best practice technologies and processes. The government benefited the most from FDI in the increased tax revenue gained from the informal retailers acquired by formal companies, most of which were acquired with FDI.

Exhibit 23

BRAZIL FOOD RETAIL – SUMMARY



- ① Global retail industry drive for growth (Brazil's attractive market size), end of hyperinflation, and lack of affordable local capital for domestic players drove foreign players to enter and take over the modern formal segment, which is now 90% in the hands of retailers with FDI
- ② High VAT on food products, high taxes on salaries, and poor tax enforcement enabled modern informal players to dominate the food retail sector (due to significant benefits from tax evasion) and to compete fiercely vs. more productive formal players
- ③ Foreign retailers' growth and improvements increased competitive pressure, primarily among formal retailers. Foreign retailers began to acquire modern informal players to eliminate some of their toughest competitors and to improve scale
- ④ Foreign players implemented technological improvements (eg, logistics technology) and best practice large format food retail processes
- ⑤ Overall, FDI has had a positive impact on the food retail sector in Brazil, predominantly in the form of contributing to sector productivity growth. FDI contributed capital that was otherwise not available, and introduced some best practice technologies and processes. The government benefited the most from FDI in the increased tax revenue gained from the informal retailers acquired by formal companies, most of which were acquired with FDI

Exhibit 24

BRAZIL FOOD RETAIL – FDI OVERVIEW



- FDI impact analysis time periods
 - Focus period: Mature FDI 1995-2001
 - Comparison period: Early FDI 1975-1994
- Total FDI inflow (1996-2000) \$3.4 billion USD
 - Annual average \$675 million USD
 - Annual average as a share of sector value added* 4.2%
 - Annual average as share of GDP* 0.13%
 - Annual average per sector employee** \$171 USD
- Entry motive (percent of total)
 - Market seeking 100%
 - Efficiency seeking 0%
- Entry mode (percent of total companies)
 - Acquisition*** 50%
 - JV 0%
 - Greenfield 35%
 - Financial stake 15%

Note: FDI inflow data refers to the total retail sector except for 'annual average as a share of sector V-A', which represents retail and wholesale inflows as a percent of retail and wholesale value added

* 2001

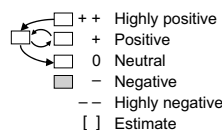
** 2000

*** All acquisitions started out as JVs

Source: Banco Central do Brasil; National accounts; IBGE; World Bank; Company reports

Exhibit 25

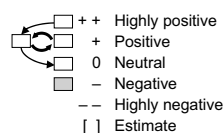
BRAZIL FOOD RETAIL – FDI'S ECONOMIC IMPACT IN HOST COUNTRY



Economic impact	Sector performance during		FDI impact	Evidence
	Early FDI (1975-1994)	Mature FDI (1995-2001)		
• Sector productivity (CAGR)	[+]	+4.0%	+	<ul style="list-style-type: none"> Approximately 75% of sector productivity growth during mature FDI period due to FDI (approx 60% would not have happened without FDI) <ul style="list-style-type: none"> Significant operational improvements in FDI players (eg, improved logistics technology, category mgmt) Mix shift toward more productive players (through acquisition and greenfield growth) driven largely by foreign capital
• Sector output (CAGR)	[0]	+3.0%	[0]	<ul style="list-style-type: none"> Output growth roughly on par with GDP growth; No evidence that FDI has had a significant impact on output
• Sector employment (CAGR)	[0]	-0.7%	0	<ul style="list-style-type: none"> Minimal employment growth from FDI greenfield expansion
• Suppliers	[0]	[0]	[0]	<ul style="list-style-type: none"> Small operational improvements (eg, forecasting technology) due to FDI (concentrated in food manufacturers)
Impact on competitive intensity	[0]	++	+	<ul style="list-style-type: none"> FDI increased competitive intensity (although concentrated in the formal market) <ul style="list-style-type: none"> Increase in price competitiveness of FDI retailers Market share changes among FDI retailers Increased goods/services offerings among FDI retailers Thriving informal market responsible for much of fierce competition Strongest driver of increased competitive intensity between eras was end of hyperinflation

Exhibit 26

BRAZIL FOOD RETAIL – FDI'S DISTRIBUTIONAL IMPACT IN HOST COUNTRY



Economic impact	Sector performance during		FDI impact	Evidence
	Early FDI (1975-1994)	Mature FDI (1995-2001)		
• Companies				
– FDI companies	[++]	+/-	+/-	<ul style="list-style-type: none"> Mixed performance by retailers with FDI <ul style="list-style-type: none"> Operational improvements (eg, CBD used Casino's capital for renovations, distribution, etc) due to foreign capital and best practice Poorly performing acquisitions of informal players largely funded by foreign capital Increased competitive intensity put pressure on margins
– Non-FDI companies	[+]	[0/-]	[0/-]	<ul style="list-style-type: none"> Non-level playing field limited the impact of FDI on domestic players
• Employees				
– Level of employment (CAGR)	[0]	-0.7%	0	<ul style="list-style-type: none"> Minimal employment growth from FDI greenfield expansion
– Wages	[0]	[0]	[0]	<ul style="list-style-type: none"> No evidence of changes in wages due to FDI; Shift toward more benefits and less cash when foreign retailers acquired informal players
• Consumers				
– Reduced prices	[+]	+	[0]	<ul style="list-style-type: none"> Two competing forces regarding impact on prices <ul style="list-style-type: none"> Increased competition from foreign players put pressure on prices (predominantly within formal market) Foreign players increased prices in acquired informal stores to compensate for full tax compliance
– Selection	[+]	[+]	[0/+]	<ul style="list-style-type: none"> Improvement in selection/services available (e.g., niche private label products) and more products available in one place
• Government				
– Taxes	[0]	++	++	<ul style="list-style-type: none"> Approximately R \$40 million-80 million (U.S. \$20 million-35 million USD) in annual incremental tax revenue from foreign retailers' acquisitions of informal players (primarily VAT tax and taxes on salaries)

Exhibit 27

BRAZIL FOOD RETAIL – COMPETITIVE INTENSITY

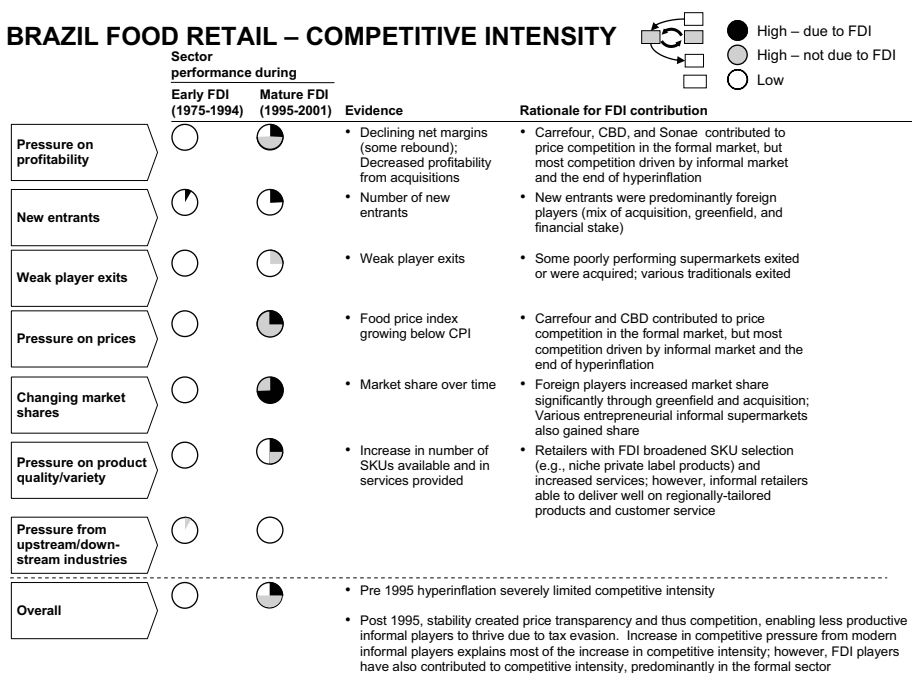


Exhibit 28

BRAZIL FOOD RETAIL – EXTERNAL FACTORS' EFFECT ON FDI

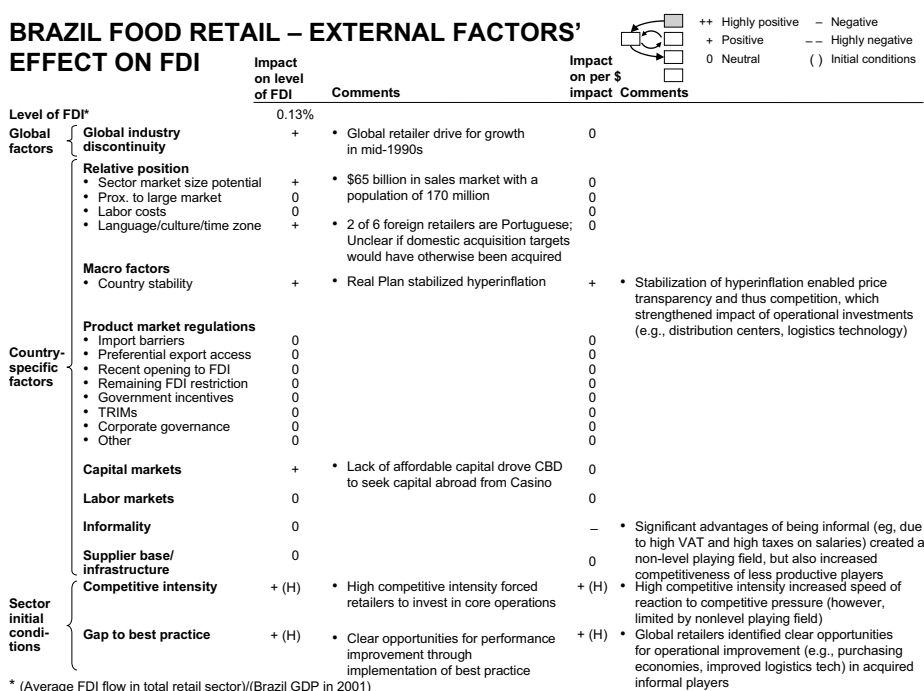


Exhibit 29

BRAZIL FOOD RETAIL – FDI IMPACT SUMMARY

[] Estimate ++ Highly positive – Negative
+ Positive -- Highly negative
0 Neutral () Initial conditions

Level of FDI relative to sector*	FDI impact on host country	Level of FDI** relative to GDP	External factor impact on	
			Level of FDI	Per \$ impact of FDI
	4.2%		0.13%	
Economic impact		Global factors		
• Sector productivity	+	• Global industry discontinuity	+	0
• Sector output	[0]	• Relative position		
• Sector employment	0	• Sector market size potential	+	0
• Suppliers	[0]	• Prox. to large market	0	0
		• Labor costs	0	0
		• Language/culture/time zone	+	0
Impact on competitive intensity	+	• Macro factors		
Distributional impact		• Country stability	+	+
• Companies		• Product market regulations		
– FDI companies	+/-	• Import barriers	0	0
– Non-FDI companies	[0/-]	• Preferential export access	0	0
• Employees		• Recent opening to FDI	0	0
– Level	0	• Remaining FDI restriction	0	0
– Wages	[0]	• Government incentives	0	0
• Consumers		• TRIMs	0	0
– Reduced prices	[0]	• Corporate governance	0	0
– (Selection)	[0/+]	• Other	0	0
• Government		• Capital markets	+	0
– Taxes	++	• Labor markets	0	0
		• Informality	0	–
		• Supplier base/ infrastructure	0	0
		• Competitive intensity	+	(H)
		• Gap to best practice	+	(H)
		• Sector initial conditions		

* (Average FDI flow in retail and wholesale)/(Retail and wholesale sector value added in 2001)

** (Average FDI flow in total retail sector)/(Brazil GDP in 2001)

Mexico Food Retail

Summary

EXECUTIVE SUMMARY

When leading global retailers started to seek growth through global expansion in the mid-1990s, the prospects of Mexico's large, growing food retail market made it attractive for foreign entry. At the time, the four leading companies across all main formats controlled 65 percent of the segment and competed against very small-scale, traditional companies with low productivity, and had relatively high net margins as a result. So, despite many offers, most leading retailers were disinclined to sell to international companies. The one exception was Cifra, which was acquired by Wal-Mart in 1997 following a six-year joint venture. Other international companies entered through small-scale joint ventures or greenfield investments but have failed to gain significant market share.

Wal-Mart initiated aggressive price competition and improved its own productivity by introducing best practices in operations and supply chain management – while retaining the acquired Cifra management team. This led to a radical change in the competitive dynamics in the sector – for example, Wal-Mart exited the local industry association after an attempt to establish a gentlemen's agreement not to use in-store price comparisons as a competitive tool. Consumers have benefited as a result of lower and more transparent prices and some broadening of product selection beyond to already on-going change after NAFTA.

While sector-wide productivity did not improve during period of study, higher competitive intensity has led to significant operational changes among leading modern retailers (e.g., investments in proprietary distribution centers and improved pricing). Similarly, changes in supply chain management introduced by Wal-Mart and adopted by other companies (new distribution centers and aggressive supplier price targets) have created significant performance pressure on suppliers and distributors. Going forward, this is likely to increase the speed of productivity growth in the sector and among suppliers beyond what would have happened without a large-scale acquisition by an international company.

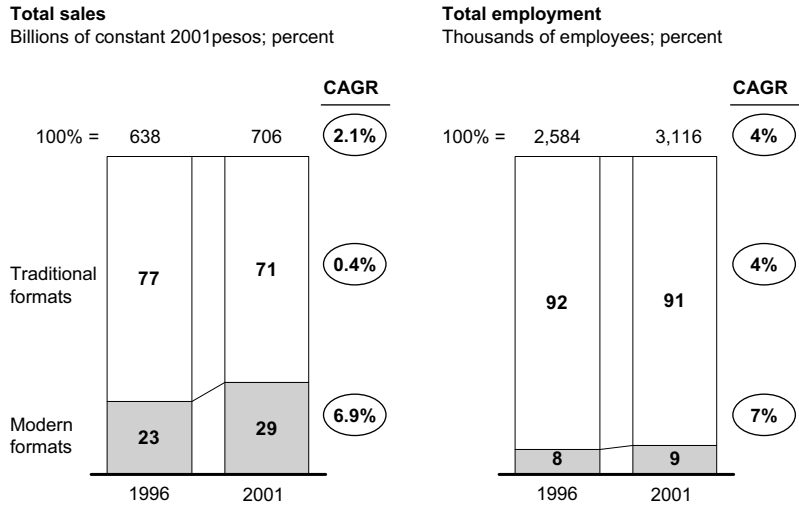
SECTOR OVERVIEW

¶ **Sector overview.** Mexican food retail is estimated to be a \$70 billion dollar (\$706 billion peso) market. Sales are growing at two percent a year in real terms. The market is segmented between modern formats, limited to urban areas, and a wide range of traditional formats, serving rural areas and a number of specific product and customer segments in urban areas. We estimate the share of modern formats to be about 30 percent today; this share is growing slowly (exhibits 1 and 2).

- The modern segment's sales are growing at seven percent annually, and four leading companies own 65 percent of the segment: national chains Wal-Mart, Gigante, Comercial Mexicana, and the Northern regional company Soriana (Exhibit 3). All national chains cover the three main modern formats: hypermarkets, supermarkets, and discount "bodegas". Convenience stores, the fourth modern format, has grown rapidly in recent years but still has an insignificant share of total sales.

Exhibit 1

MEXICAN FOOD RETAIL MARKET IS GROWING IN REAL TERMS AND MODERN CHANNEL IS SLOWLY GAINING MARKET SHARE



Source: ANTAD, ENIGH, Cuentas Nacionales, McKinsey analysis

Exhibit 2

FOOD RETAIL IS COMPOSED OF NUMEROUS SUB-SEGMENTS WITHIN BOTH MODERN AND TRADITIONAL CHANNELS

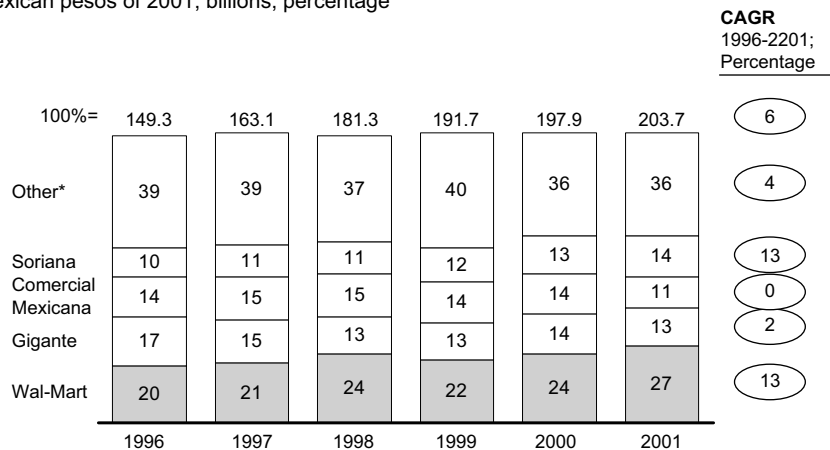
	Examples	Share of total sales (percent)	Formal*	Informal	
Modern	Hypermarkets	Wal-Mart Supercenter	19	✓	
	Supermarkets	Sumesa	6	✓	
	Bodegas (warehouses)	Bodega Gigante	4	✓	
	Convenience stores	Oxxo	0	✓	
Traditional	Groceries	Mom&Pop	48	✓	✓
	Food specialist	Bakeries		✓	✓
	Markets	Municipal markets	✓	✓	
	Open air markets	Tianguis	10		✓
	Street sellers	Milk sellers			✓
	Other	Door to door vendors	12		✓

Source: INEGI; Commercial census; McKinsey analysis

Exhibit 3

FOUR LEADING PLAYERS REPRESENT TWO THIRDS OF THE MODERN SEGMENT

Mexican pesos of 2001, billions; percentage



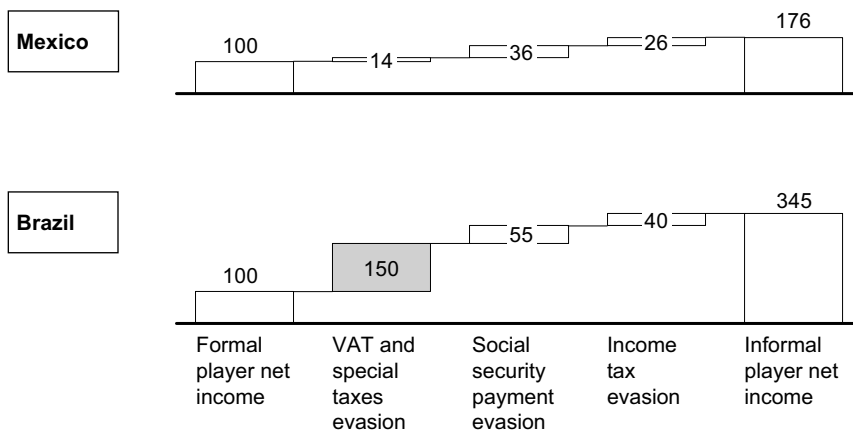
* Estimate
Source: Profit and loss statements, ANTAD; McKinsey Analysis

Exhibit 4

BENEFITS FROM INFORMALITY ARE LOWER IN MEXICO THAN IN BRAZIL

ROUGH ESTIMATE

Indexed to formal sector net margin = 100



Note: Analysis modeled for a representative supermarket – informal sector assumption is that 30% net sales and employee costs go unreported
Source: McKinsey analysis

Exhibit 5

MANY FOREIGN PLAYERS ENTERED AFTER THE ECONOMIC OPENING

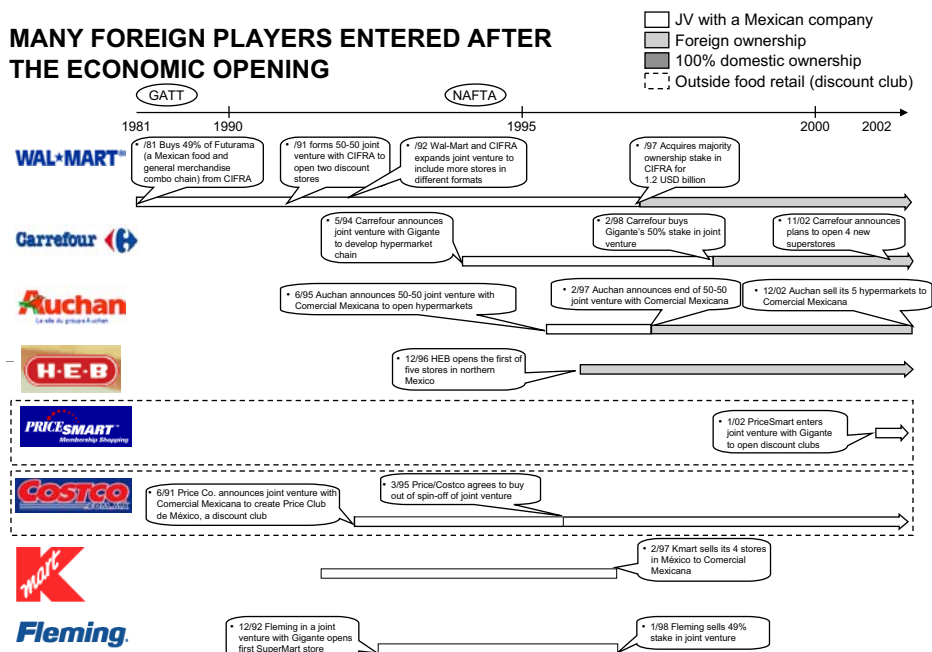
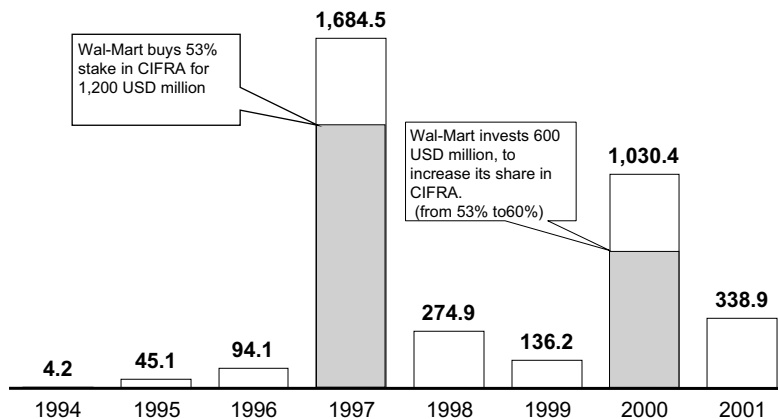


Exhibit 6

WAL-MART'S CIFRA ACQUISITION REPRESENTS HALF OF FDI INFLOWS TO THE MEXICAN FOOD RETAIL SECTOR

USD million



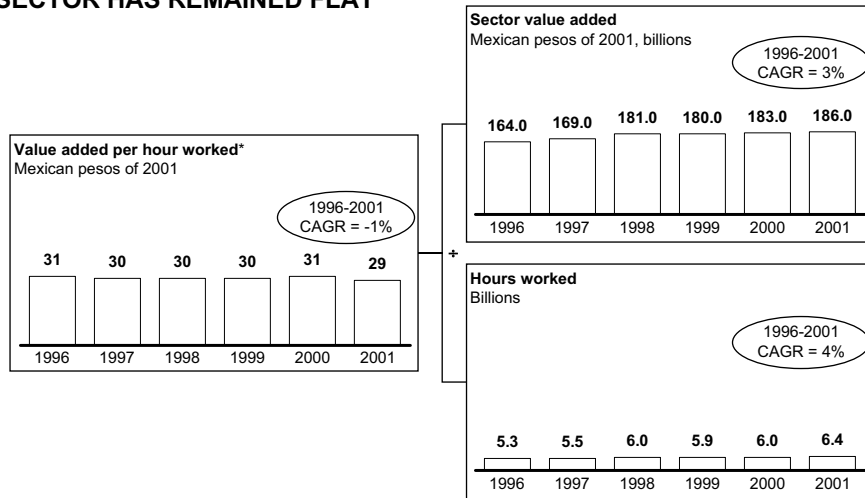
Source: Registro Nacional de Inversiones Extranjeras; "El Financiero"; McKinsey analysis

-
- The traditional segment sales are growing very slowly, at 0.4 percent annually. The dominant formats, with roughly half of the total market, are small groceries and food specialists like bakers, meat sellers, and tortilla manufacturers. The segment also includes municipal and open-air markets, street sellers, and door-to-door vendors.
 - Most food products in Mexico are exempt from Value Added tax, reducing the benefits of tax avoidance activities for food retailers. While informality in Mexico is the rule among small traditional vendors, it has not played a major role in the modern sector structure or dynamics – unlike in Brazil (Exhibit 4).
- ¶ **FDI overview.** During the 1990s, the Mexican food retail sector attracted many international companies with market-seeking motives, but most international companies have failed to establish a significant presence (Exhibit 5). The one exception is Wal-Mart, which acquired one of the leading national chains in 1997 and has since grown to become the largest food retailer in the country.
- Wal-Mart entered in 1991 through a joint venture with a leading domestic retailer, Cifra, with the explicit option to buy a controlling stake if the partnership worked well, as it did. In 1997, Wal-Mart acquired 53 percent of Cifra and increased its share to 60 percent in 2000. This acquisition represents roughly half of the total \$3.6 billion invested by international companies in the Mexican food retail sector between 1994 and 2001 (Exhibit 6).
 - Most other companies entered through small-scale joint ventures with one of the leading national companies. Comercial Mexicana and Gigante have each been involved in three joint ventures and many more partnership discussions. Most of these joint ventures have ended with either the operations being sold to domestic partners (as in the joint ventures with Auchan, Kmart, and Fleming) or to international companies (Carrefour, and Auchan between 1997 and 2002). The only significant greenfield entry has been HEB in Northern Mexico, where HEB is seeking to build on their strong position in the near-by Texan market.
 - To assess the impact of FDI, we focused on the early FDI period of 1996-2001 in our analysis. In order to capture the likely lag in impact of changes made in operational practices and competitive dynamics during this period, we have used as a comparison our prediction of the economic impact of FDI entry going forward.
- ¶ **External factors driving the level of FDI.** When leading global retailers started to seek growth through global expansion in mid-1990s, the prospects for Mexico's large, growing food retail market made it attractive to international entry. There is strong evidence that the level of FDI could have been higher than the \$3.6 billion actually achieved had more leading domestic companies been available for foreign acquisition.
- **Global factors.** From the mid-1990s, global food retailers started to seek international growth opportunities.
 - **Country specific factors.** Foreign companies saw great potential in the Mexican food retail market for three reasons: it was a relatively large, young market growing from a low income level; NAFTA created expectations of rapid economic growth; the liberalization of import and price controls in the

Exhibit 7

ESTIMATED

VALUE ADDED PER HOUR WORKED IN THE OVERALL SECTOR HAS REMAINED FLAT



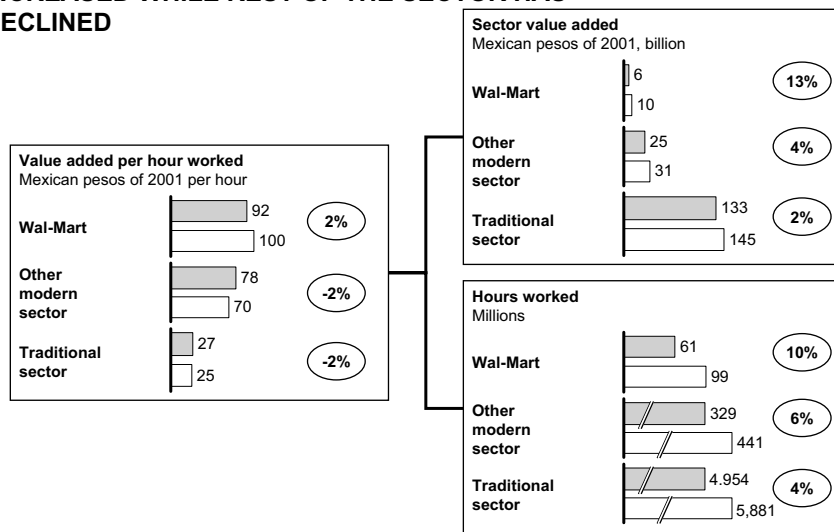
$$\frac{\text{Sector value added}}{\text{Number of hours worked}} = \frac{\text{Net sales} - \text{COGS (cost of goods sold)}}{\text{Number of hours worked}}$$

Note: Deflated using CPI fbt: consumer price index for food, beverages and tobacco
Source: McKinsey analysis

Exhibit 8

WAL-MART'S LABOR PRODUCTIVITY HAS INCREASED WHILE REST OF THE SECTOR HAS DECLINED

■ 1996
□ 2001
○ CAGR



Note: Deflated using consumes price index for food, beverages and tobacco
Source: INEGI; McKinsey analysis

early 1990s opened up opportunities for introducing new skills and global capabilities in the previously protected local market.

- **Initial sector conditions.** The low productivity level of modern domestic companies made the market attractive to international companies who could reap the benefits from introducing modern management and operational capabilities. In addition, the large share of traditional format retailers that have a very low productivity provided a clear opportunity for growth going forward. As a result, many global companies were interested in acquiring one of the leading domestic retailers. However, all the leading domestic retailers were family-owned and only Cifra was willing to sell at the prices offered by international companies. Unlike in Brazil, there was no urgent need for foreign capital because of the relatively high initial net margins.

FDI IMPACT ON HOST COUNTRY

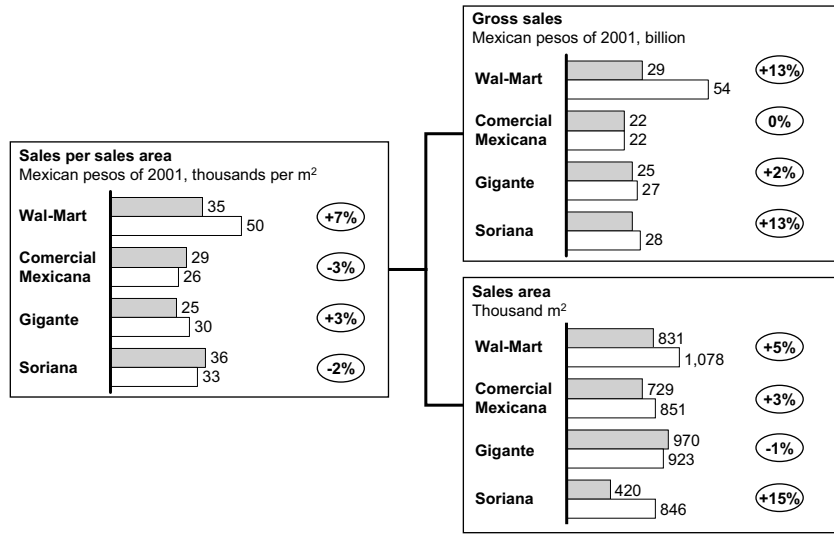
¶ **Economic impact.** Mexico's food retail output, measured by the value added, has grown by three percent a year between 1996 and 2001, while productivity has stayed flat. The entry of international companies had had limited economic impact on the overall food retail sector performance by 2001. However, Wal-Mart's rapid growth and improved productivity, together with the increased competitive intensity driving operational changes among other retailers, suggest that this situation is changing very quickly.

- **Sector productivity.** Labor productivity in the sector overall has declined marginally during our focus period (Exhibit 7). However, Wal-Mart has significantly outperformed the rest of the sector: Wal-Mart's labor productivity has increased by two percent annually and its capital productivity (measured as throughput per sales area) by seven percent annually (exhibits 8 and 9). In the rest of the modern segment, labor productivity declined by two percent annually, due both to throughput decline in existing stores as Wal-Mart gained market share and to a shift in the sub-segment mix due to the expansion of convenience stores. Labor productivity in the traditional segment has also declined by two percent annually. Given that Wal-Mart has already introduced increased price competition that has put pressure on retailer margins and has led to operational changes among domestic competitors, we expect this to give rise to a positive impact on productivity in the modern sector going forward.
- **Sector output.** Mexican retail sector output, measured as real value added, has been growing by three percent annually over the past five years – a rate comparable to the two percent population growth and four percent real GDP growth. Again, Wal-Mart's growth outpaced the rest of the sector with 13 percent CAGR in output growth: this growth arose largely from increasing sales in existing stores, combined with five percent growth in sales area. In the rest of the modern sector, output grew by four percent annually; the traditional segment grew by two percent annually. While the main driver of food retail output growth will continue to be GDP growth, we believe that Wal-Mart's entry has the potential for a positive impact on food retail output. Given the low income level of Mexico, lower food prices can lead to

Exhibit 9

WAL-MART'S CAPITAL PRODUCTIVITY HAS ALSO GROWN FASTEST AMONG MODERN PLAYERS

■ 1996
 ■ 2001
 ○ CAGR

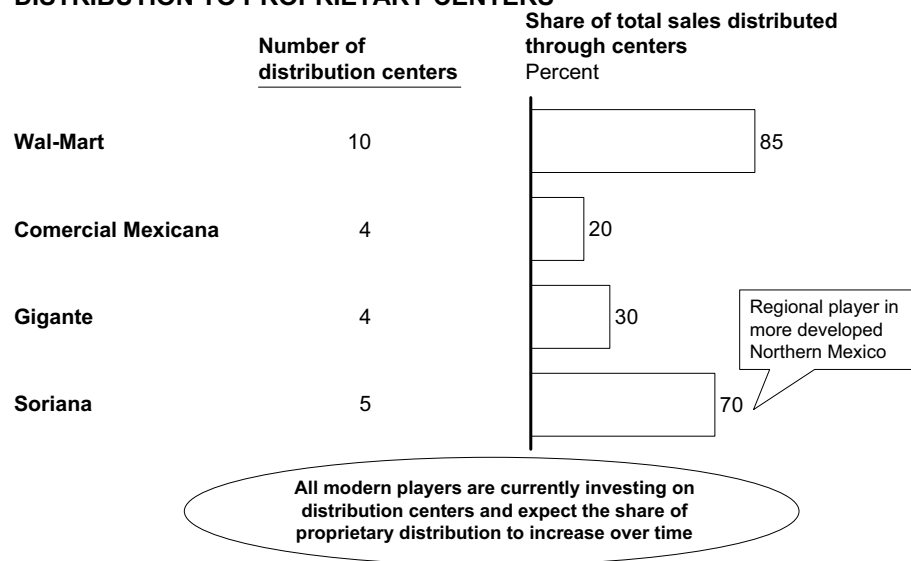


Source: Annual Reports; ANTAD; McKinsey analysis

Exhibit 10

WAL-MART HAS SUCCEEDED IN CONCENTRATING DISTRIBUTION TO PROPRIETARY CENTERS

ROUGH ESTIMATES



Source: Interviews

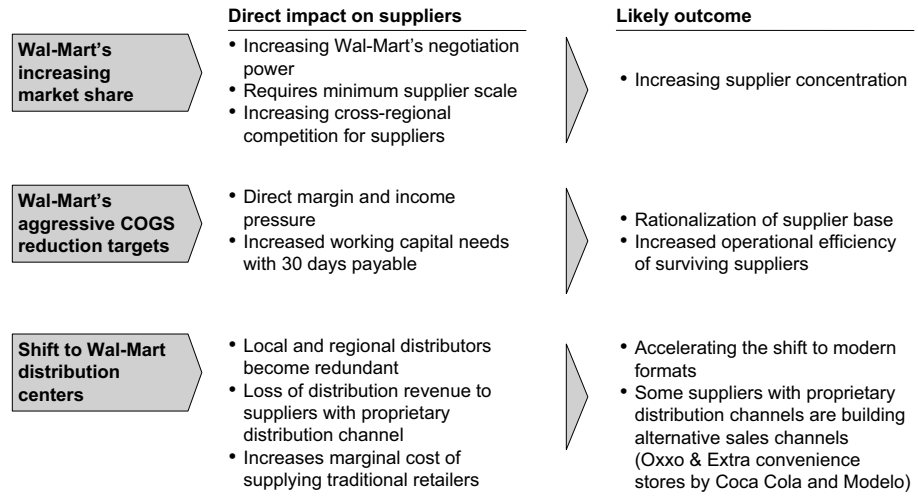
substitution to higher value added food products – something that has occurred in higher income countries such as France and Germany.¹

- **Sector employment.** The number of hours worked grew by four percent per annum in the sector overall and varied by segment: annual employment growth was ten percent at Wal-Mart, six percent in the rest of the modern segment, and four percent in the traditional segment. Most of Wal-Mart's employment growth was within existing stores, while growth in the remainder of the modern sector employment came from Soriana's expansion in the Northern region, as well as from the growth of convenience stores. However, it is unlikely that this employment growth is sustainable going forward as modern formats gain market share and food retail sector productivity increases within modern formats. Experiences in other countries indicate that employment is likely to decline as a result of increased competition and international company entry.
- **Supplier spillovers.** Wal-Mart's increasing market share and the shift to proprietary distribution centers have already initiated structural changes that are likely to increase productivity in the food processing industry and its distribution channels. The pressure on supplier performance is likely to intensify as all the other leading modern retailers are adopting similar practices.
 - Wal-Mart initiated changes in its supply chain by building proprietary distribution centers that today deliver 80 percent of their goods sold – compared to 20-30 percent for the leading national competitors (Exhibit 10). This increases the volumes purchased by Wal-Mart and increases cross-regional competition among suppliers; it also makes the local and regional distributors redundant. Wal-Mart is also introducing more aggressive negotiation techniques with their suppliers, putting increasing performance pressure on the upstream industries (Exhibit 11).
 - All other leading companies are following suit by moving to proprietary distribution centers and adopting similar business practices with suppliers.
- ¶ **Distribution of FDI impact.** Wal-Mart's aggressive pricing strategy has already benefited consumers through lower prices, while the increased competitive pressure has had a negative impact on the incumbent modern domestic retailers' sales and profitability.
 - **Companies.**
 - FDI companies. The performance of foreign companies entering Mexico has been mixed. Wal-Mart has gained market share rapidly within the modern segment, at a rate of roughly 1.5 percent points annually, achieving a 27 percent market share in 2001 (Exhibit 3). It has grown while maintaining solid financial performance, in large by reducing operational costs (Exhibit 12). Most other international entrants have failed to gain a significant market share (Exhibit 13). The reasons for the joint venture failures have been the incompatibility of managerial practices in the companies concerned, unclear leadership in 50:50 joint venture operations, and disagreements on strategy (the speed of

1. McKinsey Global Institute: "Reaching higher productivity growth in France & Germany" (2002); and "Removing barriers to growth and employment in France & Germany" (1997).

Exhibit 11

SPILL-OVER EFFECTS TO WAL-MART SUPPLIERS ARE ALREADY SIGNIFICANT AND LIKELY TO INCREASE

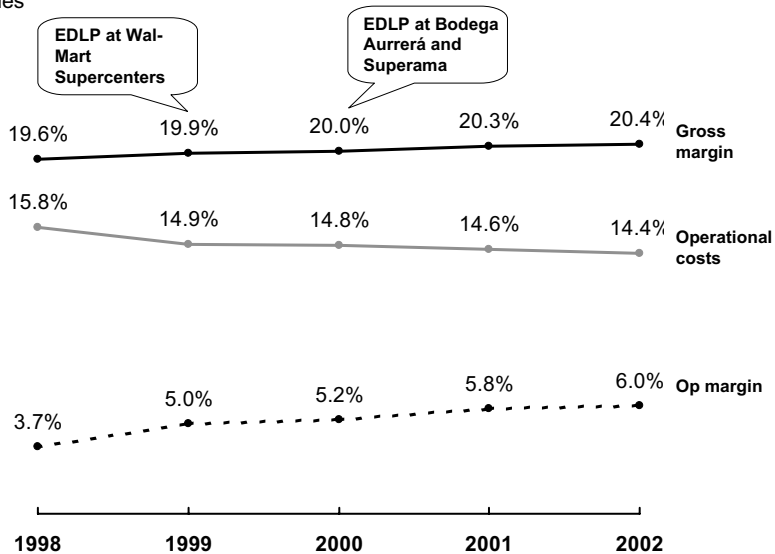


Source: Interviews

Exhibit 12

WAL-MART HAS INCREASED NET MARGIN BY REDUCING OPERATIONAL COSTS – WITH A STABLE GROSS MARGIN

Percent sales

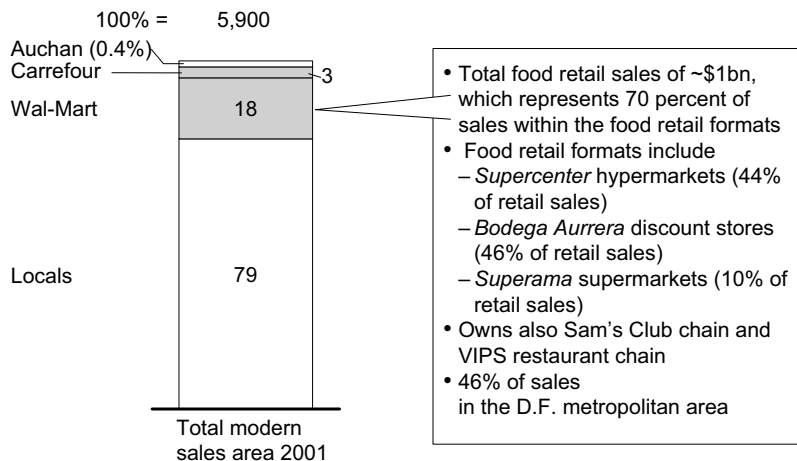


Source: Annual reports

Exhibit 13

WAL-MART IS THE ONLY FOREIGN RETAILER WITH IMPORTANT PRESENCE EVEN WITHIN THE MODERN CHANNEL

Thousands of squared meters; percentage



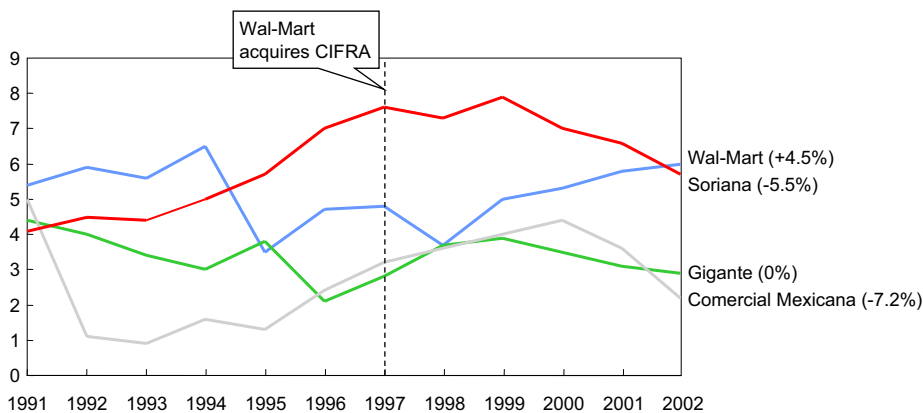
Source: ANTAD, annual reports, interviews

Exhibit 14

OPERATIONAL MARGINS FOR TOP RETAILERS IN MEXICO

Percent of sales

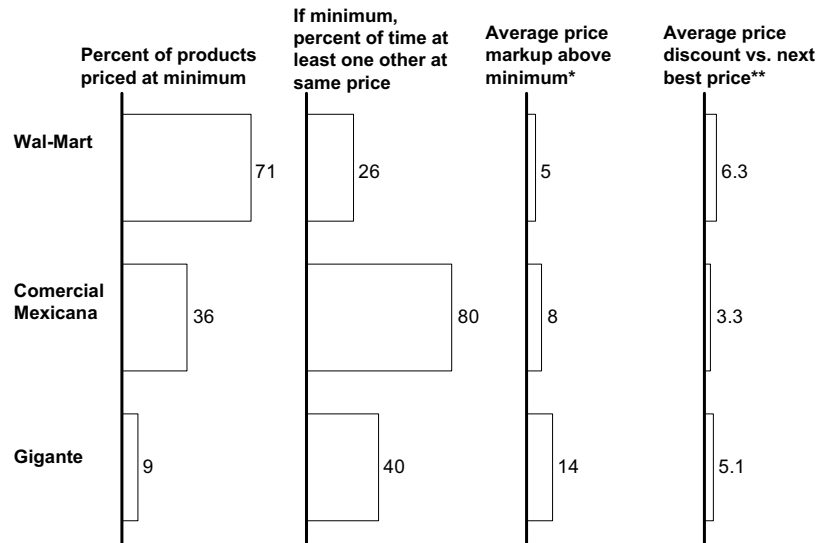
() 1997-2002 CAGR



Source: Annual reports

Exhibit 15

ACROSS A BROAD BASKET OF PRODUCTS, WAL-MART IS PRICING BELOW LEADING COMPETITORS - 2002



* When retailer does not offer minimum price

** When retailer offers minimum price and where next best price is not also equal to the minimum

Note: Analysis done for a sample of 316 products carried by all 5, minimum price calculated within the 5 retailers - 2002

Source: Profeco; McKinsey analysis

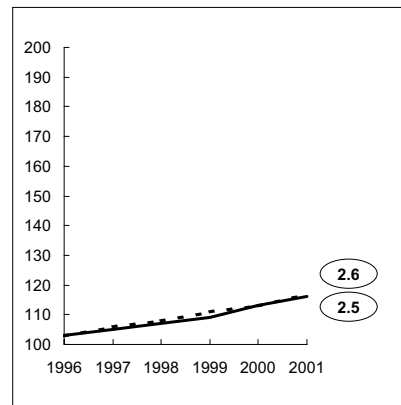
Exhibit 16

MEXICAN FOOD PRICE INDEX HAS LAGGED CPI, UNLIKE IN THE U.S.

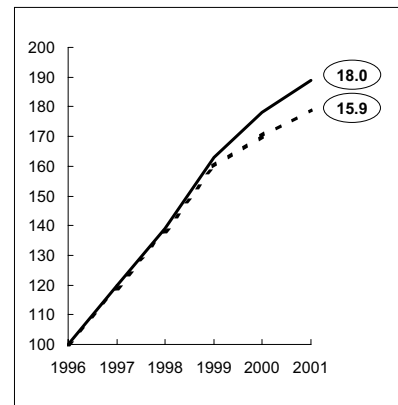
Indexed; 1996 = 100

○ CAGR
 — CPI
 - - Food*

In the U.S., food prices grew at approximately the same pace as overall economy prices



In Mexico, food prices grew more slowly than overall economy prices particularly after 1999



* Refers to "food and beverages" in the U.S. and "food beverages and tobacco" in Mexico

Source: BLS; INEGI

expansion and format mix). However, two companies, Carrefour and HEB in the North, in particular, continue to invest.

- Non-FDI companies. As competitive intensity has increased during the past four years, the financial performance of the leading modern companies, as measured by operational margins, has declined (Exhibit 14). Wal-Mart's gain in market share has come largely at the cost of the other two leading national retailers, Comercial Mexicana and Gigante, both of which have seen their market share decline. Soriana has grown very rapidly in the Northern region where Wal-Mart has only a limited presence; its growth has come largely from investments in new stores.
- **Employees.** As discussed above, employment in the sector overall increased during the early FDI period but this growth is unlikely to be sustainable going forward. We have no direct evidence of the impact of FDI on wages.
- **Consumers.** Wal-Mart's aggressive pricing strategy has already benefited consumers in urban areas, and analysts that we interviewed cited Wal-Mart as a contributor to the declining rate of inflation. Wal-Mart is consistently pricing below leading competitors across a broad basket of goods (Exhibit 15) and the food price index in Mexico has been lagging behind the Consumer Price Index (CPI), unlike in the U.S. (Exhibit 16). In addition, consumers have benefited from more transparency in pricing and further broadening of selection beyond to already on-going change after NAFTA.
- **Government.** Most food products do not have a Value Added tax in Mexico, making the tax implications of foreign company entry minimal beyond their contributing to the increasing share of formal modern formats.

HOW FDI HAS ACHIEVED IMPACT

- ¶ **Operational factors.** Wal-Mart's own performance improvement has come both from improvements in its operations and from economies of scale derived from increasing throughput within their stores. The local knowledge of the acquired management team was critical for the rapid and successful implementation of Wal-Mart's best practices in operations, enabling them to be tailored to local market conditions.
 - **Technology and innovation.** Wal-Mart's move to proprietary distribution centers in its supply chain management in Mexico has allowed it to implement its proprietary IT technologies and business processes. These allow strong control of inventory management and provide suppliers with information that gives a transparent view of their products' performance within Wal-Mart's stores.
 - **Product mix and marketing.** In pricing, Wal-Mart introduced its trademark "every day low price" (EDLP) strategy in all its food retail formats. The core of the EDLP strategy has been to focus on low, non-promotional prices and in-store price comparisons with leading near-by competitors (Exhibit 17). The implementation has been tailored to the Mexican modern retail formats through extensive local market research. As a result, Wal-Mart prices highly visible products below key competitors within each format (Exhibit 18). The

Exhibit 17

WAL-MART HAS TRANSITIONED TO “EVERY DAY LOW PRICE” (EDLP) STRATEGY

Pricing strategy

- No promotional sales prices – focus on low, stable prices
- Up to 10% price difference between stores as a result of decisions to adjust pricing to local competition
- Price positioning different by format
- Some differentiation in positioning by category (ex, unbeatable in diapers)
- 100 “highly visible” products priced below market

Two of three other leading retailers have followed Wal-Mart and adopted EDLP

Communication

- External communication focused on “everyday low price” image
- Very strong store communication:
 - Low prices opportunity
 - Prices lower than direct competition
 - Wal-Mart always work to lower prices
- No direct marketing with sales leaflets
- Very limited use of TV (e.g., when EDLP was launched)

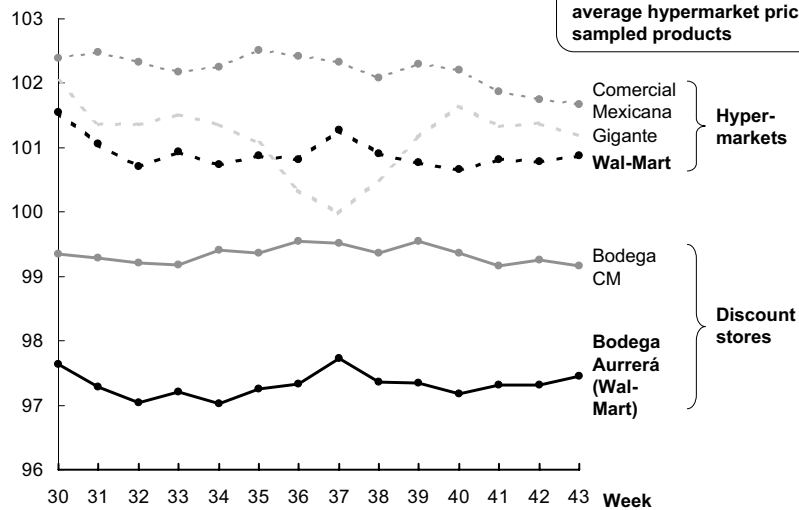
Wal-Mart exited industry association in response to an attempt to prohibit in-store price comparisons

Source: Interviews

Exhibit 18

WAL-MART IS PRICING HIGHLY VISIBLE PRODUCTS BELOW MAIN COMPETITORS IN BOTH FORMATS

Weekly price index of 100 highly visible products; July 22nd to October 27th, 2002



Source: AC Nielsen; team analysis

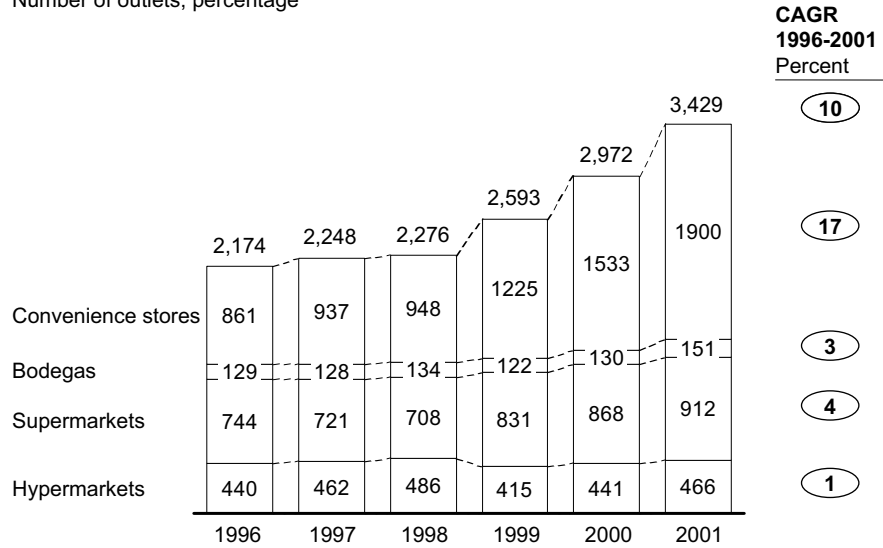
gain in Wal-Mart's market share, and thus their increasing throughput, has been largely attributed to this low price strategy.

- **Management skills.** The implementation of Wal-Mart's best practices in operations has come through coaching the acquired management team and providing them access to Wal-Mart's business processes and technologies. There has been very little transfer of people – the senior management in Wal-Mart in Mexico today is almost exclusively ex-Cifra managers, with a few new additions hired to fill capability gaps (e.g., in global operations).
 - **Capital.** There has not been significant capital inflow to Mexican operations. While small-scale joint ventures and greenfield entry of other international companies has brought in some capital, Wal-Mart's Cifra acquisition was largely an ownership transfer of existing assets. Outside of the small-scale joint venture operations made early on, the growth of Wal-Mart in Mexico has been financed with cash flow from domestic operations.
- ¶ **Industry dynamics.** Wal-Mart has changed the modern segment competitive dynamics by introducing aggressive price competition and forcing other modern retailers to improve their operational performance in order to be competitive. This change in sector dynamics will increase modern sector productivity, accelerate the transition to modern formats, and potentially lead to changes in modern segment structure going forward.
- The competitive intensity among leading retailers had been relatively low in the Mexican food retail sector for a number of reasons:
 - Four companies controlled 65 percent of the modern channel.
 - The leading companies participated across all large-scale modern formats, limiting incentives for cross-format competition.
 - Policies prior to liberalization limited competition through price controls and import quotas.
 - Unlike in Brazil, there was no performance pressure on modern players from tax-evading low-cost informal players – because there is no Value Added tax on most food products.
 - Wal-Mart increased competitive intensity by introducing aggressive price competition. The initial reaction of the other leading retailers illustrates the subsequent change in behavior: their response to Wal-Mart's in-store price comparisons was a proposal in the industry association for a gentlemen's agreement not to use in-store price comparisons as a competitive tool. Wal-Mart did not agree to this and exited the industry association as a result.
 - As a result of increased price competition and declining margins, other leading modern retailers have adopted Wal-Mart's EDLP pricing, started to move their distribution to proprietary distribution centers, and improve their supply chain management technologies and software. The impact of this on sector productivity had not been made evident by 2001², but we expect this situation to change rapidly.
 - As a result of supplier spillover effects, the traditional channel is becoming less competitive in Mexico. As leading companies are moving away from traditional distributors, the marginal costs of supplying traditional retailers increases. In addition, in response to the increasing market power of

2. As of May 2003, the last year for which productivity data is available.

Exhibit 19**CONVENIENCE STORES ARE RAPIDLY GROWING IN NUMBER OF OUTLETS**

Number of outlets; percentage



Source: ANTAD; ISSSTE annual report; McKinsey Analysis

Wal-Mart, some leading brand suppliers are investing in alternative channels, such as the convenience store chains Oxxo and Extra, owned by Coca Cola and the beer company La Modelo, respectively. Convenience stores are therefore growing rapidly (Exhibit 19) but compete directly with the traditional mom-and-pop corner stores, not with the hypermarkets. Both of these factors tend to accelerate the rate of increase in the modern channel share of the food retail sector.

EXTERNAL FACTORS THAT AFFECTED THE IMPACT OF FDI

¶ **Sector initial conditions.** The speed of impact from international entry on sector economic performance has been slowed by two structural factors:

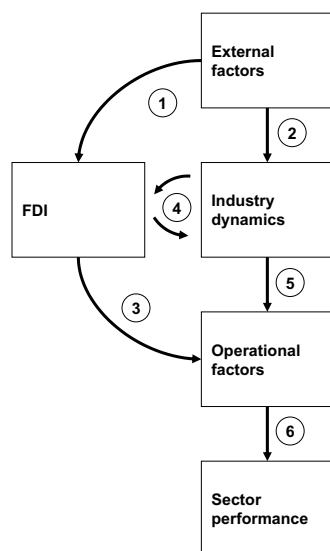
- Starting from a strong financial position, the leading domestic companies were able to absorb some net margin reductions initially without needing to cut costs.
- The impact of international companies on the large, small-scale traditional segment will be slow because a large proportion of the population are out of the reach of the modern formats, either because they live in small towns or rural areas, or because they do not have a car that would allow them to drive to the hypermarkets in urban areas.

SUMMARY OF FDI IMPACT

FDI impact on the Mexican food retail industry is likely to be positive as consumers continue to benefit from lower prices and sector productivity increases. While the economic impact has been limited during the period of analysis (1997-2001), Wal-Mart has already changed the competitive dynamics by introducing aggressive price competition. This has benefited consumers through lower and more transparent prices and led to significant operational changes both within modern formats and among suppliers and distributors. Going forward, this is likely to increase the speed of productivity growth in the sector beyond what would have happened without a large-scale acquisition by an international company.

Exhibit 20

MEXICO FOOD RETAIL – SUMMARY



- ① Global retail industry drive for growth and Mexico's liberalization explain Wal-Mart's acquisition of a leading domestic retailer in 91/97. Other global players entered greenfield or through small scale JVs – other major family-owned retailers were unwilling to sell because of relatively high initial net margins
- ② Very small-scale traditional formats still represent 71% of the food retail market in Mexico, while four leading retailers dominate 64% of the modern segment
- ③ Wal-Mart gained share through aggressive EDLP pricing and improved productivity by changing supply chain operations (by moving to proprietary distribution centers and aggressive supplier price targets)
- ④ Wal-Mart's aggressive pricing led to increased competitive pressure and lower margins within modern segment
- ⑤ Competitive pressure led modern domestic players to initiate similar changes in pricing and supply chain management
- ⑥ **FDI impact on the Mexican food retail industry is likely to be positive as consumers continue to benefit from lower prices and sector productivity increases.** While the economic impact has been limited during the period of analysis (1997-2001), Wal-Mart has already changed the competitive dynamics by introducing aggressive price competition. This has benefited consumers through lower and more transparent prices and led to significant operational changes both within modern formats and among suppliers and distributors. Going forward, this is likely to increase the speed of productivity growth in the sector beyond what would have happened without a large-scale acquisition by an international company.

Exhibit 21

MEXICO FOOD RETAIL – FDI OVERVIEW



- FDI analysis time periods
 - Focus period: Early FDI 1996-2001
 - Comparison period: Mature FDI 2002 -
- Total FDI inflow (1994-2001)*
 - Annual average \$450 million
 - Annual average as a share of sector value added** 2.4%
 - Annual average as share of GDP** 0.07%
 - Annual average per employee** \$145
- Entry motive (percent of total)
 - Market seeking 100%
 - Efficiency seeking 0%
- Entry mode (percent of total)
 - Acquisitions 60%
 - JVs 30%
 - Greenfield 10%

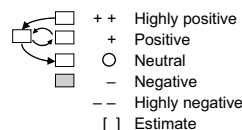
* Food retail including discount warehouses

** 2001

Source: SECOFI; Registro Nacional de Inversiones Extranjeras

Exhibit 22

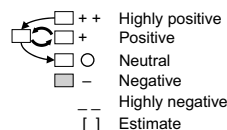
MEXICO FOOD RETAIL – FDI's ECONOMIC IMPACT IN HOST COUNTRY



Economic impact	Sector performance during		FDI impact	Evidence
	Early FDI (1996-2001)	Mature FDI (2002-)		
• Sector productivity (CAGR)	-1%	+	[+]	<ul style="list-style-type: none"> Wal-Mart's labor productivity has grown by 2% annually since acquisition while rest of modern segment productivity has slightly declined as they have lost market share and raised to grow. Increased competitive intensity from Wal-Mart and significant operational changes observed among modern players strongly suggest that there are large productivity gains to be captured if competitive pressure remains strong Large traditional sector productivity has declined as employment has increased more rapidly than output – and we expect to see a longer lag on impact there
• Sector output (CAGR)	+3%	+	[+]	<ul style="list-style-type: none"> Food retail output has grown at par with long term GDP growth, with modern segment gaining share Experience from France and Germany indicate that lower prices are likely to contribute to higher output growth in the future, particularly given low average income level
• Sector employment (CAGR)	+4%	-	[-]	<ul style="list-style-type: none"> Despite growing sector employment to date in all segments, this is unlikely to be sustainable as productivity improvements take effect and can turn to decline as modern format share increases
• Suppliers	+	+	[+]	<ul style="list-style-type: none"> Move to retailer distribution centers and increasing retailer concentration is already putting price pressure on suppliers, and likely to lead to productivity improvements in the future (anecdotal evidence of changes exists already).
Impact on competitive intensity (op. margin CAGR)	-4.5%	++	++	<ul style="list-style-type: none"> Wal-Mart's rising share and aggressive pricing have put significant pressure on modern sector retailer margins and led to behavioral and operational changes among other modern players – all of which is likely to drive future productivity and output growth

Exhibit 23

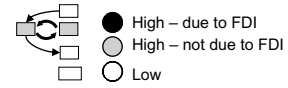
MEXICO FOOD RETAIL – FDI's DISTRIBUTIONAL IMPACT IN HOST COUNTRY



Economic impact	Sector performance during		FDI impact	Evidence
	Early FDI (1996-2001)	Mature FDI (2002-)		
• Companies				
– FDI companies	+/-	++/-	++/-	<ul style="list-style-type: none"> Wal-Mart has rapidly gained market share and maintained solid operational margins Other global players have either remained small scale players or exited the market by ending JVs
– Non-FDI companies	--	-	-	<ul style="list-style-type: none"> Declining operational margins for leading modern domestic players
• Employees				
– Level of employment (CAGR)	+4%	-	[-]	<ul style="list-style-type: none"> Despite growing sector employment to date in all segments, this is unlikely to be sustainable as productivity improvements take effect and can turn to decline as modern format share increases
– Wages	[0]	[0]	[0]	<ul style="list-style-type: none"> No evidence on changes in wages
• Consumers				
– Prices	+	++	++	<ul style="list-style-type: none"> Wal-Mart has introduced price competition by pricing below competitors across formats and using comparative pricing as a marketing tool – this has led food prices to grow slower than overall CPI
– Selection	[+]	[+]	[+]	<ul style="list-style-type: none"> Increased selection driven by both removal of import restrictions and access to FDI players' global food supply chain
• Government				
– Taxes	[0]	[0]	[0]	<ul style="list-style-type: none"> Low VAT in food sales in general, and little avoidance within modern segment even prior to FDI player entry – hence little tax implications

Exhibit 24

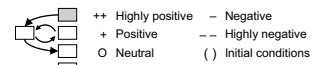
MEXICO FOOD RETAIL – COMPETITIVE INTENSITY



	Sector performance during		Evidence	Rationale for FDI contribution
	Pre-FDI (1995)	Early FDI (1996-2001)		
Pressure on profitability			• High initial margins relative to global benchmarks that have declined after 1996	• Wal-Mart introduced aggressive price competition within modern segment
New entrants			• 8 new foreign players in the modern segment	• FDI players are the new entrants
Weak player exits			• Exits of some foreign players	• A number of foreign JVs have ended
Pressure on prices			• Changes in relative prices across leading players; food price index growing below CPI	• Wal-Mart introduced price competition and is the consistent price leader
Changing market shares			• Market share over time	• Wal-Mart rapidly gaining market share at the cost of two leading national chains
Pressure on product quality/variety			• Increase in number of SKUs available	• Relaxing import restriction increased product variety • FDI players have further broadened SKU selection
Pressure from upstream/downstream industries				
Overall				

Exhibit 25

MEXICO FOOD RETAIL – EXTERNAL FACTORS' EFFECT ON FDI



Level of FDI*	Impact on level of FDI	Comments	Impact on per \$ impact	Comments
Global factors	0.07%			
Global industry discontinuity	+	• Global retailer drive for growth in mid-1990s	O	
Relative position				
• Sector market size potential	+	• \$70 billion in sales market with a population of 100 million	O	
• Prox. to large market	O		O	
• Labor costs	O		O	
• Language/culture/time zone	O		O	
Macro factors				
• Country stability	+	• Policy liberalization and Nafta created growth and stability expectations	+	• Rapid recovery after 1995 and stable growth allowed retailers to focus on core operations
Product market regulations				
• Import barriers	O		O	
• Preferential export access	O		O	
• Recent opening to FDI	O		O	
• Remaining FDI restriction	O		O	
• Government incentives	O		O	
• TRIMs	O		O	
• Corporate governance	-	• Low willingness to sell control among leading family-owned retailers	O	
• Other	O		O	
Capital market deficiencies	O		+	• Lack of financing to medium players increases barriers to entry and reduces domestic competition to leading modern retailers, making FDI a way to introduce competitive pressure
Labor market deficiencies	O		O	
Informality	O		O	
Supplier base/ infrastructure	O		O	
Sector initial conditions				
Competitive intensity	O (L)		- (L)	• Low initial competitive intensity has reduced the speed of competitor reactions
Gap to best practice	+(H)	• Clear opportunities for performance improvement from best practices	+(H)	• Wal-Mart identified clear opportunities for performance improvement particularly in supply chain management

* Average annual inflow as a percentage of GDP

Exhibit 26
MEXICO FOOD RETAIL – FDI IMPACT SUMMARY

[] Estimate ++ Highly positive – Negative
 + Positive -- Highly negative
 O Neutral () Initial conditions

Level of FDI relative to sector*	FDI impact on host country	Level of FDI** relative to GDP	External Factor impact on	
	2.4%		Level of FDI	Per \$ impact of FDI
Economic impact			0.07%	
• Sector productivity	[+]	Global factors	Global industry discontinuity	+ O
• Sector output	[+]		Relative position	
• Sector employment	[-]		• Sector market size potential	+ O
• Suppliers	[+]		• Prox. to large market	O O
Impact on competitive intensity	++		• Labor costs	O O
Distributional impact			• Language/culture/time zone	O O
• Companies		Country-specific factors	Macro factors	
– FDI companies	++/-		• Country stability	+ +
– Non-FDI companies	-		Product market regulations	
• Employees			• Import barriers	O O
– Level	[-]		• Preferential export access	O O
– Wages	[0]		• Recent opening to FDI	O O
• Consumers			• Remaining FDI restriction	O O
– Prices	++		• Government incentives	O O
– Selection	[+]		• TRIMs	O O
• Government			• Corporate governance	- O
– Taxes	O		• Other	O O
		Capital market deficiencies	O +	
		Labor market deficiencies	O O	
		Informality	O O	
		Supplier base/ infrastructure	O O	
		Sector initial conditions		
		• Competitive intensity	O (L) – (L)	
		• Gap to best practice	+ (H) + (H)	

* Average annual FDI/sector value added

** Average (sector FDI inflow/total GDP) in key era analyzed

Preface to the Retail Banking Cases

1

The retail banking markets in Brazil and Mexico are the two largest in Latin America, with \$391 billion and \$172 billion in assets respectively (Exhibits 1 and 2). Both received approximately \$22 billion of FDI between 1995 and 2002, but the impact of FDI has been quite different in each case. This preface provides the background information necessary for a full understanding of the comparative cases.

BACKGROUND AND DEFINITIONS

FDI typology. FDI in retail banking is purely market-seeking (Exhibit 3). In Brazil and Mexico, foreign financial institutions entered the banking sector solely through acquisitions. Market entry through greenfield investments is rare in retail banking due to the high costs of acquiring customers and building branch networks. Joint ventures are used typically when prescribed by government regulations or when targeting specific customer segments.

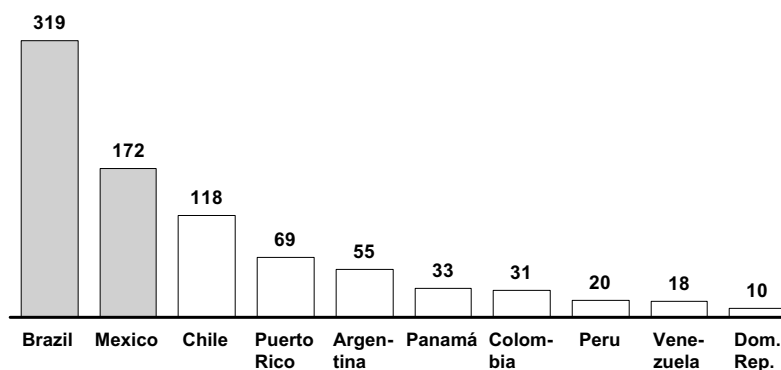
FDI in Latin American banking. Until the early 1990s, Latin American banking markets were highly regulated and foreign participation was minimal. Following liberalization and deregulation in the 1990s, most regional governments removed restrictions on banking sector FDI and, attracted by high margins and low valuations, foreign financial institutions started to enter local banking markets. The expansion of international banks in Latin America was led by BBV, BCH, and Santander of Spain, which took over leading local players in the key regional banking markets. Other key international players in Latin America include Citigroup and HSBC (Exhibit 4). Macroeconomic instability in Argentina and Brazil, combined with regulatory pressures on the Spanish banks to improve their capitalization ratios, have slowed the expansion of international banks in Latin America. Today international financial institutions control between 25 percent and 80 percent of banking sector assets in the region's four largest economies (Exhibit 5).

Sector characteristics

¶ **Competition in banking.** Many retail banking markets are characterized by relatively low levels of competitive intensity. This is primarily due to two inherent sector characteristics. First, the costs of switching banks for consumers are generally high. As a result, banks enjoy some degree of pricing power in a number of segments. Second, retail banking has entry barriers that are relatively high, such as the costs of developing distribution networks. However, not all retail banking markets are characterized by low levels of competitive intensity. The markets that are very competitive in general have a strong presence of non-bank financial institutions in core banking segments. The U.S. market is a good example, where mutual funds started to compete with banks for consumer deposits in the 1980s, thereby altering radically the nature and intensity of competition.

Exhibit 1**COMMERCIAL BANKING ASSETS, 2002**

U.S.\$ Billions



Source: Austin Asis

Exhibit 2**RELATIVE SIZE OF THE BRAZILIAN AND MEXICAN BANKING SECTORS, 2002***

	Brazil	Mexico	U.S.
Commercial banking assets**			
• U.S.\$ Billions	319	172	8,272
• Share of GDP (%)	85.4	27.9	79.2
Commercial banking employment			
• Thousands	403	109	1,964
• Share of total employment (%)	0.6	0.5	1.5
Financial services FDI*** (95-01)			
• U.S.\$ Billions	20.4	22.9	123.2
• Share of total FDI (%)	14.2	25.7	10.9

* Mexico: September 2002, Brazil and US: December 2002

** US: Commercial banks and savings institutions

*** Depository institutions and other financial services. Does not include insurance

Source: Banco do Brazil, IBGE, Banco de México, Secretaría de Economía, Federal Reserve, FDIC, SNL, DRI

Exhibit 3

FDI TYPOLOGY

Sector type	Manufacturing	<ul style="list-style-type: none"> • CE China 	<ul style="list-style-type: none"> •Auto Brazil •Auto China •Auto India •CE Brazil •CE India 	<ul style="list-style-type: none"> •Auto Mexico •CE Mexico •CE China
	Services	<ul style="list-style-type: none"> • Food retail Brazil • Food retail Mexico • Retail banking Brazil • Retail banking Mexico 		<ul style="list-style-type: none"> • IT • BPO
		Market-seeking	Tariff-jumping	Efficiency-seeking
Motive for entry				

Exhibit 4

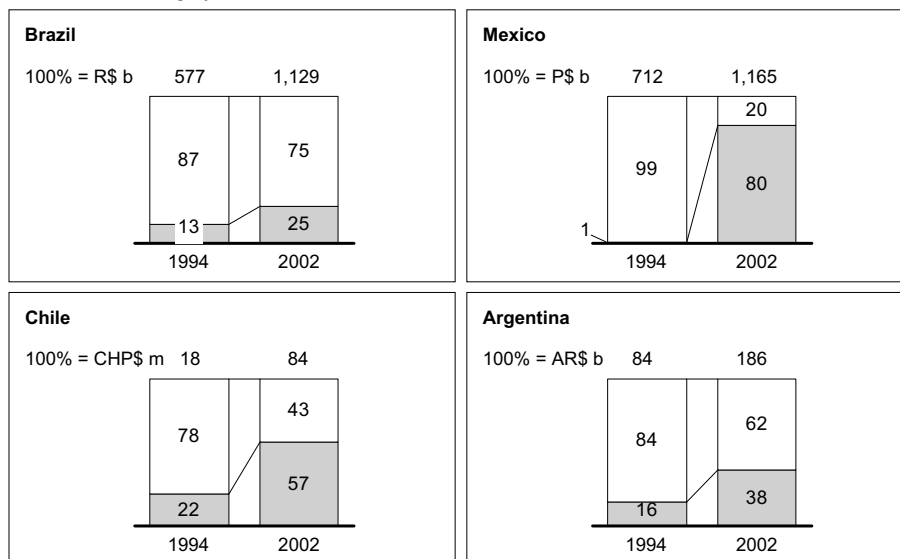
MAJOR ACQUISITIONS BY FOREIGN FINANCIAL INSTITUTIONS

Brazil				Mexico			
Acquirer	Bank	Year	Value of deal \$ Million	Acquirer	Bank	Year	Value of deal \$ Million
Santander	• BGC	1997	200	Citigroup	• Banamex	2001	12,500
	• Noreste	1997	270		• Banca Confia	1998	195
	• Meridional	2000	1,800	Santander	• Serfin	2000	1,540
	• Banespa	2000	3,852		• Banco Mexicano	1996	379
ABN-AMRO	• Real	1998	2,100	BBVA	• Bancomer	2000	1,400
	• Bandepa	1998	153		• Probusa	1995	350
	• Sudameris	2003	750	HSBC	• Bitel	2002	1,140
HSBC	• Bamerindus	1997	999				
	BBV	• Excel Economico	1997	450			
Chile				Argentina			
Acquirer	Bank	Year	Value of deal \$ Million	Acquirer	Bank	Year	Value of deal \$ Million
Santander	• Santiago	1999/02	1,270	BBVA	• Santa Cruz	1999	11
	• Osorno	1996	500		• Frances	1996	203
BBV	• BHIF	1998	334		• Corp Banca	1999	84
	• Credito Argentino	1997	600		Santander	• Rio de la Plata	1997
Bank of Nova Scotia	• Banco Sud Americano	1999	116			• Galicia	1998
	• Tomquist	1999					
Citibank	• Financiera Atlas	1998	83	HSBC	• Roberts	1997	688
	• Santiago	1997	15				

Exhibit 5**SHARE OF FOREIGN FINANCIAL INSTITUTIONS IN KEY LATIN AMERICAN BANKING MARKETS**

Local banks
Foreign banks

Percent of banking system assets

**Exhibit 6****SOURCES OF INFORMATION FOR THE RETAIL BANKING SECTOR**

	Brazil	Mexico
Key data sources	<ul style="list-style-type: none"> • Brazilian Central Bank • Labor Ministry • IBGE (Brazilian Institute of Geography and Statistics) • ANDIB (National Association of Investment Banks) • Austin Asis (Database of Bank Statements) • Bankscope 	<ul style="list-style-type: none"> • Banco de Mexico (Central Bank) • CNBV (Banking and Securities Commission) • INEGI (National Institute for Statistics and Geography) • SHCP (Ministry of Finance and Public Credit) • IPAB (Institute for Protection of Bank Savings)
Interviews	<ul style="list-style-type: none"> • Commercial banks: 5 <ul style="list-style-type: none"> – President – Credit Director (2) – Marketing Director – Planning and Segmentation Director • Public sector: 4 <ul style="list-style-type: none"> – Central Bank ex-president – Central Bank Senior Economist – IBGE (2) • Analysts: 4 • Associations: 2 <ul style="list-style-type: none"> – Brazilian Bank Association – Bank Workers Union • Academics: 1 • McKinsey 	<ul style="list-style-type: none"> • Commercial banks: 4 <ul style="list-style-type: none"> – Finance Director – Head of Consumer Lending (2) – Director of Strategy • Public sector: 6 <ul style="list-style-type: none"> – Banco de Mexico (Senior Economist, 2) – CNBV (Vice President) – SHCP (Director General, 2) – SHF (Director General) • Analysts: 2 • Academics: 1 • McKinsey

¶ **Capitalization of the banking system.** A properly capitalized banking system is crucial for economic development and growth. Financial systems provide five kinds of services. They mobilize an economy's resources, facilitate economic exchange, improve risk management, collect and evaluate information, and monitor corporate managers¹. An undercapitalized banking system cannot fulfill its role effectively in financial intermediation, limiting economic growth and imposing costs on business, employees, and consumers.

SOURCES

Data. Productivity, output, and employment estimates are based on data from government statistical sources (Banco de Mexico, CNBV, INEGI, Banco Central do Brasil, FIPE). Additional sector statistics were obtained from analyst reports, database providers, and the trade press.

Interviews. Our analysis of industry dynamics and impact of external factors was based on interviews with company executives, government officials, industry analysts, and industry associations. The same sources were used to understand and verify the impact of FDI on sector productivity (Exhibit 6).

1. Levine, R., Foreign Banks, Financial Development, and Economic Growth, in: C. Barfield (ed.), International Financial Markets, Washington, D.C. 1996.

Retail Banking Sector Synthesis

7

The retail banking sectors in Brazil and Mexico are the two largest in Latin America and both experienced significant inflows of FDI in the second half of the 1990s following a period of macroeconomic instability. Yet the impact of FDI has been quite different in each case. In Mexico, international financial institutions took over the industry leaders and today control more than 80 percent of banking sector assets. FDI has had a positive impact in Mexico, primarily through improving sector capitalization, but also through increasing productivity and stabilizing sector output. In Brazil, by contrast, international banks account for less than 25 percent of banking sector assets and the impact of FDI has been much more limited (exhibits 1 and 2). This difference in FDI impact is essentially due to two factors. First, the depth and severity of the Mexican financial crisis and, second, the existence of strong, local banking players in Brazil. In both cases, FDI had little impact on competitive intensity and consumer welfare.

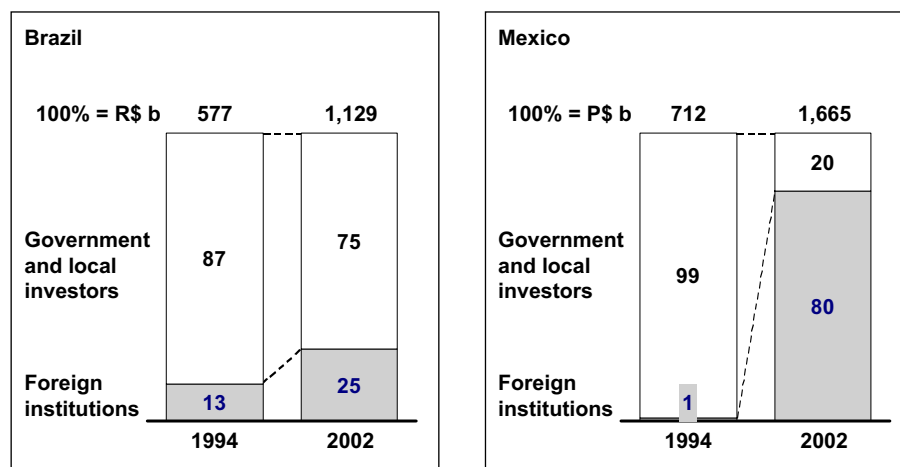
¶ **Mexico's financial crisis generated a strong demand for international capital.** A key factor behind the government's decision to open the banking sector to FDI was the undercapitalization of Mexican banks following the financial crisis of 1994. Additional capital was needed to stabilize the sector. Between 1995 and 2003, foreign financial institutions increased sector capitalization by at least U.S. \$7.4 billion, equivalent to 45 percent of total banking sector capital in 2002. This made an important contribution to the stabilization of the banking sector. In Brazil, by contrast, the impact of FDI on sector capitalization was much more limited, accounting for only 27 percent of banking sector capital in 2002. The Brazilian banking sector did not face a systemic crisis when the government removed restrictions on FDI and international capital was not essential in strengthening local banks after the macroeconomic turmoil of the mid 1990s. In fact, local Brazilian banks contributed significantly to sector capitalization in the second half of the 1990s.

¶ **Strong local banks have limited the impact of FDI in Brazil.** When international financial institutions entered Mexico, the banking sector had just emerged from a severe financial crisis and even the leading banks had been weakened significantly. Even following the government rescue of the banking industry, many local banks had a large share of nonperforming loans on their books. International banks took an active role in the restructuring of the sector and helped the local banks improve the quality of their asset base by transferring critical credit workout and risk management skills. They also helped reduce workforce staffing levels and administrative costs. All these factors contributed to increased banking sector productivity. In Brazil, by contrast, the banking sector was dominated by a number of strong local banks, including Itau, Unibanco, and Bradesco. These banks were well capitalized and profitable and had productivity levels exceeding the average of U.S. banks². As a result, international banks gained a much smaller share of the sector in Brazil than they did in Mexico and had fewer opportunities to drive productivity improvements.

2. McKinsey Global Institute. Productivity The Key to an Accelerated Development Path for Brazil, Washington D.C.: 1998.

Exhibit 1**SHARE OF BANKING SECTOR ASSETS CONTROLLED BY FOREIGN FINANCIAL INSTITUTIONS**

Percent



Source: CNBV

Exhibit 2**FDI IMPACT IN BRAZILIAN AND MEXICAN BANKING SECTOR**

++ Highly positive
 + Positive
 0 Neutral
 - Negative
 -- Highly negative

Brazil		Mexico	
FDI impact	Economic impact	FDI impact	
+	Sector capitalization	++	
0/+	Sector productivity	+	
0	Sector output	+	
-	Sector employment	-	
0	Impact on competitive intensity	0	
0	Overall impact	+	

¶ **In both countries, FDI has had limited impact on competitive intensity and consumer welfare.** In both Brazil and Mexico, FDI did not increase banking sector competition and, as a result, consumers did not experience a decline in prices or significant improvements in product selection and quality. The limited impact of FDI on competition and consumer welfare can be traced to inherent characteristics of the banking industry, prevailing macroeconomic conditions, and an underdeveloped non-bank financial sector. High switching costs for consumers limit competition in retail banking, as do high entry barriers, such as the need for banks to develop extensive branch networks. Competitive intensity in both countries was also limited because of prevailing high interest rates, which made it highly profitable for banks to lend to the government rather than to consumers. Likewise, the lack of long-term debt markets has made mortgage lending – a segment with relatively low switching costs – very difficult. Finally, the level of competitive intensity has been limited by the relatively small presence of non-bank financial institutions, such as mutual funds, which played a key role in transforming the U.S. banking sector in the 1980s.

Our examination of the Brazilian and Mexican banking sectors suggests that FDI has the greatest impact when the need for capital is high and when local banks trail best-practice productivity levels. FDI's capitalization function is equivalent to that of domestic capital, but, as the case of Mexico has shown, domestic capital is not always available. Productivity gains in banking require knowledge, skills, experience, and scale, which gives FDI banks a natural advantage. It is this quality that gives FDI its special status. Our study also highlights the critical role of competition in generating and distributing the benefits from FDI. Sound macroeconomic policies and a regulatory environment encouraging the development of long-term debt markets and competition from non-bank players are critical in creating a competitive banking sector, which will increase the benefits from FDI and spread them more broadly to consumers and the economy as a whole.

Brazil Retail Banking Case Summary

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EXECUTIVE SUMMARY

The Brazilian retail banking sector is the largest in Latin America with U.S. \$319 billion of commercial assets. It is growing at the rate of 8.8 percent a year. Banking penetration is comparatively modest at approximately 35 percent. The dramatic drop in inflation in 1994 following Plano Real exposed the fragility and poor management of several private and public owned banks. Shortly after, FDI, which had been restricted since 1988, was allowed as part of the Central Bank restructuring plan through which the distressed banks were to be stabilized and then sold off. International banks were attracted not only by the new found macroeconomic stability of the country but also the size and growth potential of the Brazilian market, the presence in Brazil of corporate clients that they already served elsewhere, and the possibility of increasing their global scale. Both domestic and international investors drove the consolidation of the sector.

Overall, FDI has had a neutral impact on the retail banking sector in Brazil. This is due predominantly to FDI's only moderate impact on capitalization and productivity improvements, and to it having little effect on sector output or consumer benefits. FDI in Brazil has been purely market seeking and has been made entirely through acquisitions. FDI contributed to the capitalization of the sector during the period of restructuring, although a significant amount of capital was from public funds. FDI has increased productivity through the headcount reduction and administrative cost reductions associated with the elimination of merger related duplications. The impact of FDI on headcount reduction has been smaller than what was observed in the period pre-FDI, during which time the government prepared banks for sale. FDI has not provided more credit to the private sector and has had a neutral effect on output of the sector. Finally, international banks have not competed on price nor have they provided successful new products to the sector since their entry into the Brazilian market.

SECTOR OVERVIEW

¶ **Sector overview.** The Brazilian retail banking market has U.S. \$319 billion of commercial banking assets and is growing at the rate of 8.8 percent a year in asset terms (Exhibit 2). It is the largest market in Latin America and eleventh largest worldwide. The sector is highly profitable with ROE of 21 percent. Despite accounting for 86 percent of GDP, banking penetration is still relatively low (Exhibit 3). The deposit and mutual fund base has increased steadily (Exhibit 4 and 5), yet bank credit has remained relatively stable (Exhibit 6) as banks have tended to invest in government bonds. The sector is relatively concentrated, with the top twelve banks accounting for ~80 percent of assets (Exhibit 7).

- The history of the sector can be divided into three phases (Exhibit 1).
 - Hyperinflation (1988-1994). This period 1988-1994 is characterized by hyperinflation, which allowed banks to be highly profitable. To cope with hyperinflation, the leading banks developed world-class skills and systems (asset liability management, payment processing, etc.) that enabled them to adjust to macroeconomic instability. More than

Exhibit 1

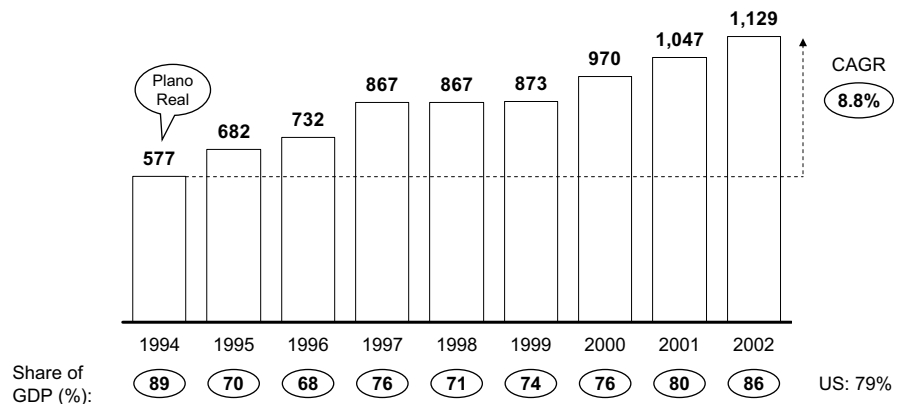
EVOLUTION OF THE BRAZILIAN BANKING SYSTEM 1988-2002

	1988-1993	1994-1998	1999-2002
	Hyperinflation	Restructuring	Consolidation
External factors	<ul style="list-style-type: none"> Hyperinflation New Federal Constitution: Central Bank as monetary authority Creation of multiple banks 	<ul style="list-style-type: none"> Introduction of stabilization program (Plano Real) with dramatic drop in inflation Deregulation of the economy and entry of international banks to assist in capitalization of financial system restructuring High interest rate policy Central Bank implements bank rescuing program that allows recapitalization of distressed banks 	<ul style="list-style-type: none"> Devaluation of the currency following change in exchange rate regime Reduction of interest rates with downward tendency Central Bank focusing on credit/risk policy
Industry dynamics	<ul style="list-style-type: none"> Hyperinflation led banks to improve their IT systems (e.g., payment processing, ALM, etc) to state-of-the-art standard First recovery program providing new lines of credit in order to help state banks Law-enforced creation of financial funds in order to provide loans to the industrial sector 	<ul style="list-style-type: none"> Government take-over of a number of banks that were either liquidated or privatized/sold to investors with the consequent consolidation of the market Banks start focusing on operational improvements 	<ul style="list-style-type: none"> Further consolidation as consequence of <ul style="list-style-type: none"> Continued restructuring by BC Some players choose to leave market Banks take several measures to sustain profitability <ul style="list-style-type: none"> Reduce headcount Segment clients Diversify products Improve technology, favoring self-service
Performance	<ul style="list-style-type: none"> High profitability based on hyperinflation Public banks less profitable and efficient than private banks 	<ul style="list-style-type: none"> Deterioration of profitability as banks lost float income resulting from hyperinflation 	<ul style="list-style-type: none"> Increase in sector performance as large portion of non-profitable banks were acquired Improvement in individual bank profitability (both of private and public)

Exhibit 2

THE BRAZILIAN BANKING SECTOR HAS GROWN STEADILY SINCE ADOPTION OF THE REAL PLAN

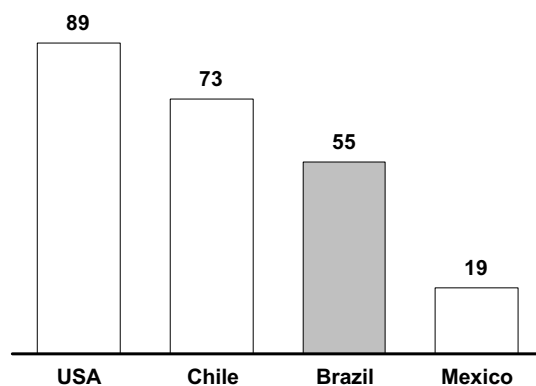
Commercial banking assets
R\$ billion (constant 2002*)



* Used CPI deflator from FIPE december to december
Source: Austin Asis

Exhibit 3**BRAZILIAN BANKING PENETRATION IS RELATIVELY LOW COMPARED WITH OTHER COUNTRIES**

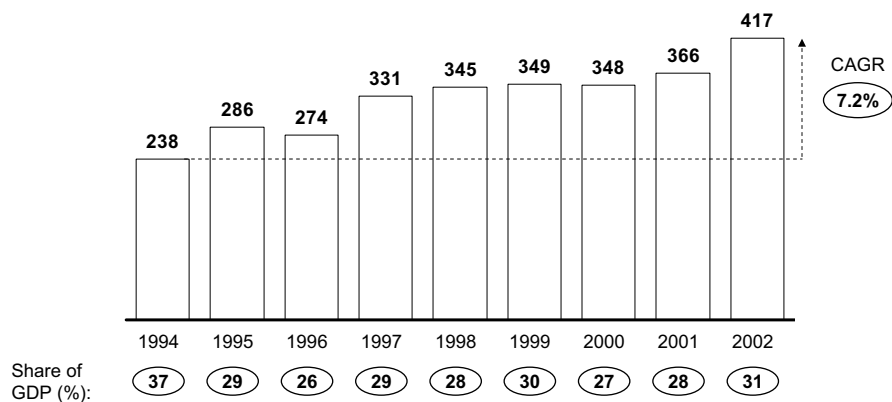
Domestic credit provided by banking sector as share of GDP, 2001
Percent



Source: EIU

Exhibit 4**DEPOSITS IN THE BRAZILIAN BANKING SYSTEM HAVE INCREASED**

Deposits in the Brazilian banking system*
R\$ billion (constant 2002)



* Checking, savings, time deposits
Source: Austin Asis

Exhibit 5

MUTUAL FUNDS HAVE ATTRACTED INVESTORS

Deposits in mutual funds
R\$ billion (constant 2002)

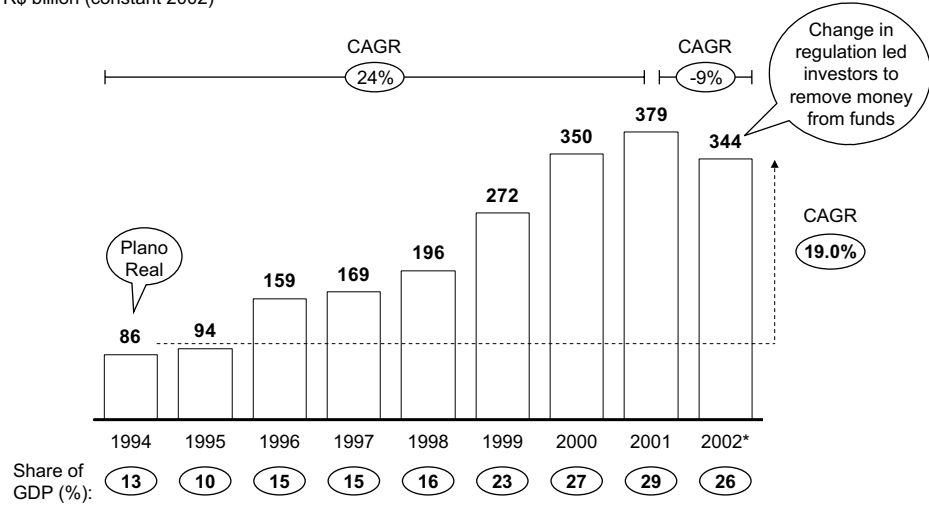
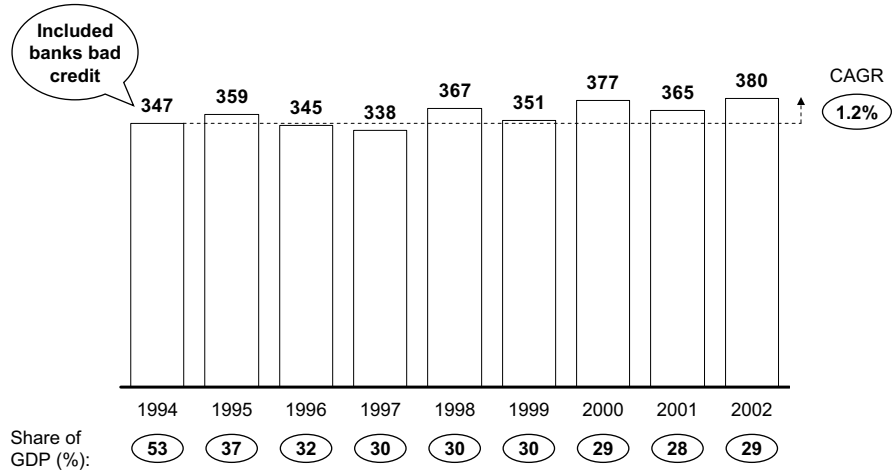


Exhibit 6













TOTAL BANK CREDIT HAS REMAINED STABLE IN ABSOLUTE TERMS AND DECLINED AS SHARE OF GDP

Total bank credit
R\$ billion (constant 2002)



Source: Brazilian Central Bank

Exhibit 7
**TOP TWELVE PLAYERS ACCOUNT FOR ALMOST 80% OF MARKET
2002**

Ownership	Type of player	Assets	Market Share	Branches	Employees	
		R\$ billion	%			
 BANCO DO BRASIL	• Banco do Brasil	• Federal	206	18	3,165	92,958
 Bradesco	• Bradesco	• Private National	143	13	2,587	112,455
 CAIXA	• CEF	• Federal	128	11	2,147	106,548
 Itaú	• Itaú	• Private National	108	10	2,230	49,422
 UNIBANCO	• Unibanco	• Private National	71	7	906	25,054
 banespa	• Santander	• Private International	55	5	1,017	20,030
 BANCO REAL <small>ABN AMRO Bank</small>	• ABN-AMRO	• Private International	52	3	1,148	28,905
 Nossa Caixa	• Nossa Caixa	• State (São Paulo)	29	3	498	13,964
 citibank	• Citibank	• Private International	29	2	51	2,084
 Safr	• Safr	• Private National	28	2	79	4,071
 HSBC	• HSBC	• Private International	25	2	944	20,398
 BankBoston	• BankBoston	• Private International	24	2	59	4,037
TOTAL			78			

Source: Brazilian Central Bank

50 percent of assets were under state or federal government control. A small number of international banks, focusing on niche segments, were already present (Citibank, BankBoston). However, no additional FDI was permissible in the financial sector and was prohibited by law, unless it was part of an international cooperation agreement or in the interests of the federal government.

- Restructuring (1994-1998). The introduction of the Plano Real stabilization program resulted in a dramatic drop in inflation. During this period several poorly managed banks were in distress and in danger of closure. The government implemented two rescue programs (one aimed at public the other at private banks) that allowed the Central Bank to take over distressed banks and to liquidate them or sell them off to investors. To increase sector capitalization, the government removed restrictions on foreign ownership of banks in Brazil.
- Consolidation (1999-2002). The consolidation of the sector continued in 1999-2002 as banks restructured and a few banks exited the market. While interest rates are still high by international levels and continue to sustain banking profitability, they nevertheless have had a downward trend. As a consequence, several banks started to take measures to improve their profitability (e.g., client segmentation, product diversification, headcount reduction, and system upgrades). Leading banks continue to grow through acquisitions.
- **Key banks.** Banks in the Brazilian market can be divided into three distinct categories (Exhibit 8).
 - Government banks. Government banks can be either federal or state owned. Before the restructuring of the sector, leading banks in the sector were government owned. In the process of restructuring, however, more than 80 percent of these banks were liquidated or privatized. Currently, Banco do Brasil (the largest bank in Brazil in assets terms) has an 18 percent market share and Caixa Economica Federal (the third largest bank in the sector) has an 11 percent market share. Nossa Caixa, a State of São Paulo bank, is the eighth largest bank and has a 3 percent market share. Government banks account for 37 percent of total banking sector assets.
 - National private banks. National banks can be divided in two groups: universal mass-market banks and niche banks. The leading universal mass-market banks in terms of asset share are Bradesco (the second largest bank in Brazil) with a market share of 13 percent, Itaú (fourth largest) with a market share of 10 percent, and Unibanco (fifth largest) with a 7 percent market share. Niche banks can be quite large (e.g., Safra, which is the tenth largest bank) and focus on specific client segments, such as the upper income population or mid-sized companies and their owners. Together national private banks account for 38 percent of banking sector assets.
 - International banks. Before 1996, the main international banks were Citibank and BankBoston, which focused on the high to middle income population and large or medium sized corporations. With the opening of the market in 1995, other international banks have entered mass-market

Exhibit 8**THE BRAZILIAN RETAIL BANKING SECTOR HAS THREE DISTINCT TYPES OF PLAYERS**

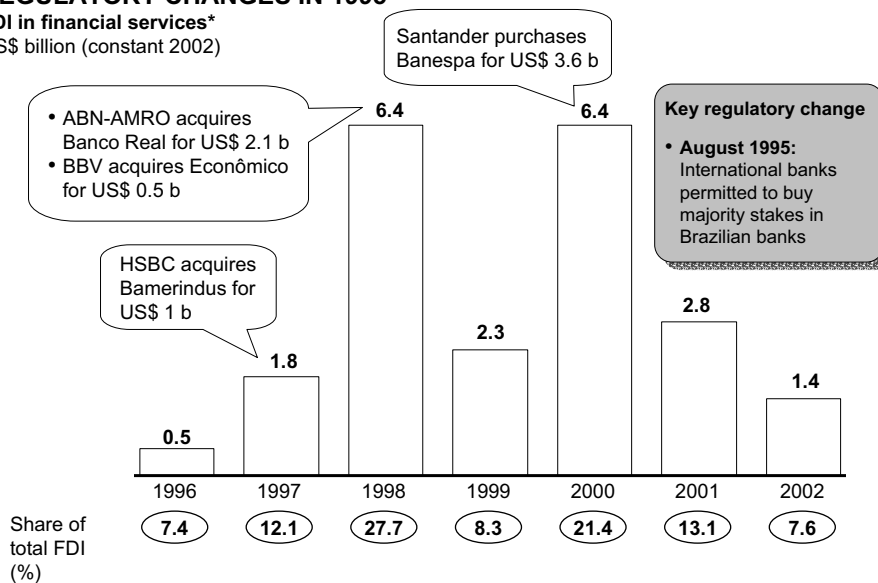
Type of player	Description	Main players	Characteristics
Government	<ul style="list-style-type: none"> Federal or state government 	<ul style="list-style-type: none"> Banco do Brasil Caixa Econômica Federal (CEF) Nossa Caixa 	<ul style="list-style-type: none"> Used for specific social credit purposes with low interest rates and high risk (e.g., mortgage by CEF, rural credit by BB) Captive clients/deposits (e.g., government or state employees are required to bank with government banks) Federal banks have high distributional reach
Private National	<ul style="list-style-type: none"> Universal banks owned by Brazilian families or investors 	<ul style="list-style-type: none"> Bradesco Itaú Unibanco 	<ul style="list-style-type: none"> Universal banks that aim to serve all client segments Strong distribution network Well-capitalized and profitable World class skills in payments and processing
Private International	<ul style="list-style-type: none"> Local subsidiaries of leading international retail banks Niche players focusing on HNW individuals and corporate clients 	<ul style="list-style-type: none"> Santander ABN-AMRO HSBC Citibank BankBoston 	<ul style="list-style-type: none"> Compete directly with private national universal banks Entry in mid-1990s Focus on high/medium income clients Have been present in the country for several years Have begun exploring opportunities in mass retail banking

Source: McKinsey

Exhibit 9

FOREIGN BANKS ENTERED THE BRAZILIAN MARKET FOLLOWING REGULATORY CHANGES IN 1995

FDI in financial services*
US\$ billion (constant 2002)



* Includes all transactions in financial services (e.g., banks, insurance companies)
Source: Brazilian Central Bank, press clippings

Exhibit 10

MAJOR PLAYERS IN THE CONSOLIDATION OF THE BRAZILIAN BANKING SECTOR

Acquirer	Major acquisitions			Total market share		
	Bank	Year	Value (US\$ billion)	1994	2002	
National	Bradesco	• BCN	• 1997	1.0	6%	13%
		• Mercantil	• 2002	0.5		
		• BBV	• 2003	0.9		
	Itaú	• BFB	• 1995	0.5	5%	10%
		• Banerj	• 1997	0.3		
		• BEMGE	• 1998	0.5		
		• Banestado	• 2000	1.6		
		• BEG	• 2001	0.7		
		• BBA	• 2002	0.9		
		• Nacional	• 1995	1.0		
International	Banco Santander	• BGC	• 1997	0.2	0%	5%
		• Noroeste	• 1997	0.3		
		• Meridional	• 2000	1.8		
		• Banespa	• 2000	3.5		
	BANCO REAL (ABN-AMRO BANK)	• Real	• 1998	2.1	1%	3%
		• Bandepe	• 1998	0.2		
		• Sudameris	• 2003	0.8		
	HSBC	• Bamerindus	• 1997	1.0	0%	2%

Source: Brazilian Central Bank, press clippings

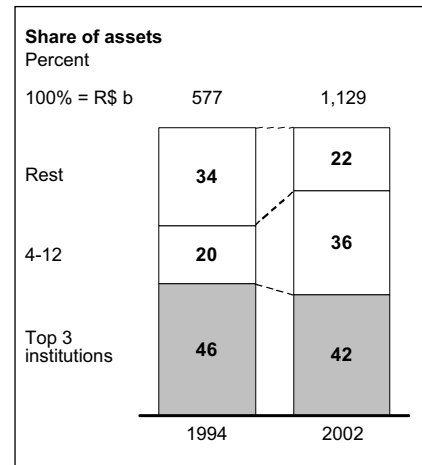
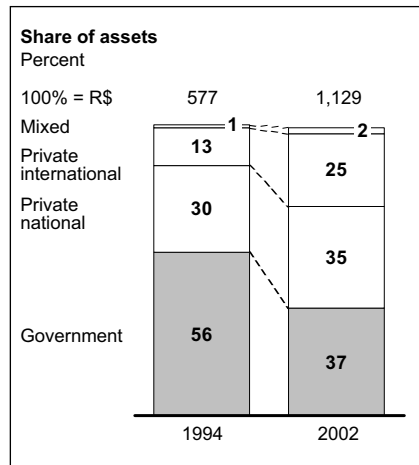
banking. The leading international banks are Santander (the sixth largest in Brazil) with a market share of five percent, ABN-AMRO (seventh largest) with a market share of three percent, and HSBC (eleventh largest) with a market share of two percent. International banks account for 25 percent of banking sector assets.

¶ **FDI overview.** Regulatory changes in 1995 allowed the entry of FDI in the retail banking sector. In order to bring FDI to Brazil, international banks had to participate in the Central Bank restructuring program. As a result, FDI in the financial sector was in general made between 1996 and 2001. During this time \$22 billion were invested, equivalent to 0.23 percent of the GDP (Exhibit 9). FDI in the Brazilian banking sector was exclusively market seeking. We have separated our study of the sector into two distinct periods based on the overall dynamics of FDI entry. The first period, "Pre-FDI" covers the time between Plano Real and the entry of international banks (1994-1996). The second period, termed "FDI" covers the years 1996-2002 when most of the investment was made and when international banks consolidated their position in the Brazilian market.

- **Pre-FDI (1994-1996).** The pre-FDI years of 1994-1996 are important in the evaluation of FDI, as this was the time when the ground was prepared for the entry of the international banks. During the years of hyperinflation most banks earnings were concentrated in float revenues. Banks fees were regulated and there was a lack of price transparency due to the high levels of inflation. As a consequence, productivity was low, there was little investment in service improvements, and banks were not focused on granting credit or charging for services. With the Plano Real and the consequent control of inflation there was a change in the banks' revenue composition, with the immediate effect that there were less float gains. The banks attempted to compensate for the loss of these float gains with traditional credit granting and fee from service income. However, these revenues from services were not sufficient to compensate for the loss of float gains in most cases and significant credit loss affected overall results. At the end of this period, the Central Bank launched two restructuring programs: PROER (aimed at private banks) and PROES (aimed at public banks). To assist capitalization, the government allowed the entry of FDI.
- **FDI period (1996-2002).** This period is marked by further restructuring, led both by leading national and international banks (Exhibit 10). HSBC, ABN-AMRO, BBV, Santander among others, entered the market at this time. This period was also marked by the expansion of BankBoston and Citibank, although these banks chose to grow organically due to the high values bid for acquisitions. By the end of 2001 international banks accounted for 29 percent of market share. National and international private banks grew through the transfer of public to private ownership (Exhibit 11). Further consolidation took place in 2002 and 2003, when two international banks left the market: BBV sold its Brazilian operations to Bradesco (a national private player) and Sudameris (an Italian bank) sold its Brazilian operations to ABN-AMRO (Exhibit 10).

Exhibit 11

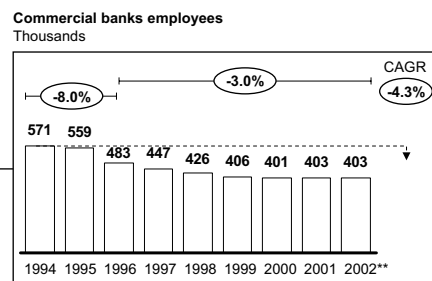
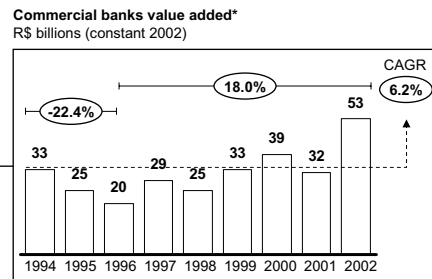
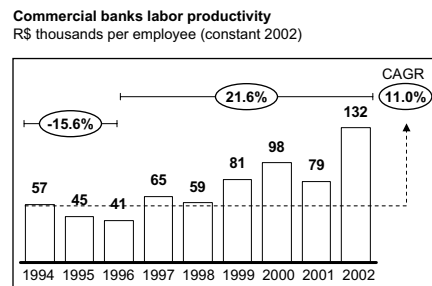
AFTER THE PLANO REAL THE MID SEGMENT OF BANKS GREW THROUGH THE TRANSFER OF CONTROL FROM THE GOVERNMENT TO PRIVATE (LOCAL AND FOREIGN) INVESTORS



Source: Austin Asis

Exhibit 12

LABOR PRODUCTIVITY OF COMMERCIAL BANKS HAS GROWN PARTICULARLY AFTER 1998



* Value added = net operating profits before tax + depreciation + personnel expense
 ** Estimate
 Source: Austin Asis, Brazilian Central Bank

¶ **External factors driving the level of FDI.** As part of generalized optimism surrounding the Brazilian economy after the Plano Real, several international companies entered the Brazilian market. International banks were attracted by the size of the Brazilian market and its growth potential, the presence in the country of corporate clients that they served elsewhere, and the possibility of increasing their global scale.

- **Global factors.** International banks, particularly European ones, faced limited potential for growth within their own markets. This encouraged them to look abroad for new growth opportunities.
- **Country specific factors**
 - **Sector potential.** International banks were attracted by the size of Brazil's market and the potential for growth. The Brazilian banking sector is the largest in Latin America. Currently, a significant proportion of the potential customer base does not possess a bank account (Exhibit 3).
 - **Macroeconomic stability.** Brazil's newfound economic stability and control of hyperinflation brought about by the Plano Real allowed international banks to operate within an environment more closely resembling that to which they were accustomed. The government-sponsored restructuring program managed by the Central Bank prepared distressed banks for acquisition and thereby prevented a severe financial crisis from arising in the banking sector.
 - **Further liberalization of FDI.** The constitution passed in 1988 prohibited international banks from taking a majority stake in national banks unless it was part of an international agreement or in the interests of the Federal Government. These restrictions on international entry were lifted in 1995 so that international banks could participate in the restructuring of Brazil's financial system.
 - **Government incentives.** To further encourage the entry of international banks, special benefits, such as tax benefits, were provided.
- **Initial sector conditions.** In the restructuring program promoted by the Central Bank market share was shifted from public to private ownership. This provided banks with the opportunity to grow through acquisitions.
 - **Gap with best practice.** Upon entry, international banks expected that the gap between Brazilian banking practices and best practice would be high and that they would be able to make significant improvements in the profitability of the acquired Brazilian banks.

FDI IMPACT ON HOST COUNTRY

¶ **Economic impact.** International banks contributed to the improvement in labor productivity of the Brazilian banking sector by reducing headcount and administrative costs. FDI has had a neutral impact on output and a negative impact on employment.

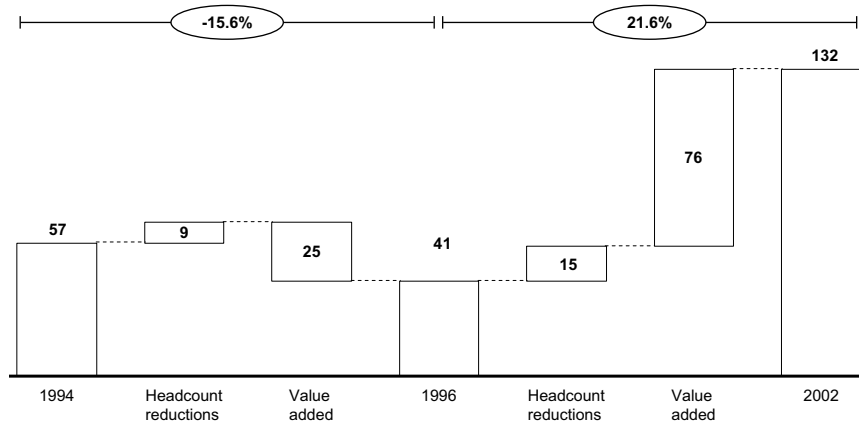
- **Sector productivity**
 - **FDI helped improve labor productivity.** Between 1996 and 2002, labor productivity increased by 22 percent a year compared to an annual decrease of 16 percent a year from 1994-1996 (Exhibit 12). In the pre-FDI period, headcount reductions drove productivity growth. However, a

Exhibit 13

AFTER THE REAL PLAN PRODUCTIVITY GROWTH WAS DRIVEN FIRST BY HEADCOUNT REDUCTION THEN BY INCREASE IN VALUE ADDED

Commercial banking labor productivity, 1994-2002
R\$ thousands per employee (constant 2002)

○ = CAGR



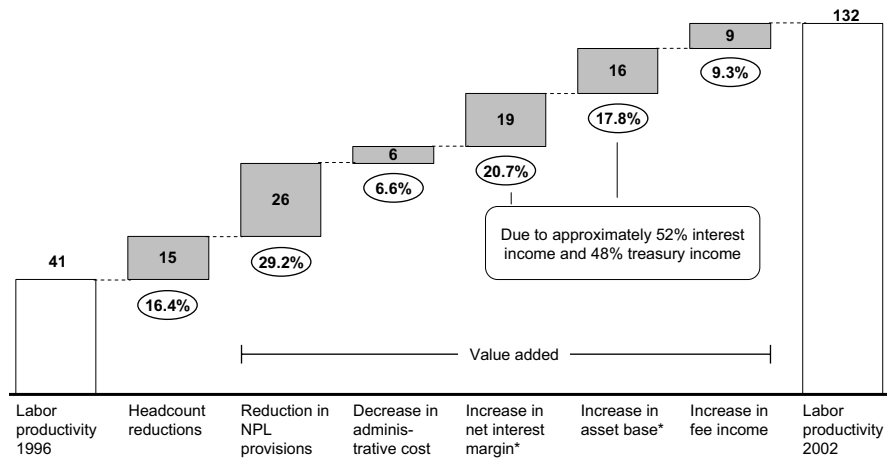
Source: Austin Asis, McKinsey analysis

Exhibit 14

INCREASES IN NET INTEREST INCOME HAVE BEEN THE BIGGEST DRIVER OF PRODUCTIVITY GROWTH BETWEEN 1996 AND 2002

Breakdown of productivity change, 1996-2002
R\$ thousand per employee (constant 2002)

○ = Percent of change



Source: Austin Asis, Labor Ministry, McKinsey analysis

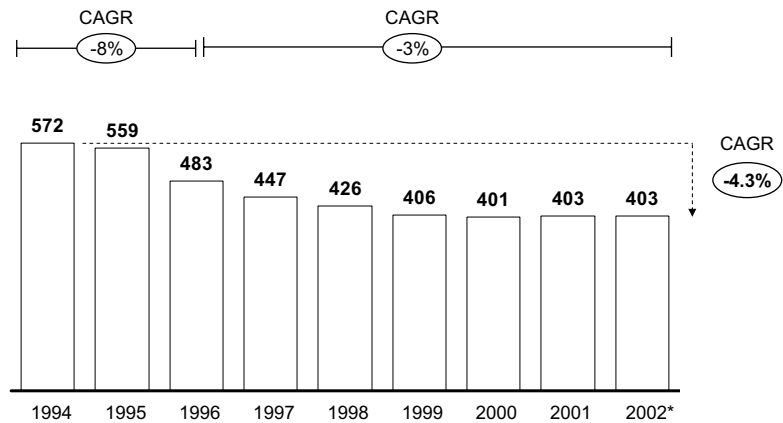
significant drop in value added, caused primarily by an increased provision for non-performing loans, impacted overall productivity negatively. Since 1996, productivity gains have come primarily from increases in value added (Exhibit 13). The main drivers of productivity growth between 1996 and 2002 have been a reduction in provisions for non-performing loans and increases in net interest income. The increase in net interest income derived almost 50:50 from interest income and treasury income (Exhibits 14).

- FDI reduced staffing levels. FDI contributed to headcount reduction through a combination of technology improvements and elimination of merger-related duplications. However, compared to the reduction in the headcount that occurred in the pre-FDI period, the effect of FDI has been relatively small (Exhibit 15). FDI impacted administrative costs more modestly by eliminating merger-related duplications. Santander played a key role in both headcount and administrative cost reduction.
- Average productivity of leading FDI banks mirrors leading national banks. Comparison of the top three international banks with the top three private national banks shows that the international banks increased their productivity at a faster rate than the national banks, bringing their productivity in line with that of the national banks by the end of the period under review (Exhibit 16).
- **Sector output**
 - Sector output has increased modestly. Between 1996 and 2002, total bank credit increased by 1.6 percent per year compared to an annual decrease of 0.2 percent between 1994-1996. Sector output measured as increase in bank credit has been modest. As a share of GDP, banking credit has declined from 32 percent in 1996 to 29 percent in 2002 (Exhibit 6).
 - The impact of FDI on output has been neutral. FDI did not increase private bank credit as measured by loans per asset or loans per deposit. The leading international banks combined provide less credit than the average for the sector, ABN-AMRO being an exception (Exhibit 17).
- **Sector employment**
 - Banking sector employment is declining. Between 1996 and 2002, banking sector employment declined by three percent per year compared to an annual decrease of eight percent a year from 1994-1996. Sector employment decreased particularly strongly in the first years following the Plano Real and more modestly since the international banks have entered the sector (Exhibit 15). The significant decrease in the pre-FDI years was the result of governmental negotiations as the banks were being prepared for sale. In the FDI period, most of the decrease is associated with the elimination of merger related duplications and improvements in technology. Further reductions are limited by restrictions imposed on the employment contracts of federal and state bank employees.
 - FDI has had a small negative impact on employment. International banks contributed modestly to headcount reduction by eliminating merger-related duplications and by making operations improvements using new

Exhibit 15

THE NUMBER OF EMPLOYEES HAS DECREASED

Commercial banking employees
Thousands

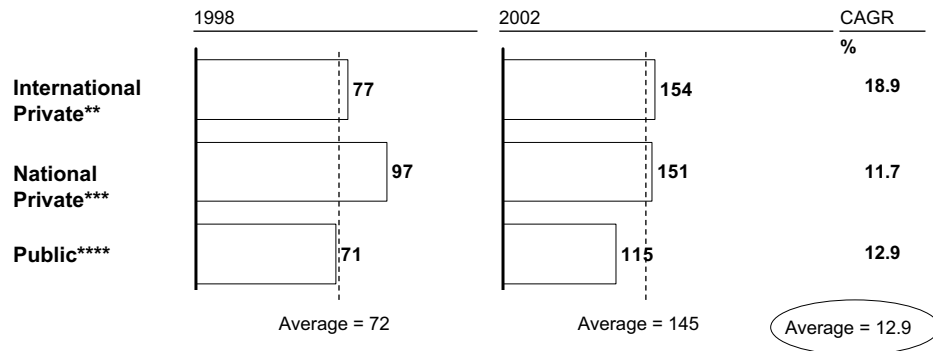


* Estimate
Source: Labor Ministry

Exhibit 16

LABOR PRODUCTIVITY HAS INCREASED MOST FOR BANKS ACQUIRED BY FDI

Labor productivity of commercial banks *
R\$ thousands per employee (constant 2002)



* Labor productivity = value added per employee; value added = net operating profit before taxes + depreciation + personnel expenses
 ** Santander, ABN-AMRO, HSBC in 2002; Banespa, Real, HSBC in 1998
 *** Itau, Unibanco, Bradesco
 **** Banco do Brasil, Caixa Economica Federal, Nossa Caixa
 Source: Austin Asis, company websites

Exhibit 17

LEADING FOREIGN BANKS PROVIDE FEWER LOANS THAN SYSTEM AVERAGE

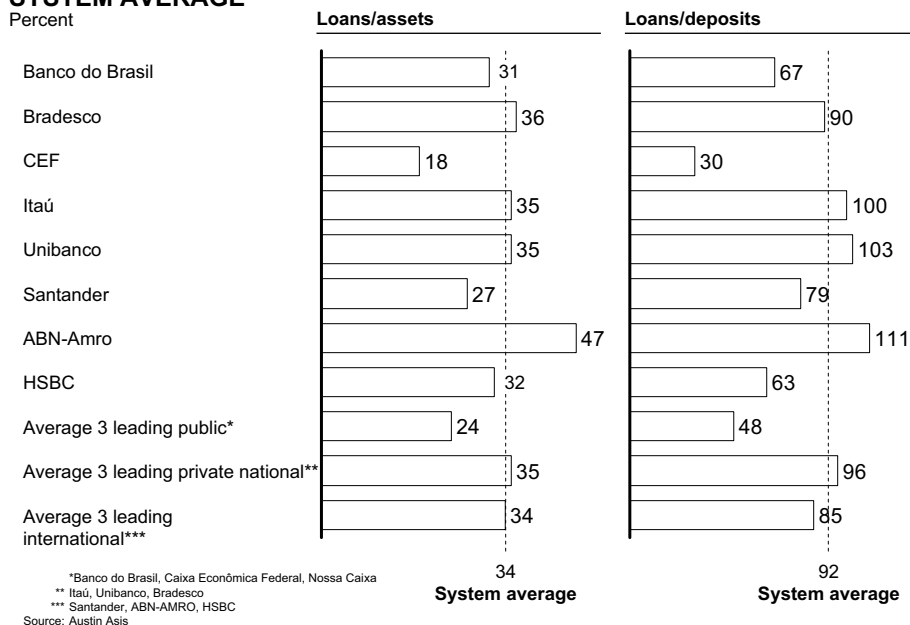
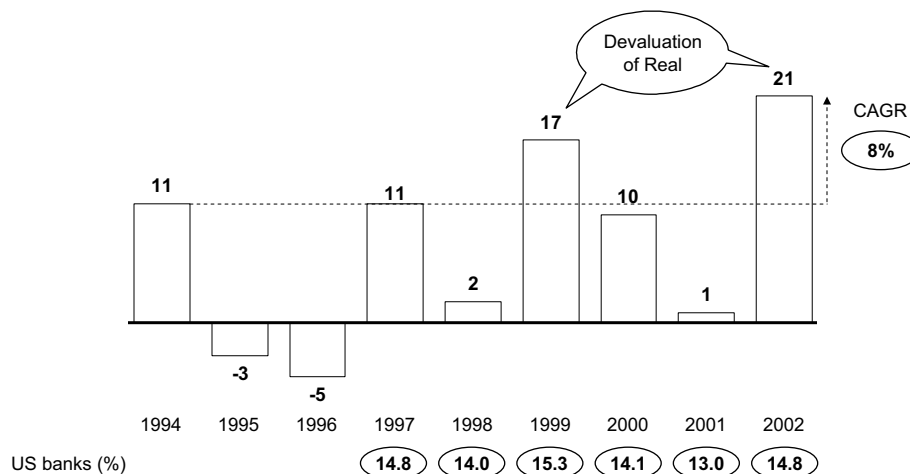


Exhibit 18

PROFITABILITY OF BRAZILIAN BANKING SYSTEM HAS FLUCTUATED

Return on equity for Brazilian banking system
Percent

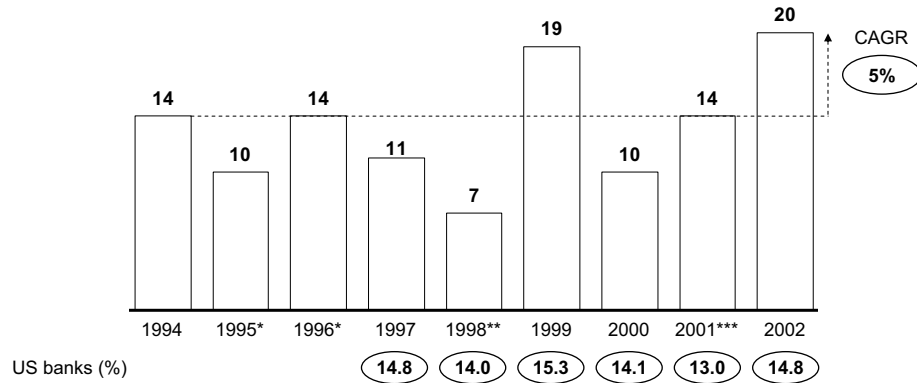


Source: Austin Asis

Exhibit 19

LOSSES INCURRED BY INDIVIDUAL BANKS SIGNIFICANTLY IMPACT SECTOR ROE

Return on equity for Brazilian banking system excluding Banco do Brasil (1995, 1996), Banestado (1998) and Caixa Econômica Federal and Banespa/Santander (2001)
Percent

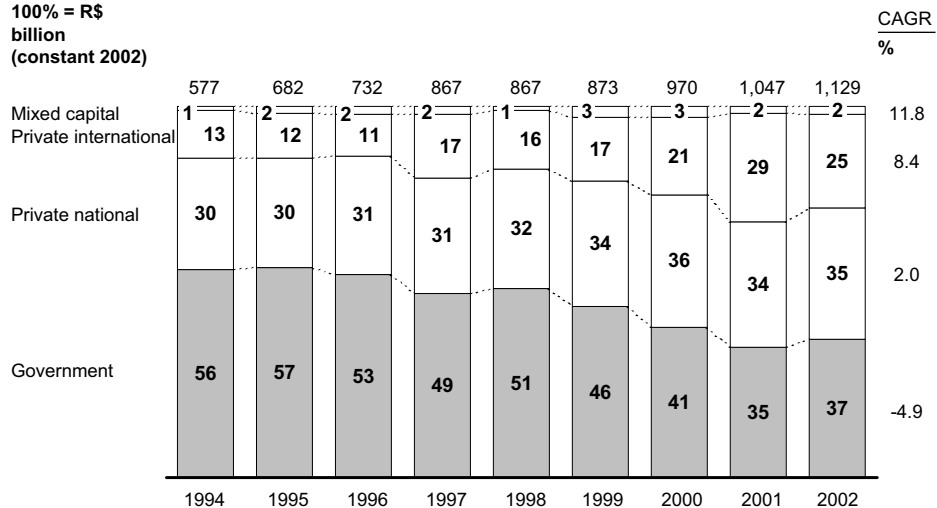


* Excludes Banco do Brasil loss of R\$ 4.3 (1995) and R\$ R\$7.5 bi (1996)
 ** Excludes Banestado loss of R\$ R\$ 2.9 bi
 *** Excludes CEF loss of R\$ 4.7 bi, Santander/Banespa loss of R\$ 6.5 bi
 Source: Austin Asis

Exhibit 20

PRIVATE BANKS GREW FROM THE REDUCTION IN MARKET SHARE OF GOVERNMENT OWNED BANKS

Share of assets
Percent
100% = R\$ billion
(constant 2002)



Source: Austin Asis

technology. Most of the reductions in headcount in the retail banking sector were promoted by the government's restructuring of the sector. In comparison with this, the effect of FDI on employment has been relatively small. Individually, Santander has had the highest impact on headcount reduction.

- **Supplier spillovers.** There are no significant supplier spillovers in retail banking

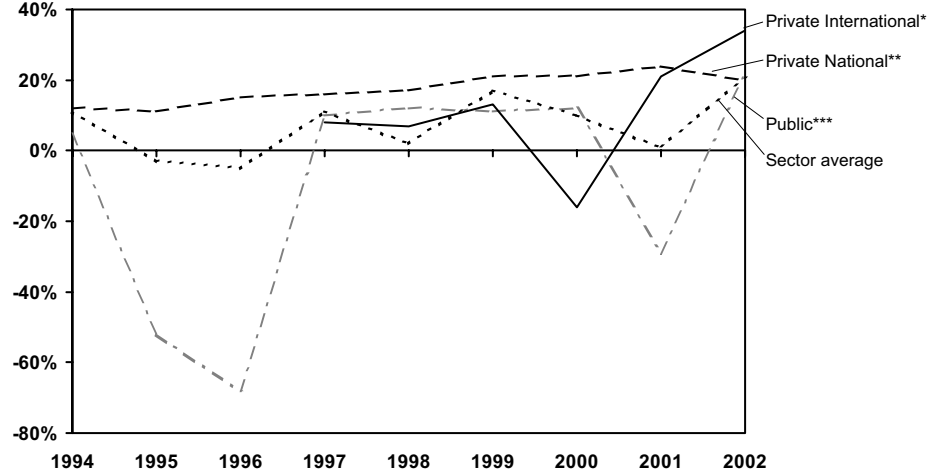
¶ Distribution of impact of FDI

- **Banks.** The overall impact of FDI has been mixed for international banks and neutral for local banks. Some international banks have benefited from entering the Brazilian market. Others are struggling and some have exited the market. International banks have not affected the profitability of national banks (exhibits 18, 19 and 21)
 - **FDI banks.** Despite having increased their market share from 13 percent to 25 percent during the past eight years (Exhibit 20) the international banks have had a mixed track record in Brazil (Exhibit 21). HSBC, the first entrant, has had mixed results: while it is profitable, it has lost half of its earlier market share. Recent entrants (Santander and ABN-AMRO) are profitable. Niche banks, such as BankBoston and Citibank, have historically performed well. A few international banks, such as BBV and Sudameris, have exited the market.
 - **Non-FDI banks.** Public and private domestic banks have both improved profitability (Exhibit 21). FDI has not affected the profitability of domestic banks.
- **Employment.** The overall impact of FDI on employment has been negative. International banks have reduced employment levels, but had no impact on wages.
 - **Level.** Employment has seen two distinct stages. Pre-FDI, substantial reductions occurred in the sector as the government prepared distressed banks for sale. Since then, FDI has reduced headcount from merger-related duplications and through operations improvements.
 - **Wages.** Wages agreements are negotiated for the employees by the trade union representatives and representatives of the banking sector. There is no evidence that wage levels or wage negotiations have been affected by FDI.
- **Consumers.** The impact of FDI on consumer welfare has been neutral. The majority of this impact occurred before the international banks had actually entered the country, as the threat of increased competition helped accelerate improvements in the services provided by local banks. However, since the entry of the international banks, there has been little or no increase in competition. Improvements in services have been modest, prices for banking products have risen – albeit selectively – and few successful new products have been introduced.
 - **Prices.** Overall, fee income in the sector has increased modestly (Exhibit 22). Common fees (such as overdraft fees) have remained stable and are usually negotiated with customers. Uncommon fees (such as special transfers between accounts) have increased significantly.

Exhibit 21

PROFITABILITY OF LEADING FOREIGN BANKS HAS VARIED AND ONLY RECENTLY OUTPERFORMED THE SECTOR AVERAGE

Return on equity
Percent



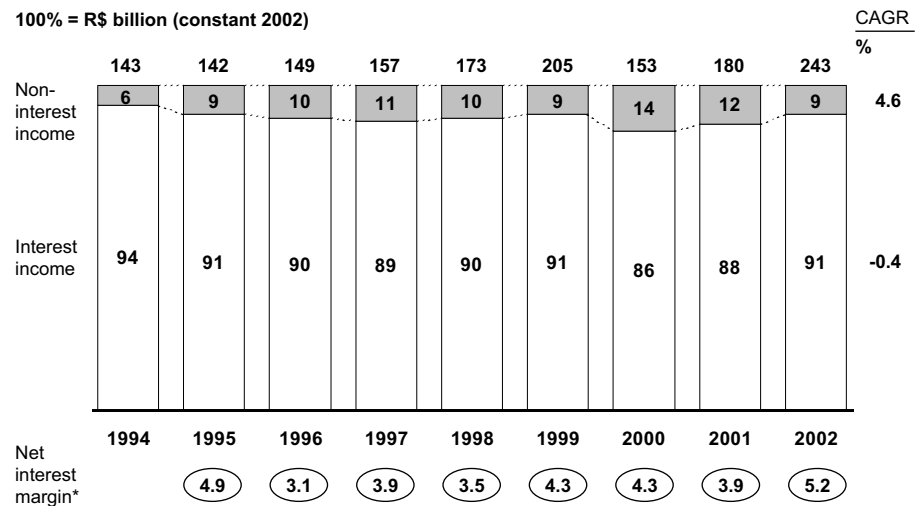
* Santander, ABN-AMRO, HSBC
 ** Itaú, Unibanco, Bradesco
 *** Banco do Brasil, Caixa Econômica Federal, Nossa Caixa
 Source: Austin Asis

Exhibit 22

NON-INTEREST INCOME AND MARGINS HAVE FLUCTUATED OVER THE PAST DECADE

Gross income Brazilian banking system
Percent

100% = R\$ billion (constant 2002)



* Calculated as Net interest income/Average assets
 Source: Austin Asis

- Product selection and quality. International banks have launched a number of new products in Brazil. However, most of these products proved unsuccessful and were later removed from the market.
- **Government.** FDI contributed to the re-capitalization of the banking sector and thus reduced the overall cost of restructuring for the government. Nevertheless, most of the costs associated with the restructuring of the financial system were from public funds (Exhibit 23).

HOW FDI HAS ACHIEVED IMPACT

FDI has had two important effects. Its greatest impact has been in assisting the capitalization of the sector as it underwent restructuring. It also increased competition prior to the entry of the international banks by triggering operational improvements in local banks in the anticipation of increased competition (Exhibit 24).

¶ **Operational factors.** FDI's most important operational role was in the modest provision of capital to the financial system. In addition, international banks also impacted the sector modestly by reducing the headcount and administrative costs.

- **Capitalization.** FDI brought capital to the sector through the acquisition of banks – both of distressed banks made available in the restructuring program and of healthy banks. Had FDI not entered the sector the government could have provided the necessary funds, as most of the costs associated with the restructuring of the financial system were raised from public funds (Exhibit 23).
- **Headcount.** FDI reduced headcount through a combination of technology improvements and the elimination of merger-related duplications. However, compared to the reduction of headcount that occurred in the pre-FDI period, the impact of FDI in this area has been small.
- **Administrative costs.** FDI has reduced administrative costs of its banks by achieving economies of scale through merger-related processes.

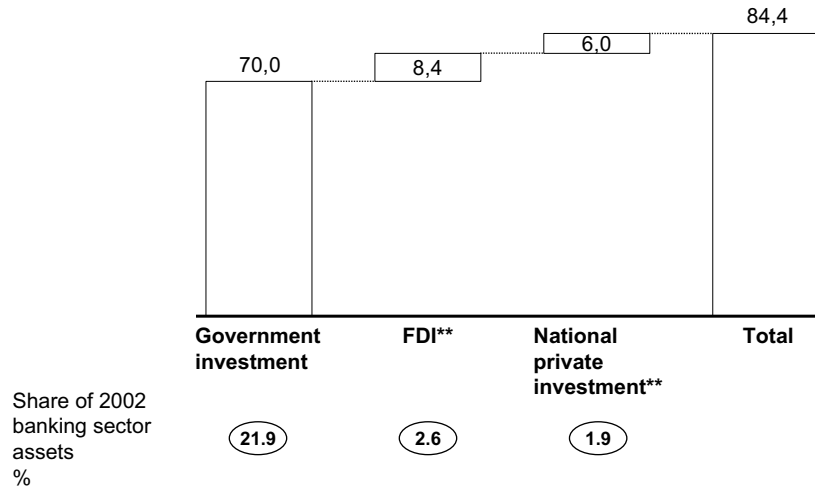
¶ **Industry dynamics.** FDI has had two important impacts on industry dynamics. First, international banks participated in the consolidation process in the sector. Second, before actually entering the market, FDI triggered operational improvements in local banks in anticipation of international competition.

- **Consolidation.** The entry of international banks increased consolidation but has not led to concentration in the sector.
 - International banks have participated in the consolidation process both through the acquisition and merger of more than one bank (e.g. Santander bought several banks and consolidated them), as well as through exiting (BBV, Sudameris).
 - The consolidation of the sector has not resulted in any concentration of the industry, the overall market share of the top ten banks having actually decreased over time (Exhibit 10).

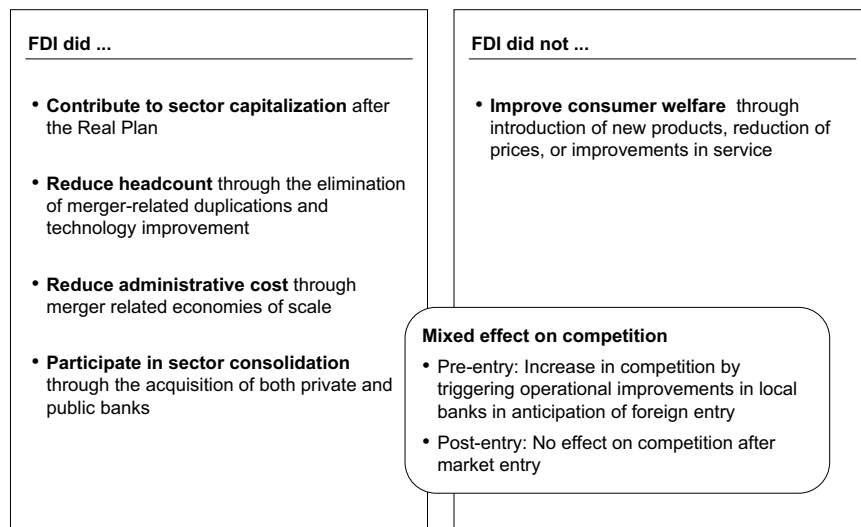
Exhibit 23**INVESTMENT IN RESTRUCTURING OF THE RETAIL BANKING SECTOR WERE MOSTLY FROM PUBLIC FUNDS**

ESTIMATE

Investments made in the restructuring of retail banking sector*
US\$ billion (nominal)



* Some transactions between private banks were for undisclosed value
 ** Excludes private purchases such as ABN-AMRO purchase of Real, Itau purchase of BBA and Banco Fiat, Bradesco purchase of BBV
 Source: Austin Asis

Exhibit 24**FDI IMPACT ON BRAZILIAN RETAIL BANKING SECTOR**

- **Competitive intensity.** The threat of the international banks' entry into Brazil increased the level of competition in the Brazilian banking sector prior to their entry. However, once they had entered the sector, the international banks did not increase the level of competition further.
 - As FDI was allowed into the country, national banks accelerated the implementation of measures that resulted in improvement of operations (e.g. branch improvements, internet banking, ATM systems, etc.) in anticipation of international competition.
 - Since the entry of international banks there has been no increase in the level of competitive intensity. Competition in the sector is relatively low and mostly concentrated among the three top national banks. Despite increasing their market share, international banks have been unable to increase competitive pressure on either public or private national banks (Exhibit 31).

EXTERNAL FACTORS THAT AFFECTED THE IMPACT OF FDI

¶ Country-specific factors

- **Macroeconomic stability.** The economic stability brought about through Plano Real in combination with the sector's restructuring promoted by the Central Bank facilitated FDI. These factors allowed international banks to operate within an environment that more closely resembled that to which they were accustomed. However, high interest rates have reduced the incentives for banks to compete, thereby limiting the impact of FDI.
- **Legislation.** Brazilian legislation has in some cases inhibited the impact of FDI as it on occasion prevents international banks from adapting best practice to the Brazil environment. In particular, the housing laws (associated with the repossession of houses put up as collateral for mortgage loans) and the bankruptcy law (which determines the order in which the funds of a bankrupt company are returned to the parties involved – first the employees, then government tax, and only then creditors) have inhibited the impact of FDI.

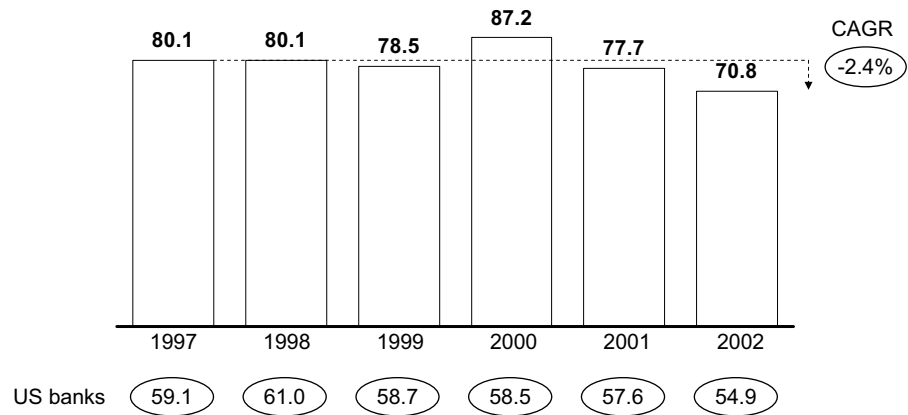
¶ Initial sector conditions

- **Competitive intensity.** Competition in the sector is low and this reduces the pressure for improving performance. In addition, international banks face the challenge of competing in a system where they have only a small market share.
- **Gap with best practice**
 - High costs. The Brazilian retail banking sector has high costs (Exhibit 25 and 26). This is due primarily to specific local policies that require a number of labor-intensive transactions (e.g., payments may be made at banks and all banks are obliged to receive all payments, even if they are from other banks). As a result, international banks have had to adapt to these policies and in consequence incur the same high costs as incurred by local banks.

Exhibit 25

THE COST EFFICIENCY OF THE BRAZILIAN BANKS IS BELOW BEST PRACTICE LEVELS

Cost-to-income ratio of commercial banking sector*
Percent

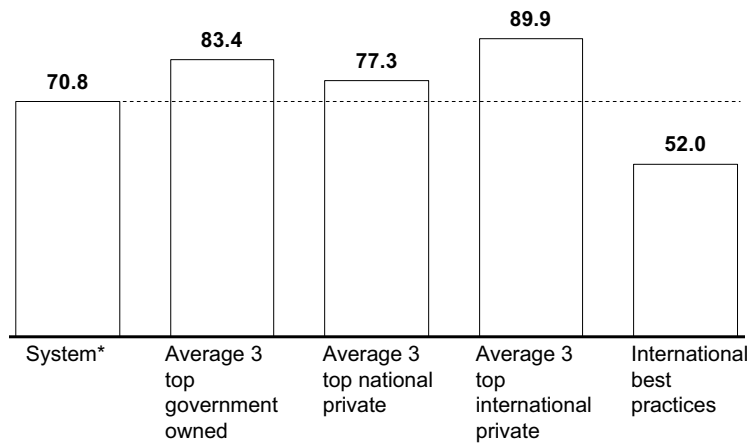


* Based on sample of 164 banks
Source: Bankscope

Exhibit 26

THE COST EFFICIENCY OF THE LEADING PLAYERS IS BELOW AVERAGE FOR SEGMENTS WITHIN SECTOR

Cost-to-income ratio of commercial banking sector*
Percent



* Based on sample of 164 banks
Source: Bankscope

-
- Brazilian national banks have been well adapted to the national situation. National banks, particularly the private national banks, have historically invested significant amounts in the IT systems and operations improvements necessary to adapt to changes in the local environment. As a result, the gap with best practice operations is relatively small, leaving international banks little room to have significant impact within the sector.

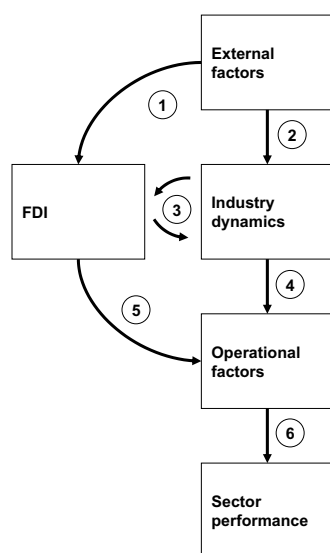
SUMMARY OF FDI IMPACT

Overall, FDI has had a neutral impact on the retail banking sector in Brazil. It has a moderate but positive impact on capitalization and productivity improvement but has had little effect on sector output or consumer benefits. Though FDI participated in the capitalization of the sector, so did private national banks at roughly the equivalent level (the majority of the investment coming from public funds). FDI has increased productivity, mostly through the headcount reduction and administrative cost reduction associated with the elimination of merger related duplications. However, the impact of FDI on headcount reduction has been smaller than was the case in the pre-FDI period, when government restructuring prepared distressed banks for sale. Nor has FDI provided more private credit than was previously available; it has thus had a neutral effect on the output of the sector. Finally, international banks have not competed in price nor have they been able to provide successful new products since their entry in the market.

Exhibit 27

BRAZIL RETAIL BANKING – SUMMARY

Overall impact of FDI: 0



- ① • The dramatic drop in inflation in 1994 following Plano Real exposed the fragility and poor management of several private and public owned banks. FDI, which had been restricted since 1988, was allowed as part of the Central Bank restructuring plan through which the distressed banks were to be stabilized and then sold off
- International banks were attracted not only by the new found macroeconomic stability of the country but also the size and growth potential of the Brazilian market, the presence in Brazil of corporate clients that they already served elsewhere, and the possibility of increasing their global scale.
- ② • Restructuring of sector by Central Bank resulted in consolidation through the sale of most state banks and a number of private banks
- ③ • Competitive intensity is relatively low. Entry of international banks does not increase competitive intensity
- ④ • Operation improvements to compensate for reduced gains from float due to control of hyperinflation
- ⑤ • FDI contributed modestly to sector capitalization; international banks also have a small positive impact on productivity through reduction of headcount and administrative costs. In anticipation of international competition, local banks implement operation improvements
- ⑥ • **Overall, FDI has had a neutral impact on the retail banking sector in Brazil.** It has a moderate but positive impact on capitalization and productivity improvement but has had little effect on sector output or consumer benefits. Though FDI participated in the capitalization of the sector the majority of the investment coming from public funds. FDI has increased productivity, mostly through the headcount reduction and administrative cost reduction associated with the elimination of merger related duplications. Nor has FDI provided more credit to the private sector than was previously available; it has thus had a neutral effect on the output of the sector. Finally, international banks have not competed in price nor have they been able to provide successful new products since their entry in the market.

Exhibit 28

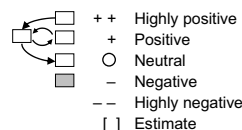
BRAZIL RETAIL BANKING – FDI OVERVIEW



• FDI analysis time periods	
– Focus period: Pre- FDI	1994-1996
– Comparison period: FDI	1996-2002
• Total FDI inflow (1996-2002)	\$21.6 billion
– Annual average	\$3.1 billion
– Annual average per sector employee (2002)	\$ 7.7 thousand
– Annual average as share of GDP (2002)	0.23%
– Market share of international banks (2002)	25%
• Entry motive (percent of total)	
– Market seeking	100%
– Efficiency seeking	0%
• Entry mode (percent of total)	
– Acquisitions	100%
– JVs	0%
– Greenfield	0%

Exhibit 29

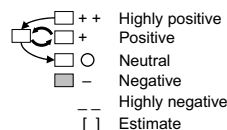
BRAZIL RETAIL BANKING – FDI's ECONOMIC IMPACT IN HOST COUNTRY



Economic impact	Sector performance during		FDI impact	Evidence
	Pre FDI (1994-1996)	FDI (1996-2002)		
• Sector productivity (CAGR)	-16%	22%	0/+	<ul style="list-style-type: none"> • Since 1996, productivity gains have come primarily from increases in value added. The main drivers of productivity growth between 1996 and 2002 have been reductions in provisions for non-performing loans and net interest income increases with moderate contributions of headcount and administrative cost reduction • FDI participated in reduction of headcount and administrative costs; however overall participation is small
• Sector output (CAGR of total bank credit)	-1%	+2%	0	<ul style="list-style-type: none"> • Sector output measured as increase in bank credit has been modest • International banks have not provided more credit to the private sector than have national banks
• Sector employment (CAGR)	-8%	-3%	-	<ul style="list-style-type: none"> • Sector employment has decreased particularly in the first years following the Real Plan and more modestly since international banks entered the sector • International banks contributed to the reduction in headcount by eliminating merger-related duplications, and improvements in technology
• Suppliers	N/A	N/A	N/A	<ul style="list-style-type: none"> • No significant supplier spillover in retail banking
Impact on competitive intensity (op. margin CAGR)	+	0	0	<ul style="list-style-type: none"> • International banks created a competitive environment before they entered the market, however, have been unable to compete since their entry • Competition in the sector is relatively low and mostly concentrated among the three top national private players • Since entry international banks have not increased competitive intensity. Despite increasing their market share, international banks have been unable to increase competitive pressure on either public or private national banks • Income from fees has increased modestly. Pricing in the sector has increased selectively

Exhibit 30

BRAZIL RETAIL BANKING – FDI's DISTRIBUTIONAL IMPACT IN HOST COUNTRY



Distributional impact	Sector performance during		FDI impact	Evidence
	Pre FDI (1994-1996)	FDI (1996-2002)		
• Companies				
FDI companies	0	+	+	<ul style="list-style-type: none"> • International banks have increased their participation in the sector from 13% to 25% in the past 8 years and have been profitable in their Brazilian operations
Non-FDI companies	+	0	0	<ul style="list-style-type: none"> • Brazilian players both public and private have also improved profitability • FDI has not affected domestic banks
• Employees				
Level of employment (CAGR)	-8%	-3%	-	<ul style="list-style-type: none"> • Sector employment has decreased following the Real Plan and International banks contributed to the reduction in headcount by eliminating merger-related duplications, and improvements in technology
Wages	0	[0]	[0]	<ul style="list-style-type: none"> • Wages are negotiated between the workers (union) and representatives of the banking sector. FDI had no impact
• Consumers				
Prices	0	0	0	<ul style="list-style-type: none"> • Income from fees has increased modestly. Pricing in the sector has increased selectively. Common fees (such as overdraft fees) have remained stable and are usually negotiated with customers. Uncommon fees (such as special transfers between accounts) have increased significantly
Selection	0	0	0	<ul style="list-style-type: none"> • FDI has not brought new successful products to sector
• Government				
Taxes	0	[+]	[0]	<ul style="list-style-type: none"> • FDI contributed to, at least partially, reduce the amount that had to be invested by the government. Yet, most of the costs associated with the restructuring of the financial system were from public funds

Exhibit 31

BRAZIL RETAIL BANKING – COMPETITIVE INTENSITY

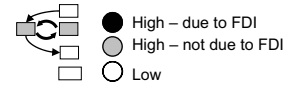
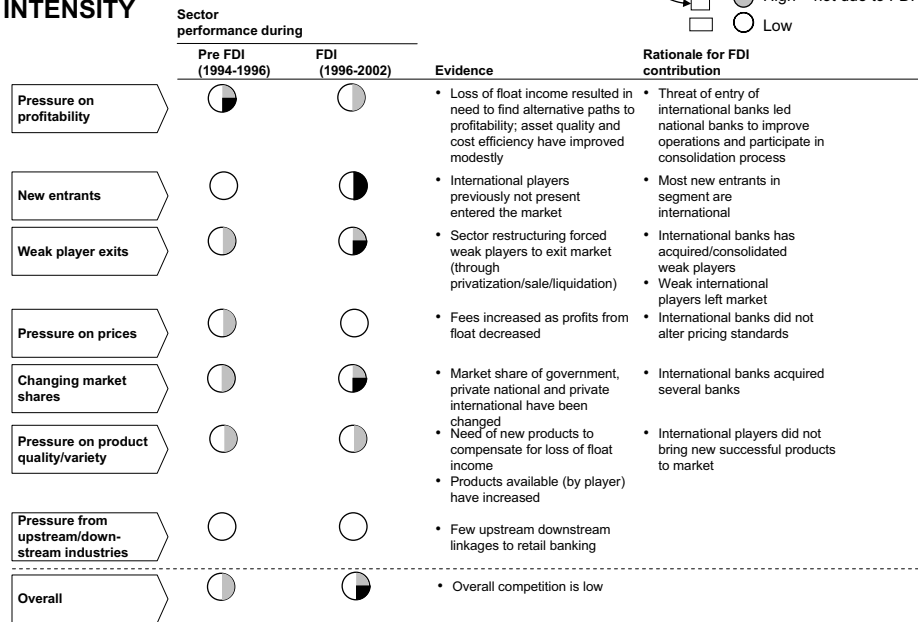


Exhibit 32

BRAZIL RETAIL BANKING – EXTERNAL FACTORS' EFFECT ON FDI

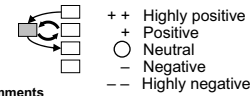
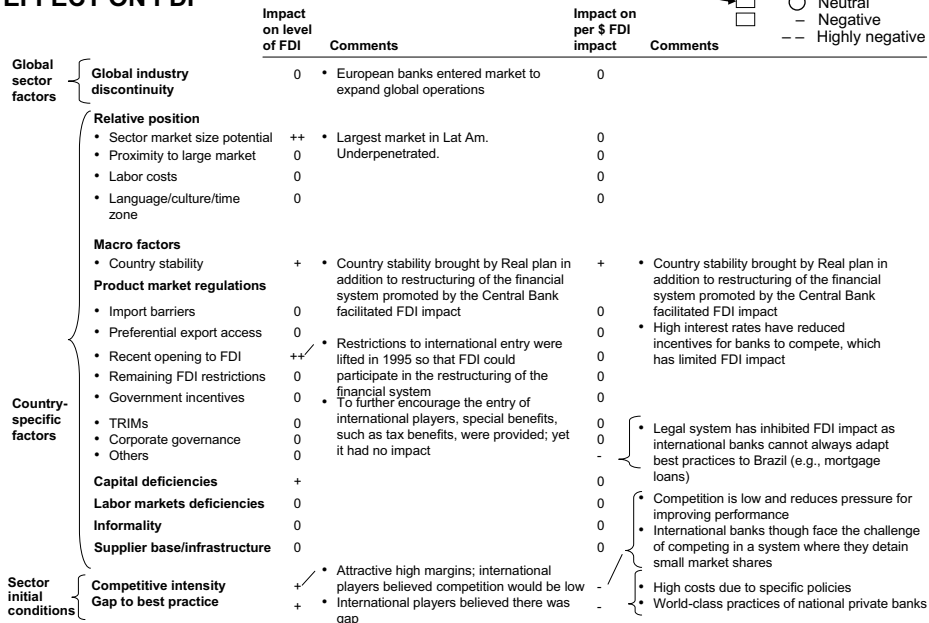


Exhibit 33
**BRAZIL RETAIL BANKING –
FDI IMPACT SUMMARY**

[] Estimate ++ Highly positive – Negative
+ Positive -- Highly negative
O Neutral () Initial conditions

Level of FDI relative to sector*	FDI impact on host country	Level of FDI** relative to GDP	External Factor impact on	
			Level of FDI	Per \$ impact of FDI
	N/A		0.23%	
Economic impact		Global factors		
• Sector productivity	0/+	• Global industry discontinuity	0	0
• Sector output	0	• Relative position		
• Sector employment	–	• Sector market size potential	++	0
• Suppliers	NA	• Prox. to large market	0	0
		• Labor costs	0	0
		• Language/culture/time zone	0	0
Impact on competitive intensity	0	• Macro factors		
Distributional impact		• Country stability	+	+
• Companies		• Product market regulations		
FDI companies	+	• Import barriers	0	0
Non-FDI companies	0	• Preferential export access	0	0
• Employees		• Recent opening to FDI	++	0
Level	–	• Remaining FDI restriction	0	0
Wages	[0]	• Government incentives	+	0
• Consumers		• TRIMs	0	0
Prices	0	• Corporate governance	0	0
Selection	0	• Other	0	–
• Government		• Capital market deficiencies	+	0
Taxes	[0]	• Labor market deficiencies	0	0
		• Informality	0	0
		• Supplier base/ infrastructure	0	0
		• Competitive intensity	+	–
		• Gap to best practice	+	–
		• Sector initial conditions		

* Average annual FDI/sector value added

** Average (sector FDI inflow/total GDP) in key era analyzed

Mexico Retail Banking Case Summary

EXECUTIVE SUMMARY

With U.S. \$172 billion in commercial assets, the Mexican banking sector is the second largest in Latin America. Credit penetration is one of the lowest in the region, with domestic banking credit accounting for 19 percent of GDP. Since the 1994 financial crisis, the Mexican banking sector has contracted. Bank credit to the private sector has declined and banks have been unable to increase their deposit base. Mexico's banking sector was fully opened to FDI in mid-1990s. The main impetus behind the government's decision to open up the banking sector was the undercapitalization of domestic banks following the 1994 financial crisis. These regulatory changes triggered a wave of FDI in the Mexican banking sector. International banks were attracted by the size and growth potential of the Mexican market and by the sector's low asset valuations. The Mexican government's rescue of the banking sector after the financial crisis was an important pre-condition for FDI. Today, international financial institutions control 80 percent of Mexican banking assets.

Overall, FDI had a positive impact on the Mexican banking sector, primarily through improving sector capitalization, but also through increasing productivity and stabilizing sector output. Since 1995, international banks have increased sector capitalization by at least U.S. \$7.4 billion, equivalent to 45 percent of total banking sector capital in 2002. FDI contributed to increasing banking sector productivity by improving asset quality and rationalizing the workforce. The effect on output was likewise positive as international banks helped preserve a functioning banking system after the financial crisis of 1994. FDI had a small impact on employment as international banks drove sector consolidation and reduced overheads. The effect of FDI on consumer welfare has been mixed. On the one hand, international financial institutions helped preserve a functioning banking system; on the other hand, prices for most banking products have been stable or have increased, and improvements in product selection and quality have been modest.

SECTOR OVERVIEW

¶ Sector overview

- Since the 1980s, the Mexican banking sector has evolved in four phases:
 - 1) In 1982, the government nationalized the banking system in response to an economic crisis.
 - 2) Between 1991 and 1992, the government returned the commercial banks to private ownership and the sector expanded rapidly.
 - 3) The 1994 Peso devaluation triggered a severe economic and financial crisis and only a government rescue package prevented the banking system from collapsing.
 - 4) Following regulatory changes in 1995, international financial institutions entered the Mexican banking sector and drove a process of consolidation (Exhibit 1).
- The Mexican banking sector has contracted since the 1994 financial crisis. Commercial banking assets have declined both in absolute terms and as share of GDP since 1994 (Exhibit 2). Bank credit to the private sector has declined and banks have been unable to increase their deposit base.

Exhibit 1

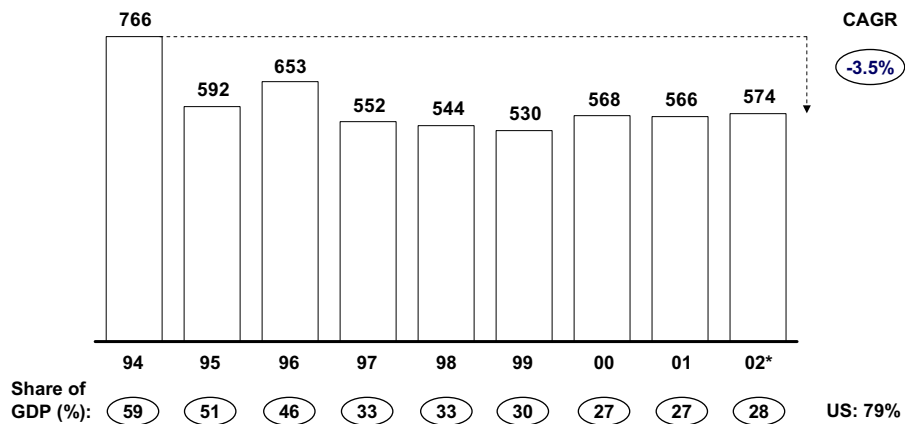
EVOLUTION OF THE MEXICAN BANKING SYSTEM 1982-2002

	1982-1991	1991-1994	1994-1995	Since 1996
	Government control	Privatization and liberalization	Financial crisis	Consolidation
External factors	<ul style="list-style-type: none"> In 1982, the government nationalizes the banking system in response to an economic crisis Government reduces number of banks from 47 to 18 and obliges them to lend a large part of their reserves to the public sector 	<ul style="list-style-type: none"> Between 1991 and 1992, the government returns commercial banks to private ownership The new owners are mostly brokerage houses or industrialists with little banking experience 	<ul style="list-style-type: none"> Growing current account deficits and several political events in 1994 erode investor confidence and lead to capital flight The peso devaluation in December 1994 triggers a severe economic and financial crisis 	<ul style="list-style-type: none"> Government bailout reduces the level of bad debt in the system and improves banking sector capitalization Regulatory changes facilitate the acquisition of Mexican banks by foreign financial institutions
Industry dynamics	<ul style="list-style-type: none"> Banks concentrate on gathering deposits while government agencies centralize and redistribute about 70% of deposited funds 	<ul style="list-style-type: none"> Increase in the number of banks Sharp increase in lending fueled by expectations of economic growth 	<ul style="list-style-type: none"> Significant increase in the level of bad debt in the banking system Sharp decline in the bank lending 	<ul style="list-style-type: none"> Domestic and international M&A activity drives consolidation of the banking system Increasing share of non-bank lending institutions
Performance	<ul style="list-style-type: none"> Low profitability and build up of inefficiencies Given lack of competitive pressures, banks fail to develop credit skills and processes 	<ul style="list-style-type: none"> Increase in profitability due to efficiency gains and increase in lending Aggressive lending combined with lack of credit skills leads to an increase in bad debt 	<ul style="list-style-type: none"> Sharp deterioration in profitability Erosion of capital base Government take-over of a number of banks 	<ul style="list-style-type: none"> Steady improvement of bank profitability Increase in quality of asset base

Exhibit 2

SINCE THE 1994 FINANCIAL CRISIS THE BANKING SECTOR HAS CONTRACTED IN BOTH ABSOLUTE AND RELATIVE TERMS

Commercial banking assets, 1994-2002
1993 P\$ b



* September 2002
Source: CNEV

Non-bank financial institutions account for an increasing share of credit and deposits (Exhibit 3).

- Whereas overall bank credit has declined, consumer lending has grown. Commercial lending accounts for the largest share of lending to the private sector. Commercial and mortgage lending have declined in real terms since 1994, whereas consumer lending has grown, fueled primarily by an increase in credit card lending (Exhibit 4).
- There are a number of non-bank sources of credit. The main source of non-bank commercial credit is supplier financing. Sofoles (special purpose lending institutions) and the government account for the largest share of non-bank mortgage lending. The main providers of non-bank consumer credit are Sofoles and retailers (Exhibit 5).
- **Key banks.** BBVA Bancomer (BBVA) and Banamex (Citigroup) dominate the Mexican banking sector, controlling about 45 percent of commercial banking assets. In January 2003, Serfin (Santander) and Santander-Mexicano (Santander) merged their operations under the Santander-Serfin brand to form a potential challenger to the leaders. Other key players include Banorte, the only major bank still controlled by local investors, Bital (HSBC) and Scotiabank Inverlat (Bank of Nova Scotia) (Exhibit 6).

¶ **FDI overview.** FDI in the Mexican banking sector has been exclusively market seeking. Regulatory changes in the mid-1990s triggered a wave of FDI in the Mexican banking sector. The focus period of this examination is the period of 1996-2002 following the removal of restrictions on the foreign ownership of Mexican banks and the entry of international financial institutions. To calibrate the impact of FDI, we have chosen the period of 1992-94 (the period after banking sector privatization, but before the financial crisis) as a reference.

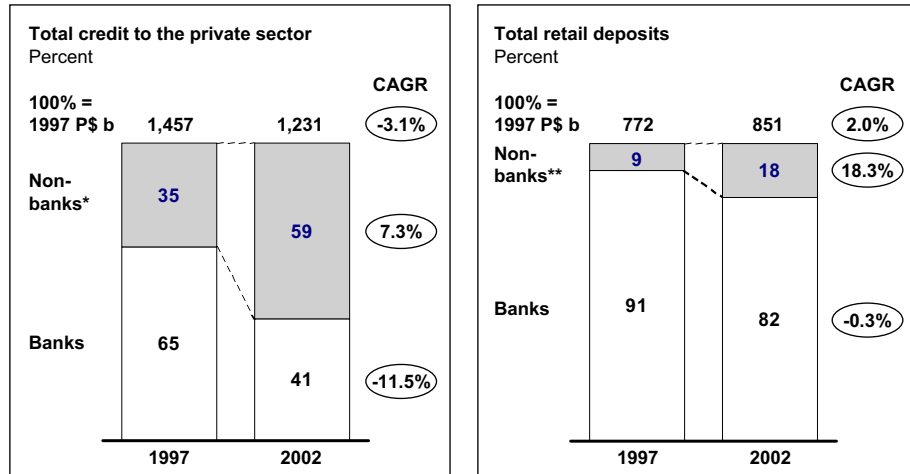
- **Pre-FDI (1992-94).** Until 1994, the only international bank in Mexico was Citibank, which had been established before restrictive legislation was signed in 1966. After privatization in 1992, Mexican banks increased lending sharply in anticipation of strong economic growth. The banking sector expanded and profitability increased due to efficiency gains and increases in lending. At the same time, aggressive lending combined with a lack of credit skills led to an increase in nonperforming loans in the system.
- **FDI (1996-2002).** Following regulatory changes in the mid-1990s, BBV, Santander and Bank of Nova Scotia acquired minority stakes in smaller banks, which they gradually increased to eventually take full control. Between 2000 and 2002, Citigroup, HSBC and the two Spanish banks took over the industry leaders and merged them with their local operations. Financial services FDI reached a peak in 2001 with Citigroup's U.S. \$12.5 billion takeover of Banamex, the largest foreign acquisition in Mexico and largest financial sector deal ever in Latin America. Today, international financial institutions control 80 percent of Mexican banking assets (exhibits 7-9).

¶ **External factors driving the level of FDI**

- **Country-specific factors**
 - Sector potential. International banks were attracted by the size and growth potential of the Mexican banking sector. Mexico has the second largest banking market in Latin America and the lowest banking

Exhibit 3

NON-BANKS ACCOUNT FOR AN INCREASING SHARE OF CREDITS AND DEPOSITS



* Special purpose lending institutions (Sofoles), development funds (*fondos de fomento económico*), leasing companies, factoring companies, credit unions, savings-and-loans, suppliers, retailers and capital markets

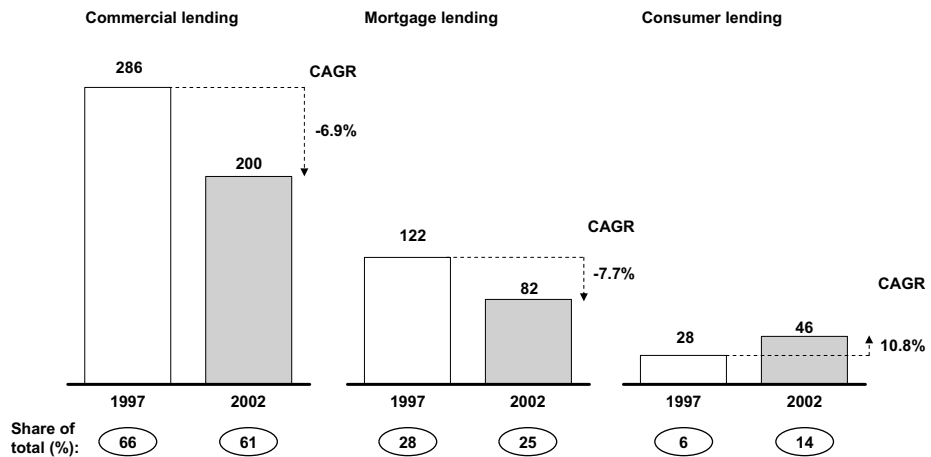
** Savings-and-loans, credit unions and retail mutual funds

Source: Banco de México, CNBV

Exhibit 4

COMMERCIAL AND MORTGAGE LENDING HAVE DECLINED IN REAL TERMS SINCE 1997, WHEREAS CONSUMER LENDING HAS GROWN

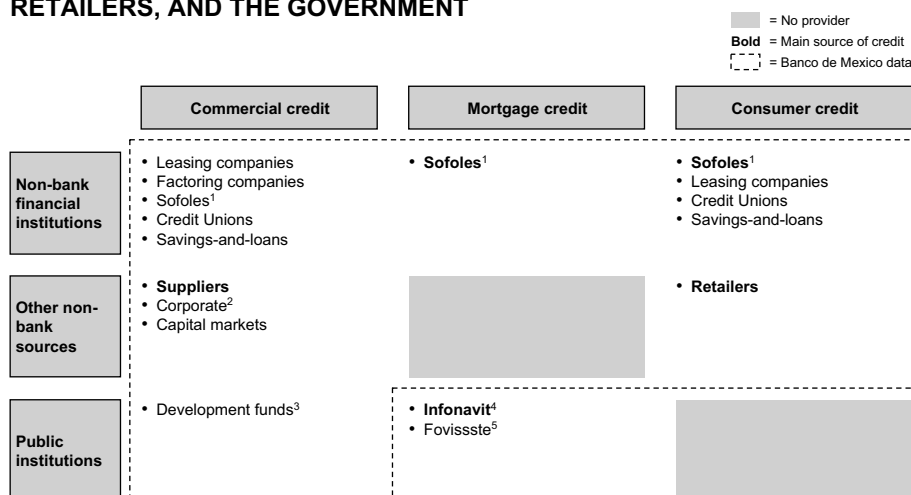
Bank credit to the non-financial private sector, 1997-2002
1997 P\$ b



Source: CNEV

Exhibit 5

THE MAIN NON-BANK SOURCES OF CREDIT ARE SUPPLIERS, SOFOLES, RETAILERS, AND THE GOVERNMENT



¹ Non-bank financial institutions licensed to lend to particular sectors or for specific types of activities

² Headquarters and other corporate group companies

³ Government funds to support a number of targeted economic activities (*fondos de fomento económico*)







⁴ Government housing program for private company employees

⁵ Government housing program for government employees and teachers

Source: Banco de Mexico, analyst reports, market reports, trade press

Exhibit 6

OVERVIEW OF MAJOR COMMERCIAL BANKS, 2002*

	Ownership	Assets P\$ b	%	Branches	Employees
 Bancomer	BBVA	415.6	25.0	1,676	30,912
 Banamex	Citigroup	331.9	19.9	1,425	27,630
 Santander Serfin	Santander**	249.2	15.0	920	11,800
 BANORTE	Local investors	175.1	10.5	1,069	9,069
 BITAL	HSBC	159.6	9.6	1,374	15,697
 Scotiabank Inverlat	Bank of Nova Scotia	76.4	4.6	375	6,393

* September 2002

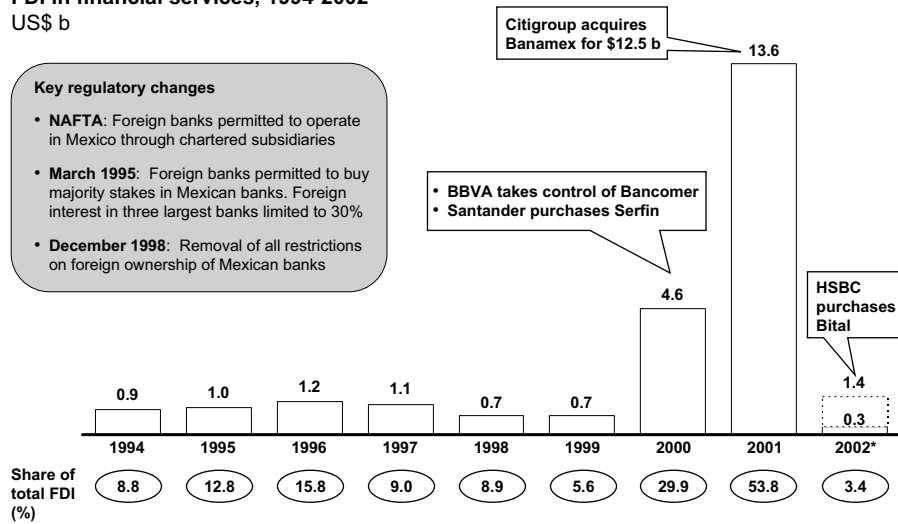
** Merger of Serfin and Santander-Mexicano under the Santander-Serfin brand in January of 2003

Source: CNBV

Exhibit 7

REGULATORY CHANGES IN THE MID-1990s TRIGGERED A WAVE OF FOREIGN DIRECT INVESTMENT IN FINANCIAL SERVICES

FDI in financial services, 1994-2002
US\$ b



Key regulatory changes

- **NAFTA:** Foreign banks permitted to operate in Mexico through chartered subsidiaries
- **March 1995:** Foreign banks permitted to buy majority stakes in Mexican banks. Foreign interest in three largest banks limited to 30%
- **December 1998:** Removal of all restrictions on foreign ownership of Mexican banks

* September 2002 (excludes HSBC's purchase of Bital for US\$ 1.1b in November of 2002)
Source: INEGI

Exhibit 8

FDI HAS DRIVEN CONSOLIDATION OF THE INDUSTRY

1994
18 banks, only one controlled by foreign investors (Citibank)

Bank	Share of assets (%)**
Banamex	21.4
Bancomer	18.2
Serfin	12.8
Mexicano	7.1
Comermex	5.9
Atlántico	5.8
Internacional	5.4
Banpais	3.7
Bancrecer	2.8
Probursa	2.7
⋮	
Citibank	1.0

Major acquisitions by foreign financial institutions

- 11/02: • HSBC purchases Bital for \$1.14 b
- 8/01: • Citigroup acquires Banamex for \$12.5 b
- 8/00: • BBVA takes control of Bancomer through \$1.4 capital injection
- 5/00: • Santander purchases Serfin for \$1.54 b
- 5/98: • Citibank acquires Banca Confia
- 11/96: • Santander acquires majority stake in Banco Mexicano
- 7/96: • Bank of Nova Scotia takes control of Inverlat
- 6/95: • BBV acquires majority stake in Probursa

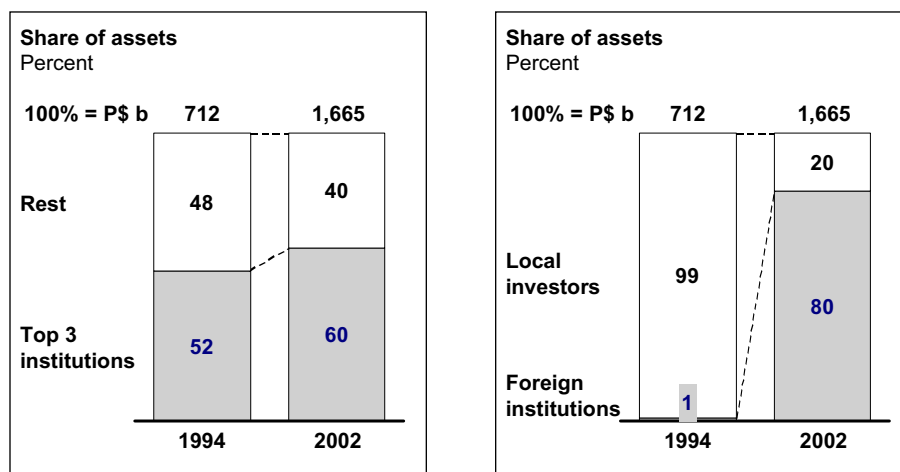
2002
Six banking groups, only one controlled by local investors (Banorte)

Bank	Share of assets (%)**
BBVA (Bancomer)	25.3
Citibank (Banamex)	19.9
Santander (Serfin, Santander-Mexicano)	15.0
Banorte	10.8
HSBC (Bital)	9.6
Scotiabank (Inverlat)	4.6

* September 1994
** September 2002
Note: Domestic merger activity between 1994 and 2002 includes the following transactions: Banorte acquires Banco del Centro (6/96), Banpais (12/97) and Bancrecer (1/02); Bancomer takes over Probursa (8/00); Bital purchases Banco del Atlántico (10/02).
Source: SDC, Salomon Smith Barney, Deutsche Bank, Financial Times

Exhibit 9

SINCE THE 1994 FINANCIAL CRISIS THE MEXICAN BANKING SYSTEM HAS BECOME MORE CONCENTRATED AND IS NOW DOMINATED BY FOREIGN FINANCIAL INSTITUTIONS

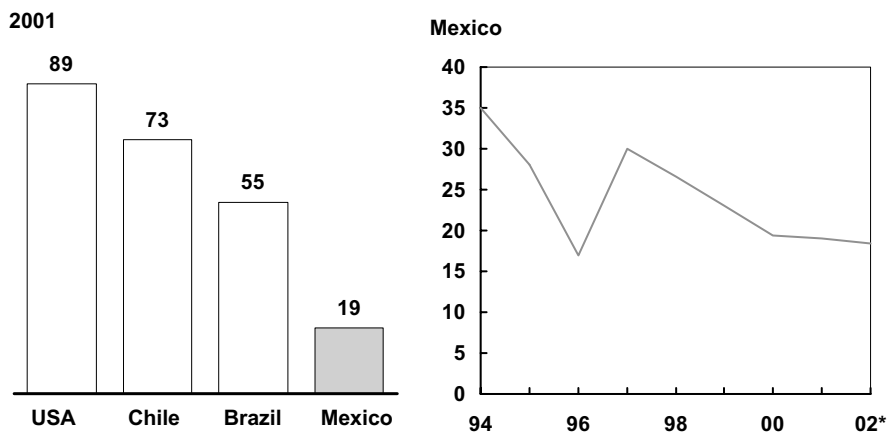


Source: CNBV

Exhibit 10

MEXICAN BANKING PENETRATION IS LOW COMPARED TO OTHER COUNTRIES AND HAS BEEN DECLINING IN RECENT YEARS

Domestic credit provided by banking sector as share of GDP
Percent



* September 2002

Source: EIU

penetration in the region (Exhibit 10).

- Macroeconomic stability. Political and economic stability after the 1994 financial crisis was an important precondition for FDI. A government-sponsored debt-restructuring program prevented the banking sector from collapsing and contributed to a quick economic recovery.
- Removal of ownership restrictions. NAFTA permitted international banks to operate in Mexico through chartered subsidiaries. In March 1995, Congress passed legislation to allow international financial institutions to purchase majority stakes in Mexican banks. However, foreign interest in the three largest banks was limited to 30 percent. In December 1998, the government removed all the remaining limitations on foreign ownership of Mexican banks.
- Capital deficiencies. A key factor behind the government's decision to open the banking sector to FDI was the undercapitalization of Mexican banks following the 1994 financial crisis.
- Other. Low asset valuations of banks under government administration following the financial crisis increased the attractiveness of Mexican banks to international investors.
- **Initial sector conditions**
 - Competitive intensity. The potential of realizing high margins as a result of low levels of competitive intensity increased the attractiveness of the Mexican banking sector to international investors.
 - Gap with best practice. The opportunity to bring cost structure and revenue models of Mexican banks in line with best practice helped encourage FDI.

FDI IMPACT ON HOST COUNTRY

¶ **Economic impact.** FDI contributed to increasing banking sector productivity by improving asset quality and reducing workforce staffing levels. The effect on output was likewise positive as international banks helped preserve a functioning banking system after the financial crisis. Both these effects are relatively small compared to the impact of the government's rescue of the banking sector. FDI had a small impact on employment as international banks drove sector consolidation and reduced overheads.

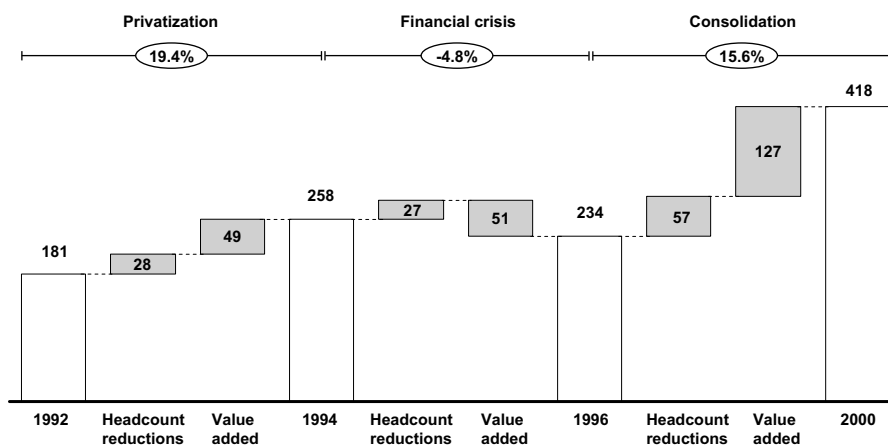
- **Sector productivity**
 - Labor productivity rebounded following the financial crisis. Labor productivity grew by 16 percent per year between 1996 and 2000, as compared to 19 percent between 1992 and 1994 and -5 percent during the financial crisis. Until the financial crisis, productivity growth was driven both by increases in value added and by headcount reductions. Since 1996, productivity gains have come primarily from increases in value added, with a much smaller contribution of headcount reductions (Exhibit 11). The key driver of value added growth after 1996 has been an improvement in asset quality, reflected in reduced provisions for non-performing loans (Exhibit 12).
 - FDI increased banking sector productivity. Following the government's rescue of the banking sector after the financial crisis, international banks

Exhibit 11

SINCE THE FINANCIAL CRISIS PRODUCTIVITY GROWTH HAS BEEN DRIVEN PRIMARILY BY INCREASES IN VALUE ADDED

Commercial banking labor productivity, 1992-2000
1993 P\$ thousands per employee

○ = CAGR



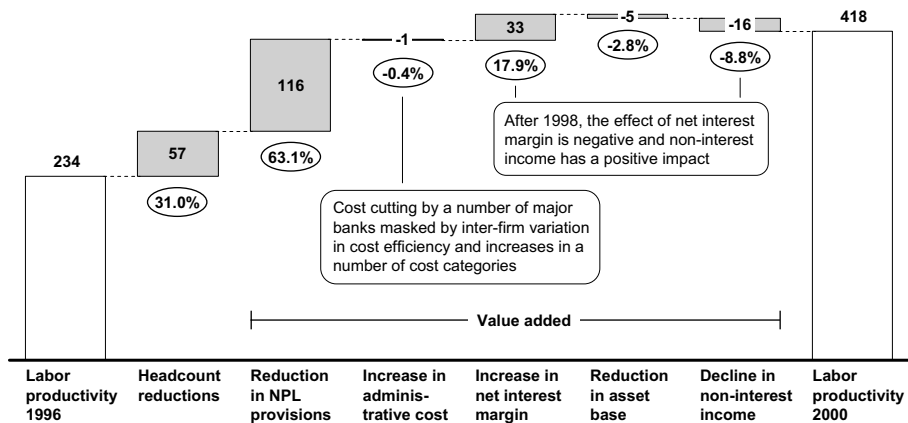
Source: INEGI, CNBV, McKinsey analysis, interviews

Exhibit 12

REDUCTION IN NPL PROVISIONS WAS THE MAIN DRIVER OF PRODUCTIVITY GROWTH BETWEEN 1996 AND 2000

Breakdown of productivity change, 1996-2000
1993 P\$ thousands per employee

○ = Percent of change



Source: INEGI, CNBV, McKinsey analysis

played an important role in improving asset quality by transferring critical credit workout and risk management skills to their Mexican subsidiaries. FDI likewise accounts for a significant share of headcount reductions. Finally, international banks improved banking sector productivity by reducing administrative costs.

- **Sector output**

- Bank credit has declined since the financial crisis. Between 1996 and 2002, total bank credit declined by 1.6 percent a year in real terms compared to an increase of 1.8 percent a year in the pre-FDI period. As a share of GDP, banking credit declined from 26 percent of GDP in 1996 to 16 percent in 2002 (Exhibit 13).
- FDI contributed to the recovery in banking sector output. After the financial crisis, Mexican banks were severely undercapitalized and the banking sector was in danger of collapse. A government-sponsored debt-restructuring program laid the foundations for the quick recovery of the banking sector. International financial institutions played an important role in recapitalizing domestic banks and in helping preserve a functioning banking system. Since 1995, international banks have increased sector capitalization by at least U.S. \$7.4 billion, equivalent to 45 percent of total banking sector capital in 2002 (Exhibit 14). This suggests that banking output would have declined even further without FDI.

- **Sector employment**

- Employment has declined. Between 1996 and 2002, banking sector employment declined by 3.9 percent a year compared to a decline of 6.4 percent a year in the pre-FDI period (Exhibit 15). Following privatization in 1992, Mexican banks had rapidly realized cost savings after a decade of government ownership. Headcount reductions since 1996 have been primarily merger-driven.
- FDI contributed to the reduction of banking sector employment. FDI triggered a process of consolidation, which reduced headcount by eliminating merger-related duplications. International banks also reduced employment through overhead reduction. Compared to the headcount reductions by Mexican banks in the early 1990s, the effect of FDI on employment was relatively small.

- **Supplier spillovers.** There are no significant supplier spillovers in retail banking.

- ¶ **Distribution of FDI impact**

- **Companies.** International financial institutions have benefited from entering the Mexican market. They control the leading banks in a sector that has gradually become more profitable since the 1994 financial crisis. Domestic banks have so far not been adversely affected by FDI.
 - FDI companies. Between 1996 and 2002, international financial institutions took over the leading banks in the sector and now control 80 percent of Mexican banking assets (exhibits 8 and 9). The Mexican subsidiaries of international banks are profitable and returns that previously accrued to domestic companies and their shareholders now flow to FDI companies (exhibits 16 and 17).
 - Non-FDI companies. In an industry with low competitive intensity and

Exhibit 13

BANK CREDIT TO THE PRIVATE SECTOR HAS DECLINED SINCE THE FINANCIAL CRISIS

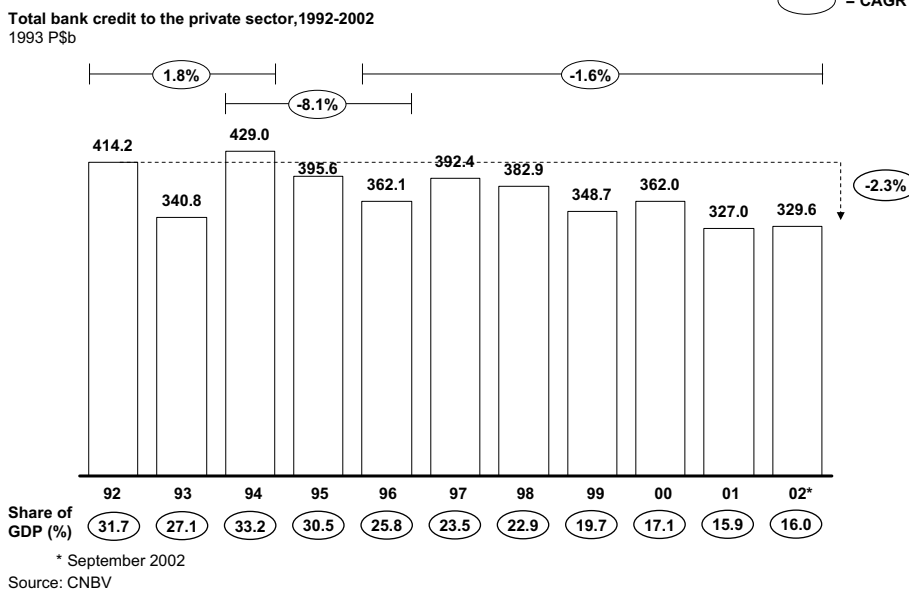
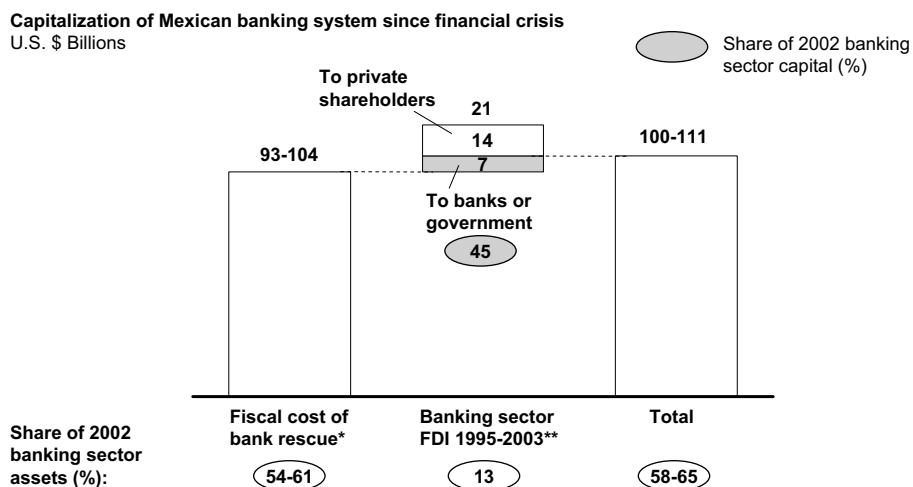


Exhibit 14

FOREIGN BANKS HAVE INCREASED SECTOR CAPITALIZATION BY AT LEAST U.S.\$ 7 BILLION SINCE 1995



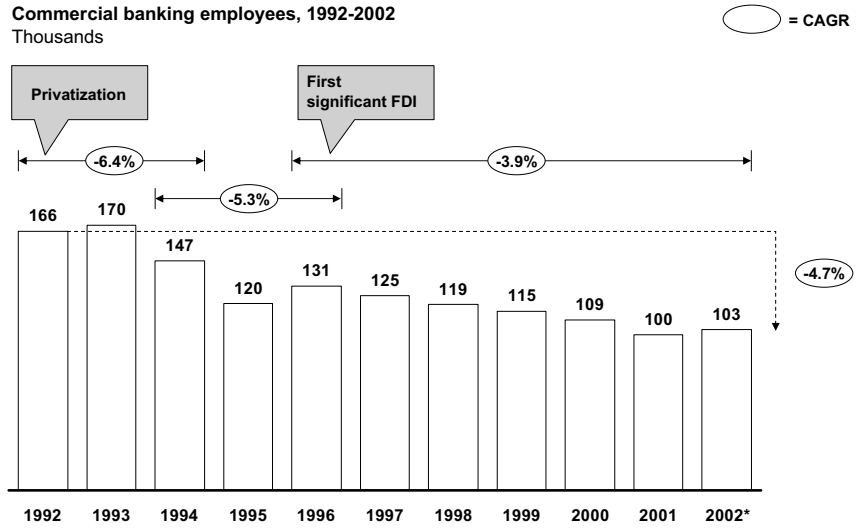
* Cost of government bailout of banking system after 1994 financial crisis estimated at U.S.\$ 93b by IPAB and U.S.\$ 104b by Standard & Poors. Estimates do not include value of assets taken over by former Fobaproa rescue agency in return for bailout

** Major commercial banking transactions between 1995 and June of 2003

Source: SDC, IPAB, Standard & Poors, trade press

Exhibit 15

SINCE PRIVATIZATION BANKS HAVE CUT HEADCOUNT, WITH MOST REDUCTIONS BEFORE THE ENTRY OF FOREIGN PLAYERS



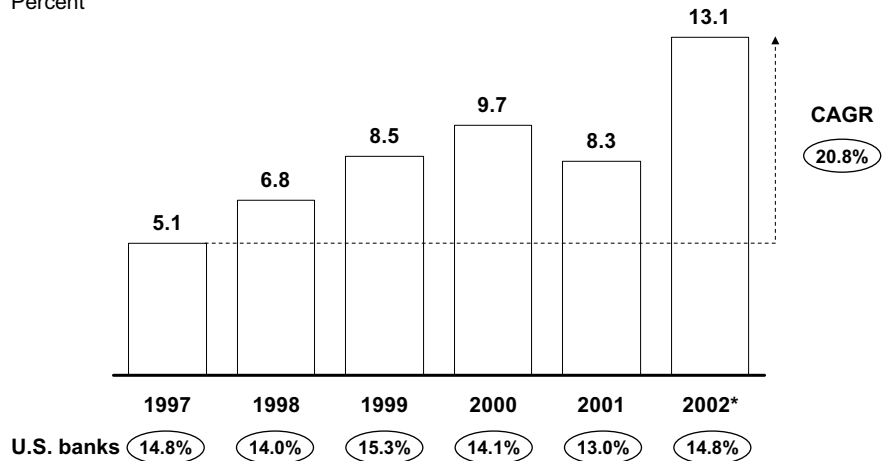
* September 2002

Source: CNBV

Exhibit 16

THE PROFITABILITY OF MEXICAN BANKS HAS INCREASED SINCE THE FINANCIAL CRISIS

Return on equity for Mexican banking system, 1997-2002
Percent



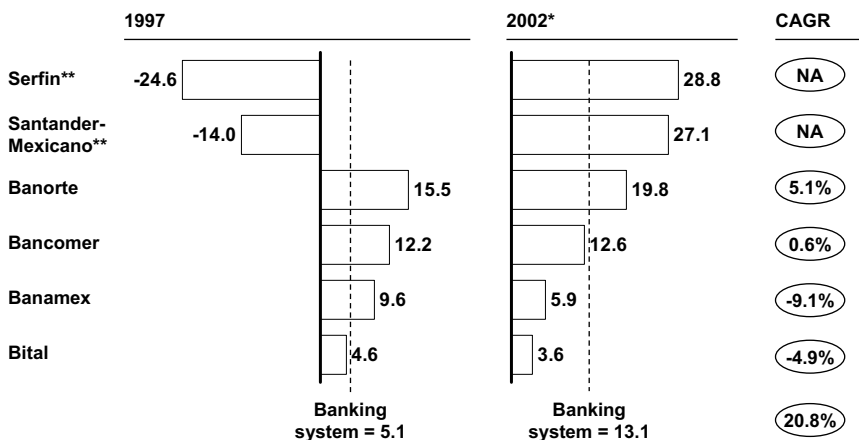
* September, 2002

Source: Salomon Smith Barney, CNBV

Exhibit 17

SERFIN AND MEXICANO HAVE IMPROVED PROFITABILITY MOST SINCE THE FINANCIAL CRISIS

Return on equity for Mexican commercial banks, 1997-2002
Percent

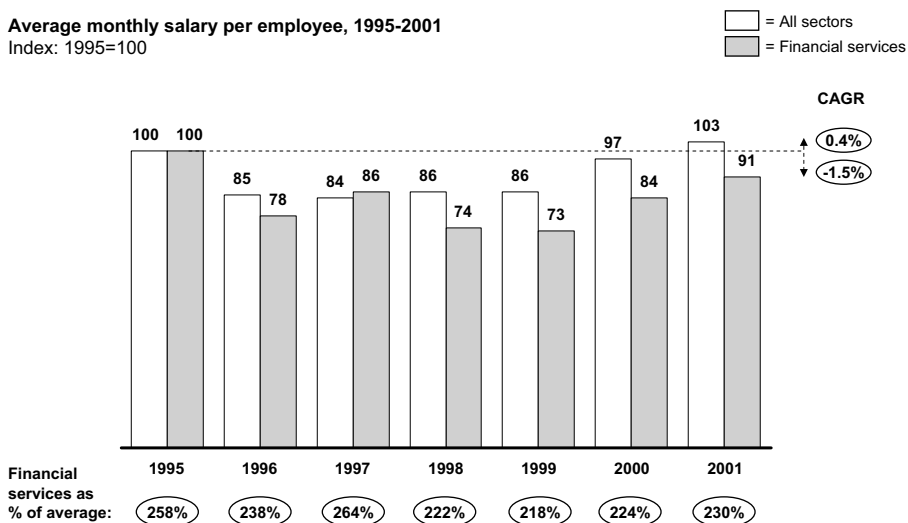


* September 2002
 ** Merger of Serfin and Santander-Mexicano under the Santander-Serfin brand in January of 2003
 Source: CNBV

Exhibit 18

FINANCIAL SERVICES WAGES HAVE GROWN MORE SLOWLY THAN WAGES IN THE OVERALL ECONOMY

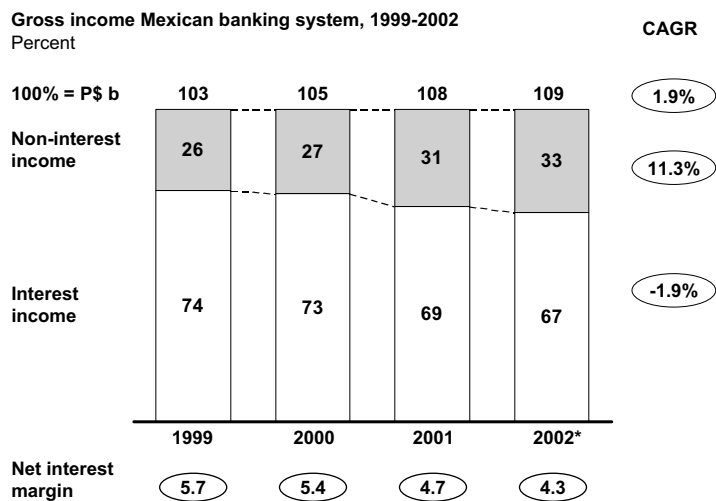
Average monthly salary per employee, 1995-2001
Index: 1995=100



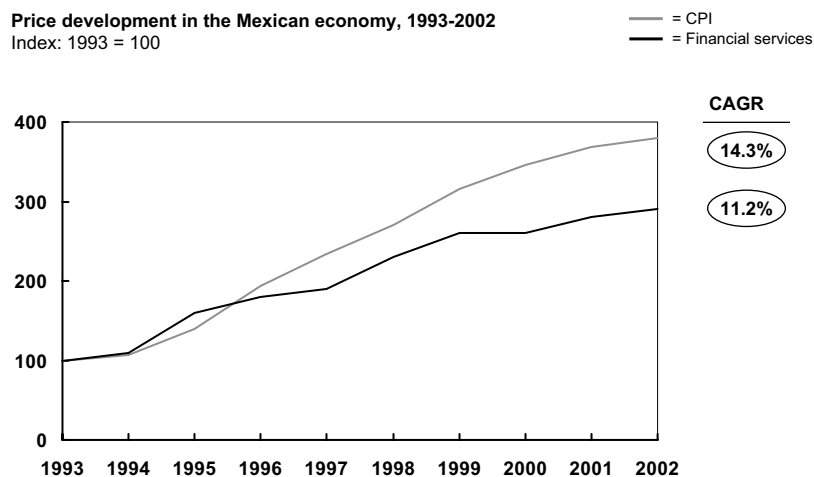
Source: ILO

healthy returns domestic banks have so far not been adversely affected by FDI. Between 1996 and 2002, FDI and non-FDI companies had similar levels of profitability (Exhibit 17). In the future, locally owned banks might find it difficult to compete with FDI companies, however, as competition intensifies and global institutions deploy their full resources.

- **Employment.** FDI contributed to the reduction in banking sector employment. The effect on wages has been neutral.
 - **Level.** In the FDI period, banking sector employment declined by 3.9 percent a year. This decline is partly attributable to the contraction of the sector and partly to FDI. International banks reduced headcount through a combination of cutting overheads and eliminating merger-related duplications. Compared to the headcount reductions by Mexican banks made in the early 1990s, the effect of FDI on employment has been small (Exhibit 15).
 - **Wages.** In the FDI period, financial services wages grew by 3.2 percent a year compared to an increase of 2.2 percent a year in the pre-FDI period. In the FDI period, financial service wages grew more slowly than overall wages, possibly reflecting the contraction of the banking sector following the financial crisis (Exhibit 18). There is no evidence that FDI had a significant effect on banking sector wages (with the possible exception of top management salaries).
- **Consumers.** The impact of FDI on consumer welfare has been mixed. On the one hand, international financial institutions helped preserve a functioning banking system in Mexico, which is critical to financial intermediation, including deposit-taking, lending, and payment transactions. On the other hand, prices for most banking products have been stable or have increased and improvements in product selection and quality have been modest.
 - **Prices.** Since 1996, prices for most banking products have been stable or have increased. The exception is in credit cards, where rates have declined. As interest rates started to decline in the late 1990s, banks increased fees aggressively (Exhibit 19). However, price increases in financial services have lagged behind consumer price inflation (Exhibit 20).
 - **Product selection and quality.** Banks have introduced relatively few new products since international financial institutions entered Mexico. Credit cards are the exception, with Serfin triggering a series of product launches after introducing a low-fee, no frills card.
- **Government.** Government has benefited from FDI in the sense that international banks helped strengthen the Mexican banking sector following the financial crisis. The effect of FDI on government budgets has been positive, as it has accelerated the return to profitability of a number of Mexican banks, which, in turn, has increased government tax receipts.

Exhibit 19**AS INTEREST SPREADS HAVE DECREASED BANKS HAVE SOUGHT TO INCREASE THEIR NON-INTEREST INCOME**

* January-September, annualized
Source: Salomon Smith Barney

Exhibit 20**SINCE THE FINANCIAL CRISIS PRICE INCREASES IN FINANCIAL SERVICES HAVE LAGGED OVERALL CONSUMER PRICE INFLATION**

Source: INEGI

HOW FDI HAS ACHIEVED IMPACT

- ¶ **Operational factors.** FDI has had impact on banking operations in four ways: it increased sector capitalization, improved asset quality, reduced headcount, and reduced administrative costs (Exhibit 21).
 - **Sector capitalization.** FDI contributed to the recapitalization of Mexican banks after the 1994 financial crisis and thereby helped preserve a functioning banking system in private ownership. Since 1995, international banks have increased sector capitalization by at least U.S. \$7.4 billion, equivalent to 45 percent of banking sector capital in 2002 (Exhibit 14). An important precondition for FDI was the government-assisted debt-restructuring program, which significantly improved sector capitalization.
 - **Asset quality.** International banks helped improve the quality of the asset base as they transferred credit workout and risk management skills to their Mexican subsidiaries. Improvements in asset quality through the Fobproa debt-restructuring program provided an important enabling condition for FDI. The skills and systems transferred by international banks further improved asset quality and helped Mexican banks maintain a healthy asset base (exhibits 22 and 23).
 - **Headcount.** FDI triggered a process of consolidation, which reduced headcount by eliminating merger-related duplications. International banks also reduced employment through overhead reduction (Exhibit 15).
 - **Administrative costs.** International banks reduced administrative costs through operational improvements and merger-related economies of scale. Overall, Mexican banks have improved cost efficiency in recent years, but still lag best practice (exhibits 24 and 25).
- ¶ **Industry dynamics.** FDI has driven the consolidation of the industry. Competitive intensity has not increased since international banks entered the sector, but is likely to do so in the future.
 - **Consolidation.** FDI has driven a process of consolidation. The leadership structure of the industry has been preserved, but Banamex and BBVA Bancomer have switched positions. Santander-Serfin is emerging as a potential challenger to the leaders (Exhibit 8). Since the financial crisis, the Mexican banking sector has become more concentrated and is now dominated by international financial institutions (Exhibit 9).
 - **Competitive intensity**
 - Competitive intensity in the Mexican banking sector is relatively low and has not increased since international banks entered the market. Since 1996, prices for most banking products have been stable or have increased and bank profitability has risen (from a low base). The only exception is credit cards, where international banks have increased competitive intensity by introducing new products and lowering prices (Exhibit 26).
 - Competitive intensity is limited in part because of inherent characteristics of the banking sector, such as high switching costs for consumers and high entry barriers. Competition has also been limited because of high interest rates, which have made it very profitable for banks to lend to the government rather than to consumers; because international banks have focused so far on integrating their Mexican subsidiaries; and because of

Exhibit 21

SUMMARY OF FDI IMPACT ON MEXICAN BANKING SECTOR

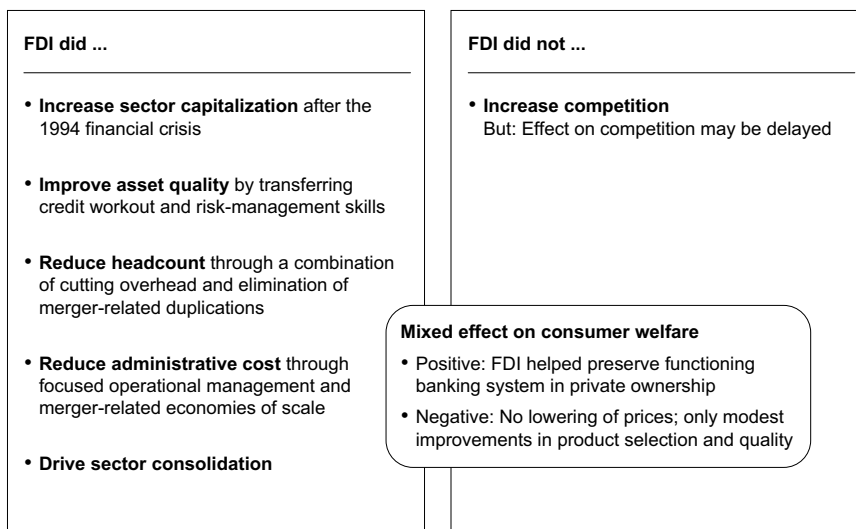
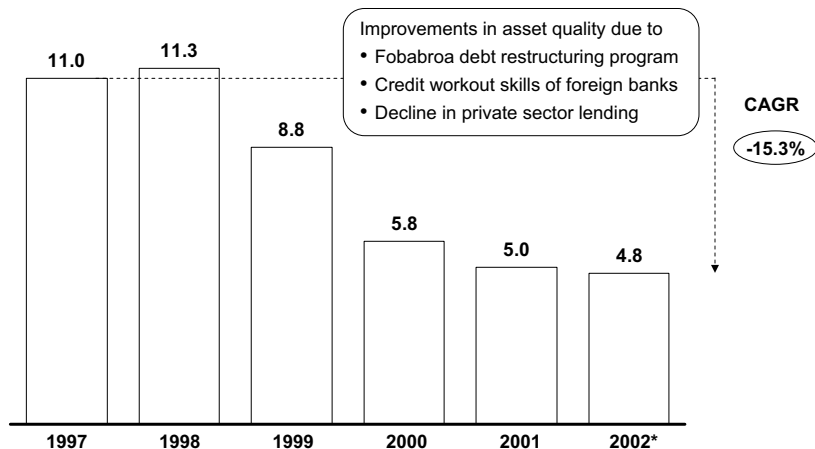


Exhibit 22

ASSET QUALITY HAS IMPROVED SINCE THE FINANCIAL CRISIS

Past-due loans as share of total loans and repossessed assets, 1997-2002
Percent



* September 2002
Source: Salomon Smith Barney

Exhibit 23

SANTANDER-MEXICANO AND SERFIN ARE LEADING THE INDUSTRY IN TERMS OF ASSET QUALITY

Past-due loans as share of total loans and repossessed assets, 1997-2002
Percent

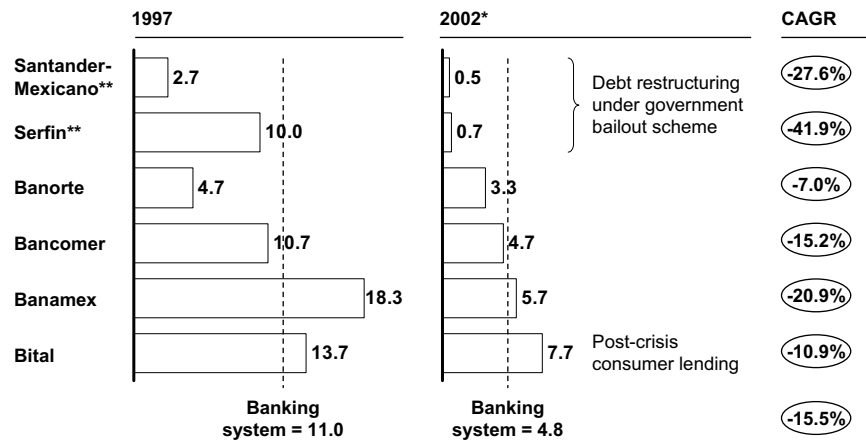


Exhibit 24

MEXICAN BANKS HAVE IMPROVED COST EFFICIENCY IN RECENT YEARS, BUT STILL LAG BEST PRACTICE

Cost-income ratio of commercial banking sector, 1997-2002
Percent

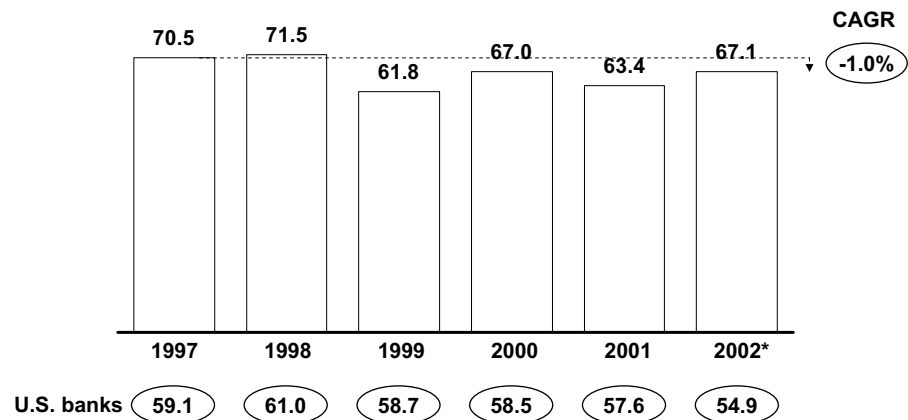
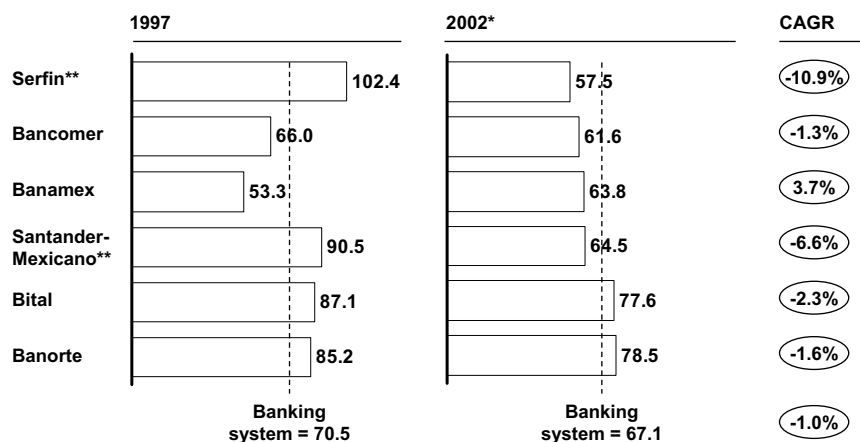


Exhibit 25**SERFIN IS LEADING THE INDUSTRY IN TERMS OF COST EFFICIENCY**

Cost-income ratio for Mexican commercial banks, 1997-2002
Percent



* September 2002

** Merger of Serfin and Santander-Mexicano under the Santander-Serfin brand in January of 2003

Source: CNBV

Exhibit 26**COMPETITIVE INTENSITY IS LIKELY TO INCREASE****1 Changing market environment**

- As interest rates continue to fall and room for further fee increases is limited, banks will need to increase private sector lending to meet return objectives
- As interest rates decline, the pressure on second-tier banks to improve their performance will increase

2 Changing firm conduct

- As foreign banks complete the integration of their Mexican subsidiaries, their focus will shift to the market and to increasing revenues
- The recent entry of leading global banking players is likely to change established norms of competitive conduct

3 New entrants

- Non-bank players, particularly mutual funds, are moving into core banking segments, such as deposit-taking

**Increase in
competitive
intensity**

the small presence of non-bank financial institutions, such as mutual funds, which have driven competition in other banking markets.³

- Competitive intensity is likely to increase in the future, however, as interest rates continue to fall, international banks complete the integration of their Mexican subsidiaries, global banking players challenge established norms of competitive conduct, and non-bank financial institutions move into core banking segments (Exhibit 27).

EXTERNAL FACTORS THAT AFFECTED THE IMPACT OF FDI

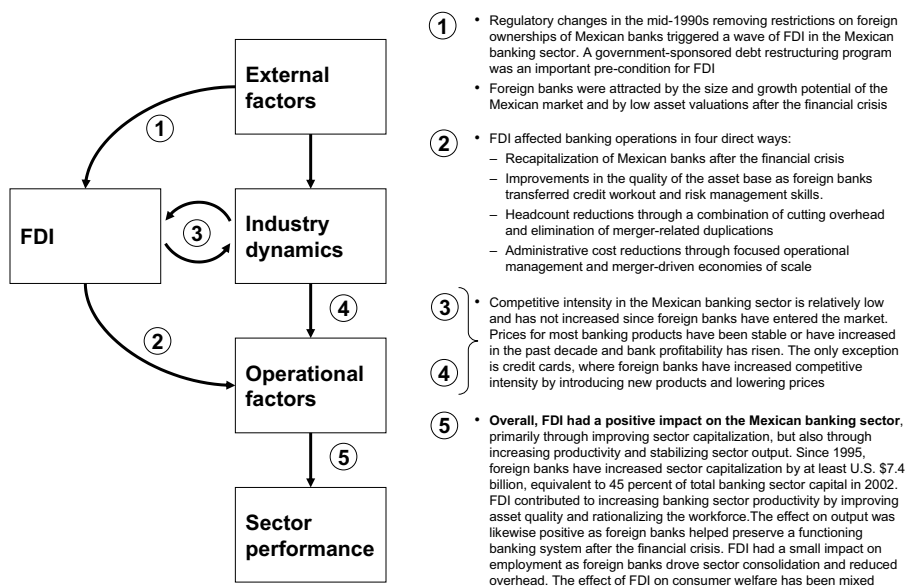
¶ Country-specific factors

- **Macroeconomic factors.** Political and economic stability has facilitated FDI impact because it has enabled international banks to operate without major departures from their own business and operating models. As a result, their Mexican subsidiaries can profit from the experience and best practices of their parent companies. Relatively high interest rates have, until recently, reduced the incentive for banks to compete, which has limited FDI impact.
- **Government legislation.** Mexico's underdeveloped legal infrastructure, particularly regarding the repossession of collateral assets (highly difficult due to enforcement problems), has been an inhibitor of FDI impact. This problem has limited the ability of banks to develop core banking segments, such as mortgage lending.

¶ Initial sector conditions

- **Competitive intensity.** Low competitive intensity has reduced the pressure for improving performance and slowed down the diffusion of best practice in the Mexican banking sector.
- **Gap with best practice.** Mexican banks' gap with best practices, on both the cost and revenue side, increased the potential for international investment improving their performance.

3. Non-banking financial institutions play an important role in the Mexican financial sector. However, most of these institutions focus on lower-income segments of the population that are not served by commercial banks. The role of non-bank financial institutions in core banking segments is limited.

Exhibit 27
MEXICO RETAIL BANKING – SUMMARY
Overall impact of FDI: +


SUMMARY OF FDI IMPACT

Overall, FDI had a positive impact on the Mexican banking sector, primarily through improving sector capitalization, but also through increasing productivity and stabilizing sector output. Since 1995, international banks have increased sector capitalization by at least U.S. \$7.4 billion, equivalent to 45 percent of total banking sector capital in 2002. FDI contributed to increasing banking sector productivity by improving asset quality and rationalizing the workforce. The effect on output was likewise positive, as international banks helped preserve a functioning banking system following the financial crisis of 1994. FDI had a small impact on employment as international banks drove sector consolidation and reduced overheads. The effect of FDI on consumer welfare has been mixed. On the one hand, international financial institutions helped preserve a functioning banking system; on the other hand, prices for most banking products have been stable or have increased, and improvements in product selection and quality have been modest.

Exhibit 28

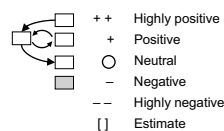
MEXICO RETAIL BANKING – FDI OVERVIEW



• FDI period	
– Focus period: Early FDI	1996-2002
– Comparison period: Pre-FDI, pre-financial crisis	1992-1994
• Total FDI inflow (1996-2001)	\$21.8 billion
– Annual average	\$3.6 billion
– Annual average per sector employee (2001)	\$36.6 thousand
– Annual average as a share of sector value added (2000)	6.9%
– Annual average as a share of GDP (2001)	0.59%
• Entry motive (percent of total)	
– Market seeking	100%
– Efficiency seeking	0%
• Entry mode (percent of total)	
– Acquisitions	100%
– JVs	0%
– Greenfield	0%

Exhibit 29

MEXICO RETAIL BANKING – FDI's ECONOMIC IMPACT IN HOST COUNTRY (1/2)

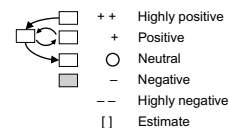


Economic impact	Sector performance during		FDI impact	Evidence
	Pre FDI (1992-1994)	Early FDI (1996-2002)		
• Sector productivity (CAGR)	19.4%	15.6%*	+	<ul style="list-style-type: none"> • Reductions in NPL provisions and headcount reductions were the biggest drivers of productivity growth between 1996 and 2002. • Contribution of foreign banks to NPL reductions through transfer of credit workout and risk management skills • Foreign banks also drove headcount reduction through sector consolidation and focussed operational management
• Sector output (CAGR of total bank credit)	1.8%	-1.6%	[+]	<ul style="list-style-type: none"> • Bank credit to the private sector has declined in absolute terms and as share of GDP since the 1994 financial crisis • After the financial crisis, Mexican banks were severely undercapitalized and the banking sector was in danger of collapse. Foreign financial institutions played an important role in recapitalizing domestic banks and preserving a functioning banking system. This suggests that banking output would have declined even more without FDI and taken longer to recover
• Sector employment (CAGR)	-6.4%	-3.9%	–	<ul style="list-style-type: none"> • Banking sector employment has declined since privatization in 1992 and continued to decline after entry by foreign banks • FDI triggered a process of consolidation, which reduced headcount by eliminating merger-related duplications • Foreign banks also reduced employment through business process redesign and overhead reductions

* 1996-2000

Exhibit 30

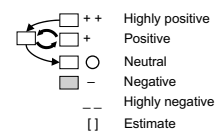
MEXICO RETAIL BANKING – FDI's ECONOMIC IMPACT IN HOST COUNTRY (2/2)



Economic impact	Sector performance during		FDI impact	Evidence
	Pre FDI (1992-1994)	Early FDI (1996-2002)		
• Suppliers	N/A	N/A	N/A	• No significant supplier spillovers in retail banking
Impact on competitive intensity	+	0	0	<ul style="list-style-type: none"> • Competitive intensity in the Mexican banking sector is relatively low and has not increased since foreign banks entered the market • Prices for most banking products have been stable or have increased in the past decade and banking profitability has increased. The credit card segment is an exception, where foreign banks have driven competition by introducing new products and lowering prices • However, competitive intensity is likely to increase in the future as interest rates continue to fall, foreign banks complete the integration of their Mexican subsidiaries, global banking players challenge existing norms of competitive conduct, and non-bank players move into core banking segments

Exhibit 31

MEXICO RETAIL BANKING – FDI's DISTRIBUTIONAL IMPACT IN HOST COUNTRY



Distributional impact	Sector performance during		FDI impact	Evidence
	Pre FDI (1992-1994)	Early FDI (1996-2002)		
• Companies				
– FDI companies	+/-	++	++	• Between 1996 and 2002, foreign banks took over the leading players in the industry and now control 80% of Mexican banking assets
– Non-FDI companies	+/-	0	0	• Mexican subsidiaries of foreign banks are profitable and returns that previously accrued to domestic companies and their shareholders now flow to MNCs
• Employees				
– Level of employment (CAGR)	-6.4%	-3.9%	-	• FDI reduced banking sector employment through sector consolidation and overhead reduction
– Wages (CAGR)	2.2%*	3.2%**	0	• Between 1996 and 2002, financial sector wages grew slower than wages in the overall economy, but no evidence that FDI had a significant effect on banking sector wages
• Consumers				
– Prices	[0]	0/-	0	• Since 1996, prices for most banking products have been stable or have increased. The exception is credit cards, where prices have declined. As interest rates declined in the late 1990s, banks aggressively increased fees. Since the financial crisis, price increases in financial services have lagged consumer price inflation
– Selection	[+]	0	0	• Improvements in product selection and quality have been modest.
• Government				
– Taxes	[+]	[+]	+	• The Mexican banking system is profitable and bank profitability has increased since the financial crisis (from a low base) • Foreign banks helped strengthen the banking system after the financial crisis

* 1993-1995

** 1996-2001

Exhibit 32

MEXICO RETAIL BANKING – COMPETITIVE INTENSITY

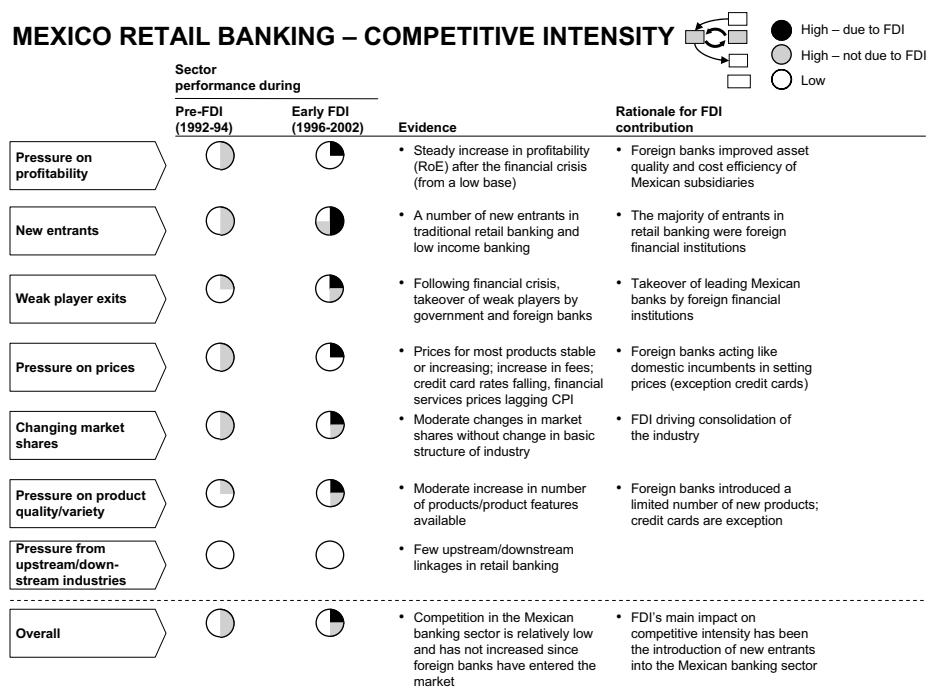


Exhibit 33

MEXICO RETAIL BANKING – EXTERNAL FACTORS' EFFECT ON FDI

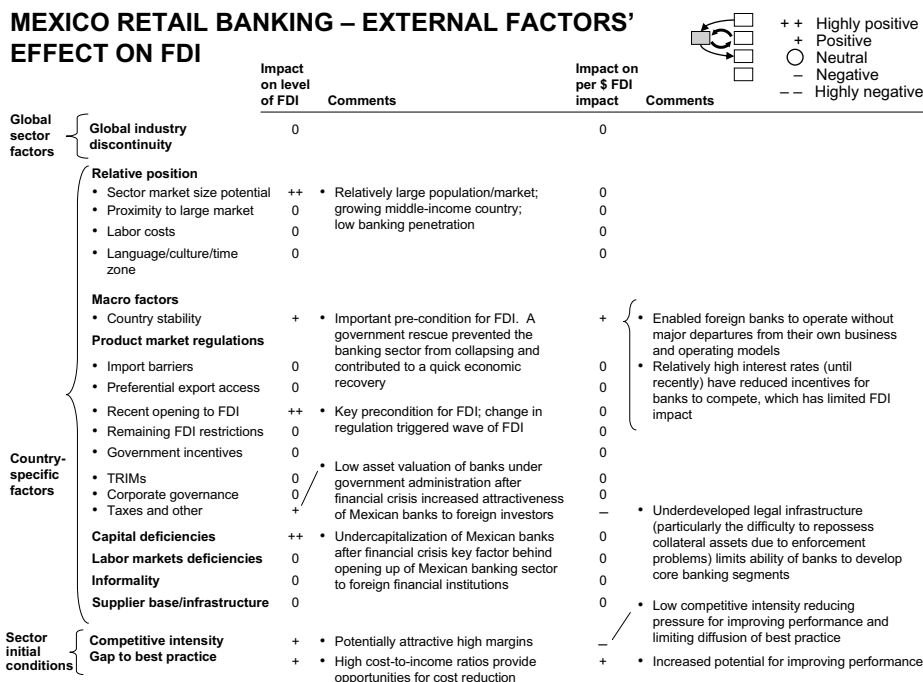


Exhibit 34

MEXICO RETAIL BANKING – FDI IMPACT SUMMARY

[] Estimate ++ Highly positive – Negative
 + Positive -- Highly negative
 O Neutral () Initial conditions

Level of FDI relative to sector*	FDI impact on host country		Level of FDI** relative to GDP	External Factor impact on	
	6.9%			Level of FDI	Per \$ impact of FDI
Economic impact			Global factors	0	O
• Sector productivity	+		Global industry discontinuity		
• Sector output	[+]		• Relative position		
• Sector employment	–		• Sector market size potential	++	O
• Suppliers	NA		• Prox. to large market	O	O
Impact on competitive intensity	0		• Labor costs	O	O
Distributional impact			• Language/culture/time zone	O	O
• Companies			Macro factors		
– FDI companies	++		• Country stability	+	+
– Non-FDI companies	0		Country-specific factors		
• Employees			• Product market regulations		
– Level	–		• Import barriers	O	O
– Wages	0		• Preferential export access	O	O
• Consumers			• Recent opening to FDI	++	O
– Prices	0		• Remaining FDI restriction	O	O
– Selection	0		• Government incentives	O	O
• Government			• TRIMs	O	O
– Taxes	+		• Corporate governance	O	O
			• Other	O	–
			Capital deficiencies	++	O
			Labor markets	O	O
			Informality	O	O
			Supplier base/ infrastructure	O	O
			Sector initial conditions		
			• Competitive intensity	+ (L)	– (L)
			• Gap to best practice	+ (M)	+ (M)

* Average annual FDI/sector value added
 ** Average (sector FDI inflow/total GDP) in key era analyzed

Preface to the Information Technology/Business Process Offshoring Case

1

Offshored services include information technology (IT)-related services and other business services (BPO) relocated to remote locations to leverage differences in wage levels and the availability of skilled labor between the new location and the former one. This sector has shown robust growth over the past decade and this growth has accelerated significantly during the past few years. Offshoring has largely been enabled through recent advances in communications technology, the increasing penetration of PCs, and removal of trade barriers in developing countries.

BACKGROUND AND DEFINITIONS

Sector scope. The scope of the IT/BPO case is limited to studying cross-border offshoring industry in IT and BPO. Its scope includes looking at both captive and third-party outsourcing arrangements within both the IT and BPO offshoring segments. It does not include domestic outsourcing (Exhibit 1).

Country selection. India is of particular importance to the offshore services sector because of the dominant position it enjoys in the offshoring industry (Exhibit 2) and because of the importance the industry enjoys in India's economy (Exhibit 3). The offshored services sector is an important destination for FDI to India, accounting for eight percent of all FDI in 2001. It is expected to grow to a third of the total by 2008. Furthermore, the offshored services sector is entirely export-oriented, accounting for 10 percent of India's total exports and growing at almost 35 percent per year from 1999-2002.

Measuring productivity. Given the large variety in the product mix of a typical services firm, the average revenue earned per FTE (adjusted for cross-border wage arbitrage) was taken as a proxy for company productivity. Productivity comparisons should not, therefore, be seen as measures solely of physical productivity at the employee level, but rather as measures of productivity at the enterprise level – the direct combination of productivity at the employee level with managerial actions (e.g., the branding premium, or organizational form).

FDI typology. This case focuses exclusively on export-oriented efficiency seeking FDI.

SOURCES

Data. Given its brief history, published data on offshoring is very limited. Most primary data was collected from annual reports, company financial statements, and through interviews. In addition, we have also made use of data published by Nasscom (the National Association of Software Services Companies, India) and ITAA (the IT Association of America).

Exhibit 1

OUTSOURCING AND OFFSHORING DEFINED

Offshored services case focus

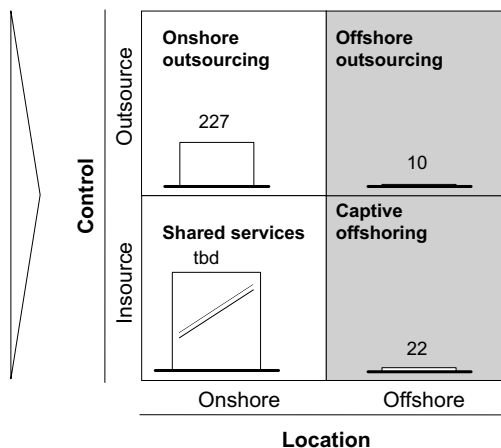
Outsourcing

- Unbundling vertically integrated processes and purchasing them back as services to leverage superior capabilities and/or lower costs

Offshoring

- The phenomenon of locating IT-services and other business processes in optimal offshore locations, largely enabled through recent advances in communications technology, to leverage differences in wage levels and the availability of skilled labor across borders

Revenues
\$ Billions, 2001



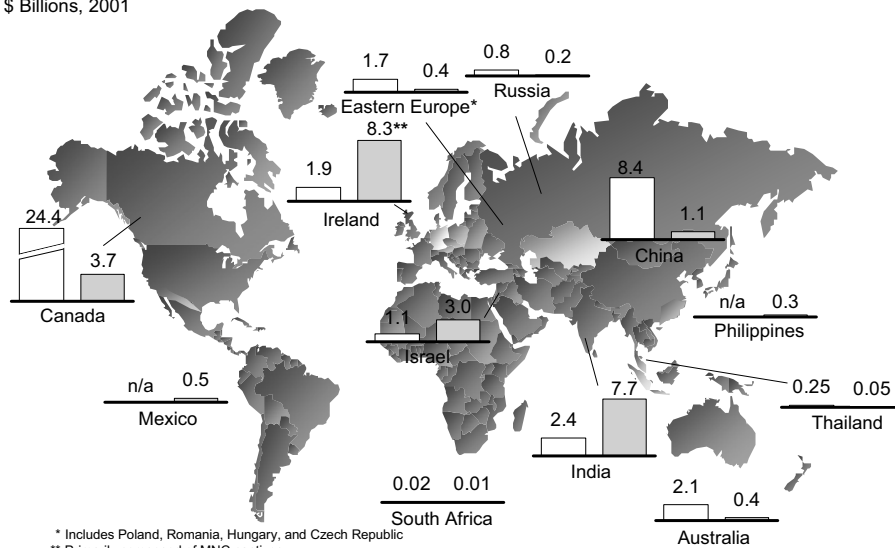
Source: Gartner; IDC; Aberdeen Group; UBS Warburg; Nasscom; U.S. import-export data; McKinsey Global Institute

Exhibit 2

INDIA IS A DOMINANT PLAYER IN GLOBAL OFFSHORING

Domestic
Offshoring

Offshored services market size
\$ Billions, 2001



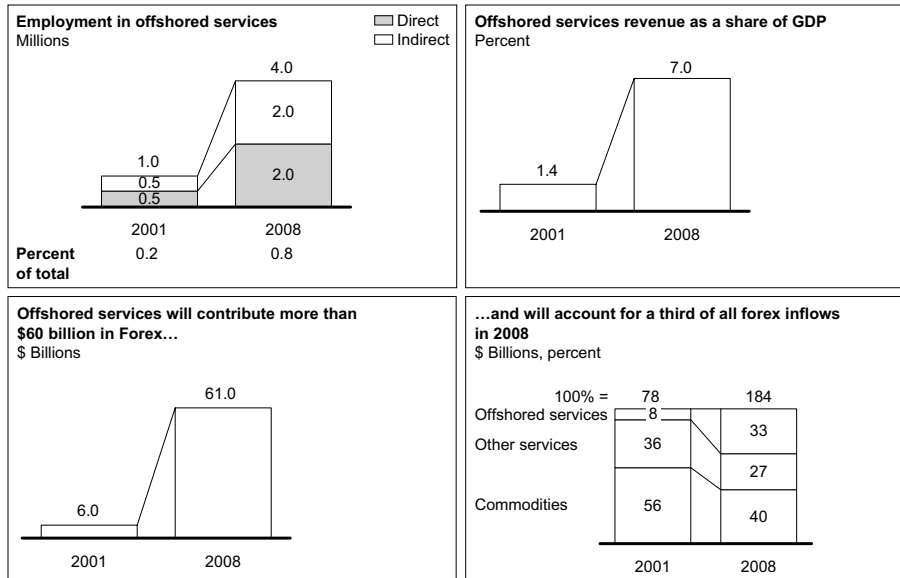
* Includes Poland, Romania, Hungary, and Czech Republic

** Primarily composed of MNC captives

Source: Software Associations; U.S. country commercial reports; press articles; McKinsey analysis; Gartner; IDC; Country government websites; Ministry of Information Technology for various countries; Enterprise Ireland; NASSCOM

Exhibit 3

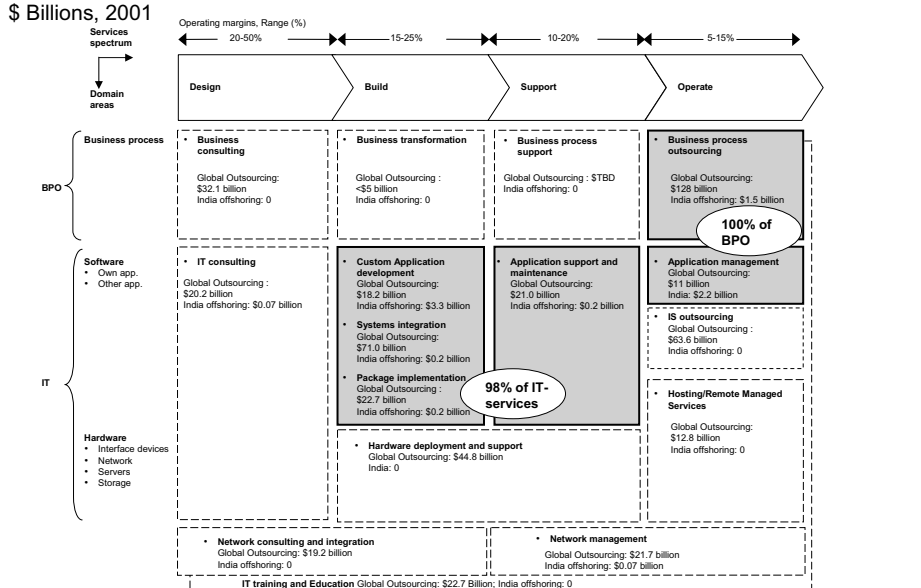
OFFSHORING IS AN IMPORTANT DRIVER OF INDIA'S ECONOMIC GROWTH



Source: WEFA-WIM; Nasscom 2002; CMIE-EIS; SIA Newsletter; EIU; McKinsey Global Institute

Exhibit 4

THE OFFSHORED SERVICE CASE WILL FOCUS ON THE LARGEST SEGMENTS



Source: IDC; Gartner, Nasscom; Interviews with BTO experts; McKinsey Global Institute

Interviews. Our understanding of the industry dynamics and the impact of external factors on the sector were based on more than 40 interviews with company executives, government officials, industry analysts, and industry associations. Almost all the leading providers were interviewed in each country. These same sources were used to understand and verify the impact of FDI on productivity and what operational factors it might have influenced.

India Information Technology/ Business Process Offshoring Case Summary

5

EXECUTIVE SUMMARY

India is the world's largest supplier of information technology (IT) offshoring and business process offshoring (BPO) services, accounting for a quarter of the global market. The sector is growing at roughly 30 percent a year in India. It is projected that the sector will grow to over U.S. \$200 billion in size by 2008 and that India will gain further market share. India has a competitive advantage in the sector in that it possesses a large, well-educated, English-speaking talent pool that can meet the expected sector growth without creating excessive wage inflation.

FDI has had very different roles in the IT and BPO sector segments. In the IT segment, its impact has been positive but limited, while in the BPO segment it has had a very strong positive impact. India's IT sector has shown strong growth since the 1980s prior to receiving FDI. The limited amount of FDI received since the mid-1990s has enabled the IT segment to increase its size while moving up the value chain. In BPO, on the other hand, FDI has been the catalyst for creating the segment, driving its growth and spawning local champions. FDI companies account for half of the segment's size and have had a large impact on driving segment productivity, both as providers and as customers.

Our examination of the offshored services sector in India has revealed that a significant share of FDI's potential impact in this sector has been reduced by the large tax incentives offered by the government. Furthermore, our research shows that India's offshored services sector would continue to attract FDI even if these incentives were withdrawn and would benefit further if these investments were used to upgrade the infrastructure. We also found that offshoring creates large benefits for the global economy and that, contrary to popular perception, both the demand and the supply countries are much better off economically as result of the practice.¹ We also found that barriers within companies can be a bigger retardant of FDI flows than national ones. This case illustrates that there are significant cross-border differences in productivity within the sector and shows how productivity can be improved by making capital (rather than labor) work harder.

SECTOR OVERVIEW

¶ Sector overview

- India has emerged as the largest supplier of information technology (IT) offshoring and business process offshoring (BPO) services, accounting for 25 percent of the global market. MGI estimates the current global offshoring market to be roughly \$32 billion in size (Exhibit 1).
- IT offshore services account for 80 percent of India's exports in this sector, with BPO accounting for the remaining 20 percent. Though the segment has the potential for substantial impact on India's economy in the near future, because of its relatively small scale today (500,000 in direct employment)

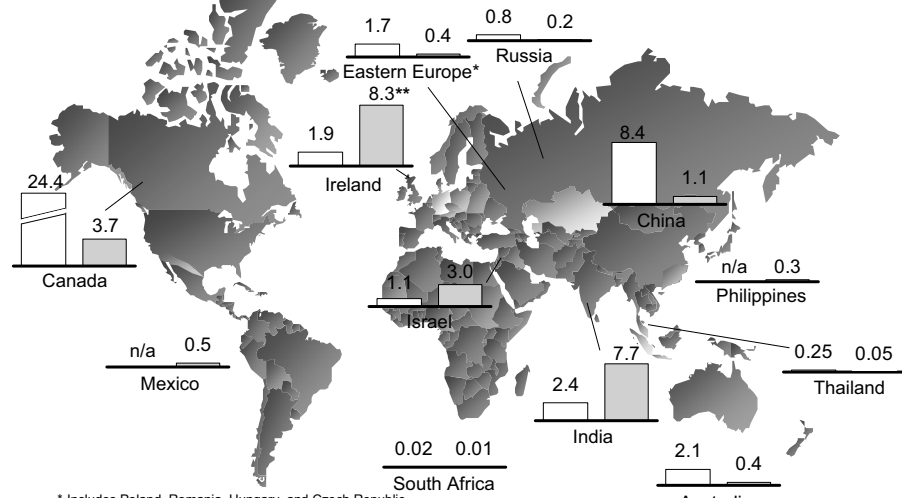
1. For an analysis of the impact of offshoring on the U.S. economy, see "Offshoring: Is it a Win-Win Game?", available on the McKinsey Global Institute website (www.mckinsey.com/knowledge/mgi).

Exhibit 1

INDIA IS A DOMINANT PLAYER IN GLOBAL OFFSHORING

□ Domestic
 ■ Offshoring

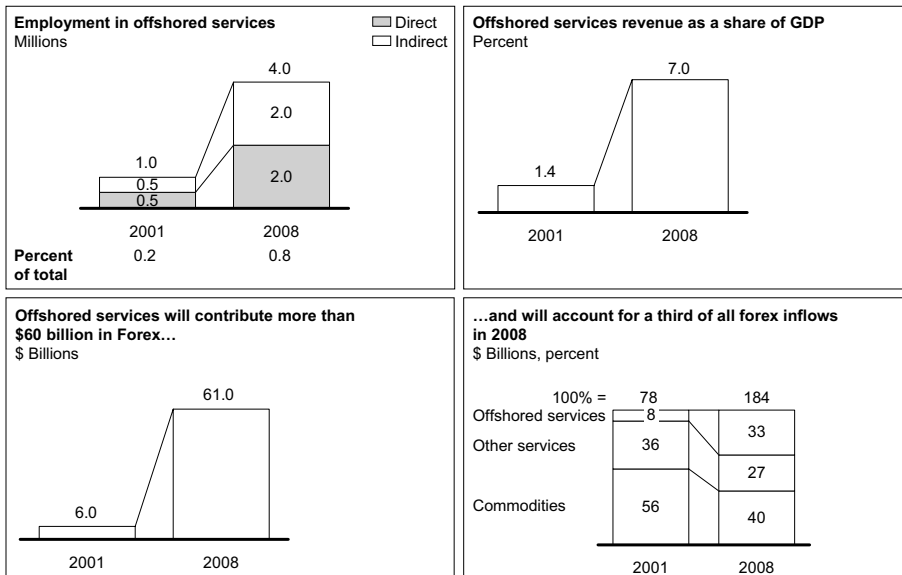
Offshored services market size
 \$ Billions, 2001



* Includes Poland, Romania, Hungary, and Czech Republic
 ** Primarily composed of MNC captives
 Source: Software Associations; U.S. country commercial reports; press articles; McKinsey analysis; Gartner, IDC; Country government websites; Ministry of Information Technology for various countries; Enterprise Ireland; NASSCOM

Exhibit 2

OFFSHORING IS AN IMPORTANT DRIVER OF ECONOMIC GROWTH IN INDIA



Source: WEFA-WIM; Nasscom 2002; CMIE-EIS; SIA Newsletter; EIU; McKinsey Global Institute

its current impact has so far been modest (Exhibit 2).

- It is projected that the sector will grow to over U.S. \$200 billion in size by 2008. India will not only retain its lead in the sector, but will gain further market share. In addition to currently possessing a significant first-mover advantage, India is also one of the few countries that has a talent pool of sufficient size to be able to supply the sector at its projected rate of growth without causing wage inflation large enough to erode the business case for offshoring.

¶ FDI overview

- India captures only a small share of global FDI flows. In 2002, total FDI in India was \$2.6 billion, of which \$400 million was invested in offshoring – the highest level in any given year. FDI in the sector totaled \$300 million in 2001 and has averaged \$100 million annually in years from 1996-2001. Although data for the division of FDI between IT and BPO is not available, FDI plays a significantly more important role in BPO than it does in IT. All FDI in offshoring is, by definition, efficiency seeking.
- This examination of the sector assesses the trends in the emergence, growth, and performance of the offshoring sector and attempts to isolate the role played by FDI in each case. Given the brief history of this sector, it is not possible to compare this influence with that of another period.
- Within the sector, 70 percent of revenue and employment is generated by local companies, 26 percent by international corporations, and just three percent by joint ventures. Local companies dominate the IT segment, with a market share of 80 percent; the BPO segment is split more evenly, with 55 percent of the market controlled by local companies (exhibits 3 and 4).

¶ External factors driving the level of FDI. Several external factors have influenced the volume of FDI received by the sector.

- **Country-specific factors.** Several factors intrinsic to India's economy impacted the flow of FDI in offshoring.
 - Factors having a positive impact
 - Labor market.** India's large, English-speaking labor market offering relevant skills at low wages. This has been the most powerful driver of FDI flows into the sector.
 - Government policies.** The Indian government's liberalization of its tariff and trade regime in 1991-93, which allowed FDI to enter the country, was a fundamental precondition of FDI.
 - The Indian diaspora.** The presence of large and successful Indian diaspora in the U.S. with many Indian managers in U.S. companies has been a crucial enabler in placing India on the global offshored services map and directing FDI flows towards it.
 - Incentives.** India has matched the incentives being offered by rival locations (e.g., the Philippines) and this played a role in encouraging FDI in the Indian sector in the early stages. We estimate that incentives amounted to a direct subsidy of ~\$6,000 per FTE a year in IT and ~\$2,000 per FTE a year in BPO.² These incentives were mostly in the form of tax exemptions and were required in the initial stages of the

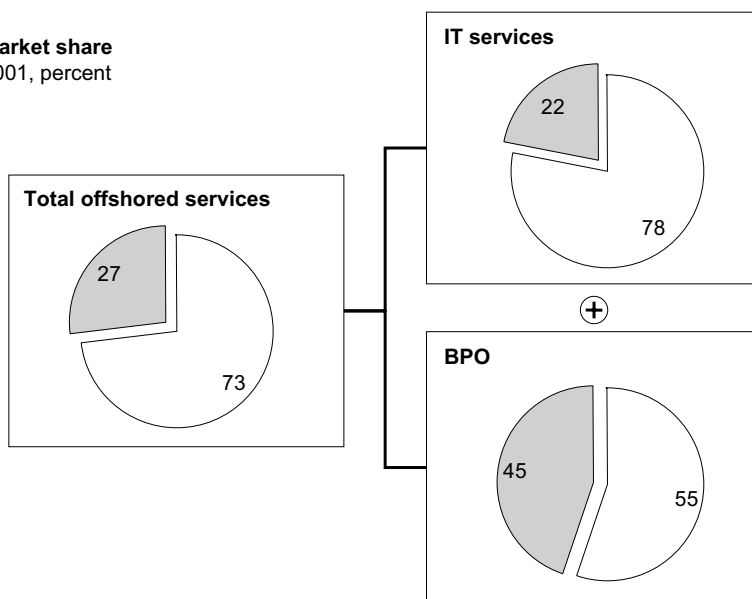
2. On average, offshoring companies generate ~\$50,000 per FTE in IT and ~\$15,000 per FTE in BPO.

Exhibit 3

IT SERVICES INDUSTRY IS DOMINATED BY LOCAL COMPANIES

Market share
2001, percent

Indian
MNC



Source: Press reports; Nasscom; Gartner; McKinsey Global Institute

Exhibit 4

INDIA OFFSHORED SERVICES INDUSTRY IS EMERGING AS A HIGHLY COMPLEX SPACE

BPO	<ul style="list-style-type: none"> • GE • HSBC • Standard Chartered • American Express • Ford • McKinsey • JP Morgan • Flour Daniel 	<ul style="list-style-type: none"> • Convergys • Sitel • eFund • Sykes • First Data Systems 	<ul style="list-style-type: none"> • WNS (2) • Stream trac mail (3) • EXL (2) • Health Scribe (3) • eServe (1) 	<ul style="list-style-type: none"> • Daksh (1) • Spectramind (2) • Msource (2) • Intellinet (2) • TransWorks (1) • Progeon (2) • ICICI OneSource (2)
IT	<ul style="list-style-type: none"> • Microsoft • Oracle • Adobe • SAP • Cadence 	<ul style="list-style-type: none"> • Deloitte Touche • Tohmatsu • PriceWaterhouse • Coopers • Accenture • IBM • EDS • CSC 	<ul style="list-style-type: none"> • MBT (3) • Syntel (1) • Cognizant Tech-nology Solutions (1) • Convansys(1) 	<ul style="list-style-type: none"> • Infosys (3) • Wipro (3) • NIIT (3) • Satyam (3) • TATA Consultancy Services (3)

MNC "captives"

Wholly-owned subsidiaries of large MNCs established to offshore business functions

MNC 3rd-party providers

Wholly-owned subsidiaries of international outsourcing firms established in India as one of several global locations to perform business functions for clients

Foreign 3rd-party providers

3rd-party providers considered foreign when any one of the following applies:
 1. Company has headquarters and investor base overseas with primarily India-based operations
 2. Company was captive of an MNC and has been spun-off with an MNC stake >20%
 3. Company is JV with an MNC stake >20%

Local 3rd-party providers

3rd party providers considered local when any of the following applies:
 1. Company has been founded by Indian citizens residing in India and is headquartered in India (can have FII base)
 2. Company is a wholly-owned subsidiary of an established Indian company
 3. Company is an established Indian IT provider

Source: McKinsey Global Institute

development of the sector in order to compensate for the perceived geopolitical risk of locating to India, its relatively poor infrastructure, lack of credible and reliable suppliers, and high corporate taxes³. Over time, these factors have become less relevant and the case for incentives has therefore weakened.

Supplier base. The absence of reliable suppliers has been a key factor in determining FDI flows in the BPO segment. However, with the emergence of a mature supplier base in IT, FDI has been less essential in this segment.

- Factors having a negative impact

Infrastructure. The absence of reliable power and telecom infrastructure has been a large deterrent to companies wishing to make investments in India.

Conflict with Pakistan. The risk of moving into what is currently a volatile region politically has discouraged some international companies from making further FDI in India.

- **Global factors.** FDI flows to India have been enabled by a number of factors at the international level: the widespread penetration of the PC within companies, a step-change reduction in telecom costs, and the creation of the offshoring business model by companies such as British Airways and GE.
- **Barriers within companies.** Even with a compelling economic case for offshoring, internal organizational resistance and inefficient incentive structures nevertheless remain as powerful barriers to the flow of FDI into this sector.

FDI IMPACT ON HOST COUNTRY

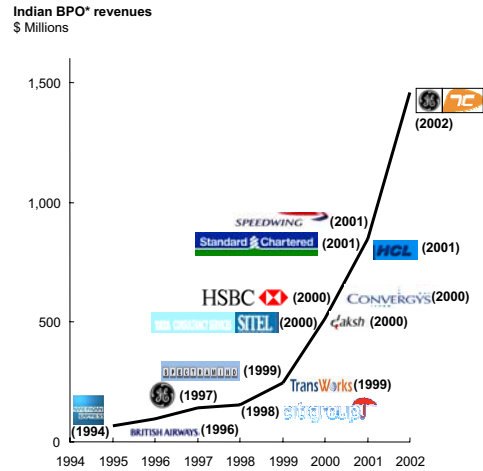
¶ **Economic Impact.** Both the IT and BPO segments saw rapid growth in output, productivity, and employment in the 1990s. However, the role FDI has played in determining this success has been very different in the two segments.

- **Sector Creation.** FDI was crucial to the creation of the BPO segment; by contrast, its role in the IT segment was negligible.
 - Creating the business model. International companies were responsible for identifying the BPO opportunity, infusing capital, training labor, demonstrating value, and increasing the competitive intensity of the segment (Exhibit 5). The decision by reputed companies such as American Express, GE and British Airways to offshore to India increased the comfort level of others in undertaking similar arrangements and created a strong case for India as a credible destination for offshoring.
 - Infrastructure investment. Creating a BPO segment required substantial investment in the power and telecom infrastructure, which was otherwise unreliable. FDI therefore played a vital role in this regard. The IT segment did not face similar constraints, so was able to develop without the assistance of FDI.
 - **Sector productivity.** FDI has had little or no impact on increasing sector
3. In order to attract FDI, the Indian government does not tax the IT/BPO sector; without this incentive, the tax rate would be 35 percent of profits. While the draw of cheap, skilled labor would have attracted FDI eventually, this tax break probably helped to develop the sector more quickly than otherwise by making the cost savings of offshoring more lucrative.

Exhibit 5

WHY FDI WAS REQUIRED TO JUMP START BPO ECONOMY

- Infrastructure**
 - Reliability of power and connectivity while sufficient for batch-processed IT work, was insufficient to support the real-time nature of BPO work
 - MNC captives were able to invest in upgrading this infrastructure because they were assured demand for their services from parent
- Nature of work**
 - Indian IT firms moved up the learning curve by doing on-site work before offshoring; BPO offered no such opportunity
 - Project based nature of IT allowed experimentation with unknown IT firms; higher risks associated with offshoring crucial business processes like CRM offered little margin of failure in BPO
- Growth in IT**
 - With boom in IT, Indian IT firms were focusing on moving to higher value added work in IT and had no inclination to take the risks of entering 'low value added' BPO work



* For captives, revenue based on cost base
Source: Literature search; interviews; McKinsey Global Institute

productivity in IT, while its impact in BPO has been strong. Given the complex product mix of this segment, productivity is measured at the enterprise level (revenue per employee) rather than at the agent level (output per hour). Productivity growth in IT has so far been limited and has resulted from external factors such as competitive pressure from other offshoring locations and the price pressure due to the global recession in the IT segment. In contrast, FDI has had direct beneficial impact on improving the productivity of the BPO segment – by increasing the credibility of India as a destination for offshoring (and, therefore, its price premium) and by transferring technology and best practices to Indian companies (Exhibit 6).

- We estimate the productivity in software services to be 47 percent of the U.S. level (measured as revenue per FTE) while the overall productivity in IT services is 39 per cent of U.S. levels. The overall productivity level is brought down by the poor performance of companies serving the domestic market, which are functioning at 34 percent of U.S. levels. Product mix differences account for a fifth of this gap, but the biggest explanatory factors are those of the branding premium enjoyed by international companies and differences in employee utilization (Exhibit 7).
- The productivity of best practice Indian companies in both the IT and BPO segments is 100 per cent of the U.S. average. U.S.-based operations of best practice Indian IT companies can reach productivity levels of almost 150 percent of the U.S. average, comparable to the levels of large U.S. services companies, such as Accenture or EDS (Exhibit 8).
- The main reasons for the productivity gap of Indian IT and BPO companies are: 1) the lower value-added product mix on average; and 2) the lack of a strong brand capable of earning a price premium. In addition, the poor organization of functions and tasks (OFT) within software development centers plays an important role in lowering productivity of the IT segment, though not in the BPO segment (exhibits 7 and 8).
- **Sector Output.** Output has grown at a rate of 48 percent a year, rising from a level of \$3 billion in 1998 to over \$10 billion today. The sector is expected to continue to grow at high rates in the years to come, with predicted average growth of 32-34 percent a year to 2008, when the sector is projected to reach \$70-80 billion in size. Some 80 percent of sector output is concentrated in IT services, where FDI has so far had a limited role in driving output.
- **Sector employment.** The sector currently employs 500,000 people and accounts for only two-tenths of a percentage point of India's total employment. Sector employment is expected to grow to 2 million people by 2008. As with productivity and output, FDI has so far had only a limited role in creating employment in IT services (which account for roughly 80 percent of total sector employment). In the remaining 20 percent of sector (the BPO segment), FDI has been a crucial factor in employment creation (Exhibit 2).
- **Supplier spillovers.** Given its exclusively export-oriented nature and limited interface with supplier industries, FDI in the offshoring industry has had limited external spillovers. Two important areas where it has had some impact are telecom and construction. As the importance of the offshoring

Exhibit 6

FDI IMPACT SUMMARY

○ Low
● High

	IT		BPO	
Industry creation	<ul style="list-style-type: none"> Limited impact – spillover benefit of initial market-seeking FDI in the hardware industry, e.g. IBM, TI 	●	<ul style="list-style-type: none"> Very high impact – directly responsible for identifying opportunity, demonstrating value and establishing credibility, e.g., GE 	●
Supply of capital	<ul style="list-style-type: none"> No impact – capital investments in the industry built over time through trade, not through FDI 	○	<ul style="list-style-type: none"> High impact – played a crucial role in initial years providing low cost of capital through assured demand from parent company, e.g., GE, British Airways, Amex 	●
Technology transfer	<ul style="list-style-type: none"> Limited impact – spillover benefit of market-seeking FDI; hardware MNCs trained software professionals to service their customers in India, e.g., IBM 	●	<ul style="list-style-type: none"> High impact – played a crucial role in training a whole range of personnel from senior managers to CSRs, e.g., GE, Amex 	●
Creation of local champions	<ul style="list-style-type: none"> Limited impact – spillover benefit of market-seeking FDI; established Indian firms captured labor skilled in software services after MNC forced departure, e.g., TCS, Wipro 	●	<ul style="list-style-type: none"> High impact – leading local champions a result of (a) MNC trained managers turned entrepreneurs (b) MNC captive spin-offs (c) MNC JVs, e.g., WNs, Spectramind, EXL Service, E-serve 	●
Competitive intensity	<ul style="list-style-type: none"> Limited impact – presence of efficiency-seeking FDI in IT services relatively new and too small for meaningful impact, e.g. Accenture, EDS 	●	<ul style="list-style-type: none"> Medium impact – MNC captives provide limited competition to 3rd party players; competition will increase after MNC 3rd party players scale presence, e.g. Convergys, eFunds 	●
Productivity	<ul style="list-style-type: none"> No impact – presence of efficiency-seeking FDI in IT services relatively new and too small for meaningful impact 	○	<ul style="list-style-type: none"> Limited-medium impact – MNC captives are themselves highly unproductive and MNC 3rd party presence currently too small for meaningful impact 	●
Employment	<ul style="list-style-type: none"> Limited impact – less than 20% of current employment attributable to FDI 	●	<ul style="list-style-type: none"> Medium-high impact – Roughly half of the industry employment FDI related 	●
Wages	<ul style="list-style-type: none"> No impact – presence of efficiency-seeking FDI in IT services relatively new and too small for meaningful impact 	○	<ul style="list-style-type: none"> Medium-high impact – MNC presence has raised average wages in the industry between 10-20% 	●
Spillovers	<ul style="list-style-type: none"> Limited impact – result of public and private initiatives to improve infrastructure, education, governance, etc. to attract FDI 	●	<ul style="list-style-type: none"> Medium-high impact – important spillover such as country trade balance, self-financing education, infrastructure limited only by the relatively small scale of sector 	●

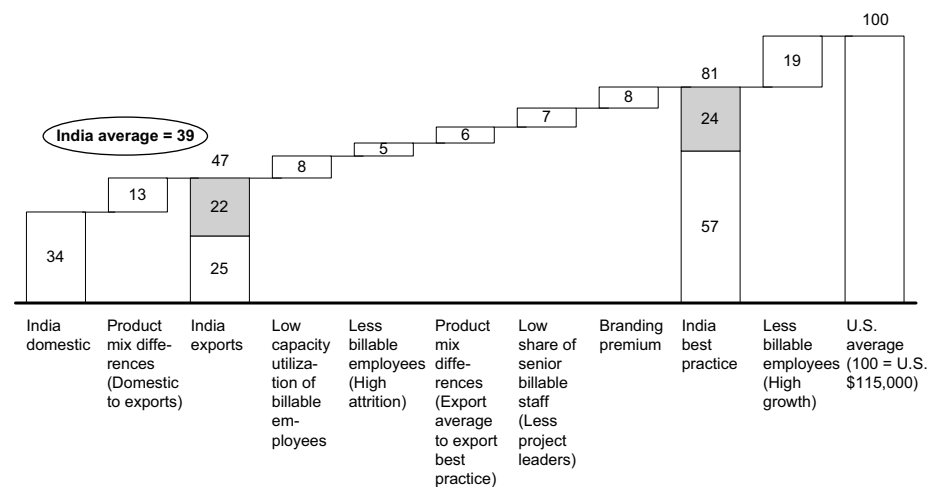
Source: McKinsey Global Institute

Exhibit 7

WHY PRODUCTIVITY OF IT SERVICES FIRMS IN INDIA LAGS

■ PPP adjustment*

Index, U.S. 1998 = 100



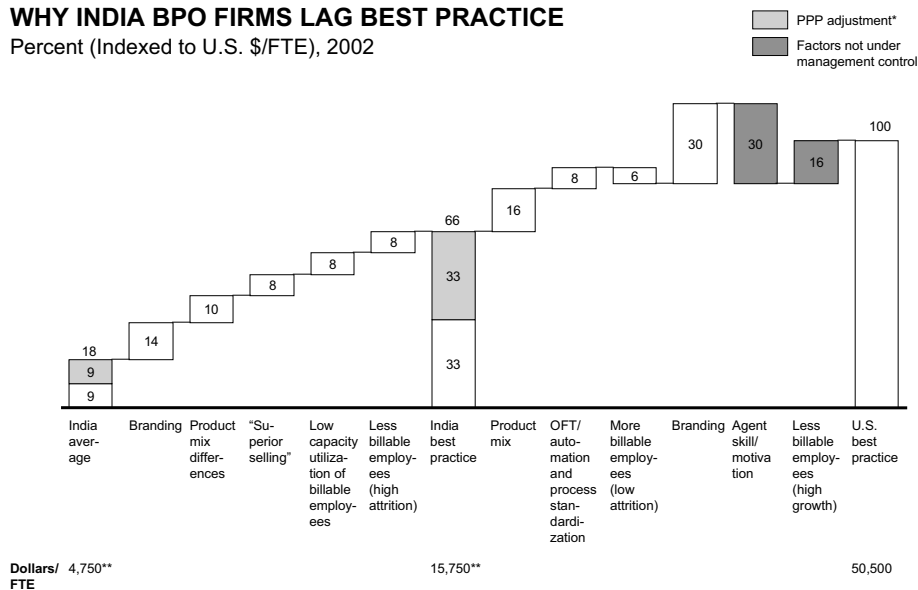
* Reflects adjustment for perceived country risk and value sharing from factor cost arbitrage

Source: Interviews; MGI report on Russia; McKinsey analysis

Exhibit 8

WHY INDIA BPO FIRMS LAG BEST PRACTICE

Percent (Indexed to U.S. \$/FTE), 2002



* Reflects adjustment for perceived country risk and value sharing from factor cost arbitrage

** To adjust for very high growth rates, productivity levels for Indian companies is estimated as annual output for the year divided by number of employees for the year. Average number of employees calculated using employment at start of the year and end of the year

Source: Company interviews; Nasscom; analyst reports; McKinsey Global Institute

sector in India's economy grew, it also became an important consideration in the government's decision to deregulate the telecom industry, resulting in large improvements in reliability and performance and a drop in prices. The construction sector has also improved its performance as international companies' specifications have forced contractors to comply with Western standards of construction.

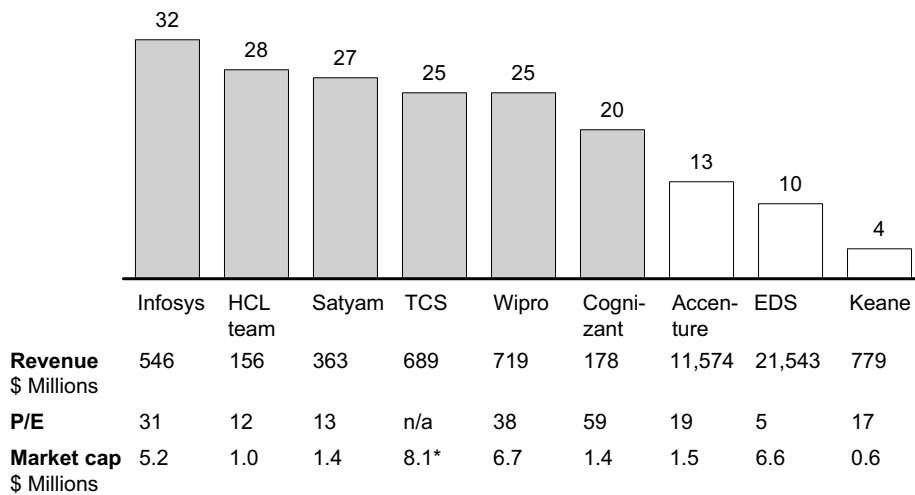
¶ **Distribution of FDI impact**

- **Companies.** FDI has had limited impact in raising the level of competition in the sector. As a result, sector companies have so far managed to retain a large share of their productivity gains. Indian providers continue to lead global champions in profitability, though lag in productivity. This dichotomy has so far been supported by the labor cost advantage Indian companies enjoy over their international competitors, which allows them to compete on price while still maintaining very high margins (exhibits 9-12). However, as international service companies scale up their operations in India, Indian providers are beginning to improve their productivity in order to compete.
 - FDI companies. FDI companies have so far had only a limited direct presence in India; most FDI in this sector has been made in subsidiary companies, which create large savings for the parent company even as their productivity trails global best practice.
 - Non-FDI companies. Non-FDI companies continue to manage high margins (~25 percent, as compared to a global best practice level of 10 percent) despite their productivity gap with global best practice companies.
- **Labor.** Labor has benefited substantially from the growth of this sector. Both FDI and non-FDI companies, buoyed by factor cost arbitrage, have offered significantly higher wages in order to attract the highest skill employees.
 - Employment. The sector has created 500,000 new jobs through direct employment and another 500,000 through indirect employment. While these numbers are significant by international standards, they account for a very small share of the India's total labor pool (0.2 percent). Some 80 percent of this employment is in the IT-segment and, therefore, is not due to the impact of FDI directly. Of the remaining 20 percent accounted for by BPO, roughly half is employed directly by FDI.
 - Wages. On average, employee wages in the IT segment are between 80 and 100 percent higher than the wages of their counterparts in other sectors of the economy. In the BPO segment, wages on average are 50 percent higher than alternatives available to workers.
- **Consumers.** Offshoring (i.e., exports) account for 75 percent of total IT sector size. Due to special incentives offered by the government to export-oriented companies, offshoring companies are prohibited from serving the domestic market. There is, therefore, only a limited spillover from the productivity gains of export-oriented companies to domestic companies. However, as competition in the sector builds up and some lower productivity companies are forced to exit the higher-margin export market, they are likely to pick-up work in the domestic market and build performance pressure on domestic providers (whose productivity currently is even lower than that of the poor performers in the export market).

Exhibit 9**INDIA IT PROVIDERS LEAD IN PROFITABILITY**

Indian firms

Operating margin
Percent; 2002

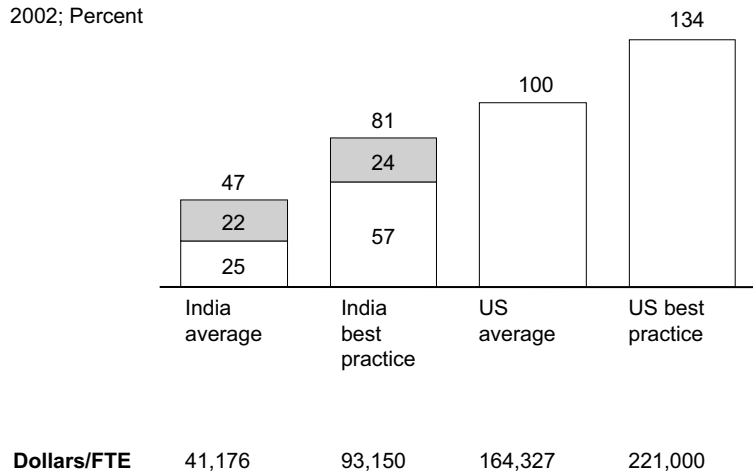


* Market cap estimate by Nasscom
Source: Company reports

Exhibit 10**INDIA IT SERVICES FIRMS HAVE LOW PRODUCTIVITY**

PPP adjustment*

Revenue/FTE
2002; Percent



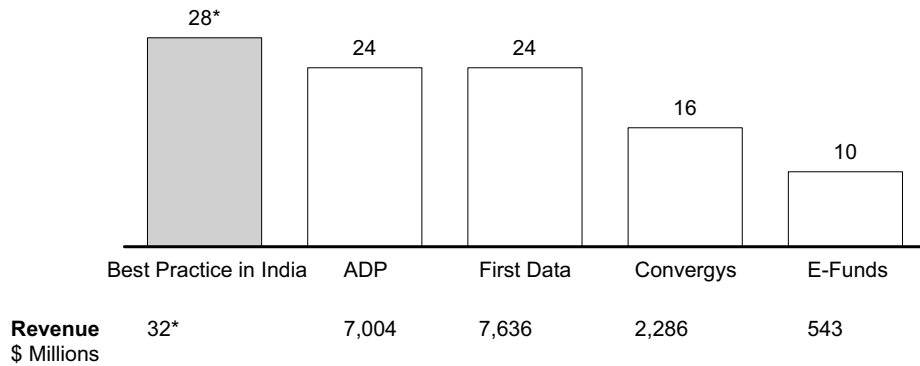
* Reflects adjustment for perceived country risk and value sharing from factor cost arbitrage
Source: Interviews; Nasscom; analyst reports; McKinsey Global Institute

Exhibit 11

BEST PRACTICE INDIA BPO FIRMS ARE HIGHLY PROFITABLE

Indian firms

Operating margin
Percent; 2002



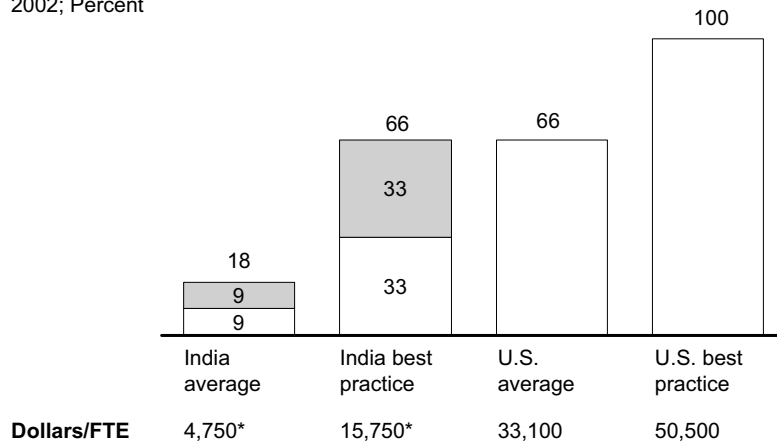
* Analyst estimate
Source: Company reports; analyst estimate; NASSCOM

Exhibit 12

... BUT, LAG IN PRODUCTIVITY

PPP adjustment**

Revenue/FTE
2002; Percent



* To adjust for very high growth rates, productivity levels for Indian companies are estimated as annual output for the year divided by the average number of employees for the year. Average number of employees calculated using employment at the start of the year and the end of the year
** Reflects adjustment for perceived country risk and value sharing from factor cost arbitrage
Source: Interviews; Nasscom; analyst reports; McKinsey Global Institute

- **Government.** Although this sector is corporate tax-exempt, the government is a net beneficiary from the taxation of employees and suppliers. Given India's high levels of unemployment⁴, the new jobs that are created are unlikely to present any opportunity cost for the country. Every vacated position is filled up, as the employees move up the value chain and the country's vast unemployed and semi-employed labor pool supplies additional workers to fill the vacant positions at the lowest levels of value-added.

HOW FDI HAS ACHIEVED IMPACT

As has been discussed earlier, India's offshoring sector is dominated by non-FDI companies, and the direct impact of FDI-companies in increasing output, productivity, employment, wages and taxes has been limited. However, given the important role FDI has played in enabling the creation of this segment, its indirect impact is large. There are several important mechanisms through which FDI has achieved this impact.

- ¶ **Sector Creation.** As discussed earlier, FDI's crucial contribution to this sector has been in helping to create the BPO segment.
 - **Market credibility.** FDI's crucial contribution came in the form of the validation of India as a credible location for offshoring. Once names like GE, American Express and Citibank set up subsidiary companies in India, others followed quickly.
 - **Knowledge.** In the IT segment, the transfer of technology has been a spillover benefit from market-seeking FDI. International hardware companies such as IBM have trained software professionals to service their customers in India (which local companies tapped into after IBM left in India in 1977). In the BPO segment, international companies have been responsible for training an entire generation of professionals, ranging from senior managers to CSAs.
 - **Creating local champions.** FDI did not play a direct role in creating local IT-services champions. However, FDI has played a crucial role in spawning local BPO champions. Most leading Indian BPO companies have either, 1) been started by managers trained at an international subsidiary company, 2) been spin-offs from international subsidiaries or, 3) arisen through joint ventures with international customers or outsourcers (exhibits 13 and 14).
- ¶ **Industry dynamics.** Although the relatively small scale of FDI has limited its ability for direct economic impact in the sector, its presence has set in motion industry dynamics that have enabled non-FDI companies to have large economic impact. FDI has had a limited impact in increasing competitive intensity in the sector to date. In both the IT and BPO segments, the vast majority of FDI has been made in the form of subsidiaries. International services companies (e.g, Accenture in IT and Convergys in BPO) have so far been unable to scale their operations in India. However, this might be beginning to change as competition in the sector increases.

4. Estimates vary as to exactly how high, as no proper records are kept.

Exhibit 13

INDIA IT SERVICES INDUSTRY DYNAMICS

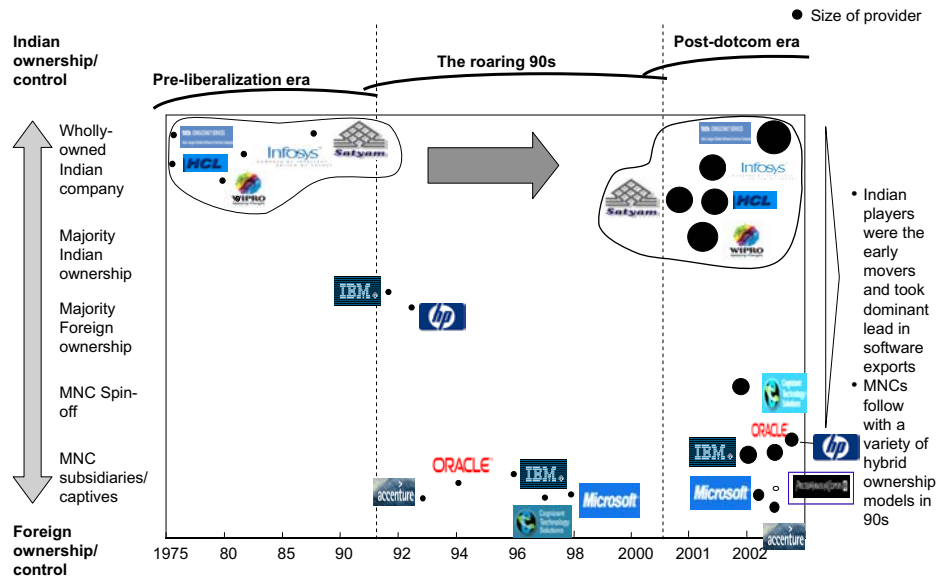
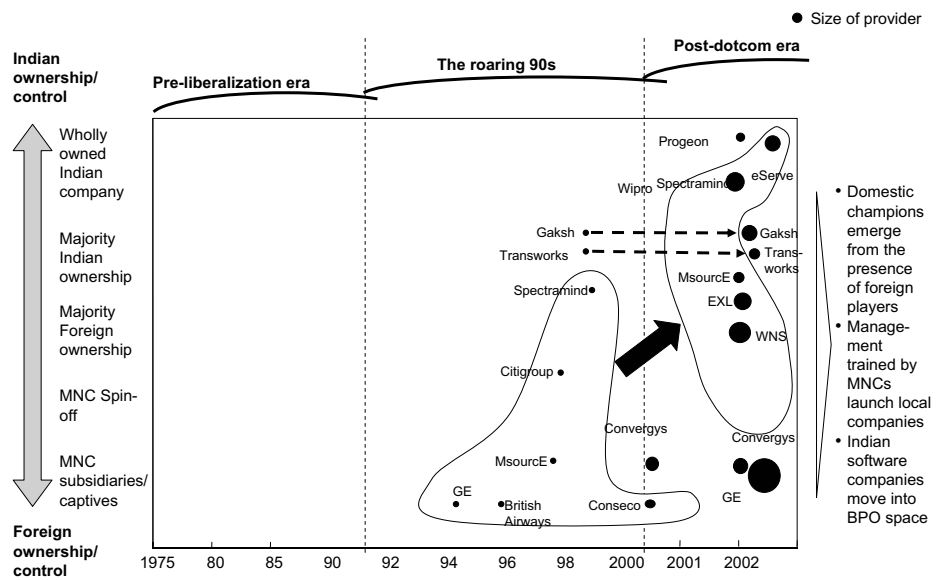


Exhibit 14

INDIA BPO SERVICES INDUSTRY DYNAMICS



¶ Operational factors

- **Capital supply.** FDI was crucial to supplying the capital necessary for upgrading the power and telecommunications infrastructure necessary for BPO. The subsidiaries of international companies were able to make the investment necessary for upgrading the infrastructure because they were assured demand for their services by the parent company. In contrast, the capital requirements in IT were low and FDI did not play an important role as a supplier of capital in this segment as non-FDI companies were able to raise the capital themselves.
- **Transfer of best practices.** FDI-companies (and their subsidiaries) were crucial in transferring improved management techniques to non-FDI companies in the BPO segment. They did so through a variety of mechanisms: 1) by direct employment (a whole generation of entrepreneurs, managers and service agents has been trained by leading captives); 2) through outsourcing (international subsidiaries outsource to local providers, thereby ensuring that a large portion of their total cost base is variable cost); by training local suppliers (to ensure quality, FDI companies have invested significantly in training local vendors in their proprietary processes and in working with them to develop techniques for meeting service level agreements).
- **Supplier spillovers.** In addition to training local suppliers, as discussed above, FDI has also contributed by improving the standards of operational performance of the infrastructure. For example, FDI played an important role in lobbying for the deregulation of the telecommunications sector in India. Following deregulation, FDI's needs helped specify bandwidth reliability and performance standards.

EXTERNAL FACTORS THAT AFFECTED THE IMPACT OF FDI

¶ Country-specific factors

- **Incentives.** Although incentives may have been necessary to attract FDI in this industry in the early stages, they are now reducing FDI's potential for economic impact. India's case as an attractive location for offshoring is now strong. The tax subsidies and direct incentives that the government continues to offer companies have deflected investments away from much needed infrastructure upgrades.
- **Supplier spillovers.** The growing importance of the offshoring sector to the Indian economy was an important consideration in enabling the deregulation of Indian telecommunications sector. This has led to improved reliability and lower prices for telecommunications services, which has created further positive spillovers for many other sectors of the economy.

- ¶ **Initial sector conditions.** The high level of growth and the medium to high levels of competition in the BPO segment have created the conditions for FDI to have higher impact in the years to come. The arrival of international companies is likely to drive competitive intensity and productivity growth in the segment. Similarly, in the IT segment, the entry of higher productivity FDI-companies is building up the level of competitive intensity and is likely to have impact on productivity growth in the near future.

SUMMARY OF FDI IMPACT

FDI has had a positive impact on the IT segment and a very strong positive impact on the BPO segment. FDI has had a strong impact in the IT segment by increasing employment and by bringing higher value-added functions to India. Its impact has been very strong in BPO because, 1) it was responsible for creating the segment and, 2) it accounts for half of the sector employment and has been a driver of productivity. As international companies now enter India, increased competition is beginning to drive increased sector productivity.

Exhibit 15

IT/BPO – FDI OVERVIEW



• FDI period	
– Focus period: Mature FDI	2003-2008
– Comparison period: Early FDI	1998-2002
• Total FDI inflow (1996-2002)	\$1.2 billion*
– Annual average	\$ 170 million*
– Annual average as a share of sector value added	2.2%**
– Annual average per sector employee	\$ 340**
– Annual average as a share of GDP***	0.04%
• Entry motive (percent of total)	
– Market seeking	0%
– Efficiency seeking	100%
• Entry mode (percent of total)	
– Acquisitions	<1%
– JVs	10%
– Greenfield	89%

* A disproportionate amount of FDI in the offshoring sector has flowed into BPO. Actual split is not available, but informal estimates attribute 80% of total to BPO and the remaining to IT

** Average for IT and BPO sectors. IT accounts for 80% of sector value-add and similarly accounts for majority of total industry employment. Given the disproportionately small portion of FDI in IT, this number is likely much smaller for IT and much larger for BPO

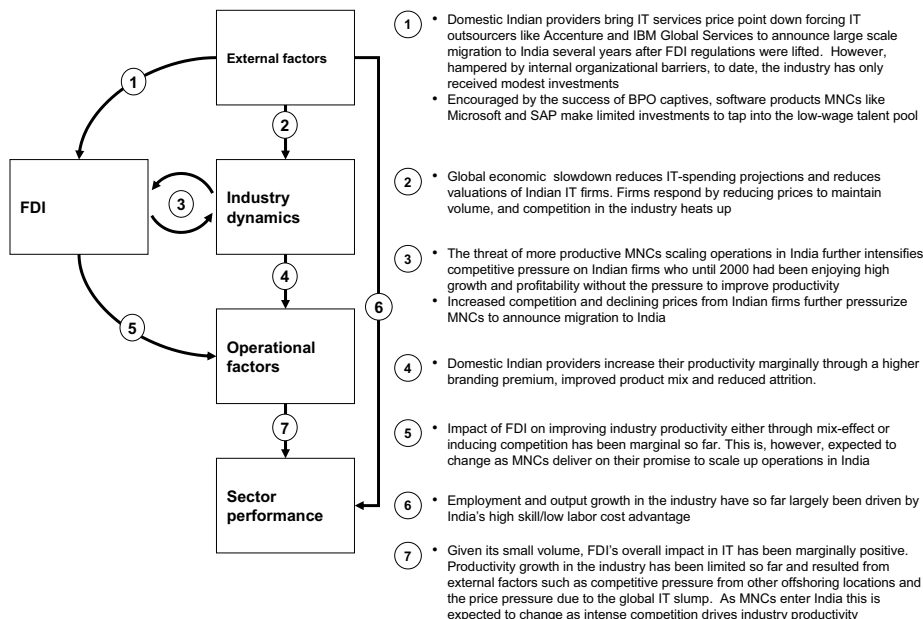
*** 2001 GDP

Source: SIA newsletter; Planning Commission Report, August 2002; McKinsey Global Institute

Exhibit 16

INDIA IT OFFSHORING – SUMMARY

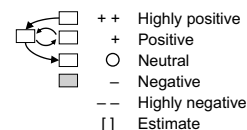
Overall impact of FDI +



Source: McKinsey Global Institute

Exhibit 17

INDIA IT OFFSHORING – FDI'S ECONOMIC IMPACT IN HOST COUNTRY

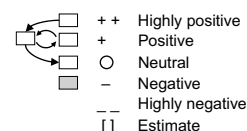


Economic impact	Sector performance during		FDI impact	Evidence
	Early FDI 1998-2002	Mature FDI 2003-2008E		
• Sector productivity (CAGR)	+5%	[++]	[+]	<ul style="list-style-type: none"> Driven primarily by external factors (not FDI), domestic IT providers have steadily improved their productivity since 1998 However, Indian providers (roughly half the productivity of global best practice firms) are now experiencing pressure to improve their productivity as the best practice firms scale operations in India
• Sector output (CAGR)	+35%	[++]	[+]	<ul style="list-style-type: none"> Sector output grew dramatically through the 90s, driven only in small part by FDI (20%) Sector output is expected to continue to grow robustly into the future driven both by domestic and FDI firms
• Sector employment (CAGR)	+30%	[++]	[+]	<ul style="list-style-type: none"> In line with output, sector employment has grown dramatically through the 90s (mostly domestic firms), and is expected to continue to grow
• Suppliers	+	[+]	+	<ul style="list-style-type: none"> Deregulation and privatization in the nationalized telecom sector has resulted in exponential growth and a decline in prices; this trend is expected to continue
Impact on competitive intensity (net margin CAGR)	3%↓	[++]	[+]	<ul style="list-style-type: none"> Driven by external factors, EBIT margins of IT providers have steadily declined since 2001 With increased competition from global vendors scaling operations in India, this trend is expected to continue

Source: McKinsey Global Institute

Exhibit 18

INDIA IT OFFSHORING – FDI'S DISTRIBUTIONAL IMPACT IN HOST COUNTRY



Economic impact	Sector performance during		FDI impact	Evidence
	Early FDI 1998-2002	Mature FDI 2003-2008E		
• Companies				
– FDI outsourcers	O	[O]	[O]	<ul style="list-style-type: none"> Due to limited presence, there has been no impact on IT outsourcing MNCs thus far. Even as the MNCs scale up their offshore presence, FDI will only help them maintain market share, but is unlikely to increase profitability
– FDI captives	++	[++]	[++]	<ul style="list-style-type: none"> MNCs with captives have benefited from increase in productivity leading to a decline in prices. This trend is expected to continue As MNCs scale operations in India, and the industry capability and credibility increases, product mix will evolve to include higher value-added functions
– Non-FDI companies	++	[-]	[-]	<ul style="list-style-type: none"> Domestic companies will be subjected to intense competition and will be forced to increase productivity. Margins will continue to decline
• Employees				
– Level of employment (CAGR)	+30%	[++]	[+]	<ul style="list-style-type: none"> IT industry is expected to grow at 35% CAGR to 2008
– Wages	++	[+]	[+]	<ul style="list-style-type: none"> Although most surplus due to increase in productivity in recent years has gone to consumers, the industry has given wages a strong boost As MNCs scale presence and look to poach talent, bidding is expected to drive wage inflation
• Consumers				
– Prices	n/a	?	?	<ul style="list-style-type: none"> As MNCs scale operations and competition increases, some Tier 1 players will be forced to serve the local market, increasing pressure on Tier 2/3 players and bringing prices down
– Selection	n/a	?	?	
• Government				
– Taxes	O	[O]	[O]	<ul style="list-style-type: none"> No impact on taxes as industry is tax-exempt to 2010
– Other	+	+	+	<ul style="list-style-type: none"> Dramatic increase in foreign exchange reserves through contributions from this industry

Source: McKinsey Global Institute

Exhibit 19

INDIA IT OFFSHORING – COMPETITIVE INTENSITY

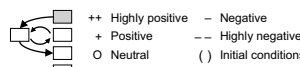


	Sector performance during		Evidence	Rationale for FDI contribution
	Prior to focus period (1998)	End of focus period (2002)		
Pressure on profitability	○	◐	<ul style="list-style-type: none"> Trend for rising EBITDA margins has reversed since 2001 to a steady decline 	<ul style="list-style-type: none"> Decline in margins primarily driven by reduced IT spending globally; global outsourcer presence too limited for meaningful pressure on profitability
New entrants	◐	◐	<ul style="list-style-type: none"> Before 1998: hundreds of domestic entrants with marginal FDI-related entrants 2002: domestic players rapidly consolidating; multiple FDI entrants 	<ul style="list-style-type: none"> Every major software product development and IT services firms has entered or has announced plans for entry into India
Weak player exits	○	◐	<ul style="list-style-type: none"> Before 1998: negligible exits as a share of total 2002: no large player exits; limited subscale exits as share of total 	<ul style="list-style-type: none"> Limited number of subscale exits have primarily been driven out by domestic competition, FDI-outsourcer presence not meaningful for impact
Pressure on prices	○	◐	<ul style="list-style-type: none"> Before 1998: marginal pressure on prices as global consumers are indifferent to vendor margins and enjoy dramatic savings 2002: medium pressure on prices due to global slow down in IT-spending 	<ul style="list-style-type: none"> Global outsourcer presence too limited for meaningful pressure on prices
Changing market shares	○	◐	<ul style="list-style-type: none"> Before 1998: Limited change in market share among domestic players 2002: Trend toward consolidation as Tier 1 vendors capture market share 	<ul style="list-style-type: none"> Global outsourcer presence too limited to vary market share for domestic companies
Pressure on product quality/variety	◐	◐	<ul style="list-style-type: none"> Before 1998: domestic players performed low value-added work, e.g., Y2K etc. 2002: pressure to move up the value chain driven by competition from other low wage countries and from FDI-outsourcers entering India 	<ul style="list-style-type: none"> As global outsourcers scale up, higher value-added functions are being offshored to India
Pressure on upstream industries	n/a	n/a		
Overall	○	◐	<ul style="list-style-type: none"> Medium-level competitive intensity primarily driven by external factors like reduced global IT spending and competition from other offshoring locations 	<ul style="list-style-type: none"> Competitive pressure from FDI should be more visible by 2006

Source: McKinsey Global Institute

Exhibit 20

INDIA IT OFFSHORING – EXTERNAL FACTORS' EFFECT ON FDI

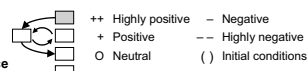


	Level of FDI*	Impact on level of FDI	Comments	Impact on per \$ impact	Comments
Global factors	Global industry discontinuity	0.04%			
	Relative position				
	• Sector market size potential	O	• Market too small for FDI	n/a	• —
	• Proximity to large market	n/a	• —	n/a	• —
	• Labor costs	++	• High skill workers at low cost	O	• —
Country-specific factors	Language/culture/time zone	+	• English language; faster time to market	O	• No impact
	Macro factors				
	• Country stability	-	• Mixed track record on FDI regulation • Geo-political instability/conflict with Pakistan	+	• Sector's importance in country's economy creates pressure on government to adopt a more rational foreign policy stance • India's strategic importance in global business value chain creates pressure on foreign governments to engage with the country
	Product market regulations				
	• Import barriers	O	• All equipment import duty-exempt	O	• —
	• Preferential export access	O	• None	O	• —
	• Recent opening to FDI	O	• Track record for unpredictable behavior toward MNCs in the 70's	O	• —
	• Remaining FDI restriction	n/a		n/a	
	• Government incentives	O	• None	n/a	• Incentives redirect investments from much-needed infrastructure development
	• TRIMs	n/a	• Not sufficient enough to mitigate company and country barriers	n/a	
• Corporate governance	--	• None • Organizational barriers inhibit the flow of further FDI	O	• —	
• Other	+	• Large Indian Diaspora in senior positions U.S. companies	n/a	• —	

* Average annual inflow as a percent of GDP; includes BPO
Source: McKinsey Global Institute

Exhibit 21

INDIA IT OFFSHORING – EXTERNAL FACTORS’ EFFECT ON FDI (CONTINUED)

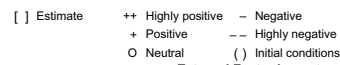


Level of FDI*	Impact on level of FDI	Comments	Influence on per \$ impact	Comments	
Country-specific factors (continued)	Capital deficiencies	O	• Incremental; low capital requirement	O	• —
	Labor markets deficiencies	O	• No implications	O	• —
	Informality	n/a	• n/a	n/a	• n/a
	Supplier base/ infrastructure	--	• Presence of a mature vendor base does not require MNCs to invest in setting up captives • Poor power, telecom, transport infrastructure	+	• Improvements to poor telecom infrastructure have large spillover effects to many other sectors of the economy
Sector initial conditions	Competitive intensity	O(M)	• Medium competitive intensity driven primarily by global IT slowdown and the growth of other offshoring destinations	+(M)	• Increased competition leading to increased productivity
	Gap to best practice	O(H)	• High gap to best practice; however, other internal and external deterrents more significant as barriers to FDI	[++](H)	• Increased competition leading to increased productivity

Source: McKinsey Global Institute

Exhibit 22

INDIA IT OFFSHORING – FDI IMPACT SUMMARY



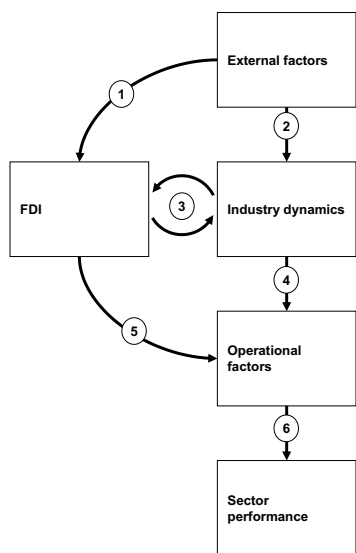
Level of FDI relative to sector*	FDI impact on host country	Level of FDI** relative to GDP	External Factor impact on			
			Level of FDI	Per \$ impact of FDI		
Economic impact	2.2%		0.04%			
• Sector productivity	[+]	Global factors	Global industry discontinuity	+	O	
• Sector output	[+]		Country-specific factors	Relative position		
• Sector employment	[+]			• Sector market size potential	O	n/a
• Suppliers	+			• Prox. to large market	n/a	n/a
Impact on competitive intensity	[+]	• Labor costs		++	O	
Distributional impact		• Language/culture/time zone	+	O		
• Companies		Macro factors	• Country stability	-	+	
– FDI companies	[O]	Country-specific factors	Product market regulations			
– Non-FDI companies	[-]		• Import barriers	O	O	
• Employees			• Preferential export access	O	O	
– Level	[+]		• Recent opening to FDI	O	n/a	
– Wages	[+]		• Remaining FDI restriction	n/a	n/a	
• Consumers			• Government incentives	O	-	
– Prices	?		• TRIMs	n/a	n/a	
– (Selection)	?		• Corporate governance	--	O	
• Government			• Other	+	n/a	
– Taxes	[O]		Capital deficiencies		O	O
		Labor markets deficiencies		O	O	
		Informality		n/a	n/a	
		Supplier base/ infrastructure		--	+	
		Sector initial conditions	Competitive intensity	O (M)	+(M)	
			Gap to best practice	O (H)	[++](H)	

* Average annual FDI/sector value added
 ** Average (sector FDI inflow/total GDP) in key era analyzed
 Source: McKinsey Global Institute

Exhibit 23

INDIA BUSINESS PROCESS OFFSHORING – SUMMARY

Overall impact of FDI ++

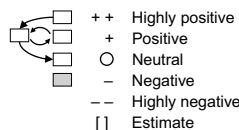


- ① • Driven by the success of IT offshoring, a step-change in telecom costs and recent opening of FDI, MNCs like GE and American Express set up captive facilities in India to offshore back office functions
- Rapid growth in the IT industry in 90s and high investments necessary to enter BPO keep domestic outsourcers like Infosys and Wipro out of this arena; this changes dramatically after 2000
- ② • Success of the BPO industry and a slowdown in the IT sector forces IT outsourcers like Wipro and Infosys to enter BPO space through acquisitions and compete head-to-head with U.S. outsourcers
- Driven by a "dotcom"-like frenzy and low barriers to entry, other local entrepreneurs also start BPO companies creating overcapacity in Tier 2 players
- Overcapacity and the threat of MNCs with scale efficiencies and brand premium heats up competitive intensity in the industry. However, Tier 1 players remain revenue focused
- ③ • Successful MNC captives create domestic players by training a breed of local managerial/entrepreneurial talent. Some captives are also spun-off as BPO companies. MNCs continue to support these companies by providing business directly and indirectly and training agent-level talent
- Domestic Indian BPO companies undercut U.S. outsourcers like Convergys and E-Funds forcing them to announce large scale migration to India. However, organizational barriers prevent them from scaling rapidly
- ④ • Key causes of productivity gap to best practice are product mix, OFT and brand. However, high growth in the industry has so far put limited pressure on domestic players to increase productivity
- ⑤ • As MNC outsourcers like Convergys and E-Funds scale up, the industry is expected to be pressured to improve productivity
- Captives, themselves highly inefficient, have had limited impact on inducing competition and improving industry productivity
- ⑥ • Overall impact of FDI in BPO has been highly positive. FDI has so far had a big impact on increasing employment and wages, but limited impact on improving productivity

Source: McKinsey Global Institute

Exhibit 24

INDIA BPO – FDI'S ECONOMIC IMPACT IN HOST COUNTRY

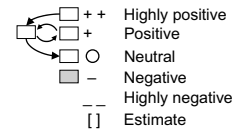


Economic impact	Sector performance during		FDI impact	Evidence
	Early FDI 1998-2002	Mature FDI 2003-2008E		
• Sector productivity 2001, Indexed to U.S. = 100	66	[++]	[++]	<ul style="list-style-type: none"> • As best practice global outsourcers scale presence, sector productivity will increase due to mix-effect and due to increased competition; in India best practice firms have productivity levels at 66% relation to U.S. firms best practice • As the vendor base matures, captives which are highly inefficient relative to best practice today will face increasing pressure to increase productivity to justify insourcing
• Sector output (CAGR)	+64%	[++]	[++]	<ul style="list-style-type: none"> • Sector output has grown dramatically through late 90s, as a direct (captives) or indirect (local firms created or supported by captives) impact of FDI • Sector output is expected to continue to grow robustly into the future driven both by domestic and FDI firms
• Sector employment	+	[++]	[++]	<ul style="list-style-type: none"> • In line with output, sector employment has grown through the 90s, and is expected to continue to grow
• Suppliers	+	[+]	+	<ul style="list-style-type: none"> • Deregulation and privatization of the nationalized telecom sector has resulted in exponential growth, and fall in prices. This trend is expected to continue
Impact on competitive intensity (net margin CAGR)	O	[+]	[+]	<ul style="list-style-type: none"> • With increased competition from global vendors profit margins of Indian vendors will decline to industry norms

Source: McKinsey Global Institute

Exhibit 25

INDIA BPO – FDI'S DISTRIBUTIONAL IMPACT IN HOST COUNTRY

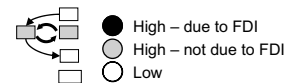


Economic impact	Sector performance during		FDI impact	Evidence
	Early 1998-2002	Mature 2003-2008E		
• Companies				
– FDI outsourcers	O	[O]	[O]	• Due to limited presence, there has been no impact on global outsourcers thus far. Even as the MNCs scale up their offshore operations, FDI will only help them maintain market share and is unlikely to increase profitability
– FDI captives	+	[++]	[++]	• Global consumers have benefited from increase in productivity as prices have declined. This trend will continue as MNCs scale up • As MNCs scale operations in India, and the industry capability and credibility increases, the product mix will evolve
– Non-FDI companies	++	[++]	[++]	• Even as FDI from global outsourcers pressures domestic companies to reduce margins, it will build India's credibility further as a destination for offshoring. Domestic companies will likely more than offset margin loss by volume
• Employees				
– Level of employment (CAGR)	[++]	[++]	[++]	• BPO industry is expected to grow at ~50% CAGR to 2008
– Wages	++	[++]	[++]	• Although most surplus from productivity increases in recent years has gone to consumers, the industry has given wages (for equivalent level of education) a strong boost • As MNCs scale presence and look to poach talent, bidding is expected to drive wage inflation
• Host country consumers				
– Prices	n/a	?	?	• As MNCs scale operations and competition increases, some Tier 1 players will be forced to serve the local market, increasing pressure on Tiers 2/3 players and bringing prices down
– Selection	n/a	?	?	
• Government				
– Taxes	O	O	O	• No impact on taxes on Industry is tax-exempt to 2010
– Other	+	[+]	[+]	• Dramatic increase in foreign exchange reserves through contributions from this industry

Source: McKinsey Global Institute

Exhibit 26

INDIA BUSINESS PROCESS OFFSHORING – COMPETITIVE INTENSITY

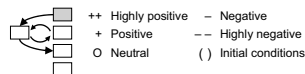


	Sector performance during		Evidence	Rationale for FDI contribution
	Prior to focus period (1998)	End of focus period (2002)		
Pressure on profitability	n/a	●	• Tier 1 players are largely top-line focused and enjoy large profit margins; Tier 2/3 players, ailing from over-capacity, have low or (-)ve margins	• As global outsourcers like Convergys and E-funds scale operations, Tier 1 players are reducing their EBITDA margins
New entrants	●	●	• Before 1998: MNC captives only • 2002: global outsourcers and established Indian businesses enter	• All major global outsourcers and several MNCs have either already established subsidiaries or have announced their intention to do so
Weak player exits	n/a	○	• No significant exits yet	• n/a
Pressure on prices	n/a	●	• Tier 1 players are largely top-line focused and enjoy large profit margins; Tier 2/3 players, ailing from over-capacity, are competing on price	• As global outsourcers like Convergys and E-funds scale operations, Tier 1 players are reducing prices to capture market share
Changing market shares	n/a	●	• Tier 1 players are scaling significantly faster than others	• Global outsourcers are growing and have aggressive plans to consolidate the industry
Pressure on product quality/variety	n/a	●	• Domestic players primarily offer call center services and little or no BPO • Most higher value-added BPO work restricted to captives	• As captives spin-off, they are rapidly capturing higher value-added BPO work
Pressure on upstream industries	○	●	• Pressure from MNCs and domestic firms on government to improve telecom and power infrastructure	• High telecom and power infrastructure is a precondition for setting up BPO captives
Overall	○	●	• Medium-high competitive intensity among Tier 1 players; very high competition in other segments	• FDI has had limited impact on competition so far, but is likely to create a large impact in the near future

Source: McKinsey Global Institute

Exhibit 27

INDIA BUSINESS PROCESS OFFSHORING – EXTERNAL FACTORS’ EFFECT ON FDI

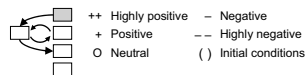


	Level of FDI*	Impact on level of FDI	Comments	Impact on per \$ impact	Comments
Global factors	Global industry discontinuity	0.04%			
		++	<ul style="list-style-type: none"> Widespread penetration of enterprise software and the Internet Step change in telecom costs 	O	• —
Country-specific factors	Relative position				
	• Sector market size potential	O	• Market too small for FDI	n/a	• —
	• Proximity to large market	n/a	• n/a	n/a	• —
	• Labor costs	++	• High skill workers at low cost	O	• —
	• Language/culture/time zone	++	• English language; faster time to market	O	• No impact
	Macro factors				
	• Country stability	-	<ul style="list-style-type: none"> Mixed track record on FDI regulation Geo-political instability/conflict with Pakistan 	+	<ul style="list-style-type: none"> Sector’s importance in country’s economy creates pressure on government to adopt reasonable approaches India’s strategic importance in global business value chain creates pressure on foreign governments
	Product market regulations				
	• Import barriers	O	• All equipment import duty-exempt	O	• —
	• Preferential export access	O	• None	O	• —
• Recent opening to FDI	+	• —	O	• —	
• Remaining FDI restriction	n/a	• None	n/a	• —	
• Government incentives	+	• Tax exempt status and grants	-	• Incentives redirect investments from much-needed infrastructure development	
• TRIMs	n/a	• None			
• Corporate governance	--	• Organizational barriers inhibit flow of further FDI	-	• “Moral hazard” problem leads to reduced productivity relative to realizable potential (lower wages allow managers comfort with building process redundancies and lowering productivity from achievable level)	
• Other	+	• Large Indian Diaspora in senior positions U.S. companies	n/a	• —	

* Average annual inflow as a percent of GDP; includes IT
Source: McKinsey Global Institute

Exhibit 28

INDIA BUSINESS PROCESS OFFSHORING – EXTERNAL FACTORS’ EFFECT ON FDI (CONTINUED)



	Level of FDI*	Impact on level of FDI	Comments	Impact on per \$ impact	Comments
Country-specific factors (continued)	Capital deficiencies	+	• Relative to IT, higher capital investment required in BPO	O	• —
	Labor markets deficiencies	O	• No implications	O	• —
	Informality	n/a	• none	n/a	• —
Supplier base/ infrastructure	--	• Poor power, telecom, transport	+	• Improvements to poor telecom infrastructure have large spillover effects to many other sectors of the economy	
Sector initial conditions	Competitive intensity	O(M)	• Medium-high	+(M)	• Increased competition leading to increased productivity
	Gap to best practice	O(M)	• Medium	+(M)	• Increased competition leading to increased productivity

Source: McKinsey Global Institute

Exhibit 29

INDIA BUSINESS PROCESS OFFSHORING – FDI IMPACT SUMMARY

[] Estimate

 ++ Highly positive – Negative
 + Positive -- Highly negative
 O Neutral () Initial conditions

Level of FDI relative to sector*	FDI impact on host country	Level of FDI** relative to GDP	External Factor impact on	
			Level of FDI	Per \$ impact of FDI
	2.2%		0.04%	
Economic impact		Global factors	++	O
• Sector productivity	[++]	Global industry discontinuity • Relative position • Sector market size potential • Prox. to large market • Labor costs • Language/culture/time zone	O	n/a
• Sector output	[++]		n/a	n/a
• Sector employment	[++]		++	O
• Suppliers	[+]		++	O
Impact on competitive intensity	[+]	Macro factors		
Distributional impact		• Country stability	–	+
• Companies		Product market regulations		
– FDI Companies	[O]	• Import barriers	O	O
– Non-FDI companies	[++]	• Preferential export access	O	O
• Employees		• Recent opening to FDI	+	0
– Level	[++]	• Remaining FDI restriction	n/a	n/a
– Wages	[++]	• Government incentives	+	–
• Consumers		• TRIMs	n/a	n/a
– Prices	?	• Corporate governance	--	--
– (Selection)	?	• Other	+	n/a
• Government		Capital deficiency	+	O
– Taxes	O	Labor markets	O	O
		Informality	n/a	n/a
		Supplier base/ infrastructure	--	+
		Sector initial conditions		
		• Competitive intensity	O (M)	+(M)
		• Gap to best practice	O (M)	+(M)

* Average annual FDI/sector value added

** Average (sector FDI inflow/total GDP) in key era analyzed

Source: McKinsey Global Institute

Methodological appendix

1

The methodology used in this study involved three steps. First, the fundamental fact base for our research is a set of 14 sector-country case studies that look at MNC investments, measured by FDI, in developing countries at a microeconomic level, assessing the impact these investments have on sector performance and different host country constituencies. This fact base was collected by teams of McKinsey consultants located in each study country, collecting and analyzing economic and company data and conducting interviews with company executives and public sector representatives. Collectively, we conducted over 150 interviews and spent over 20,000 work hours in generating the fact base. Second, by looking at common patterns across our industry case studies, we identify the benefits and costs of FDI to both countries and firms and synthesize these findings to summary impact of MNC investments on developing countries and patterns on global industry restructuring. Third, based on the findings, we derived implications for both companies and policymakers. (Exhibit 1).

SECTOR-COUNTRY CASE STUDIES

The core of the research project is a set of 14 sector-country case studies in five industries (auto assembly, consumer electronics, food retail, retail banking, and information technology/business process offshoring) and across four countries (China, India, Brazil, and Mexico; Exhibit 2). We have organized these case studies into industry summaries, and each summary includes three sections:

1) **Preface to each sector** provides the reader with the background information needed to navigate through the sector-country cases. The preface defines the sector, characterizes its FDI flows, indicates the data sources used, and gives any additional pertinent information necessary for interpreting the subsequent case study findings.

2) **Individual sector-country summaries** provide the main content of our research. The summaries give an overview of the sector and highlights key external factors (e.g., changes in policy barriers) which explain the level of FDI inflows observed. The core of the case evidence is then presented, in an assessment of FDI impact on the host country – including economic impact on the sector and suppliers, the distribution of economic impact across different host country stakeholders, and an analysis of how this impact comes, including a description of the direct operational changes introduced by foreign investors and the indirect effects from changes in industry dynamics and competitive intensity. Lastly, the summaries assess external factors and local industry conditions that contribute to the level of FDI impact in the case. In addition to the case write-up outlined above, we have included a sector summary at the end of each case, with 7 summary charts synthesizing the analytic evidence on each section (Exhibit 3).

Exhibit 1

3 STEP METHODOLOGY

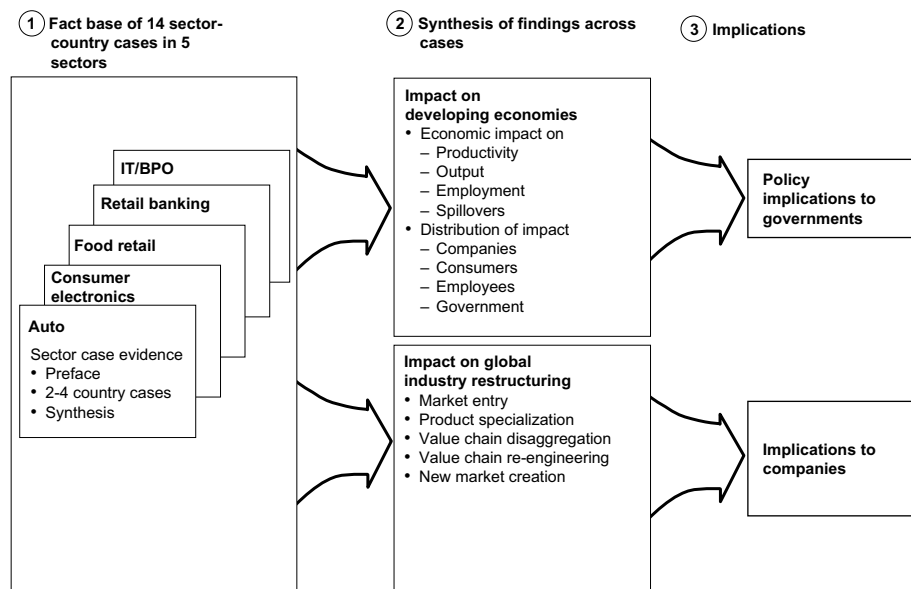


Exhibit 2

OVERVIEW OF COUNTRIES/SECTORS STUDIED

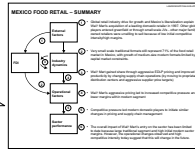
	China	India	Brazil	Mexico
Auto	✓ Mature FDI 1998-2001	✓ Mature FDI 1993-2003	✓ Incremental FDI 1995-2000	✓ Incremental FDI 1994-2000
Consumer electronics	✓ Mature FDI 1995-2001	✓ Mature FDI 1994-2001	✓ Mature FDI 1994-2001	✓ Mature FDI 1990-2001
Retail			✓ Mature FDI 1995-2001	✓ Early FDI 1996-2001
Retail banking			✓ Pre-FDI 1994-1996	✓ Early FDI 1996-2002
IT/BPO*		✓ Mature 2002-2008		

*Information technology/business process offshoring

Exhibit 3

SECTOR CASE EVIDENCE METHODOLOGY

Page 1. Summarizes the FDI impact “story” of the sector case using consistent conceptual structure



Page 2. Provides assessment of FDI's economic impact on host country and on industry dynamics by

- Summarizing evidence on sector performance during focus and comparison period
- Describing way we have isolated FDI's impact on performance

MEXICO FOOD RETAIL - FDI'S ECONOMIC IMPACT IN HOST COUNTRY

Page 3. Provides assessment on the way economic impact of FDI was distributed among stakeholders within host country by

- Summarizing evidence on distributional impact during focus and comparison period
- Describing the way we have isolated FDI's impact on performance

MEXICO FOOD RETAIL - FDI'S DISTRIBUTIONAL IMPACT IN HOST COUNTRY

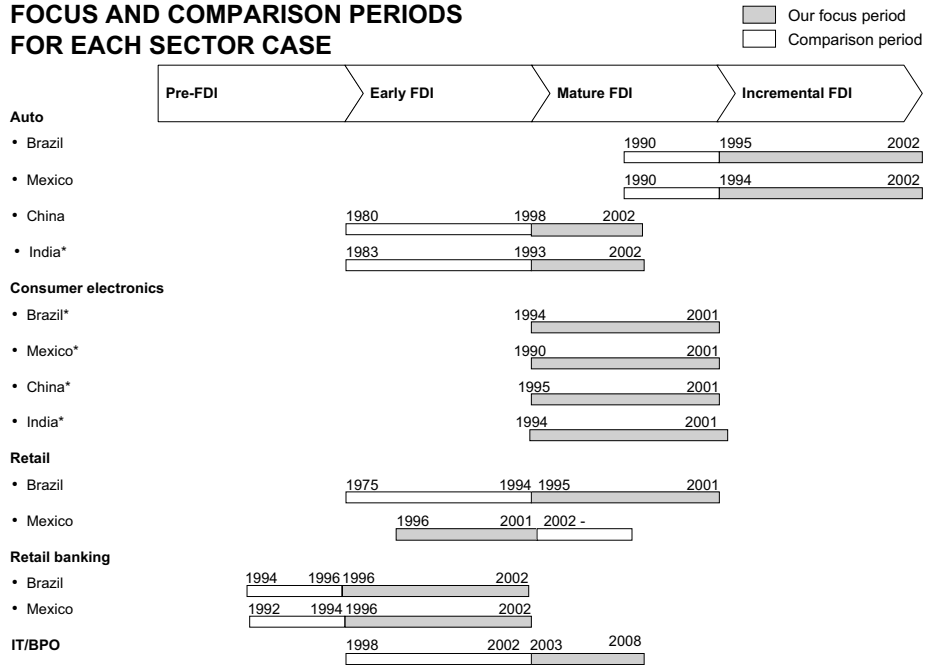
MEXICO FOOD RETAIL - COMPETITIVE INTENSITY

- **Page 4.** Provides assessment of FDI's impact on sector's competitive intensity using two period comparison
- Evidence summarized as final assessment in FDI's economic impact page

Page 5. Provides an assessment of the way external factors affected the level and impact of FDI within the country and sector by highlighting key explanatory factors and summarizing evidence

MEXICO FOOD RETAIL - EXTERNAL FACTORS' EFFECT ON FDI

- ¶ **Identifying contrasting time period(s) or product segment(s).** Our assessment of the economic impact of FDI emerges in part from a qualitative comparison of different time periods or contrasting product segments. In most sectors, we compare and contrast the impact of FDI in two time periods, the focus period and the contrast period. The focus period is the one for which we have developed a strong fact base through data analyses and interviews; the contrast period is usually an earlier time period, and provides a base-line comparison. In Mexico food retail we have chosen a future time period and estimate the economic impact that operational changes we observe during our focus period will have (Exhibit 4). In other cases, we have contrasted sub-segments (cars vs. trucks and buses in China auto) or global benchmarks (mobile phones or white goods productivity growth in different countries) that help isolate the economic impact of FDI within the case country.
- ¶ **Economic impact of FDI on host country.** To measure the economic impact of FDI, we show data on sector performance for the contrast time periods or product segments, and then derive the role of FDI in the performance differences, using additional fact-based, quantitative and qualitative analysis. Our measure of economic performance consists of labor productivity, output, employment, and supplier employment/productivity performance. Labor productivity is the most important driver of standards of living, and it reflects the efficiency with which resources are used to create value in the marketplace. It is measured by computing the ratio of output to input. We measure the sector's output using value added or physical output. The labor inputs are measured as number of hours worked. In some sectors, we have also measured capital productivity where capital inputs are measured as capital services derived from the existing stock of physical capital. And finally, we have assessed the impact on supplier productivity and employment by observing changes either in actual sector performance when data is available, or, when it is not, changes in supplier operations, plant closures, new technology introduction, etc. (see side box: "Measurement of Output and Productivity"). To measure the impact of FDI on sector performance, we then deepen our understanding of industry operations through additional fact-based analyses, interviews, and plant visits, all of which allows us to draw conclusions about how important FDI was in the observed differences in sector performance, versus other causes. In this phase, we benefit from McKinsey's expertise in many industries around the world, as well as from the expertise of industry associations and company executives. We conduct the assessment separately for each measure of performance, and document the evidence and reasoning for each assessment in a consistent framework.
- ¶ **Distribution of FDI impact.** The distribution of economic impact is measured by assessing the way FDI has affected different stakeholders within the host country: MNCs and domestic companies through impact on profitability; employees through level of employment and wages; consumers through impact on prices and product selection/quality; and government through mainly tax impact. Analogously to the case of measuring economic impact of FDI, we analyze data whenever available on each specific metric (e.g., company profitability or retail prices) during comparison periods or product segments, and base assessment of the relative role of FDI in the observed differences on

Exhibit 4**FOCUS AND COMPARISON PERIODS FOR EACH SECTOR CASE**

* Contrast between different market segments used to isolate economic impact (cars vs. trucks and buses in Auto China; benchmarks in consumer electronics).

qualitative evidence from interviews and McKinsey internal and external industry experts.

- ¶ **How FDI has achieved impact.** MNC investments in developing countries have both direct impact through their own actions, as well as indirect impact through changes in industry dynamics and competitive intensity. We assessed the operational changes in three broad categories: capital, technology, and skills. Within the broad range of skills, we found MNC contribution to be particularly important in five areas: operations and organization of functions and tasks; marketing and product tailoring; managerial and organizational skills; and global market access.

We measured the indirect impact of FDI coming through changes in industry dynamics and competitive intensity using both changes in industry profitability and six other metrics – the number of new entrants, weak player exits, changes in market shares, pressure on prices, pressure on product selection/quality, and pressure on upstream industries. And again, we assessed the relative role of FDI in these changes using additional fact-based analyses, qualitative observations, and interviews for each component, and based the overall assessment of FDI's indirect impact on the average FDI impact across sector profitability and the other different components.

- ¶ **External factors and their impact on FDI flows and economic impact.** In order to gain insights on what factors explain the observed FDI inflows and their impact, we assessed the importance of a broad set of external factors. These we organized into global industry factors, country-specific factors (including domestic market potential, labor costs, macro-economic and policy environment, sector regulation, and others), and initial sector conditions like competitive intensity and gap to global best practice.

- 3) **Sector synthesis** provides a brief overview of the global sector as context for the investments made by multinational companies in our sector-country cases, synthesizes the findings within the sector, and explains the variances in FDI impact between the cases. In addition, this section draws attention to any sector-specific insights emerging from the cases.

SYNTHESIS OF FINDINGS ACROSS COUNTRY-SECTOR CASES AND IMPLICATIONS

Based on the detailed understanding of each sector-country case, we draw conclusions about the nature and impact of FDI across the cases. We have done this in two ways: first, we identify the patterns of the economic impact of FDI and the distribution of the impact within the host country, and synthesize them to a summary assessment of the impact of MNC investments on developing countries. And second, we synthesize the different patterns of international MNC investments into a description of the process of global industry restructuring as developing countries are increasingly being integrated into the global economy.

¶ **Impact of MNC investments on developing countries and policy implications**

- **Summary impact.** To draw overall conclusions of FDI impact on developing countries, we compare the 14 sector-country case findings on FDI impact and distribution and identify patterns across them (Exhibit 5). We also include synthesized findings across the sector-country cases on how this impact comes about – both through direct MNC actions and their indirect impact through changes in industry dynamics and competitive intensity.
- **Policy implications.** For government, the implications emerge largely from the evidence on costs and benefits of different economic policies related to MNC investments.

¶ **Global industry restructuring and company implications.** Based on the different patterns of global expansion observed in our sector cases, we generated a framework that characterizes the process of global industry restructuring from company and industry perspectives. The purpose of the framework is descriptive – to add insight on the patterns of global industry expansion observed today – as well as prescriptive – to aid companies in identifying additional opportunities arising from global expansion. For implications for companies, we have drawn from the large set of company experiences in our sector cases to identify lessons learned from their global expansion to developing countries.

Measurement of Output, Employment and Productivity

Productivity, a key metric of the economic performance of a country, reflects the efficiency with which resources are used to create value in the marketplace. We measure productivity by computing the ratio of output produced in a year to inputs used in that production over the same time period.

Output (Value Added)

For a given industry, the output produced differs from the traditional notion of sales. Sales figures include the value of goods and services purchased by the industry to produce the final goods or services. In contrast, the notion of value added is defined as factory-gate gross output less purchased materials, services, and energy. The advantage of using value added is that it accommodates quality differences between products, as higher quality goods normally receive a price premium that translates into higher value added. It also takes into account differences in the efficiency with which inputs are used.

GDP can be seen as a value added concept of output. In many cases, output is not homogeneous; the GDP of a country is made up of many thousands of different goods and services. The GDP of a country is the market value of the final goods and services produced. It reflects the market value of output produced by means of the labor and capital services available within the country.

In our country-sector case studies, we have used a value-added measure of output in all cases where this measure was available. In the three cases where this data was unavailable, we have used alternative measures – in India auto case, we used a physical output measure of equivalent cars per employee; and in IT/BPO cases in India, we have used a sales per employee measure as a proxy for productivity.

Inputs

Our inputs consist of labor and capital. Labor inputs are more straightforward to measure: we seek to use the total annual number of hours worked in the industry by workers at the plant site. When actual hours are not available, we estimate labor inputs by multiplying the total number of employees by the best available measure of average hours of work per employee in the sector, or use output per employee measures.

In 3 cases (auto China and India, IT and BPO cases) cases we also measured capital inputs. The heterogeneity of capital makes measuring capital inputs more difficult. Capital stock consists of various kinds of structures (such as factories) and equipment (such as machines, trucks, and tools). The stock is built up incrementally by the addition of investment (business gross fixed capital formation) to the existing capital stock. Each piece of capital provides a flow of services during its service life. The value of this service is what one would pay if one were leasing this piece of capital and this is what we use as our measure of capital inputs.