Economic opportunities and challenges posed by China for Mexico and Central America

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Economic Opportunities and Challenges Posed by China for Mexico and Central America

Enrique Dussel Peters
with assistance from Liu Xue Dong

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Foreword

China has taken decisive steps to integrate to the world market since the late 1970s. While facing significant challenges, it reflects one of the most interesting and relevant socioeconomic and territorial success stories of the 20th century in terms of growth, consumption, poverty alleviation and industrial upgrading, among other items. As a comparison, the economic performance of Latin America, Central America, and Mexico has been quite modest in the past 20 years.

This study offers a basis for understanding China's performance from a Latin American perspective, and stressing the massive economic opportunities and challenges, and particularly for Central America and Mexico. Moreover, the document assesses in detail the macroeconomic, trade, and employment policy and institutional changes in China and its potential effects in Central America and Mexico. These effects are analyzed in the Chinese, Central American, Mexican and US market in general, but also for the value-added chains of electronics and yarn-textile-garment. The findings presented will be of value to all of those who are trying to understand and learn from the extraordinary experience of China over the last decades. Bibliographical references and statistical information allows for subsequent detailed analysis and specific forms of cooperation and preparation between the considered countries. These countries have a significant economic and political potential, but will have to increase their mutual knowledge and increase efforts to do so. So far, China has displaced significantly some major export products from Mexico and Central America in the US and in their domestic markets.

A first draft of this paper was presented in the project "Economic Challenges Posed by China for Mexico and Central America," of the Economic Commission for Latin America and the Caribbean (ECLAC) and published in Spanish in September 2004 by ECLAC and updated by the author at the end of 2004 at the German Development Institute in Bonn. This is part of an ongoing collaboration between both institutions.

Dirk Messner
Director
German Development Institute

Executive summary

From a Latin American perspective, what are the opportunities and economic challenges posed by China for Mexico and Central America? Considering the spectacular socioeconomic performance of China, what lessons can be learned? Based on these questions, the study is divided in four parts. In the first section, a synthetic presentation will be made of some important conceptual antecedents for the understanding of value chains in the current context of globalization. The second part of the paper will analyze China's socioeconomic performance and development strategy since 1978, with emphasis in the most recent period. We will also delve into the issue of complementarity or competition between Central America, China, and Mexico in the U.S. market and Central America and Mexico's trade relations with China. The third and fourth chapters will provide a detailed analysis of the characteristics of the yarn-textile-garment and PC/electronics value chains in China, considering both the policies Beijing has implemented in the past few decades as well as its performance in the United States. In both cases, detailed information will be presented in the two, six and 10 digits of the Harmonized System, depending on its availability. Chapter 5 concludes our analysis on the previous topics and questions linked with complementarity, opportunities, and challenges in the short, medium, and long term involving the economies in question.

The respective chapters include several significant findings. The Chinese commercial structure, as well as its productive apparatus, reflect an important structural change: while in the early eighties raw materials and oil held a 50 % share of the exports, in the early nineties, garment production, with massive investments in textile plants, became the motor for the growth of exports. Since the mid-nineties, however, the principal export chapters were auto parts and electronics. In addition, and considering the long-term strategies and programs of the central government, China has been increasingly a result of Asia's integration process, also reflected in regional foreign direct investment flows and trade. This new trade pattern generates conflicts in the world market with several nation, including Central America and Mexico.

Based on the commercial analysis, the performance of Chinese, Central American, and Mexican exports in the United States market – a high priority for Central America and Mexico – reflects a high level of competition. Even though they are not the only competitors, they are among the most dynamic of Mexico's and Central America's principal export categories: auto parts, electronics, and garments. With the exception of the automotive chapter – although it is also expected that China's share in this category will continue to rise in the face of massive investments by foreign companies – the main chapters in the United States market appear to be affected. In the case of Mexico, companies formerly established in Mexico have made significant decisions to move to Asia and China. The big exceptions to this process of competition in the United States market are the agricultural, agro-industrial, and raw materials chapters. With regards to the domestic effects of the chain, China's performance has been dynamic in its exports to Central America and Mexico, considering that these countries don't export products from the chain to China: in 2002, China and Hong Kong had a 9.71 % percentage share of Central America's imports and 4.58 % of Mexico's in 2003, although it is estimated that the percentages for illegal imports are higher.

Based on detailed trade analysis and specifically in two value chains (electronics/PC and yarn-textile-garments), the document highlights several relevant short and medium-term aspects. China's entry into the World Trade Organization (WTO) and the elimination of quotas in the yarn-textile-garment chain permit assurances that these tendencies will deepen the significant productive and commercial shifts at the global level and in Latin America. China's integration into the world market and its intensification will also generate pressures towards lower prices and will affect most of the commodities exported by Central America and Mexico, particularly to the United States. The aggregated analysis, as well as of both commodity chains, reflect the increasing difficulties that Mexico and Central America will have if they continue to specialize in commodities and processes based on cheap labor power.

Specific policies in Central America and Mexico should deepen the analysis of other value chains and the challenges or complementary aspects generated by China, with the aim of measuring short, medium, and long-term policies for enhancing competition in the productive apparatus

and concretizing cooperative projects in the face of China's demand for specific products.A first draft of this paper was presented in the project "Economic Challenges Posed by China for Mexico and Central America," of the Economic Commission for Latin America and the Caribbean (ECLAC) and published in Spanish in September 2004 by ECLAC and updated by the author at the end of 2004 at the German Development Institute in Bonn. This is part of an ongoing collaboration between both institutions.

Introduction

Since the end of the 1970s, the People's Republic of China – henceforth to be referred to as China – has registered spectacular performance on a macroeconomic level as well as in terms of foreign direct investment (FDI), savings rates, and GDP growth, in addition to significant advances in the social sphere. In the 1990s, with the trade opening and the country's membership in the World Trade Organization (WTO) in 2001, Beijing also notably increased its share of international trade. In 2003 China boasts the world's seventh largest economy – and is expected to become the 4th in the short term – and is in fourth place in world trade. As a comparison, the economic performance of Latin America, Central America, and Mexico has been quite modest in the past 20 years.

China's socioeconomic dynamic is real and not result of distorted statistics. In many cases, the concepts and experiences of a large part of the developing countries do not seem sufficient – or even appear to be useful – in the face of China's performance. Indeed, how can we explain the dynamics and transition of a socialist country – or of a "socialist market economy" – in which the economic and political activities of the state play a dominant role, with a high degree of government intervention? What are the reasons why the Chinese economy has resumed its growth and global presence, after several centuries?[1] With more than 20 % of the world population – and considering its progress in its commercial integration into the world market, the changes in its rural and urban population, the achievements in terms of reducing poverty, and its respective internal challenges – the socioeconomic and political transition that China has and will continue to experience in the next few decades cannot be analyzed

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1   It is of major importance to consider, including from an historical perspective, that until the 16th century China had been one of the international economic powers, if not the main power. The Yangzi Delta alone had a population of between 31 million and 37 million inhabitants in 1750, similar to that of all Europe, with markets comparable to those of the old continent and important technological advances. However, intensive agriculture and the use of certain crops such as the potato in Europe – with high caloric yields per area – the massive use of coal – as opposed to firewood in China – and the resulting innovations such as the steam engine are particularly valuable in explaining China's backwardness since that period. These contrasts excluded the country's international socioeconomic presence (Frank 1998; Pommeranz 2000).

and evaluated as one more such process, given its major global implications.[2] According to different sources and their respective methodologies, China's GDP will be higher than that of the United States between 2015 and 2041.

The objectives of this study are twofold. First, to offer a bibliographical review to deepen our knowledge of the Chinese economy in general, and specifically with regard to the yarn-textile-garment and personal computers (or PCs)/electronics value chains, both of which have an economic importance for Central America and Mexico, respectively, in order to concretize the opportunities or threats posed by the Chinese economy in the short, medium, and long term. Second, to analyze the issue of opportunities or challenges in general and specifically for the two chains in third markets – particularly the United States – as well as in their own domestic markets, including the potential effects of China's entrance into the WTO in 2001.

The study is divided in four parts. In the first section, a synthetic presentation will be made of some important conceptual antecedents for the understanding of value chains in the current context of globalization and political questions derived from the international experience. The second part of the paper will analyze China's socioeconomic performance and development strategy since 1978, with emphasis in the most recent period. A detailed exposition will be presented of China's commercial structure and the benefits and commitments it acquired upon joining the WTO in 2001. We will also delve into the issue of complementarity or competition between Central America, China, and Mexico in the U.S. market and Central America and Mexico's trade relations with China. In both cases, the country's overall trade structure will be examined in line with the two-digit Harmonized System, in order to explicitly deal with the challenges and opportunities that China poses for Central America and Mexico. The third and fourth chapters will provide a detailed analysis of the characteristics of the yarn-textile-garment and PC/electronics value chains in China, considering both the policies Beijing has implemented in the past few decades as well as its performance in the United States. In both cases, detailed infor-

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2   Qian (2003, 331) concludes, following a meticulous analysis of the period of China's socioeconomic transition since the end of the 1970s that: "... nothing on this scale and in so short a period of time has been attempted in world history."

mation will be presented in the six and 10 digits of the Harmonized System, depending on its availability. Chapter 5 concludes our analysis on the previous topics and questions linked with complementarity, opportunities, and challenges in the short, medium, and long term involving the economies in question.

The study offers a broad and detailed statistical appendix in an electronic format (see http://www.dusselpeters.com/dussel-tema-china.html) with general commercial information and data on each of the value chains examined.[3] The appendix consists of five sections. The first contains charts directly flowing from the text, while the following four sections include commercial information from Chinese, Mexican, Central American, and U.S. sources. Depending on its availability, the data will include imports and exports by country for the 1990–2003 period, on an overall level, by product categories of the Harmonized System, by segments of the chains to be examined, and by items at six and up to 10 digits.

Liu Xue Dong's many contributions and analysis were significant and valuable for the preparation of this study. By the same token, we would like to thank Lorena Cárdenas, Iván Darío Gutiérrez Bravo, and Luis Daniel Torres, who took responsibility for elaborating the Statistical Appendix and for reviewing several versions of the text. Claudia Schatán and René Hernández, officials at the ECLAC subregional headquarters in Mexico City, offered important commentaries and suggestions for their incorporation into the study, while many business associations, officials, academic specialists, and experts from China, Central America, the United States and Mexico provided us with valuable information and analysis to prepare the document.

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3   The Statistical Appendix can be found at http://www.cepal.org.mx or at http://dusselpeters.com.

1 Conceptual antecedents

A thoroughgoing discussion and reflection has emerged at least since the 1990s on the effects of the structural adjustments in Latin America. This debate has generated important macroeconomic consensus and agreements – and beyond macroeconomic stability understood as fiscal control and restrictive monetary policies, commercial and financial liberalization, as well as parallel privatization and deregulation processes (Williamson 1990) – in relation to the relevance of the existence and/or creation of institutions and their financing, the fight against corruption and poverty, as well as social networks and instruments of corporate governance in institutions such as the International Monetary Fund and the World Bank (World Bank 1998; IMF 2003; Rodrick 2003a). Independently of this new consensus, and beyond these "macroeconomic fundamentals", significant differences still remain. While the IMF in particular insists on consolidating and deepening the macroeconomic strategy followed in the developing countries since the 1980s, several other institutions and authors have posed the need to reconsider such an approach. The Inter-American Development Bank (IDB), for example, recognizes different initiatives to promote industrial competitiveness in Latin America "to facilitate access to key resources, develop new capacities, and exploit agglomeration economies" (IDB 2001, 249). Thus, it is important to move "beyond the Washington consensus" (World Bank 1998) and deal with the international and national volatility and uncertainty (ECLAC 2002), considering that Latin America has not resumed its economic growth since the 1980s, contrary to what occurred in a large part of Asia and particularly China. From this perspective, it is important not to succumb to orthodox and extreme macroeconomic policies (Stiglitz 2002, xiii) – without conceptual justification – and, on the contrary, to implement mechanisms that allow and promote economic growth.

Since the 1970s and particularly during the 1980s, detailed analysis have been made on the main reasons why transnational companies have transferred a growing part of the segments of their global commodity chains (Gereffi / Korzeniewicz 1994; Piore / Sabel 1984; UNCTAD 2001, 2003). The changes required by the global productive structure – known as flexible production – were implemented as a response to the growing flexibility in demand, particularly and initially in industrial sectors such as auto, electronics, and garment. In a context marked by the opening of the industrial-

ized as well as developing countries – for goods in addition to capital and services – as well as the substantial improvement in shipping, the computer revolution, and the electronic media, transnational companies were increasingly able to geographically transfer segments of the value added chain of their activities (Storper 1997). Contrary to previous periods, for example, with import substitution during the 1960s in Latin America, in which transnational companies either exported their products to the region or produced them locally, in 1980s and 1990s they were increasingly able to integrate these segments of the chain as part of the strategy and global network of end products.

At least since the 1970s, and even more so since the 1980s, the globalization process has allowed the transfer of segments of value chains in very different geographical regions. This process has generated a spectacular outsourcing process on a global level, initially led by the productive sector and subsequently by distribution and marketing companies. This has allowed some regions to specialize in productive processes in specific segments of the value chain, such as growing and supplying raw materials, assembling parts of or entire products, the production of parts and components, research and development, marketing, after-sale services, etc., depending on the particular activity. All these processes require different degrees of international trade in order to integrate these segments into an end product or service. Nevertheless, since the 1990s this situation has also reflected the requirement on the part of large clients – most involved in bulk sales – to integrate the transferred processes (Bair / Dussel Peters 2004); that is, contrary to the previous recent period, these companies demand those to whom they are outsourcing to become directly and fully responsible for the costs, inventories, financing, quality, quantity, inputs and the manufacturing process itself, packaging and shipment to the final consumer. These processes – known as full packaging and which involve different characteristics depending on the specific sector – potentially allow for a greater degree of integration and the appropriation of value added on the part of the respective territories. But they also generate enormous new challenges for subcontractors and the areas in which these processes take place.

Since the second half of the 1990s, a series of authors (Humphrey / Schmitz 2001) have analyzed the relevance of "collective efficiency" – understood as the competitive advantage resulting from the externalities of local economies and joint activities – for the respective regions and their

role for understanding the positive behavior of clusters. Schmitz (1997) argues that collective efficiency and the formation of interfirm networks in specific territories are one of the main characteristics for understanding their global competitiveness. Recent analysis (Humphrey / Schmitz 2000) indicate that integration into the world market depends on different types of chain governance. The greater the vertical nature and control of a reduced group of clients and/or buyers, less will be the potential for local upgrading and diffusion and learning.[4] From this perspective, the generation of a process of "collective efficiency" is not a necessary part of the evolution of different clusters and industrial districts, as Rabellotti demonstrates (1997) in comparing industrial districts in Italy and Mexico. On the contrary, the higher the number of clients and the more reduced the dependence on standards imposed by leading companies, the greater will be the options for integration, coordination, cooperation, diffusion, learning, and local and interfirm upgrading, that is, the formation of a web of territorial interfirm networks.

The previous considerations are important from different vantage points. To begin with, they lead to questions being raised on the macroeconomic policies that have been implemented in most of Latin America since the 1980s and their "economic fundamentals." The debate on competitiveness and the generation of competitive conditions for the productive sector implies a battery of instruments to achieve such goals, such as territorial and training policies, extending technology, creating skills, incentive systems in general, promoting the development of micro, small and medium-size companies, research and development, the regulatory framework and rules governing competition, the incorporation of suppliers, and public-private sector relations, among many others (Chang 2002; Katz / Stumpo 2001; Lall 1999).[5] The challenges, from this perspective, are enormous. Thus, al-

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4   Based on a broad experience in the electronics industry, Ernst (2003, 2) points out that "defined as a shift to higher value-added products, services and production stages through increasing specialization and efficient domestic and international linkages … raises daunting challenges, chief among them are substantial investments in long-term assets, such as specialized skills and innovative and research capabilities. In countries where domestic industry structure provides only limited incentives for firms to invest in these long-term assets, upgrading prospects will remain limited."

5   Based on an exhaustive analysis of different countries and the sources of their growth, in addition to different previously published articles, Rodrick (2003b, 11) emphasizes the importance of the quality of the institutions, as long as "trade – or more specifically,

though the Central American countries, China and Mexico have significantly increased the technological content of their exports (see graph 1), this trend does not necessarily reflect a greater complexity of the processes incorporated into these activities.[6]

Graph 1:   Exports of medium and high technological level (share in total exports)
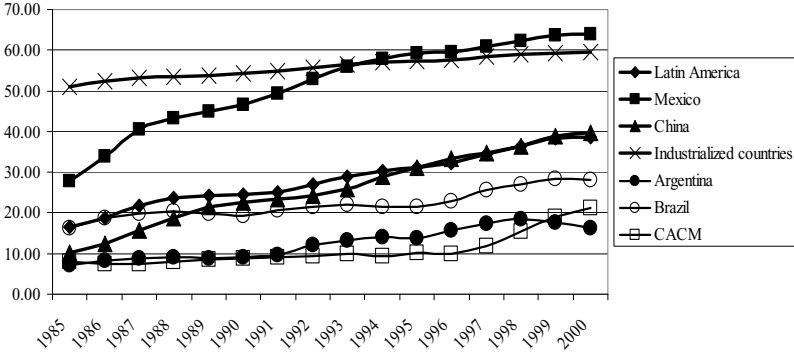
Source::   Self-compiled, based on TradeCan (ECLAC 2004a).

In second place, it is important to go beyond merely macroeconomic considerations for the development of competitiveness, but also of the microeconomic determinants for competitiveness raised by Porter (1990) at the beginning of the 1990s. As has been pointed out by different authors, institutions, and conceptual currents as well as Porter (1998), at the present time, competitiveness should be understood in its territorial and systemic dimension (microeconomic, mesoeconomic, macroeconomic and metaeconomic). From this perspective, different authors have highlighted the importance of competitiveness in its systemic and territorial dimensions as well as in terms of segments of the value chain (Dussel Peters 2004;

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government policy toward trade – does not play nearly as important a role as the institutional setting."

6   The technological complexity, for example, of products does not necessarily coincide with the processes that are required for their production. Products based on high-technology, for example, a PC, do not include technologically advanced processes in all their segments, for example, in assembling parts and components. As a result, the analysis of the segments of the value chain is crucial. For a detailed analysis on the methodology of graph 1 and the differentiation between processes and products, see Dussel Peters (2003).

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Messner 2002; Messner / Meyer-Stamer 1994) in order to understand the rationality of the global commodity chains and the growing productive flexibilization, intra and interfirm networks, requirements of competitiveness in the segments of the global chain, and institutional quality during periods of transition,[7] particularly in relation to the respective territories and their population. What would be the use for competitive global chains and/or segments with territories without options for integration and upgrading[8] to the world market and with negative effects on job creation, real wages, consumption, and investment, as well as GDP and per capita GDP? In the globalization process being studied, different territorial-sectoral experiences highlight the growing importance of the development of technology and product design capacities, more than specialization in their manufacturing and assembly (Ernst / Lüthje 2003).[9]

From this perspective, the globalization process and its socioeconomic and territorial effects can generate processes of territorial endogeneity or, in other cases, a polarization process in both absolute as well as relative terms. The territories' capacity to make the processes and segments of chains endogenous through those that become integrated into the world market are of importance in fields such as technological development and R&D, their expansion, the generation of value added, the creation and

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7   Qian (2001, 2003, 305) emphasizes the importance of the specificity of transitional institutions: "The general principle of efficiency-improving and interest-compatible institutional change is simple, but the specific forms and mechanisms of transitional institutions often are not. Successful institutional reforms usually are not a straightforward copy of best-practice institutions. They need not be and sometimes should not be. They not be because room exists for efficiency improvement that does not require fine tuning at the beginning. They should not be because the initial conditions are country –and context-specific, requiring special arrangements. Therefore, inevitably, transitional institutions display a variety of nonstandard forms."

8   From the perspective of segments of global business chains, the upgrading process – understood as the integration and appropriation of higher segments of the chain and, therefore, of greater value added – can occur on the level of products, processes, intra or inter-chains (Gereffi et al. 2001).

9   In this regard, the authors indicate that at the present time there has been a growing differentiation in product development and manufacturing. This has occurred simultaneously with a thoroughgoing verticalization in research and development, with significant effects on the international division of labor and the transfer of segments of global chains, particularly in the production segment of value-added chains. The implications of these processes for territorial upgrading are of great importance.

quality of jobs, the learning processes, and the population's living standards, as well as the required training and educational levels, among other socioeconomic variables.

2 China: economic policy strategy, instruments and joining the WTO

The first section part of this chapter will briefly examine the socioeconomic performance of the Chinese economy since the 1980s and the main policies adopted by the country. Emphasis will be placed on the current conditions of the development strategy, its strengths and weaknesses, and details will be provided on the instruments presently being used to promote foreign development and FDI. This section is important for understanding the Chinese economy and the development strategy followed during the past few decades. At the same time, it is essential to understand the depth, scope, and dynamics of China's socio economic panorama, in order to avoid a simplistic vision based on an exclusive analysis of trade. The second section analyzes China's overall trade structure in relation to its main trade partners based on the Harmonized System at the two digit level, while the third section discusses Beijing's commitments, benefits, and the effects of joining the WTO since 2002 and some of its expected results. The third section will also examine in further detail and in relation to chapters of the Harmonized System, the United States' trade relations with China, Central America, and Mexico, as well as direct commercial relations between Central America, China, and Mexico.

2.1 Socioeconomic performance

China – even beyond considerations on the "East Asian miracle" (World Bank 1993) – is one of the cases of tremendous socioeconomic dynamism of the 20th century, a process that has continued into the beginning of the 21st century. With almost 1.30 billion inhabitants in 2003 – or around 20 % of the world's population – average annual growth in per capita GDP has been 8.1 % during 1978–2003, even though the population rose by more than 310 million people during the same period. During this period, economic growth has been more than 16 times higher than that of Latin America as a whole (see chart 1). Although in absolute terms, the gap in

growth of per capita GDP with Latin America has narrowed, in 2003, China's per capita GDP still only represented 28 % of that of the region.[10]

In the context of the increase in China's GDP and per capita GDP, a series of macroeconomic variables also reflects the dynamics and some of its characteristics since 1978 (see chart 2)[11]:

Chart 1: GDP per capita growth rates of selected countries (1960–2003) (annual growth rates by decades, constant dollars of 1995)

	1960	1970	1980	1990	2000	2001	2002	2003	1978-2003
World	3.4	1.8	1.4	1.2	2.7	0.0	0.8	1.4	1.2
OECD	4.4	2.6	2.5	1.7	2.9	0.3	1.0	1.5	2.0
Latin America and the Caribbean	2.5	3.4	-0.8	1.6	2.2	-1.2	-2.2	-0.1	0.5
Argentina	2.3	1.3	-2.9	3.5	-1.7	-5.2	-11.7	3.3	0.0
Brazil	3.2	5.9	-0.4	1.3	3.1	0.1	0.3	-1.4	0.7
Costa Rica	2.0	2.8	-0.5	2.9	-0.3	-0.6	1.2	3.9	1.1
El Salvador	2.2	-0.2	-1.5	2.6	0.6	0.1	0.2	1.8	-0.4
Guatemala	2.6	2.9	-1.6	1.4	0.9	-0.3	-0.3	-0.5	0.0
Honduras	1.5	2.1	-0.7	0.4	3.0	0.0	-0.4	-0.5	-0.2
Mexico	3.4	3.6	-0.3	1.8	5.0	-1.7	-0.8	-0.1	1.0
Nicaragua	3.4	-2.8	-4.0	1.2	9.9	0.3	-1.5	-0.2	-2.5
China	1.5	4.3	7.7	8.9	7.2	6.7	7.3	8.4	8.1

Source: Self-compiled, based on World Bank (2004a).

a)   Inflation, fiscal balance, and exchange rate

China achieved major control of inflation during the 1990s and since 1997, growth in prices has been below 3 %. By the same token, and although there are limitations in terms of information, the fiscal deficit has not exceeded 3 % of GDP for 1990–1999. Given that since 1994, China has maintained its nominal exchange rate at a fixed level, accumulating more than 500 billion dollars in reserves through 2004, the real exchange rate has depreciated, with undervaluation levels of close to 20 % since 2001.

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10   According to different sources and their respective methodologies (Maddison 1998a/b; Wilson/Purushothaman 2003) the GDP of the Chinese economy could be higher than that of the United States between 2015 and 2041.

11   The information in this section, unless otherwise noted, was obtained from the World Bank's *World Development Indicators* (World Bank 2004a).

Chart 2: China: selected macroeconomic variables (1978–2003)

	1978	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Population (millions)	956	1,051	1,135	1,151	1,165	1,178	1,192	1,205	1,218	1,230	1,242	1,254	1,263	1,272	1,280	1,288
Economically active population (millions)	519	600	672	683	692	702	711	720	728	736	744	751	757	763	769	–
Life expectancy (years)	–	68	69	69	69	–	–	69	–	70	–	–	70	–	71	–
GDP (constant dollars of 1995) (growth rate)	11.7	13.5	3.8	9.2	14.2	13.5	12.6	10.5	9.6	8.8	7.8	7.1	8.0	7.5	8.0	9.1
Agriculture (% of GDP)	28.10	28.35	27.05	24.46	21.77	19.87	20.23	20.51	20.39	19.09	18.57	17.63	16.35	15.84	15.38	14.78
Industry (% of GDP)	48.16	43.13	41.61	42.11	43.92	47.43	47.85	48.80	49.51	49.99	49.29	49.42	50.22	50.10	51.09	52.94
Manufacturing (% of GDP)	40.71	34.93	32.87	32.73	33.09	34.55	34.45	34.66	34.70	34.65	33.67	33.78	34.74	34.66	35.39	43.59
Services (% of GDP)	23.74	28.52	31.34	33.43	34.31	32.70	31.93	30.69	30.09	30.93	32.13	32.95	33.42	34.07	33.53	32.28
Inflation (consumption prices)	–	–	3.06	3.54	6.34	14.58	24.24	16.90	8.32	2.81	-0.84	-1.41	0.26	0.46	-0.77	1.16
Overall budget balance (% of GDP)	–	–	-1.94	-2.27	-2.21	-2.04	-1.85	-1.75	-1.59	-1.46	-2.23	-2.94	–	–	–	–
Gross fixed capital formation (% of GDP)	29.63	29.46	25.51	27.48	31.22	37.48	36.05	34.71	34.38	33.78	35.27	35.92	36.46	37.83	40.24	42.16
Gross FDI (% of GDP)	–	0.75	1.22	1.40	3.62	7.39	6.60	5.40	5.18	5.48	5.30	4.54	4.32	4.83	4.69	–
Gross domestic savings (% of GDP)	–	33.64	37.95	38.11	37.72	41.78	43.06	43.13	41.73	42.98	42.34	40.50	39.00	40.88	43.37	43.17
Exports of goods and services (% of GDP)	4.60	9.99	17.53	19.43	19.50	17.08	25.32	23.99	21.03	23.07	21.92	22.29	23.87	25.47	28.86	33.00
Exports of goods and services (growth rate)	–	2.03	5.19	13.08	11.21	13.61	25.17	6.39	-0.71	22.93	7.16	15.16	30.57	9.62	29.42	22.71
Manufacturing (% of exports of goods)	–	–	71.58	75.72	78.73	80.63	82.31	84.02	84.36	85.36	87.30	88.28	88.22	88.60	89.84	–
High-tech exports (% of manufacturing exports)	–	–	–	–	6.11	6.84	7.95	10.05	12.00	12.68	15.08	16.76	18.58	20.57	23.31	–
Imports of goods and services (% of GDP)	4.93	14.12	14.32	16.09	17.96	18.60	23.45	21.69	18.88	18.30	17.29	19.20	23.20	23.08	25.91	32.00
Imports of goods and services (growth rate)	–	48.12	-16.06	18.18	30.22	40.07	10.84	7.46	1.14	11.12	3.11	22.59	24.50	10.78	27.52	31.04
Manufacturing (% of imports of goods)	–	–	79.79	81.04	80.43	84.00	83.87	78.46	79.10	77.14	81.26	80.29	75.74	78.21	80.45	–
Trade balance on goods and services (% of GDP)	-0.32	-4.13	3.21	3.34	1.54	-1.52	1.87	2.30	2.15	4.77	4.63	3.09	2.67	2.39	2.95	1.01
Current account balance (% of GDP)	–	-3.74	3.38	3.52	1.53	-2.69	1.27	0.23	0.89	4.12	3.33	2.13	1.90	1.48	2.80	–
Total foreign debt (millions of dollars)	–	16,696	55,301	60,259	72,428	83,928	100,457	118,090	128,817	146,697	144,007	152,085	145,706	170,059	168,255	–
Domestic credit of banking sector to private sector (% of GDP)	51.05	67.19	87.71	89.95	88.18	99.81	89.33	88.33	94.63	103.55	114.39	121.81	124.55	125.57	136.48	147.99
Lending interest rate	–	7.9	9.4	8.6	8.6	11.0	11.0	12.1	10.1	8.6	6.4	5.9	5.9	5.9	5.3	5.3
Official exchange rate (annual average for $US)	1.68	2.94	4.78	5.32	5.51	5.76	8.62	8.35	8.31	8.29	8.28	8.28	8.28	8.28	8.28	8.28
Real exchange rate (1995=100)	–	215.7	98.9	87.8	78.9	69.8	75.9	84.6	92.8	98.8	100.8	97.5	100.0	104.3	102.6	96.36
GDP per unit of energy use (constant 1995 dollars for oil equivalent)	1.03	1.67	1.97	2.14	2.36	2.54	2.73	2.83	2.97	3.22	3.49	3.71	3.93	4.23	–	–

Source: Self-compiled based on World Bank (2004a).

Despite significant pressures from the United States and multilateral financial agencies, Chinese authorities had not shown an interest in revaluating the Yuan until end-2004.[12]

b) Changes in the composition of GDP and employment

Agriculture has constantly declined within China's GDP, falling from levels above 30 % in the 1980s to less than 16 % since 2001. On the other side of the ledger, the services sector increased its weight in GDP, reaching 32.28 % of the product in 2003. In industry – and particularly in its most significant subsector, manufacturing – two periods can be identified: a) 1978–1990, where its percentage share constantly fell and b) 1990–2003, where a significant recovery was posted, with an average annual growth rate of 12.1 % and 12.9 % for manufacturing and industry, respectively; in 2003 industry's GDP accounted for 52.94 % of China's total product. The employment structure also underwent significant changes during 1980–2003: the rural population has fallen from 80.4 % of the total population to 62.4 %, that is, the urban population increased during the same period by almost 290 million inhabitants. Considering the major weight of industry in GDP, its percentage share of employment has been very low and has even declined since the beginning of the 1990s, from levels above 21 % of total employment to 17.5 % in 2000 (see chart 3). Nevertheless, and given the growth in population and employment from 1980–2000, it is very important to consider job creation during the period in general, and particularly in industry. Indeed, during the 1980–1987 period, China generated around 53 million jobs in industry, higher than the economically active population of Mexico and above that of the total population of the five Central American countries. Since that time, employment in industry has diminished, although in 2000 it continued to

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12 Inherent to the debate concerning the exchange rate and its level and flexibility is the issue of the liberalization of the capital account, which China has thus far refused to do. For a debate on the topic, see: IMF (2003), Krueger (2003); Renqing (2003); Xiaochuan (2004); USTR (2004a). Despite the debate, the IMF itself estimates growth in GDP of 8.5 % and 8 % for 2004 and 2005, respectively.

Chart 3:   China: population and employment by sectors (share over total)

	1980	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	1980-2003 \a
Total population (millions)	981	1,084	1,102	1,119	1,135	1,151	1,165	1,178	1,192	1,205	1,218	1,230	1,242	1,254	1,263	1,272	1,280	1,288	307
Rural population (percentage)	80.36	75.33	74.45	73.54	72.60	71.85	71.08	70.29	69.48	68.64	67.80	66.94	66.06	65.15	64.21	63.30	62.37	61.37	-18.99
Urban population (percentage)	19.64	24.67	25.55	26.46	27.40	28.15	28.92	29.71	30.52	31.36	32.20	33.06	33.94	34.85	35.79	36.70	37.63	38.63	18.99
Population ages 15 and 64 (millions)	586	709	725	741	758	768	779	790	801	813	821	829	837	845	853	866	878	890	304
Unemployment (share of employment)	4.9	2	2	2.6	2.5	2.3	2.3	2.6	2.8	2.9	3	3	3.1	3.1	3.1	-	-	-	-1.8
Unemployment (millions)	28.7	14.2	14.5	19.3	18.9	17.7	17.9	20.5	22.4	23.6	24.6	24.9	25.9	26.2	26.5	-	-	-	-2.3
Employed population \b	558	695	710	722	739	751	761	770	779	789	796	804	811	819	827	-	-	-	269
Agriculture (share over total employment)	68.7	60	59.4	60	53.5	53.9	53.1	51.2	49.7	48.6	47.8	47.4	47.5	47.4	46.9	-	-	-	-21.80
Industry (share over total employment)	18.2	22.2	22.4	21.6	19	19.2	19.6	20.4	20.8	21.1	20.8	20.4	18.1	17.7	17.5	-	-	-	-0.70
Services (share over total employment)	11.7	10.3	10.6	10.6	9.5	9.8	10.2	10.1	11.1	11.7	12.1	12.4	12.3	12.5	12.3	-	-	-	0.60
Other (share over total employment)	1.4	7.5	7.6	7.8	18	17.1	17.1	18.3	18.4	18.6	19.3	19.8	22.1	22.4	23.3	-	-	-	21.90
Employment (millions)	558	695	710	722	739	751	761	770	779	789	796	804	811	819	827	-	-	-	269
Agriculture	383	417	422	433	395	405	404	394	387	383	380	381	383	388	388	-	-	-	5
Industry	101	154	159	156	140	144	149	157	162	166	166	164	147	145	145	-	-	-	43
Services	65	72	75	77	70	74	78	78	86	92	96	100	100	102	102	-	-	-	36
Others	8	52	54	56	133	128	130	141	143	147	154	159	179	183	193	-	-	-	183

\a The periods depends on the last reported year.

\b Assuming that the employed population is the difference of population between 15 and 64 and the unemployed.

Source: Self-compiled, based on World Bank (2004a).

represent 145 million jobs, or 17.5 % of total employment.[13] From this vantage point, China's scope as the "global factory" takes on important dimensions and allows us to understand part of the structural changes undertaken in the economy[14]: for the later 1987–2003 period neither industry nor the agricultural sector generated jobs, with sources of employment being found in services, peasants in search of work in the cities, and informal jobs.

c)   Savings and investment

Considering the dynamics of China's GDP, gross domestic savings and gross fixed capital formation, both as a percentage of GDP, grew from levels below 30 % and 35 %, respectively, in the 1980s, to more than 40 % and 43 %, respectively, in 2003. Simultaneously with this spectacular performance, of particular importance were the very low levels of real interest rates, which from 1980–2003 did not top 9 %, as well as the relatively high and growing level of domestic credit, with bank loans to the private sector representing 148 % of GDP in 2003. Both the levels as well as the dynamics have been significantly greater than that of Latin American countries and this explains one of the main differences in the dynamics of accumulation in the nations being analyzed.

d)   Foreign direct investment

FDI in China grew substantially since 1993 and represented 11.9 % of gross fixed capital formation from 1991–2003. Since the mid-1990s, China has consolidated its position as the main recipient of FDI among the developing countries. Since 2002, China has become the main recipient of

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13   The information obtained by the World Bank (2004a) is plagued by serious problems, considering that there is an "other" category – that the authors calculated – that represents 23.3 % of jobs in 2000. In this category, peasants in urban areas, rural enterprises, and informal employment could be included (Brooks 2004; Brooks / Tao 2003, 7; González García 2003; OECD 2002, 537).

14   During the 1980–2001 period, employment in state-owned enterprises (SOES) fell by 27.5 million to 38.5 million jobs. For the same period, employment in collective enterprises declined by more than 10 million jobs. These losses could be recovered by the jobs generated in joint ventures (limited corporations, jointly owned property and/or shareholder company), those companies with foreign and private financing, which increased their employment in 1980 from 0 and 0.8 million jobs to 15.2 million, 6.7 million, and 36.6 million jobs in 2001, respectively. That is, together, only these categories of companies generated 57.7 million jobs (Brooks / Tao 2003).

FDI on a global level, even overtaking the United States. While the percentage share represented by Latin America and the Caribbean in total FDI has diminished during the 1990s, from 15.21 % to 8.6 % during the 1997–2002 period, flows to China remained relatively stable and the corresponding figure for the country was 8.09 % in 2002, and 9.79 % if Hong Kong is included. The percentage share of FDI represented by mergers and acquisitions was barely 3.9 % in 2002, which compares with 40 % for Latin America and the Caribbean (UNCTAD 2004a/b; Woetzel 2004). Recent surveys (Kearney 2003; McKinsey 2004; UNCTAD 2004d) indicate that FDI flows to China will continue, particularly in investments in assets (see chart 1 of Statistical Appendix 1). Furthermore, recent studies (Woetzel 2004) show that most of the foreign companies are currently posting earnings and that business operations in China are a significant source of profit for transnational companies. Indeed, the net earnings of U.S. subsidiaries increased from 1 billion dollars in 1990 to 6 billion dollars in 2002 and companies such as Volkswagen have registered higher profits in recent years in China than in Germany.

e)   Foreign trade

As is the case with a large part of Latin America and the Caribbean, China's foreign trade has reflected a significant orientation toward exports, with overseas sales increasing from 4.6 % of GDP in 1978 to 33 % in 2003. Nevertheless, the dynamism of Chinese export has been very much greater than in the case of Latin America, with Beijing's share of global exports increasing – with Hong Kong factored in – from 1.86 % in 1980 to 8.49 % in 2003, while the corresponding share for Latin America fell from 4.88 % to 4.64 %. These trends became particularly pronounced for China as of 1990. Several aspects are important to consider (see chart 4)[15]: 1. Although in 2003, China's exports and import levels as a percentage of its GDP did not significantly differ from that of the Latin American countries, Beijing's annual average growth in both categories from 1990–2003 was higher, with 15.5 % and 17.8 % increases, respectively. 2. The composition of Chinese exports reflects a thoroughgoing structural change, only comparable with similar modifications in Mexico. If up until the beginning of

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15   In addition, in 1980, 75 % of exports corresponded to state owned enterprises, while in 1998 the percentage had decreased to 25 %; while 39 %, 17 %, and 16 % involved collective, individual and other enterprises (Anguiano 2004).

the 1980s, exports of raw materials and oil represented almost 50 % of overseas sales, in 2002, 89.84 % of exports corresponded to manufactured goods, and with an increasing share of high-technology products (see graph 1 and charts 2 and 3 of Statistical Appendix 1; Perkins 2001), 3. Although from 1990–2003, average annual growth for China's imports of goods and services was higher than that of its exports, the country tended to generate a surplus in the trade balance of goods and services equivalent to 2.46 % of GDP and an average surplus in the current account of 1.8 % of GDP, 4. In 2003, China's imports topped 600 billion dollars, and they have been very dynamic since then. In fact, since the 1990s, China has become one of the most attractive markets internationally.

Chart 4:   China and Latin American and Caribbean countries: export and import coefficients (percentages) (1978–2003)

	1978	1985	1990	1995	2000	2001	2002	2003
Exports of goods and services								
Latin America and the Caribbean	10.20	14.80	14.08	14.90	17.07	17.55	21.09	--
Argentina	8.61	11.74	10.36	9.65	10.89	11.53	27.69	24.95
Brazil	6.68	12.25	8.20	7.72	10.66	13.21	14.49	--
Central America	29.95	20.81	27.10	30.81	31.98	29.48	29.12	29.86
Mexico	10.47	15.41	18.60	30.42	31.00	27.49	26.79	28.43
China	4.60	9.99	17.53	23.99	25.87	25.47	28.86	33.00
Imports of goods and services								
Latin America and the Caribbean	11.11	10.04	11.98	15.86	18.11	18.54	18.31	--
Argentina	5.72	6.27	4.63	10.08	11.52	10.21	12.80	14.19
Brazil	7.86	7.10	6.96	9.49	12.18	14.20	13.41	--
Central America	34.87	25.41	36.71	42.33	44.25	43.85	43.63	44.21
Mexico	11.04	10.33	19.71	27.75	32.94	29.76	28.67	30.11
China	4.93	14.12	14.32	21.69	23.20	23.08	25.91	32.00

Source: Self-compiled, based on World Bank (2004a).

f)   Household consumption

The final household budget earmarked for consumption, measured in 1995 dollars, increased considerably in China, as was the case for per capita GDP, with an average annual growth rate of 9 % during the 1978–2003 period and 9.6 % from 1990–2003 (see graph 2).[16] The high dynamism of

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16   Nevertheless, the urban middle class with per capita income above 1,250 dollars only represents part of the top two 10 % income brackets and less than 100 million people (Nolan 2003,16–17). Woetzel (2004) estimates that 4 % of households or more than 50 million people receive income above 20,000 dollars.

per capita GDP, as with final houshold spending earmarked for consumption during such a long period is of key importance for expectations of individuals and the population and the generation of political and social stability, despite the challenges indicated below.

Graph 2:   Selected countries: household final consumption expenditure (1978–2003) (constant 1995 US $, 1978 = 100)
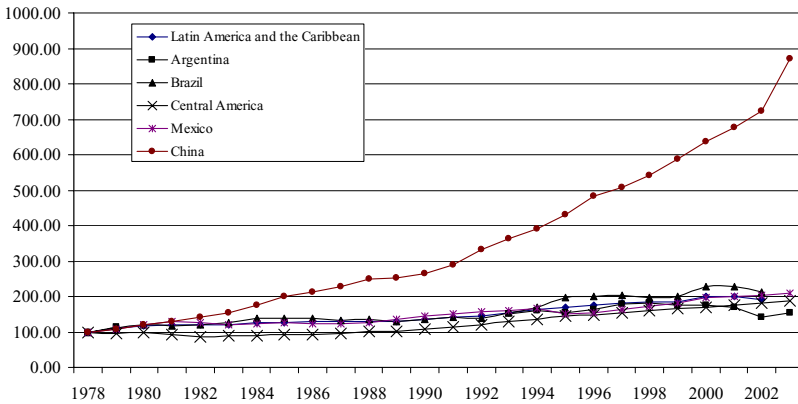
Source: Self-compiled, based on World Bank (2004a).

g)   Education

The People's Republic of China has carried out growing efforts in the field of education, both on a general level to provide higher education to a larger part of the population, as well as specialized endeavours and plans linked to some of the priority programs during the 1980s and 1990s, as will be seen later on. These policies have led to substantial increases in enrollment in primary and secondary schools and tertiary education. From 1980 to 2000, the number of students enrolled in secondary schools increased by more than 20 % with regard to the total, and, on the level of tertiary education, gross school enrollment rose from 1.70 % to 12.68 %. This important increase in educational levels has been accompanied by an expansion in R&D spending during the 1990s, rising from 0.6 % of GDP in 1996 to 1.09 % in 2001, as well as a 27.2 % growth in the number of researchers during the same period. Although income levels in higher education in China are below those in Latin America and the Caribbean – 22.6 % less in 2000 – the growth dynamic in the field has been significantly

higher in China. The R&D spending to GDP ratio, as well as the number of researchers is higher in China (see chart 5).

Chart 5:   China: Education and Research and Development (1970–2001)

	1970	1980	1990	1995	1996	1997	1998	1999	2000	2001
School enrollment, primary (% gross)	90,94	112,60	125,15	117,53	119,80	123,03	119,53	116,06	113,87	--
School enrollment, secondary (% gross)	24,27	45,92	48,69	65,77	68,94	58,95	--	66,72	68,25	--
School enrollment, tertiary (% gross)	0,07	1,70	2,97	5,25	5,65	6,09	7,39	9,70	12,68	--
Research and devel opment expenditure (% of GDP)--	--	--	--	--	0,60	0,68	0,70	0,83	1,00	1,09
Researches in R&D (per million people)	--	--	--	--	459	479	391	424	551	584

Source: Self-compiled, based on World Bank (2004a).

h)   Reducing poverty and infrastructure development

In both absolute and relative terms, China has been the most successful case study in reducing poverty in the 20th century. Both the existence of different policies oriented toward reducing poverty as well as the important economic growth achieved since the end of the 1970s allowed for a decline in the number of those living in poverty from 490 million in 1981 to 88 million in 2002 or from 49 % to 6.9 % of the population. There is an important consensus (Sangui / Zhou / Yanshun 2004; World Bank 2004c/d/e) concerning the impact of public investment in reducing poverty during the past 20 years – particularly during the 1978–1985 period of high growth – and in budget items such as general construction and highways in rural regions.[17] These important socioeconomic advances are also reflected in China's higher ranking in the Human Development Index since the mid-1970s (UN 2004).

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17   Without intending to exhaust the question, these studies emphasize that several of these programs, particularly the 8–7 National Program to Reduce Poverty since 1994, which was the first program to alleviate and reduce poverty with specific objectives, goals, and timeframes (World Bank 2004c, 2). Based on the instruments employed in this program – subsidized credits, food in exchange for work, and budgetary allocations from the central government – Beijing launched the New Century Plan to Reduce Rural Poverty for 2001–2010, focusing its efforts in 50,000 poor urban villages and seeking to increase the program's objectives, its transparency, and participation on a local level.

2.2 Strategies, policies and challenges

"Truth is to be found in practice (shishi qiushi). If we can achieve an increase in the average income of all Chinese people, then it will prove that our practice was correct. If our future experience proves that we have upheld socialism and prevented the restoration of capitalism, then it will demonstrate that our political practice was correct" (Deng Xiaping 1979, in Nolan 2003, 7).

The previous socioeconomic performance was the result of different external and internal factors. In relation to the first series of questions, several studies have underlined both the positive global conditions of integration into the world market via exports as well as the interest of the OECD member countries, and particularly the United States, in integrating the Chinese economy into their respective markets, despite the major conflicts and ideological, political, and military differences (Cohen 2000; Nolan 2003; Wang 1992). By the same token, it is important to emphasize that through formal and informal relations, the Chinese community on a global level, and particularly in Asia and the United States, has become a significant base for increasing trade in the countries in which it resides. In countries such as Indonesia, Thailand and Malaysia, where the Chinese community represents barely 2.5 %, 14 % and 30 % of the total population, respectively, it accounts for 73 %, 80 % and 69 % of the respective national capital.

The conditions and internal policy measures, however, would seem to have the dominant weight, particularly in order to understand the differences with other nations, among them Latin American countries. From the perspective of development strategy, the case of China stands out on different levels since the end of the 1970s.

In the first place, a pragmatic long-term and dynamic vision, accompanied by instruments, mechanisms, resources, and the coordination of institutions on a local, provincial and central level. A series of authors have emphasized the changes in "formulating objectives" (Fan / Zhang 2003, 13)[18] and the multiplicity of "transitional institutions" (Qian 2001, 2003) in this

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18 The same authors point out, in synthesis, "that nothing was accidental in the constantly changing "formulation of objectives" and that the logic of the political economy prevailed" (Fan / Zhang 2003, 13).

process, which has not been exempt from contradictions and difficulties. This process of reforms with a long-term vision – which began at the end of the 1970s and with important changes in 1993 – has explicitly sought to create domestic markets through policies that aim to diversify types of property ownership, particularly non-state, under the government's coordination in its diverse levels (Perkins 2001). The previous process culminated with the explicit invitation in 2001 to businessmen to join the Chinese Communist Party.

In second place, these reforms began in the agricultural sector with the objective of linking the system of responsibility with production and to reach levels of self-sufficiency, and establishing family units as basic units of production. With the experience of food shortages and massive famines during the 20th century, to date agriculture continues to be a top priority sector in the country's economic policy (Nolan 2003, 12–13; Yifu Lin / Yao 2001).[19] The success of the reforms in the agricultural sector until the mid-1980s, in terms of production, an increase in consumption, and a reduction in poverty, generated sociopolitical conditions to continue with the reforms in other fields (Nolan / Paine 1986).

In third place, it should be emphasized that since the end of the 1970s, economic policies diminished the weight of the state owned enterprises (SOEs) and collectively owned and local enterprises by allowing and actively promoting new forms of property ownership. As a result, the percentage share represented by the two above-mentioned categories fell from 75 % and 24 % of industrial output in 1980 to 25 % and 21 % in 2002, respectively. If in 1980 there were no additional important forms of property ownership, in 2002 companies with foreign investment and public and private enterprises represented 18 %, 19 % and 17 % of industrial output (Woetzel 2004).[20] Despite this important decrease in the weight of SOEs and collectively owned and local enterprises, and given a more than 20 fold increase in output, even these segments achieved significant growth in their industrial production. The achievements obtained through these reforms – particularly in terms of investment, exports, employment and the creation of "special zones"– provided support to the reformist sectors of

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19   For an excellent study on the issue, in which a comparison is made with Mexico, see: Liu Sun (1997).

20   For a detailed analysis of this process, see: Qian (2003, 311) and OECD (2002, 132).

the Chinese Communist Party (CPC), which continued with the process in industrial enterprises and SOEs and in the cities.

In fourth place, up to 2004, the reforms were based on a "double price principle". In centralized planning, initially most products, and particularly those from SOEs, were subject to established prices. The principle, however, allowed for prices on a growing percentage of products to be determined by market conditions.[21] Based on the previously established schema, during the 1980s, the "double price principle" allowed important incentives to be generated to develop market segments with an export orientation (Fureng 1986). This principle, which encouraged production beyond what was formulated in the respective plans, in addition to allowing reforms that helped gradually increase efficiency and productivity, was implemented in the liberalization of the agricultural and labor markets, among others.[22] However, and as we will see further on, the principle as a "transitional institution" (Qian 2003) was losing ground since the mid-1990s,[23] as well as through the massive privatization of the rural township-village enterprises and different constitutional amendments introduced in 1998 that recognized an important role for the private sector in the economy. Indeed, plan objectives in industrial and agricultural production represented 14.7 % and 16.6 % of total output and only 7.2 % of sales of consumer goods, directly compensating companies potentially registering losses.

Fifth, the reform project in China sought to actively promote companies, markets, and employment in the non-agricultural sectors and particularly in industrial branches. The creation and active support for large companies or industrial groups, known as "national champions", was considered one

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21 Qian (2003, 307) emphasized that this gradual implementation of the reforms allowed for the creation of markets, while simultaneously maintaining the quantities and prices of goods specified in the plan. Thus, the creation of markets becomes an incentive without negatively affecting and even temporarily protecting, the status quo.

22 As Qian points out (2003), for certain industrial products, the increase corresponding to rural township-village enterprises can be significantly higher than that of the plan. Bowles and Dong (1999) emphasize that although in general the township-village enterprises are considered to be counterposed to the SOES and private ownership, in fact they are collective property, with important effects on company organization, commitments by the workforce, and with a greater impact on its efficiency.

23 By the same token, the principle allowed for greater opportunities for corruption given the differences in the prices of products as determined by the plan and the market. This was one of the causes of the sociopolitical disturbances at the end of the 1980s in China.

of the crucial aspects of the reforms. Based on several decades of intense industrial development (Perkins 2001), since the 1980s, industrial policy granted preferential credits, established tariff and non-tariff benefits, in many cases under monopolistic conditions, and provided access to international financial and secondary markets in the case of the SOEs (OECD 2002). At the same time, in sectors such as iron and steel, transportation equipment, and, in general, in heavy industry and the chemical sector, the SOEs had a dominant presence. Companies with foreign investment were particularly present in export-oriented sectors, such as clothing, leather, electronics, and telecommunications equipment, among others.

Sixth, during this whole period and up to 2004, it is critically important to understand that the public sector, the government and the Chinese Communist Party continue to play a fundamental role in the country's socio-economic life and the "real structure of the state" (Anguiano 2004; Nolan 2003), for example, in controlling the SOEs.[24] The pragmatism of the CPC, particularly since the mid-1990s, has relegated the debate on the relationship between socialism and the market and/or the deepening of a sui generis socialism to the sidelines, and has placed emphasis on China's special characteristics through a "planned market economy" or "market socialism." It should be pointed out that from a quantitative perspective, budgetary income as a percentage of GDP declined from levels of above 30 % in the 1970s to 22.9 % in 1982 and to 17.9 % in 2002.[25] Simultaneously with this process, a decentralization was underway involving the total budget and new functions of local governments (Nolan 2003, 31). The latter currently represent around 64 % of the total budget.[26]

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24 For some authors (Qian 2003, 328) this it is reason why, as opposed to other sectors and aspects of the economy, the SOESs have not become "transitional institutions", since the CPC's control of such companies – including the appointment of their top management –has not allowed for incentives to improve their efficiency.

25 For some authors the government has several additional "quasi-fiscal" sources of revenue, and particularly through bank deposits, which provide it with around 2 % of GDP annually. Despite pressures from international financial institutions, thus far the local governments have refused to abandon generalized anonymous bank deposits, which are one of the main ways of guaranteeing private property (Qian 2003, 318.). It was not until April 2000 that it was decreed that all the new bank deposits required identification.

26 The process of decentralization, however, goes well beyond a process of functions and budget transfers. As was previously noted, local governments currently own an important part of the companies in China and until the mid-1990s this led to considerable un-

Seventh, since the beginning of the 1980s, China has implemented an interesting and complex system of taxes and incentives involving the central and local governments and that on a provincial and local level compete with each other. In general, the central government's main source of tax income was direct taxes or earnings from SOEs and duties levied on international trade, while the rest of the tax revenue was collected by provincial or local governments. Local tax revenue was divided according to pre-established budgetary allocations and, in real terms, at the beginning of the 1990s, the provinces retained 90 % of the income obtained, while 70 % of the provinces obtained net income from the central government. This "contractual fiscal system" (Qian 2003, 316) allowed the central government to obtain tax revenue and, at the same time, created incentives so that local and provincial governments promoted their economies and generated their own new tax revenue, which they could increasingly retain for their own uses. Since 1994, however, the fiscal relationship between the governments were formalized through the creation of different local and national fiscal divisions, in which the decision was made, for example, that the value added would be divided 3:1 among the national and local governments. However, regional unevenness in collecting different taxes has been enormous (Fedelino / Singh 2004).

Eighth, to date, the policies, challenges, and efforts on the part of the private sector and the government – on its different levels and institutions – should be understood in the framework of long-term and five-year plans. Currently, for example, there is the Socioeconomic Development Program for 2020, in which the central government establishes general objectives and specific goals. These are important, since they allow us to understand the Program's orientation, strategies and priorities in its specific fields.[27] Among the most important points are: a) quadrupling GDP during the 2000–2020 period, which implies an annual GDP growth rate of 7.2 %. This would bring per capita GDP to between 4,000 and 5,000 dollars,

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certainty and inefficiency in relation to private property guarantees. Ownership of companies by local governments, by the same token, allowed for an increase in tax revenue and the "township-village enterprises are an example of how existing institutions can be modified to serve the new development objective" (Qian 2003, 313–314). Initial results (Sonobe / Otsuka 2003) indicate that this process of change in ownership generated very high increases in regional productivity.

27 Also see: http://www.people.com.cn/GB/jingji/1037/2387506.html, consulted in July 2004.

b) increasing the percentage share of high-technology exports from 25.2 % to 45 % in 2020, c) boosting the workforce in non-agricultural areas from 50 % to 60 %, d) reducing the disparities between individual income in the agricultural and non-agricultural sectors, from 1:2.8 in 2000 to 1:2.5 in 2020 and, e) raising educational levels from 6.4 to 12.1 years of schooling, in addition to multiple objectives tied to the environment and the country's socioeconomic panorama.

Ninth, at the present time, the Chinese authorities – particularly the central government – have sought to simplify incentives and make them more transparent for companies, sectors and regions, eliminating a large part of the direct subsidies. The main differences and tax benefits, as well as the treatment FDI receives in China, are as follows:[28]

1. Since 1994, China has had 25 types and eight categories of local and central government taxes. Among the main taxes are the value added tax (17 % in general and 13 % for certain products), those placed on company revenue (33 %), and individual income (5–45 %), consumption (3–30 %), companies (3 %), as well as on different other items (cars, boats, the agricultural sector, and foreign trade). In several of these cases, there can be significant reductions, depending on the region where the respective activities take place and the type of activity. The central government is responsible for collecting tax revenue from the VAT, consumption taxes, and tariffs, while the local and provincial authorities are in charge of the rest.

2. There are currently 13 types of taxes on foreign investment. Among the main ones are: a) income tax (30 % general and 3 % local tax) and b) VAT. Nevertheless, the current normative framework encourages new foreign investment in regions and sectors with a long-term productive horizon, using a series of policy instruments, such as: a) Companies that are established for operations over a more than 10 year period do not have to pay taxes in the first two years in which they post earnings and until the fifth year they will only pay 50 % of

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28   For a detailed analysis, see: Baker & McKenzie (2003); CCPIT (2004); MOFCOM (2004); WTO (2001a).

the required taxes,[29] b) In the Special Economic Zones and Sectors,[30] In these cases, a variety of incentives are offered, depending on the sector and the specific area, including reductions in income tax of from 15–30 % after the fifth year of the company's operations, exemptions if the investments are for more than 15 years or if Chinese co-investments are involved or if the amount exceeds a specific quantity. In order to encourage foreign companies with technological development, the current normative framework allows that as long as the company continues developing technology after the tax exemptions granted during the first five years, it will continue benefiting from later exemptions and can even deduct one year of losses for the following five years, as well as customs duties and tariffs required for their activities and the VAT on domestically produced inputs. Several of these programs will be in effect up to 2010 and they explicitly offer the company involved the option of national treatment with development and commercial banks in China.

3. At the present time there is a broad framework for the participation of FDI in the economy. Such investment falls into in four categories: promoted, permitted, restricted, and prohibited. In accordance with the commitments established with the WTO, China will promote the establishment of foreign companies to reform traditional agriculture and its industrialization; in infrastructure and in sectors such as energy; in sectors and development centers that use cutting edge computer technology and electronics (new materials and aerospace industry); and in the establishment of companies that improve industries such as tool and die and the upgrading of the textile industry with advanced technology. Other priorities include the efficient use of natural

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29 These tax benefits are only granted to foreign companies in 10 sectors, including agriculture, textile and industrial packers, machinery and electronics, energy, construction and scientific and technological development, among others (CCPIT 2004).

30 The Special Economic Zones (SEZs) were the result of policies launched in 1978 and viewed as a laboratory and experiment for the trade opening and benefits granted to the private sector and foreign companies. After several decisions to expand the program in 1984, 1985, 1990, and 1992, currently there are three SEZs in the province of Guangdong (Shenzhen, Zhuhai and Shantou), one in Fujian (Xiamen), another in Hainan, 14 coastal cities, the Changjian and Zhujiang deltas, the Pudong area in Shangai and several cities along the Changjiang River, 15 tariff-free zones, 32 economic and technological development zones, and 53 high tech industry development zones.

and renewable resources, projects in western China, and exports. All the sectors being supported will at least be exempt from the payment of tariffs on imported equipment.

4.   Although the SEZs no longer offer tariff benefits and import duties have been evenly applied throughout China with the country's entry into the WTO, activities that are intensive in technology and knowledge will benefit from the SEZs, with income tax reduced from 33 % to 15 %.

5.   One of the most noteworthy aspects in the change in economic policies is the modification in the system of duty draw-backs. The drawback rate was reduced from 15.11 % to 12.11 % since January 2004, for example. For the textile and garment sector, the rate declined by 4 %, decreasing from 17.0 % percent to 13.0 %.[31] It is to be expected, according to official sources, that the reduction in the rate will affect future export performance.

Despite the advances achieved in the People's Republic of China, it is equally important to point out the different socioeconomic challenges that could arise in the short, medium, and long terms:

First. Although absolute poverty has experienced an important decline, there has also been a significant increase in inequity, and particularly of the rural regions with regard to the urban centers and within the cities, as had been analyzed in the case of the 1980s (Knight / Song 1993).[32] From 1997–2002 per capita income in the country's urban areas increased by 57.6 %, while in the countryside the growth was only 15.2 % (Pitsilis et. al. 2004). The urban inequality and gini coefficients increased substantially from 1992–2001 (Fedelino / Singh 2004; Nolan 2003, 16; The Economist 2004).

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31   http://www1.cacs.gov.cn/DefaultWebApp/showNews.jsp?newsid=201140001836, consulted in July 2004.

32   The OECD (2002, 546) points out that during the 1980-1999 period, real wages in SOESs have remained at levels similar to urban salaries, although rural wages and those paid by urban collective enterprises were more than 30 % below urban wages in 1999. The study emphasizes that salaries paid in urban private activities are more than 20 % higher than urban wages.

Second, in the past two decades, Chinese society has experienced massive internal population movements from the countryside to urban areas and from agriculture to industry and services. In addition, the economically active population is expected to grow between 10 and 13 million people annually through 2010 and it is believed that in the short term massive movements in the workforce will continue from the agricultural sector to the rest of the economy (Mengkui / Zhongyuan 2003). The OECD (2002, 13) emphasizes in this context that although the non-agricultural sectors have significantly increased their percentage share in GDP, their ability to

Chart 6:   China: duty draw-back of exported products (1985–2002)

	Duty draw-back (thousand of millions of yuans)	Duty draw-back (billions of $US)	Exports (billions of $US)	Duty draw-back / exports (percentage)
1985	1.97	0.67	27.35	2.45
1986	4.4	1.27	30.94	4.12
1987	7.67	2.06	39.44	5.22
1988	11.3	3.04	47.52	6.39
1989	15.3	4.06	52.54	7.73
1990	18.5	3.87	62.09	6.23
1991	25.44	4.78	71.84	6.65
1992	28.5	5.17	84.94	6.08
1993	30.1	5.22	91.74	5.69
1994	45	5.22	121.01	4.31
1995	54.92	6.58	148.77	4.42
1996	82.6	9.93	151.05	6.58
1997	43.25	5.22	182.79	2.85
1998	43.7	5.28	183.71	2.87
1999	62.77	7.58	194.93	3.89
2000	81.04	9.79	249.2	3.93
2001	107.15	12.95	266.16	4.86
2002	125.92	15.21	325.6	4.67

Source: Self-compiled, based on Department of Statistics of China and General Customs of China.

absorb the workforce has been very much below this level. The low use of installed capacity and a great number of companies in sectors such as the auto and auto parts industries, among others, lead to predictions of massive layoffs. It is to be expected that these trends will persist in the short and medium term and that both the urban areas as well as industry will continue to generate jobs. As will be analyzed in the following section, these trends could worsen with the effects of the agreements with the WTO in the agricultural and services sectors and given the complex situation of the SOEs. Although the government in its divisions has sought to coordinate and regulate the labor migration – Guangdong province along reported 5.3 million

workers from other provinces in 2002 (Lüthje 2004) – the logistics of these processes are complex and social and politically problematic.

Third, an important consensus exists that the reforms to the SOEs can generate enormous economic and sociopolitical difficulties.[33] The number of companies operating in China is enormous. In the mid-1990s there were estimated to be almost 8.0 million industrial companies, 113,800 SOEs, and practically 1.60 million collective enterprises, among others (Perkins 2001, 255). This dispersion and the size of the companies themselves also make it difficult to promote and implement industrial policies. In 2003, the SOEs represented around 30 % of GDP of the total 159,000 SOEs, the reforms were particularly oriented to the 2,696 largest such companies – and they are being attended to by commissions of the central, provincial and local governments through specific control and monitoring efforts.[34] Contrary to the agricultural, industrial, and non-state services sectors, the SOEs have encountered different problems for their reform, particularly in the rigid control of the CPC (Qian 2003). Nevertheless, from 1996–2001, between 30 million and 48 million jobs were lost in the SOEs (Nolan 2003, 14). At present, the SOEs represent around 25 % of industrial production and are centered on activities such as services and the retail trade,

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33 It is important not to resort to a simplistic approach with regard to the SOESs. That is, there are cases of successful reforms – as analyzed by Nolan / Yeung (2001) in Shougang in steel and Saniu in pharmaceuticals – of SOESs that continue to experience a high degree of interference by the CPC and at the same time, are characterized by innovations and adaptations in new forms of organization and technologies. Other analyses (Jefferson / Rawski 1999) conclude that the SOESs have undertaken a thoroughgoing restructuring at the end of the 1990s and with important advances in increased productivity and efficiency. While authors such as Sachs / Woo (1994) have an extreme vision of inefficiency and even the inability to reform these companies, Lo (1999) points out that the performance of the SOESs – and the fall in their percentage share of industrial output from 78 % to 47 % during the 1978–1993 period – has been much better than generally known and studied. In comparison with the collective enterprises and private companies, in many cases, the large SOESs have been able to increase their efficiency and take advantage of economies of scale, while the smaller-size SOESs have been the main losers (Mako / Zhang 2002; Nolan 1996). A brief analysis on the question in 2004 (Orr 2004) indicates that the situation of the SOESs, which represent 17 % of GDP, is better than is generally accepted and that an important sector of these companies has been able to post significant earnings.

34 See: http://www.drcnet.com.cn/New_Product/expert/showdoc.asp?doc_id=198337, consulted in July 2004.

transportation, communications, and banking. Although their presence has diminished during the past 20 years, they continue to be the backbone of the Chinese economy from multiple vantage points. The general situation of the SOEs is partially responsible for the weakness of the financial sector.[35] Since 1999, the government has sought to reform the SOEs – of the non-financial companies around 60 % are owned by the central government, the rest correspond to provincial and local governments – on three levels: a) a reduction in their activities, b) a diversification in SOEs ownership, whereby the state will only maintain 100 % ownership in some of the 500 to 1,000 large industrial groups and, c) the creation of the State Asset Management Corporation to absorb the debt of the four large state banks (Fan / Zhang 2003; Guonan / Fung 2002; Qian 2003). Finally, a sector of the SOEs, and this is particularly the case in the textile industry, has substantially increased the subsidies received by the central government, from 1.61 % of total central government subsidies in 1990 to 20.57 % in 2000 (see chart 7). Local and provincial governments provide between 20 % and 25 % of the subsidies to the SOEs, in 2000, the figure was 22.4 %. Beijing and Shanghai pay out more than 42 % of these resources (WTO 2001a, 72).

Chart 7: China: subsidies by sector to State-owned Enterprises (1990–1998)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Metallurgic industry	0.98	1.01	0.87	2.99	4.16	6.46	8.81	11.41	11.19
Ferrous-metal industry	0.53	0.59	0.83	1.44	5.92	12.53	8.36	6.87	6.23
Machinery industry	3.22	3.50	9.47	3.81	14.39	17.84	16.91	11.67	11.22
Coal industry	47.33	46.10	45.45	47.64	48.19	25.94	23.09	17.58	19.88
Oil industry	36.04	37.57	34.27	26.86	0.00	0.00	0.00	7.08	4.39
Chemical industry	3.25	2.79	2.40	3.93	7.05	7.42	7.45	5.56	6.64
Textile industry	1.61	1.65	1.34	2.96	2.71	7.23	12.19	17.14	20.57
Light industry	5.64	5.45	4.09	8.90	4.07	3.25	4.60	7.12	3.15
Tobacco industry	0.00	0.00	0.00	0.00	12.25	18.43	16.19	10.71	11.82
Total of the nine sectors	98.60	98.66	98.71	98.54	98.73	99.10	97.76	95.17	95.09
Other sectors	1.40	1.34	1.29	1.46	1.27	0.90	2.24	4.83	4.91
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Self-compiled, based on WTO (2001a, 68).

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35 Lo (1999) indicates that central government subsidies to the SOESs have diminished from levels above 11 % of GDP in the 1980s to 3.2 % in 1994.

Fourth. A diverse and extensive debate is currently taking place in relation to territorial participation in the growth of the Chinese economy (Maddison 1998b). Most of the authors agree that a polarization process emerged since the beginning of the 1990s, in which even during the period of high growth from 1985–1996, poverty increased in eight of the country's 29 provinces (González García 2001, 192 ff.; Nolan 2003, 13).[36] The export orientation of the productive apparatus has deepened this process of territorial polarization (Perkins 1999). This process could be exacerbated with the commitment to liberalize services acquired with the WTO (Mattoo 2002). Without ignoring the disparities between the inland/western and coastal/eastern regions, some authors point out that since the 1970s and until the mid-1990s, all of the PRC's provinces posted important growth in GDP (Qian 2003, 300). Job creation and the unemployment rate, meanwhile, reflect important differences since the 1990s, particularly between both the north – which includes Beijing – and the east – which includes Shanghai –, with the northwest (Brooks / Tao 2003; Zheng / Hu 2004).

Fifth, if not the main point cited by numerous analysts, is the growing environmental degradation generated by both urbanization as well as industrialization. A major factor is the continued use of coal as the main source of energy, with levels of efficiency below those of the industrialized countries in 1950 (Nolan 2003, 27 ff.; OECD 2002). This environmental degradation not only diminishes fertile land for agriculture, but has also increased all types of pollution. Chart 2 illustrates how from 1979–2002, the energy use per GDP unit is high if compared internationally, although with a falling tendency since the 1980s.

Sixth. As a result, since the mid-1990s, China has become the nation with the greatest growth in demand for raw materials, from food to iron and steel, oil and gas, among many others (Newsweek 2004).[37] Given the high and growing costs of raw materials and energy resources, international

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36   The issue of the significant reduction in poverty in absolute terms, although inequality might increase, requires more analysis on a provincial level, since to date, discrepancies exist between these trends and national tendencies as recently documented by the World Bank (2004e).

37   In 2004, China is expected to account for 7 % of world consumption of oil and 30 % of iron, with a high growth rate since the 1990s. It currently produces around 20 % of world steel and its consumption is higher than its output.

limitations on demand for such products could restrict this type of productive and commercial specialization.

Seventh. Different sources and analysts agree that China currently faces important challenges in the financial sector and development banking, issues linked with the already discussed question of the SOEs. Despite this consensus, different appreciations exist as to the depth of the problem. Some authors (Kang / Jones 2004; The Economist 2004) indicate that the situation is similar to that of East Asia before the 1997–1998 crisis and is the result of the overregulation of financial flows and capital markets, among others. China's non-performing credits are estimated at between 44 % and 68 % of GDP. Although the government injected 45 billion dollars in the Bank of China and the China Construction Bank, it is estimated that the non-performing credit portfolio of the major banks involves an additional 300 billion dollars (Barnett 2004; Pitsilis et al. 2004). Another group of authors, however, feels that the conditions of the financial sector are manageable, especially as economic growth trends continue during the next few decades.[38]

2.3   Trade structure

For the 1990–2002 period, 12.4 % and 13.1 % of the increase in global imports and exports corresponded to China. In this context, what are the main characteristics of China's international trade – on an aggregate level and in terms of the two digits of the Harmonized Tariff System according to its main commercial partners and the countries considered in the study – as well as Beijing's advantages and commitments concomitant with its entering the WTO?[39]

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38 OECD (2000, 80) indicates a high degree of concentration of public, development, and commercial bank assets. In 1998 the SOESs concentrated between 75 % and 80 %, while less than 10 % of credit was earmarked for non-state run companies. The future of the banking sector, from this perspective, depends significantly on the SOESs and the reduction in non-performing credits, although not much detailed financial information for each company is available (Stallings 2003). Fan / Zhang (2003, 15), for example, point out that non-performing credits of the four main state banks decreased substantially in 2002 to 26.1 % of their portfolio. Also see: Orr (2004).

39 The trade data was obtained by the UNCTAD for the 1992–2002 period (see Statistical Appendix 2). While there are other sources with longer time-series, the UNCTAD data

German Development Institute

China's foreign trade reflects the high degree of commercial integration with Asia, and particularly with a first circle of countries such as Japan, Taiwan, South Korea, and Hong Kong[40] and, as a second circle, with Singapore, Thailand, Indonesia and Malaysia, which in 2002 represented 41.86 % and 7.22 % of Beijing's total trade, respectively. Although the percentage share represented by this group of countries has diminished slightly since 1992, particularly due to the substantial fall in imports from Hong Kong –which, in fact, can be attributed to the specificities of their registration, in addition to the former British colony being the intermediary for around 22 % of China's trade (Rumbaugh / Blancher 2004) – in addition, of particular importance is the significant weight of Beijing's exports to the United States, which represented 25.55 % of the increase in overseas sales from 1992–2002. The Latin American countries considered in the statistics represented less than 2 % of Chinese imports and 1.5 % of its exports in 2002, although they were quite dynamic during the period. Special note should be made of the performance of Brazil and Argentina's exports, and to a lesser extent those of Mexico, and the minimum amount of trade with each of the Central American countries.[41]

Most of China's important trade surplus corresponds to the United States, the European Union, and the Latin American countries considered in the statistics, particularly Mexico. At the same time, Beijing's trade balance with the first and second circles of Asian countries is negative, and particularly so with Taiwan, South Korea and Japan, with which it has accumulated a high deficit. On the other side of the ledger, the accumulated trade surplus from 1992–2002 with the United States alone represented

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was selected because it is the only one that includes disaggregated data at the six level digit of the Harmonized Tariff System for 1996–2002. It is important to point out that this section will exclusively use trade registered by China as a source, while in the following sections of this study, data from other sources will be included. As will be seen, the differences in the information can be very considerable.

40 In part because it has different tariff treatment and import duty payments than China, Hong Kong has historically been Beijing's main intermediary in international trade and particularly for Chinese exports. Indeed, 53 % of Chinese exports was re-exported from Hong Kong from 1988-1998 (Hanson / Feenstra 2001).

41 The Economic Commission on Latin America and the Caribbean (ECLAC 2004b) has conducted an initial valuable analysis of the bilateral trade relations between Latin America and the Caribbean and China, highlighting the growing exports from the ercosur – particularly Argentina and Brazil – and Chile of agricultural products.

89.27 % of the total surplus during the period (see graph 3 and Statistical Appendix 2).

The itemized structure of Chinese foreign trade (see chart 8) reflects a relatively high and growing degree of concentration. The five main items represent 50.40 % and 59.48 % of exports and imports in 2002, respectively. Several points should be emphasized (see Statistical Appendix 2):

Graph 3:   China: contribution to growth of imports and exports by selected countries (1992–2002) (percentage)
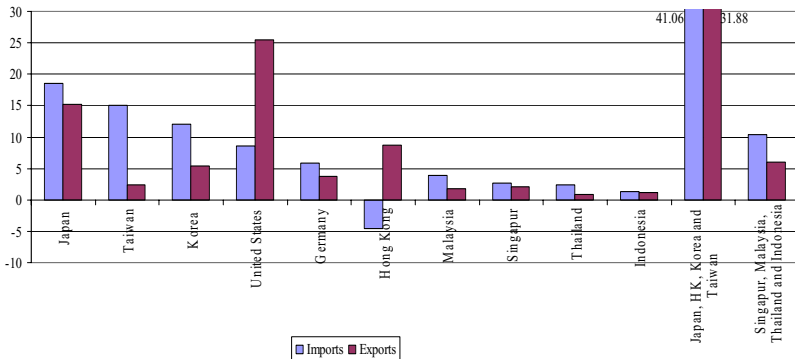
Source: Self-compiled, based on Chart 3 of Statistical Annex 2.

1. Exports using more intensive labor – clothing, shoes, and toys – have increased their absolute value, but with much less dynamism than Chinese overseas sales as a whole. The percentage share of total exports represented by the first three categories of products (see chart 8; Yin 2003) fell from 18.65 % in 1996 to 14.79 % in 2002 or almost 48.17 billion dollars. Meanwhile, the export performance of electronics (category 85) and auto parts (category 84) has been spectacular in absolute and relative terms. In 2002, these items generated 35.60 % of all overseas sales or 115.92 billion dollars.

2. In the case of imports, the itemized structure on the level of product categories reflects, on the one hand, high purchases of electronic products and auto parts, which have increased their percentage share from 35.31 % in 1996 to 42.48 % in 2002. On the other hand, the raw materials – oil and plastics, among others – represented more than 12 % of total imports in 2002.

3. China's commercial structure is experiencing an important transition. Products that use intensive labor continue to have a dominant weight, and they currently allow the country to generate a trade surplus. Of the five main product categories based on trade surplus, all use intensive labor – although export strength is greater in electronic items and auto parts.

4. There are a significant number of product categories with a much greater dynamic than the average annual growth rate for total imports, and even above the main items indicated above. It is in these items where the Latin American countries seemed to have a significant potential for exporting to China in the short term. The main product categories here would be foods, beverages, and raw materials (see graph 4).[42]

Graph 4: China: most dynamic imports (1996–2002) (average annual growth rate)
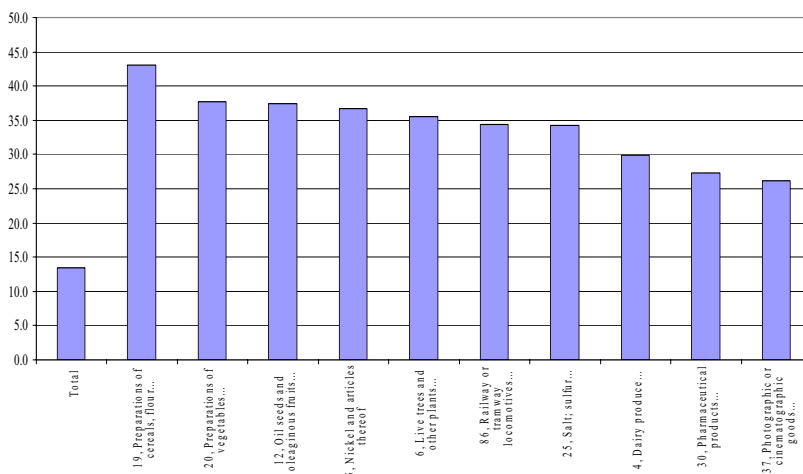
Source: Self-compiled, based on WITS (2004).

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42   This question will be analyzed in further detail –in accordance with the 6 digits of the Harmonized System and by country – in the following phase of the study and based on the appended statistical information and the company interviews

Chart 8: China: main exported and imported chapters (two digits of the Harmonized Tariff System (1996–2002) (percentage)

		1996	1997	1998	1999	2000	2001	2002
	EXPORTS (percentage of total)							
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, and parts and accessories of such articles. image and sound recorders and reproducers, and parts and accessories of such articles.	13.35	13.43	14.66	16.90	18.49	19.28	20.49
84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof.	7.21	7.50	9.07	9.82	10.76	12.62	15.11
62	Articles of apparel and clothing accessories, not knitted or crocheted .	9.65	9.26	8.47	7.99	7.57	7.12	6.32
61	Articles of apparel and clothing accessories, knitted or crocheted.	5.05	6.41	6.28	6.03	5.39	5.06	4.91
95	Toys, games and sports requisites; parts and accessories thereof	3.96	4.11	4.22	3.95	3.69	3.41	3.56
	Subtotal	39.22	40.72	42.70	44.69	45.90	47.49	50.40
	IMPORTS (percentage of total)							
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, and parts and accessories of such articles. image and sound recorders and reproducers, and parts and accessories of such articles.	13.65	15.45	18.80	21.27	22.54	22.94	24.82
84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof.	21.66	17.40	17.56	16.80	15.30	16.64	17.66
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes.	4.96	7.27	4.84	5.39	9.19	7.19	6.55
39	Plastics and articles thereof .	6.35	7.16	7.46	7.01	6.42	6.26	5.89
90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof.	2.55	2.56	2.84	3.03	3.23	4.01	4.57
	Subtotal	49.18	49.83	51.49	53.48	56.68	57.06	59.48
	TRADE BALANCE (main 5 chapters with surplus and deficit) (millions of $US)							
	Total	12,215	40,421	43,572	29,232	24,109	22,545	30,426
62	Articles of apparel and clothing accessories, not knitted or crocheted.	13,764	16,100	14,835	14,848	18,113	18,213	19,817
61	Articles of apparel and clothing accessories, knitted or crocheted.	7,444	11,477	11,245	11,420	13,041	12,981	15,460
95	Toys, games and sports requisites; parts and accessories thereof.	5,410	7,208	7,486	7,457	8,971	8,812	11,247
64	Footwear, gaiters and the like; parts of such articles.	6,750	8,183	8,099	8,373	9,530	9,766	10,786
94	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified or included; illuminated sign illuminated nameplates and the like; prefabricated buildings.	2,874	3,645	4,146	5,218	6,762	7,237	9,450
90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof	-554	354	296	-332	-963	-3,329	-6,117
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, and parts and accessories of such articles. image and sound recorders and reproducers, and parts and accessories of such articles.	1,222	2,563	586	-2,288	-4,677	-4,582	-6,566
39	Plastics and articles thereof.	-5,230	-5,353	-5,298	-6,486	-8,068	-8,562	-9,342
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes.	-956	-3,358	-1,616	-4,271	-12,825	-9,112	-10,886
72	Iron and steel.	-3,716	-2,243	-3,368	-5,120	-5,979	-8,716	-10,933

Source: Self-compiled, based on WITS (2004).

5. As can be seen in the charts in Statistical Appendix 2, at the present time, a significant part of Chinese exports are shipped via Hong Kong, and particularly electronic products and auto parts. In 2002, such exports generated a trade surplus of more than 20 billion dollars. At the same time, imports of items in these product categories were minimum. In the case of the United States, the main recipient of Chinese exports, the changes are also reflected in the total export structure, with a gradual but major decrease in exports using intensive labor – particularly yarn-textile-garment, toys and footwear, among others – and considerable strength in sales of auto parts and electronics, which represented 37.47 % of exports to the United States in 2002. More than 35 % of China's growing trade surplus with the United States, which was almost 42.79 billion dollars in 2002, can be attributed to these two product categories, while toys, furniture, clothing, and leather, among others, generate most of the current surplus.

6. At the same time, Chinese trade with Asian countries and particularly Japan and Taiwan has very different characteristics. In the case of Taiwan, for example, China posts a high and growing trade deficit that reached almost 31.48 billion dollars, corresponding to exports and imports for 6.59 billion and 38.06 billion dollars in 2002, respectively. Just three product categories – electronics, auto parts, and optical instruments – accounted for 54.15 % of Chinese imports from Taiwan.

2.4   China's entry into the WTO: benefits and commitments

After several years of arduous negotiations, on January 1, 2002, the People's Republic of China joined the WTO. In contrast to the membership of other socialist countries, China's joining the WTO, due to its size and implications, was not only a longer process, but in addition to the accession protocol, Beijing's membership required bilateral negotiations with 37 countries before it entered the international financial institution (Rodríguez y Rodríguez 2003; SE 2002). The Accession Protocol (WTO 2001a/b/c) of November 23, 2001 and China's signing the agreement on December 11, 2001, established detailed benefits and commitments. For China, the immediate benefit is access to markets and permanently obtaining most-favored-nation status and thereby not having to depend on annual reviews to have access to markets, such as with the United States (Wang 1992).

Along the same lines, future trade conflicts will be resolved multilaterally within the WTO. Finally, China's joining the WTO can also be understood as an integral part of a long-term strategy, which was initiated several decades previously, in which Beijing seeks to substantially increase its presence and regional and global power (Businessweek 2002b; Medeiros / Fravel 2004; Moore 2004; Rosen 1999).

Among the most important of China's commitments are:

1. Not to discriminate against foreign investments, granting national and most-favored-nation treatment to investments.

2. Immediate implementation of the Trade-Related Investment Measures and Trade-Related Aspects of Intellectual Property Rights provisions.

3. Most tariffs will be eliminated or reduced in 2004, with import quotas following suit in 2005. Tariffs on industrial and agricultural goods will be cut 9 % and 15 % on average, respectively.

4. With some exceptions – 134 products subject to state control (WTO 2001a, Annex 2A2) – export taxes will be eliminated. In the case of imports, those subject to state control involve 84 products in the eight digit HS, including items such as wheat, raw and vegetable oil, as well as chemical fertilizers, and cotton.

5. By 2005, China will eliminate a series of non-tariff measures, including licenses, quotas and requirements, and limitations on participation in import bidding processes.

6. Beijing will immediately restrict subsidies to the productive sector, particularly for agricultural products, to a maximum 8.5 % of the value of the output, as well as subsidies for agricultural exports.

7. Elimination of quotas and requirements based on company performance, including requirements on the level of trade balance, national content, technology transfer, and R&D results.

8. In 2005, all companies operating in China will be entitled to engage in trade, except for activities reserved for the state.

9. The purchase and sale of services will undergo major changes, with foreign investment to be allowed in sectors such as financial services

and banking, insurance, legal and professional services, telecommu-
nications, and tourism.

10. Despite Beijing's entry into the WTO, several countries reserve the
right to maintain their tariff restrictions on different Chinese products.
The respective countries and groups of nations – Argentina, the
European Community, Hungary, Mexico, Poland, the Slovak Repub-
lic, and Turkey – are mainly referring to textiles and clothing (WTO
2001a, Annex 7). Mexico will maintain antidumping measures on
imports coming from China – duties that in some cases are higher
than 1,000 % – for six years, that is, up until December 31, 2007, and
does not have to subordinate such policies to WTO dispositions.[43]

11. Other WTO member countries will be able to employ antidumping
measures for 15 years, based on the consideration of China as a non-
market economy, which allows them not to use domestic prices as a
reference point and thus use a more lax standard in their investiga-
tions.

12. China will eliminate price control mechanisms,[44] with some excep-
tions (several hundred products, including tobacco, pharmaceuticals,
and cereals) (WTO 2001c, Appendix 4).

13. These commitments and their progress will be monitored by the
WTO Transitory Safeguard Mechanism.

Since then and until mid-2004, a series of issues in relation to China's en-
try into the WTO have been examined (Cass / Williams / Barker 2003;
USDC 2003; USGAO 2003; USITO 2003; Yang 2003):

1. China will face its main challenges in the services sector (Mattoo
2002; OECD 2002; Rumbaugh / Blancher 2004; USITC 1999) and in
agriculture as a result of the new conditions for obtaining foreign in-

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43 Until 2002, Mexico imposed compensatory quotas on 1,310 Chinese products, particu-
larly in the yarn-textile-garment chain, although also on other items such as bicycles,
footwear, cigarette lighters, toys, and pencils (SE 2002, 9).

44 "China will allow market forces to determine the price of goods and services, in any
sector, that are traded internationally, and will eliminate the practice of charging multi-
ple prices for such goods and services." (WTO 2001c, 7)

vestment. At present, there are no quantitative estimates in this regard.[45]

2. Contrary to the rest of the countries that have joined the WTO, China did so without having brought a large part of its laws and internal norms and standards into line with those of the WTO, although it has undertaken important efforts in this regard since then.

3. It is expected that the tariff reductions, which had already begun to be applied in the 1990s, will be further extended and the process of replacing quotas for tariffs will continue, particularly in agriculture.[46]

4. Foreign companies will now have a clear legal framework that moreover guarantees their interests.

5. Since the 1990s, but increasingly with Beijing's entry into the WTO, the Chinese central government launched a "quasi-privatization" process involving the activities of its ministries, through which functionaries have apparently become businessmen and managers of companies and "quasi-state" institutions, although officials have not necessarily allowed the emergence of new companies nor increased the level of domestic competition (Brooks / Tao 2003; Gilboy 2004).

6. Since 2002, relatively few disputes have arisen. Although still not formally presented before the WTO, the main disputes have involved a differentiated tax treatment between imported and domestic products. All have to pay a 17 % VAT, which can be reimbursed according to criteria analyzed in chapter 2.2. However, and as will be discussed in the following chapter, imported microcircuits and semiconductors do not have the possibility of a rebate and it is felt that they do not receive "national treatment" (USITO 2003, 12).

7. Since China joined the WTO, institutions such as USITO (2003) and USTR (2004b) have emphasized that different standards – in the

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45 Martin / Bhattasali (2004), for example, point to serious problems in the information, as well as enormous differences between the real tariffs and what was negotiated in the WTO.

46 In 1982, the average weighted tariff was 55.6 %, which fell to 42.9 % and 12.7 % in 1992 and 2002, respectively (Yang 2003). For the same period, the average tariff was reduced from 42.9 % to 12.3 % and will diminish to levels below 10 % in 2005 (Ianchovichina / Martin 2003; Rumbaugh / Blancher 2004).

technical field and particularly related to telecommunications – have been proposed by local governments. According to these institutions, the objective is to achieve the same industrial protectionism that previously prevailed (USITO 2003, 13).[47]

8. With Beijing's entry into the WTO, China was formally included in the Agreement on Textiles and Clothing, whose fourth and final phase of quota liberalization concluded at the beginning of 2005 (Dussel Peters 2004). Based on the transitory safeguard measures for a 15 year period and the unilateral measures that a group of countries can adopt up to December 31, 2007, the increase in Chinese exports under this agreement could be gradual. These strict and sectoralized temporary commitments are singular in the history of countries' joining the WTO.[48]

9. In terms of electronics and information technologies, China became member of the Information Technology Agreement (ITA) upon joining the WTO. In addition to a significant tariff reduction on these products – import duties on which were on average 13 % in 2003 and will be eliminated for 2/3 of the products in the field – China agreed to liberalize the trade and distribution of services for electronic and high-technology products in three years. It should be recalled that up to 2002, these services were restricted to authorized companies.

10. Finally, although not least in importance, uncertainty exists with regard to the implementation of China's commitments to eliminate quotas, comply with the TRIPs, remove non-tariff barriers, government

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47 In the case of electronics, for example, the development of new standards for cellular telephones, DVDs, and logistical administration systems, the motivation could be to free up the cost of the patent.

48 In the safeguard process, when the request for consultations was received, China must maintain the shipment of textiles or textile products belonging to the product categories that are subject to the consultations at a level not higher than 7.5 % (6.0 % for the wool products category) of the amount shipped during the first 12 months of the past 14 months before the consultation request was filed. If a satisfactory agreement between the parties involved is not arrived at during 90 days of consultations, the consultations can continue and the member country filing for the consultations can maintain the import limits.

purchases, among others (ATMI 2001a/b; Businessweek 2002a; Pearson 2003; USGAO 2003, 2004a; USTR 2004a). [49]

Estimates – based on different methodologies and models – point to the main effects on China of its entering the WTO, among the most important of which are:

1. The high growth in domestic demand and the country's imports in the past few decades, as has been previously commented, is a question of growing interest on the part of transnational companies of goods and services. China's concessions in these fields, and particularly in services and agriculture, will increase the flows of FDI (Yang 2003).

2. China's entry into the WTO will deepen regional integration in Asia, as well as intra-industry trade and the patterns examined in the previous subchapter. The Association of East Asian Nations (ASEAN) member states and south Asian countries will continue increasing their exports of raw materials in different stages of the production or manufacturing process, as well as parts and components to be manufactured and exported by China (Rumbaugh / Blancher 2004; Yang 2003).

3. In general, and considering that China has already substantially reduced its tariffs during the 1990s, the effects on income and the increase in international trade are positive, and in some cases result in a growth in GDP of up to 5.8 % (François / Spinanger 2002). Rumbaugh / Blancher (2004, 13).[50] However, it should be pointed out that these effects can be underestimated, since the corresponding elasticity of trade does not incorporate significant structural changes, as could occur in the case of services. There are nevertheless important areas of agreement that clothing will be the main sector benefited by China's joining the WTO, while negative effects are expected in agriculture and particularly in food, beverages, and tobacco. In the case of

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49 The U.S. government reports that China has not sent information to the WTO Transitory Safeguard Mechanism on prices and subsidies (USTR 2004b, iii) and that it will increase pressure to achieve an effective monitoring of Beijing's commitments.

50 In this case, of all the countries considered in the overall model, only two nations would have their GDP negatively affected: Taiwan (-0.34 %) and Mexico (-2.8 %). The case of Mexico is of importance, due to the greater negative effects, as a result of both the elimination of the ATC as well as the liberalization of services.

textiles, important increases in imports and domestic production are expected due to their use as inputs for the growth of clothing exports. With electronics, very few positive changes are expected in terms of GDP and employment (Ianchovichina / Martin 2003; Martin / Bhattasali 2004, 50).

4. Few of these estimates offer a detailed analysis of the possible direct effects of these changes and their impact on a sectoral level in other markets in Latin American countries. But those undertaking this analysis agree that the effects for China will be particularly important, and positive in terms of GDP, employment, and exports, in labor intensive products such as textiles and clothing, leather and footwear and toys, among others (Ianchovichina / Martin 2003; OECD 2002, 142).[51] In most of these models, the conclusion is reached that Mexico will be the main loser in terms of GDP and exports, while China will be the beneficiary in the yarn-textile-garment chain and in electronics (Francois / Spinanger 2002). According to the most recent estimates, China could increase its U.S. market share from 16 % to 50 % with the elimination of quotas, while Mexico's percentage participation would fall from 10 % to 3 % and for the rest of Latin America the decline would be from 16 % to 5 %, with Central America and the Dominican Republic being particularly affected (Kyvic 2004).

2.5 The U.S. market: complementary exports or competitors?

Based on the statistical information obtained by the U.S. Department of Commerce, what are the characteristics of Central American, Chinese, and Mexican exports to the United States under the two digits of the Harmo-

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51 Hilaire / Yang (2003), based on the Global Trade Analysis Project (GTAP) model developed by the IMF, for example, feel that the CAFTA could have a positive effect on boosting regional GDP by 1.5 %, particularly due to the increase in clothing exports to the United States. However, in considering the liberalization of quotas in 2005, the positive effect diminishes substantially, since, they argue, exports would only increase by half of what is projected. In the same line of argumentation, Yang (2003) estimates that Latin America will be the main loser in the garment category with China's entry into the WTO, calculating a -32.2 % loss in its exports through 2006. None of these models considers Central America.

nized System? The following chapter will offer a detailed analysis of trade involving the yarn-textile-garment and electronics/PCs chains.

Statistical Appendix 2 provides details on the trade and particularly import structure of the United States at two and 10 digits for the 1990–2003 period. Among the main two-digit points are:

1. With an average annual growth rate of 7.5 % for the period, U.S. imports have undergone significant changes. The main exporters to the United States at the beginning of the 1990s – Canada, Japan, Germany, the United Kingdom, South Korea, Taiwan and France – experienced a fall in market share from 1990–2003.

2. Of the countries examined in the study, all posted average annual growth rates above the average for U.S. imports and have displaced nations such as Japan and the European Union during this period. Average annual growth in exports to the United States from Central America, China and Mexico was 13.0 %, 12.6 %, and 19.4 % for 1990–2003, respectively. If in 1990, Mexico, China and Central America were in third, 12th, and 32nd place in terms of U.S. imports, in 2003 their ranking was 3, 2, and 25. That is, Mexico maintained its status, while exports from China and Central America to the U.S. market increased substantially. Nevertheless, it should be noted that in 2003 practically all the countries saw their share of U.S. imports decline, including Central American nations and particularly Mexico, while China's share increased from 10.81 % to 12.13 % (see chart 9).

3. Production sharing processes – which allow for tariffs to only be placed on value added and not on U.S. produced parts and components – have played an important role for certain countries – particularly in Latin America and the Caribbean – and sectors in the United States (see charts in Appendix 2). While China benefited minimally from this tariff treatment, Mexico was the main beneficiary, followed by Central America and Caribbean countries. It should be noted, first of all, that production sharing processes have lost ground within U.S. total imports, falling from 8.23 % in 1990 to 3.92 % in 2003. Another factor in the decline was the North American Free Trade Agreement (NAFTA) and other treaties with Central America and the Caribbean that grant greater tariff benefits to their exports (Dussel Peters 2004). Secondly, production sharing processes

took on a greater importance – and continue to do so in some cases – considering that in 1990, 40.44 % of Mexican exports and 46.91 % of Honduran external sales, for example, entered the United States through this program, although the respective figures fell to 5.02 % and 0.49 % in 2003. Thirdly, production sharing programs gave preference to processes with high U.S. value added, and this is particularly the case with Latin American and Caribbean countries. The U.S. content of Latin American and Caribbean exports was, in most of the cases during the period, above 50 %, in some even higher than 80 %, while for China the corresponding figure was never greater than 20 % (see Statistical Appendix 2). Fourthly, most of the imports under production sharing programs involved the yarn-textile-garment sector, and to a much lesser extent, in electronics.

Chart 9: United States: total imports by selected countries (1990–2003) (percentage according to share in 2003)

		1990	1995	2000	2001	2002	2003	1990-2003	Average annual growth rate 1990-2003
	TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	7.45
1	Canada	18.56	19.59	19.00	19.14	18.23	17.92	19.00	7.16
2	**China**	**3.08**	**6.13**	**8.26**	**9.01**	**10.81**	**12.13**	**7.59**	**19.40**
3	**Mexico**	**6.01**	**8.34**	**11.18**	**11.52**	**11.61**	**10.98**	**9.52**	**12.55**
4	Japan	18.24	16.55	12.09	11.14	10.50	9.48	13.97	2.17
5	Germany	5.71	5.02	4.84	5.20	5.28	5.32	5.18	6.87
6	United Kingdom	4.06	3.60	3.55	3.63	3.50	3.40	3.66	5.99
7	South Korea	3.73	3.25	3.30	3.08	3.06	2.95	3.09	5.53
8	Taiwan	4.59	3.90	3.35	2.94	2.78	2.52	3.61	2.60
9	France	2.60	2.23	2.44	2.65	2.44	2.31	2.48	6.47
10	Ireland	0.35	0.55	1.36	1.64	1.94	2.06	1.06	23.06
11	Malaysia	1.06	2.35	2.11	1.96	2.07	2.03	1.95	12.91
12	Italy	2.56	2.21	2.06	2.09	2.10	2.02	2.21	5.52
13	Brazil	1.58	1.22	1.14	1.27	1.35	1.42	1.28	6.55
14	Saudi Arabia	2.03	1.10	1.19	1.09	1.05	1.37	1.24	4.25
15	Venezuela	1.86	1.25	1.45	1.25	1.24	1.33	1.33	4.74
16	Thailand	1.07	1.53	1.35	1.30	1.28	1.21	1.35	8.40
17	Singapore	1.99	2.50	1.59	1.32	1.22	1.14	1.84	2.96
18	India	0.65	0.77	0.89	0.86	1.02	1.04	0.86	11.41
19	Israel	0.67	0.77	1.07	1.06	1.08	1.02	0.90	10.95
20	Sweden	1.00	0.84	0.79	0.78	0.80	0.89	0.85	6.51
21	Holland	1.00	0.85	0.80	0.83	0.86	0.88	0.88	6.34
26	Hong Kong	1.91	1.38	0.94	0.85	0.80	0.70	1.20	-0.53
38	**Costa Rica**	**0.20**	**0.25**	**0.29**	**0.26**	**0.27**	**0.27**	**0.27**	**9.70**
39	**Honduras**	**0.10**	**0.19**	**0.26**	**0.28**	**0.28**	**0.26**	**0.23**	**15.90**
41	**Guatemala**	**0.16**	**0.20**	**0.22**	**0.23**	**0.24**	**0.24**	**0.21**	**10.67**
48	**El Salvador**	**0.05**	**0.11**	**0.16**	**0.17**	**0.17**	**0.16**	**0.13**	**17.89**
60	**Nicaragua**	**0.00**	**0.03**	**0.05**	**0.05**	**0.06**	**0.06**	**0.04**	**35.20**

Source: Self-compiled, based on Statistical Annex 2.

Central America, China and Mexico's export performance leads to the conclusion, at least initially, that they have all benefitted from growing U.S. imports from 1990–2003, although the strength of China's sales have been very much greater than those of Central America and Mexico. Furthermore, China has displaced Mexico and has become the second larger exporter to the U.S. market since 2002.

Based on the previous considerations, what does the U.S. import structure in the two digits of the Harmonized System from 1990–2003 tell us, both in terms of the value of its imports as well as the tariffs really paid on such purchases? The charts in Statistical Appendix 2 indicate that the five main product categories for U.S. imports – autos,[52] auto parts, electronics, oil, and optical instruments and apparatus – together represented 55.53 % of total imports in 1990–2003. At the same time, although the really paid tariff rate for exporting to the United States is relatively low and had tended to diminish – from 3.29 % in 1990 to 1.58 % in 2003 – major disparities exist on the level of product categories. Indeed, in 2003, garment paid tariff rates above 11 %, while electronics were charged 0.70 % (see chart 10).

Chart 11 contains the data to examine the issue of potential sources of conflict between Central American and Mexican exports and Chinese sales to the U.S. market. Based on the 10 main export product categories of Central America and Mexico in 2003, several points stand out in this regard:

1. In 2003, these 10 main export product categories represented 88.15 % of Central America's exports and 83.77 % of Mexico's foreign sales, while these same product categories only represented 30.29 % and 52.27 % for China, respectively. This is important, since these initial results reflect a greater potential for conflict with Mexico and a greater prospect for a complementary relationship with Central America. 52.27 % for China, respectively. This is important, since these initial results reflect a greater potential for conflict with Mexico and a greater prospect for a complementary relationship with Central America.

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52 The Wall Street Journal (Wonacott / White / Shirouzu 2004) emphasize that auto companies such as GM and VW, among others, decided in 2004 to undertake substantial investments for more than 3.00 billion and 7.00 billion dollars, respectively, while General Motors expects that China, currently the world's third largest auto producer for the company, will move into first place in 2025.

Chart 10: United States: total imports (two digits of the Harmonized Tariff System) (1990–2003)

	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	1990–2003	Average annual growth rate 1990–2003
	Percentage											
TOTAL	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	7,5
87 Vehicles other than railway or tramway rolling stock, and parts and accessories thereof.	14,98	13,76	13,33	13,21	13,54	14,45	13,47	13,95	14,65	13,91	14,04	6,9
84 Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof.	13,50	16,49	16,44	16,55	16,86	16,16	14,87	14,13	13,91	13,55	15,10	7,5
85 Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles.	11,79	15,36	14,48	14,04	13,90	14,24	15,29	13,54	13,07	12,52	13,75	8,0
27 Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes.	12,96	7,87	9,13	8,85	6,20	7,22	10,77	10,53	9,98	12,36	9,63	7,1
90 Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof.	2,69	3,03	3,00	3,03	3,10	3,00	3,01	3,05	2,99	3,08	3,01	8,6

Source: Self-compiled, based on Statistical Annex 2.

Chart 11: United States: imports from Central America and Mexico (main 10 chapters) and competition with China (1990–2003)

		Percentage of exports from CA				AAGR	Percentage of US-imports				Tariff rate			
		1990	1995	2000	2003	1990-2003	1990	1995	2000	2003	1990	1995	2000	2003
CENTRAL AMERICA														
	TOTAL	100.00	100.00	100.00	100.00	13.0	0.52	0.79	0.97	0.99	6.07	4.97	5.72	3.54
61	Articles of apparel and clothing accessories, knitted or crocheted	7.18	20.01	34.38	38.18	28.5	2.12	8.45	15.32	15.94	19.80	9.15	9.05	5.97
62	Articles of apparel and clothing accessories, not knitted or crocheted	21.71	31.60	22.30	19.25	11.9	3.86	8.34	8.00	7.19	19.42	9.37	11.27	6.12
8	Edible fruit and nuts; peel of citrus fruit or melons	20.08	12.51	7.26	8.23	5.5	23.13	26.48	21.78	22.32	0.10	0.01	0.01	0.01
85	Electrical machinery and equipment and parts thereof, sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles	2.72	2.76	4.43	7.86	22.6	0.12	0.14	0.28	0.62	2.73	1.11	0.47	0.48
90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof.	0.30	0.64	1.61	3.94	37.5	0.06	0.17	0.52	1.26	2.42	0.06	0.00	0.00
9	Coffee, tea, maté and spices	14.40	8.85	6.15	3.65	1.6	17.04	14.72	22.62	17.44	0.00	0.00	0.00	0.00
3	Fish and crustaceans, molluscs and other aquatic invertebrates	5.50	4.35	2.98	2.36	5.8	3.16	4.39	4.31	3.38	0.01	0.00	0.00	0.00
98	Special classification provisions	0.99	1.09	1.29	1.92	18.8	0.21	0.36	0.44	0.71	0.00	0.00	0.00	0.00
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes.	0.92	0.63	1.36	1.46	17.0	0.04	0.06	0.12	0.12	0.35	0.43	0.24	0.01
17	Sugars and sugar confectionery.	5.01	2.08	0.81	1.31	1.9	9.95	9.22	6.42	8.44	0.29	0.00	0.05	0.06
MEXICO														
	TOTAL	100.00	100.00	100.00	100.00	12.4	6.12	8.30	11.17	10.96	2.94	0.84	0.23	0.14
85	Electrical machinery and equipment and parts thereof, sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles.	25.68	26.71	26.32	23.82	11.8	13.32	14.43	19.22	20.86	3.94	0.59	0.18	0.20
87	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	12.12	16.72	19.15	18.39	16.1	4.95	7.35	13.47	15.46	2.78	0.82	0.11	0.05
84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	7.91	10.25	12.54	12.59	16.5	3.59	5.16	9.42	10.18	1.88	0.50	0.08	0.06
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes.	17.53	9.46	9.40	11.23	8.6	8.28	9.19	9.78	10.52	0.38	0.43	0.08	0.00
90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof	2.22	3.45	3.27	4.33	18.4	5.04	9.45	12.14	15.43	4.16	0.44	0.09	0.05
94	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified or included; illuminated sign illuminated nameplates and the like, prefabricated buildings.	2.18	2.26	2.81	3.66	17.0	10.48	13.03	16.03	17.02	2.27	0.26	0.04	0.01
98	Special classification provisions	3.34	3.36	3.15	3.08	11.7	8.32	11.48	12.38	12.62	0.00	0.04	0.02	0.02
62	Articles of apparel and clothing accessories, not knitted or crocheted.	1.84	2.92	3.77	3.02	16.8	3.88	8.12	15.61	12.56	16.82	1.88	0.45	0.73
61	Articles of apparel and clothing accessories, knitted or crocheted	0.29	1.58	2.57	2.12	31.0	1.02	7.02	13.25	9.85	19.04	1.36	0.38	0.73
7	Edible vegetables and certain roots and tubers.	3.06	1.95	1.17	1.53	6.6	68.43	67.16	39.79	38.74	7.04	4.83	2.33	0.80

	Percentage of exports from China				Percentage of imports from the US				1990-2003 AAGR	Tariff rate			
	1990	1995	2000	2003	1990	1995	2000	2003		1990	1995	2000	2003
CENTRAL AMERICA													
CHINA													
TOTAL	100.00	100.00	100.00	100.00	3.08	6.13	8.22	12.10	19.4	8.22	5.91	3.79	3.16
61 Articles of apparel and clothing accessories, knitted or crocheted	7.15	3.02	2.03	2.10	12.63	9.91	7.71	10.76	8.7	14.53	15.08	11.49	11.27
62 Articles of apparel and clothing accessories, not knitted or crocheted.	13.89	7.19	4.16	3.60	14.75	14.75	12.70	16.54	7.6	14.19	12.32	11.93	10.66
8 Edible fruit and nuts; peel of citrus fruit or melons.	0.05	0.03	0.03	0.04	0.38	0.47	0.64	1.34	16.6	0.80	1.41	0.55	0.88
85 Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles.	12.67	17.31	19.55	18.89	3.31	6.91	10.51	18.26	23.1	4.87	3.92	1.36	1.24
90 Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof.	1.01	2.80	2.81	2.13	1.16	5.65	7.69	8.37	26.5	4.90	3.83	1.30	1.18
9 Coffee, tea, maté and spices.	0.20	0.08	0.05	0.05	1.41	1.01	1.43	2.65	6.5	0.88	0.52	0.55	0.74
3 Fish and crustaceans, molluscs and other aquatic invertebrates.	2.61	0.61	0.52	0.59	8.95	4.76	6.38	10.33	6.5	0.04	0.26	0.17	0.01
98 Special classification provisions.	0.28	0.38	0.38	0.38	0.35	0.96	1.09	1.71	22.2	0.00	0.00	0.02	1.13
27 Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes.	4.35	0.97	0.73	0.30	1.03	0.73	0.56	0.29	-2.9	0.59	0.44	0.34	0.53
17 Sugars and sugar confectionery.	0.01	0.01	0.03	0.04	0.14	0.51	1.74	2.82	29.8	6.57	6.01	5.31	5.75
MEXICO													
CHINA													
TOTAL	100.00	100.00	100.00	100.00	3.08	6.13	8.22	12.10	19.4	8.22	5.91	3.79	3.16
85 Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles.	12.67	17.31	19.55	18.89	3.31	6.91	10.51	18.26	23.1	4.87	3.92	1.36	1.24
87 Vehicles other than railway or tramway rolling stock, and parts and accessories thereof.	0.44	1.10	1.95	1.62	0.09	0.49	1.19	1.41	31.9	6.54	6.51	5.77	4.39
84 Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	3.10	7.96	13.40	19.62	0.71	2.96	7.41	17.52	37.6	3.92	1.83	0.47	0.34
27 Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes.	4.35	0.97	0.73	0.30	1.03	0.73	0.56	0.29	-2.9	0.59	0.44	0.34	0.53
90 Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof.	1.01	2.80	2.81	2.13	1.16	5.65	7.69	8.37	26.5	4.90	3.83	1.30	1.18
94 Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified or included; illuminated sign illuminated nameplates and the like; prefabricated buildings.	1.82	4.34	7.20	7.76	4.40	18.49	30.22	39.78	33.5	5.81	5.13	2.59	1.97
98 Special classification provisions.	0.28	0.38	0.38	0.38	0.35	0.96	1.09	1.71	22.2	0.00	0.00	0.02	1.13
62 Articles of apparel and clothing accessories, not knitted or crocheted.	13.89	7.19	4.16	3.60	14.75	14.75	12.70	16.54	7.6	14.19	12.32	11.93	10.66
61 Articles of apparel and clothing accessories, knitted or crocheted	7.15	3.02	2.03	2.10	12.63	9.91	7.71	10.76	8.7	14.53	15.08	11.49	11.27
7 Edible vegetables and certain roots and tubers.	0.16	0.08	0.05	0.06	1.81	2.15	2.02	2.73	11.3	16.42	8.53	9.70	8.57

Source: Self-compiled, based on Statistical Annex 2.

1. In the case of Central America, in 2003, its clothing exports (product categories 61 and 62) to the United States represented almost 60 % of its total overseas sales, which contrasts with less than 30 % in 1990. For these items, as will be discussed in greater detail in the following chapter, Central America, China, and Mexico compete directly. In chapter 61 of the Harmonized Tariff System (clothing, knitted or crocheted), for example, in 2003, Central America exports represented 15.94 % of U.S. imports for such items, with the corresponding figures for Chinese and Mexican sales being 10.76 % and 9.85 %. More specifically, Mexican exports seemed to have lost strength since 2000, although the competition among the three countries/regions is significant. While, for product category 61, Mexican exports pay a 0.73 % tariff, Central American and Chinese products are charged 5.97 % and 11.27 %, respectively. In other product categories, such as number 85 – electronics – during the period in question, Central America's share of total U.S. exports increased more than five fold from 1990–2003, although it is 30 times less than China's percentage share. As opposed to these product categories, it is in others such as fresh fruit, coffee, fish, and shell fish, fossil fuels and sugars (product categories 8, 9, 3, 27, and 17) in which the Central America presence in the U.S. market is important and does not significantly compete with China. In addition, U.S. tariffs in all these cases are very low. In the case of fresh fruit, citrus, or melons (product category 8), for example, the region's exports posted average annual growth of 5.5 % and in 2003 represented 22.32 % of U.S. imports for these items, while the corresponding figure for China was 1.34 %.

2. Mexican exports to the United States have increasingly centered on electronic, auto, and auto part products (product categories 85, 87 and 84), representing around 55 % of such overseas sales to the U.S. in 2003, while oil continued to account for 10 % of exports from 1990–2003. Particularly in electronics and auto parts, and increasingly in auto sales, Mexico competes directly with China in the U.S. market. The electronics sector will be discussed in the following chapter, but it should be pointed out that during this period, Mexico and China's average annual growth rate was 11.8 % and 23.1 %, respectively. If in 1990, Mexican electronics exports represented 13.32 % of U.S. imports of such products and they increased to 20.86 %, Chinese sales rose from 3.31 % to 18.26 % during the same period. It should be

noted in this regard that in 2003, Chinese electronic products paid a tariff that was six times higher than that charged to their Mexican counterparts. Chinese auto parts exports (product category 84) experienced huge growth, an average annual increase of 37.6 % from 1990–2003, which compares with 16.5 % in the case of Mexico. Mexico's share of total U.S. imports of auto parts grew from 3.59 % to 10.18 %, while for China the increase was from 0.71 % to 17.52 %, in the process completely overtaking Mexico and other competitors. In automotive sector – product category 87 – Mexico has consolidated its position as one of the main suppliers for the United States, representing 15.46 % of U.S. imports for such items in 2003. However, China, with barely 1.41 % of U.S. automotive imports in 2003, is boosting its share by an annual average 31.9 %, double Mexico's results from 1990–2003. Also of significance is the case of furniture – product category 94 – which in 2003 represented 3.66 % of Mexican and 7.75 % of Chinese exports. Although both economies have increased their U.S. market share, in 2003 the Chinese completely overtook Mexican exports, with 39.78 % of U.S. imports, while the corresponding figure for Mexico was 17.02 %. In garment – as was analyzed in the case of Central America – the competition between Central America, China, and Mexico is stiff, although since 2000, Beijing seems to have significantly increased its presence, in contrast to the stagnation characterizing Central American and Mexican exports. Finally, although not least in importance, oil and other agricultural products such as vegetables and certain roots – chapter 7 of the Harmonized Tariff System – do not compete with Chinese products and have a major presence in the U.S. market. In the case of vegetables and legumes, for example, Mexican exports represent more than 60 % of U.S. imports of such products between 1990–2003. In all these cases, Mexico pays tariffs very much below those of China; in vegetables and legumes, for example, import duties were 0.8 % for Mexico and 8.57 % for China.

The previous analysis, based on the 10 main export product categories for Central America and Mexico to the United States, reflects tariff policies that have particularly benefited Mexico and, to a lesser extent, Central America, while such import duties are much higher for China. By the same token, the results of this analysis indicate a high degree of competition in the main product categories for exports to the United States by Central

America and Mexico with China. This competition especially involves clothing, electronics and auto parts, but also items such as furniture, optical instruments and apparatus, among others. With some exceptions – clothing, knitted or crocheted for Central America and autos for Mexico – the dynamic growth of Chinese exports and their increasing share of the U.S. market seems to have initiated a deep going process that began in 2000 of Beijing displacing its main competitors. The process seemed to be particularly far reaching in the case of light industry,[53] although with expectations that it will increase in other sectors such as autos and auto parts. On the contrary, in the energy product categories and agricultural and agroindustrial items, China's presence is reduced and, considering the overall analysis of Chinese imports in these fields, growing competition with China in the U.S. market cannot be expected.

2.6 Central American and Mexican trade relations with China

In this subchapter, we will be utilizing statistics on Central America – which were provided by SIECA based on two and six digits of the Harmonized System (see Statistical Appendix 4) – and BANCOMEXT for Mexican trade, also in line with the 2 and 6 digits of the HS (see Statistical Annex 3).[54]

Chart 12 indicates that for the 1994–2002 period, Central America's exports and imports posted average annual growth of 8.0 % and 9.6 %, respectively, while the corresponding figures for China were 75 % and

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53 In this sense, the results are compatible with data examined by CNIME / Global Insight (2003), Global Insight (2004) and Shadlen (2004). CNIME / Global Insight (2003) noted a massive displacement through 2012 in toys, furniture, and food, and to a lesser degree in clothing, electronics, auto parts, and autos. Based on simple studies conducted by Global Insight (2004, 14 ff.), the conclusion is that the yarn-textile-garment chain has a high competition potential with China, electronics and software are within the limit, while Mexico's auto, auto parts, and aerospace industry are relatively established and this will continue to be the case in the U.S. market.

54 As it is indicated in the respective statistical appendixes, the information for Central America provided by SIECA does not include maquiladora data, which is of particular interest for analyzing trade with China in its domestic market. In 2002, different registration problems were noted among the Central American countries, and therefore it is not possible to combine the information by groups of countries. The information on Mexico breaks down the data in temporary and definitive trade.

26.9 %. Central American trade with China and Hong Kong doubled during the period, reaching 525 million dollars or 2.1 % of imports and 1.2 % of exports in 2002. Of the nations in the region, it should be noted that only Costa Rica exports to China and Hong Kong, while all import from these countries. As a result, China and Hong Kong are posting a growing trade surplus with Central America, which reached 347 million dollars in 2002, although this contrasts with a total trade deficit of almost 11.15 billion dollars for the same year.

In line with the previous considerations, in what product categories have the region's imports from China and Hong Kong been concentrated? Graph 5 shows that up until now, Chinese sales to Central America do not play a predominant role in any of the 10 main export product categories from 1994–2001, which together represented 59.73 % of Chinese exports to the region during the period. In several product categories, performance has been very dynamic – particularly in footwear, clothing, knitted or crocheted, toys, and non-organic chemical products – although in none of the cases did such sales exceed 10 % of total imports under the respective product category in 2001. Even in the case of footwear, in which China's presence in the region is greatest, exports represented 9.06 % of total imports of such products in 2001.

Graph 5:   Central America: Imports from China in 10 main chapters (percentage over total respective imports) (1994–2001)
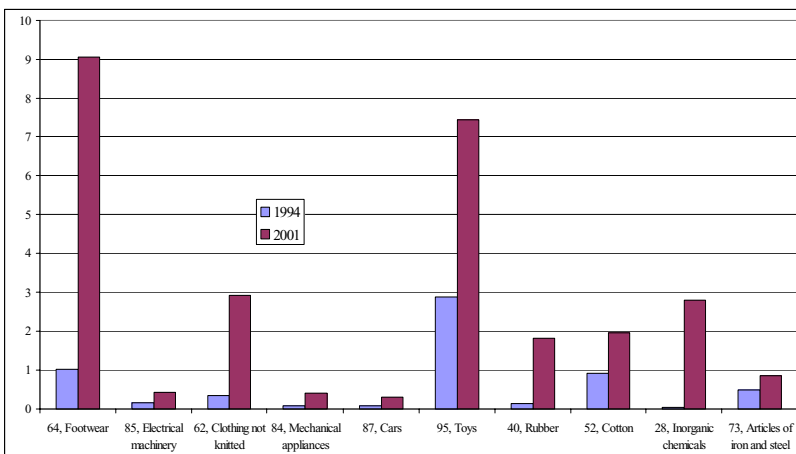
Source: Self-compiled, based on Statistical Annex 4.

Chart 12: Central America: selected main trading partners (1994–2002) (in millions of US $ and average annual growth rate)

	Imports (millions of $US)				Exports (millions of $US)				Trade Balance (millions of $US)		
	1994	2000	2002	AAGR 1994-2002	1994	2000	2002	AAGR 1994-2002	1994	2000	2002
Costa Rica	3,025	5,229	6,274	9.5	2,243	5,529	4,950	10.4	-782	300	-1,323
Developed countries	1,917	3,545	4,280	10.6	1,681	4,029	3,302	8.8	-236	485	-978
United States	1,336	2,553	3,261	11.8	927	2,723	2,353	12.3	-409	170	-907
Developing countries	1,108	1,684	1,993	7.6	562	1,499	1,648	14.4	-546	-185	-345
Mexico	137	367	380	13.6	22	104	114	22.7	-115	-263	-266
China	21	76	100	21.7	0	13	33	82.0	-21	-63	-67
Hong Kong	17	37	43	12.5	13	16	51	19.0	-4	-21	9
El Salvador	2,253	3,795	3,909	7.1	819	1,332	1,238	5.3	-1,434	-2,462	-2,671
Developed countries	1,303	1,767	1,739	3.7	401	472	333	-2.3	-902	-1,295	-1,407
United States	915	1,299	1,295	4.4	179	311	249	4.2	-736	-988	-1,046
Developing countries	950	2,028	2,170	10.9	418	860	905	10.1	-533	-1,168	-1,265
Mexico	105	257	295	13.7	21	13	32	5.3	-84	-244	-263
China	12	33	69	24.0	0	0	1	34.7	-12	-33	-68
Hong Kong	9	22	25	14.1	0	1	1	28.2	-8	-22	-24
Guatemala	2,648	5,171	6,304	11.5	1,503	2,699	2,462	6.4	-1,145	-2,472	-3,842
Developed countries	1,585	2,744	3,736	11.3	714	1,385	934	3.4	-871	-1,359	-2,802
United States	1,139	2,070	2,806	11.9	479	971	725	5.3	-660	-1,099	-2,081
Developing countries	1,063	2,427	2,568	11.7	789	1,314	1,528	8.6	-274	-1,114	-1,041
Mexico	186	576	553	14.6	67	120	76	1.5	-119	-456	-477
China	4	44	78	44.5	0	3	0	101.1	-4	-41	-78
Hong Kong	20	19	44	10.8	0	1	0	5.0	-19	-18	-44
Honduras	1,468	2,885	3,106	9.8	640	1,322	962	5.2	-828	-1,563	-2,144
Developed countries	919	1,630	1,554	6.8	512	919	626	2.5	-407	-711	-928
United States	683	1,338	1,196	7.2	332	701	446	3.7	-351	-636	-750
Developing countries	549	1,255	1,552	13.9	128	403	336	12.8	-421	-852	-1,216
Mexico	46	145	186	19.1	2	6	11	24.1	-44	-139	-175
China	7	15	21	13.5	0	0	0	--	-7	-15	-20
Hong Kong	9	12	14	6.8	0	0	0	--	-9	-11	-14
Nicaragua	853	1,721	1,802	9.8	351	629	635	7.7	-502	-1,091	-1,168
Developed countries	379	622	716	8.3	223	388	254	1.7	-157	-234	-462
United States	214	417	495	11.1	144	238	166	1.8	-70	-179	-329
Developing countries	474	1,099	1,086	10.9	128	242	381	14.6	-345	-857	-705
Mexico	27	87	102	17.8	11	23	25	10.6	-16	-63	-77
China	1	10	39	60.1	0	0	0	26.3	-1	-10	-38
Hong Kong	0	4	4	30.5	1	0	0	-11.4	0	-4	-4
Central America	10,247	18,801	21,396	9.6	5,555	11,512	10,247	8.0	-4,691	-7,289	-11,149
Developed countries	6,103	10,307	12,026	8.8	3,531	7,193	5,449	5.6	-2,572	-3,114	-6,577
United States	4,288	7,676	9,053	9.8	2,062	4,945	3,939	8.4	-2,226	-2,731	-5,114
Developing countries	4,144	8,494	9,370	10.7	2,024	4,318	4,797	11.4	-2,119	-4,175	-4,572
Mexico	501	1,432	1,515	14.8	123	267	257	9.6	-378	-1,165	-1,258
China	46	178	306	26.9	0	16	35	75.0	-46	-162	-271
Hong Kong	54	95	130	11.7	14	18	54	18.3	-40	-76	-76

Source: Self-compiled, based on Statistical Annex 3.

Thus far, the issue has not received much comment in the private and public sectors in Central America, although there seems to be an increase in the perception of a threat to the region's exports to the U.S. market.[55]

Mexico's trade is highly concentrated in the United States and in 2003 the U.S. market accounted for 88.78 % of its exports and 61.82 % of its imports (see chart 13). The percentage of Mexican exports earmarked for the United States increased during the 1990s. Mexican exports to China and Hong Kong posted average annual growth of 26.3 % and 10.6 % for the 1993–2003 period, respectively, and in the case of sales to China, performance was double that of the country's exports as a whole. Despite this dynamic, such sales represented barely 0.34 % and 0.16 % of Mexican exports in 2003. In 2003, Hong Kong and China together became the fifth most important recipient of Mexican exports,[56] after the United States,

Chart 13: Mexico: main trading partners (1993–2003)

	Exports					AAGR	Imports					AAGR	Trade balance				
	1993	2000	2001	2002	2003	1993-2003	1993	2000	2001	2002	2003	1993-2003	1993	2000	2001	2002	2003
	Amount (millions of $US dollars)						Amount (millions of $US dollars)						Amount (millions of $US dollars)				
United States	42,851	147,686	140,296	142,954	146,803	13.1	45,293	127,534	113,767	106,537	105,686	8.8	-2,443	20,151	26,530	36,397	41,117
Canada	1,569	3,353	3,070	2,832	2,832	6.1	1,175	4,017	4,235	4,480	4,121	13.4	393	-663	-1,165	-1,671	-1,289
Germany	430	1,544	1,504	1,237	1,753	15.1	2,852	5,758	6,080	6,066	6,275	8.2	-2,422	-4,215	-4,576	-4,829	-4,522
Spain	918	1,520	1,254	1,433	1,464	4.8	1,155	1,430	1,827	2,224	2,288	7.1	-238	90	-574	-791	-824
Japan	686	931	621	469	606	-1.2	3,929	6,466	8,086	9,349	7,623	6.9	-3,242	-5,535	-7,465	-8,880	-7,017
Great Britain and Ireland	202	870	673	625	561	10.8	593	1,091	1,344	1,350	1,242	7.7	-391	-221	-671	-725	-681
China	45	204	282	456	463	26.3	386	2,880	4,027	6,274	9,401	37.6	-342	-2,676	-3,745	-5,819	-8,938
Hong Kong	95	187	120	194	238	10.6	343	456	442	509	517	4.2	-249	-269	-322	-315	-279
Subtotal	46,795	156,294	147,819	150,176	154,740	12.7	55,728	149,632	139,007	136,808	137,152	9.4	-8,933	6,662	8,012	13,368	17,587
TOTAL	51,832	166,453	158,443	160,682	165,355	12.3	63,365	174,458	183,396	168,679	170,958	10.1	-13,533	-8,003	-9,954	-7,997	-5,603

Source: Self-compiled, based on Statistical Annex 3.

55 In addition to some references in newspaper articles, in 2003, the Revista INCAE, as an exception to the role, published several issues on the topic of China, although it did not directly link it with the Central American economy and/or specific cases of potential and/or real threats.

56 For a series of successful experiences of companies that have exported to China – including the Modelo brewery, Grupo Idesa Petroquímica and Canel's –as well as the logistical challenges that must be faced, see: http://www.bancomext.com (consulted in July 2004).

Canada, Spain, and Germany. The performance of Chinese exports to Mexico, however, has been much more dynamic, with average annual growth of 37.6 % from 1993–2003, with sales increasing from 386 million dollars in 1993 to 9.40 billion dollars in 2003. Since 2003, China has become the second largest source of imports entering Mexico, after the United States. In 2003, Chinese products represented 5.50 % of the total, in addition to 0.30 % from Hong Kong. Thus, despite Mexico's reduced trade with China, the latter has become the main country with which Mexico has a trade deficit and its second largest trade partner.

In what product categories of the Harmonized System have Chinese imports been most prevalent? Chart 14 illustrates the rapid and deep penetration of Chinese imports in its domestic market for the 10 main product categories. The main points to be noted are:

1. A very high concentration of Chinese exports in two product categories – auto parts and electronics – with average annual growth of 62.1 % and 49.3 %. This is the highest growth in the 10 main product categories from 1993–2003 and they represented 68.32 % of Chinese imports in 2003. Although in the rest of the product categories, the amount is significantly lower, the very high average annual growth rate for all the product categories is surprising.

2. Contrary to the case of Central America, imports from China indeed have managed to occupy a preponderant position in some product categories, particularly toys and manufactured leather goods, which in 2003 accounted for 48.40 % and 31.10 % of Mexico's total imports for these items. In other Mexico's total imports for these items. In other product categories, such as auto parts and electronics, the share of Chinese imports is still reduced and does not exceed 10 %, but it has been experiencing a major increase.

3. The two main product categories of imports from China are also the main generators of Mexico's high trade deficit. In 2003, the deficit in auto parts and electronics topped 6.00 billion dollars or 68.08 % of the trade deficit with China.

Chart 14: Mexico: imports from China from main chapters (2003)

	Importaciones chinas (en millones de $)					tcpa 1993-2003	Importaciones chinas (sobre importaciones totales)					Balanza comercial (en millones de $)				
	1993	2000	2001	2002	2003		1993	2000	2001	2002	2003	1993	2000	2001	2002	2003
TOTAL	386	2,880	4,027	6,274	9,401	37.6	0.99	1.65	2.39	3.72	5.50	-340	-2,676	-3,745	-5,819	-8,938
84 Nuclear reactors, boilers, machinery and mechanical appliances, parts thereof	26	415	684	1,386	3,272	62.1	0.28	1.64	2.50	4.95	11.20	-26	-208	-478	-1,036	-2,939
85 Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles.	57	905	1,385	2,255	3,150	49.3	0.45	1.96	3.20	5.68	8.46	-57	-886	-1,378	-2,244	-3,146
95 Toys, games and sports requisites; parts and accessories thereof.	32	236	287	348	373	27.9	7.90	36.23	40.14	40.53	48.40	-32	-236	-287	-348	-373
39 Plastics and articles thereof.	16	101	172	223	269	32.4	0.45	0.97	1.73	2.12	2.32	-16	-98	-170	-218	-259
90 Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof.	15	114	178	212	204	30.1	0.78	2.52	3.83	4.29	3.98	-15	-113	-162	-209	-202
94 Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified or included; illuminated signs illuminated nameplates and the like; prefabricated buildings.	5	61	98	145	164	42.0	0.83	4.42	6.38	9.93	11.12	-5	-61	-98	-145	-164
29 Organic chemicals.	16	83	101	137	144	24.4	0.93	2.25	2.82	3.67	3.40	-14	-82	-95	-122	-117
42 Raw hides and skins (other than furskins) and leather.	16	71	99	119	142	24.7	12.52	17.04	23.86	30.61	31.10	-16	-71	-99	-119	-142
87 Vehicles other than railway or tramway rolling stock, and parts and accessories thereof.	4	39	78	103	139	43.5	0.19	0.23	0.46	0.56	0.80	-4	-35	-73	-88	-124
73 Articles of iron or steel.	6	54	77	90	119	34.7	0.28	1.07	1.75	2.19	2.93	0	-54	-76	-90	-119

Source: Self-compiled, based on Statistical Annex 3.

In the case of Mexico, the penetration of Chinese imports has received major attention in the communications media and, to a lesser extent, in different specialized publications. The following is a summary of the different perspectives and viewpoints offered:

1. In general, although not very systematically and without turning to informational sources, business associations, the different levels of government, experts, and academic specialists, "concern" has been raised[57] in relation to the competition between Chinese and Mexican products in the United States[58] and the penetration of Chinese exports in Mexico. Clearly, and particularly since 2000, activities established in Mexico and oriented toward exports to the United States – which represents 90 % of their market – have lost their dynamism. From the end of 2000 to April 2004, the maquiladora export industry, probably the sector most sensitive to fluctuations in the United States – saw its employment levels drop 18.95 % and 22.85 %of its factories have closed their doors, even considering the initial recovery since the beginning of 2004.[59] According to initial studies, during this period of plant closings, 177 companies, or 33.8 % of the total number of enterprises, transferred their activities to China (John Christman, from Carrillo 2004). In manufacturing, the motor of growth of exports, since the end of 2000 to May 2004, Mexico has lost 14.44 % of its jobs.

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57 CNIME / Global Insight (2003, 1) concludes that "Mexico will witness an erosion in its current market share of U.S. imports, unless a new strategic vision is implemented [...] many of Mexico's competitors have rapidly been successful in obtaining market share of those goods that the United States has imported, while, depending on the series of goods, Mexico and not China is one of the competitor countries that has increased its penetration in the U.S. market in several of the product categories". Also see: Carrillo / Gomis (2003); Global Insight (2004); Neme (2002); The Economist (2004).

58 In addition, different sources point out "that Mexican products such as avocado, grapes, Mexican style food, etc. are not sold directly by Mexican companies" (García 2004, 18).

59 In this regard, Rosen (2003, 25) points out that "So China is eating Mexico's lunch, but more due to the Mexican inability to capitalize on successes and induce broader reform than to China's lower wage workers per se [...] Mexico's comparative disadvantages include an intrusive bureaucracy that is sometimes corrupt, sometimes simply hostile to the private sector; poor utilities and transportation infrastructure; under-investment in human development; and a less than dynamic industrial structure reflecting imperfect financial intermediation and residual statism. [...] A saving of two weeks in shipping time three weeks from China versus one from Mexico) is not alone going to rescue many maquiladora plants." Also see: CNIME / Global Insight (2003) and O'Boyle (2003).

2. In Mexico, an important amount of Chinese imports are introduced as contraband, either through the "triangulation" of such products – particularly via the United States – their incorrect registration, the registration of such imports as temporary, while they are in fact earmark for the domestic market and/or illegal importation (Romero Hicks / Molina Medina, 2003). This is also the result of the high tariff rates and compensatory quotas that Mexico adopted since 2002 with China's entry into the WTO.[60] There are no current estimates on the possible quantification of this contraband, although statistics have been advanced for sectors such as textiles and clothing, as will be seen in the following chapter.

For the time being, however, analyses on China's economic effect on both the Mexican domestic market as well as on the United States have been not very systematic and have been polarized between emphasis on the Chinese threat and the enormous potential demand that a market of 1.3 billion consumers can represent.[61]

3   Challenges and opportunities: the yarn-textile-garment chain

This chapter goes more deeply into the aggregate tendencies examined in Chapter 2, with the aim of concretizing the challenges and opportunities posed by China for the Central American and Mexican economies. In Chapter 2 there was a detailed examination of the extreme relevance of the yarn-textile-garment value chain[62] for the three countries, especially with regards to its exports to the United States.

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60 Paradoxically, clothing imported from China barely exceeded 35 million dollars in 2003.

61 One of the few exceptions is the study conducted by Luna Martínez (2003), which precisely seeks to differentiate between the creation and displacement of trade, emphasizing that electronics is the sector in which both countries directly compete in the U.S. market.

62 The yarn-textile-garment chain includes four segments: a) yarn or fibers, b) textiles, c) garments or clothing, and d) others (including accessories). These segments were utilized for grouping commercial information based on six and ten digits of the Harmonized Tariff System (See Statistical Annex for respective countries).

The chapter begins with a global perspective on the yarn-textile-garment chain with the aim of understanding the main actors and companies in its segments, as well as recent and expected changes in its medium-term industrial organization. The second section goes more deeply into the conditions of the chain in China, emphasizing its policies as well as current structures and elements that we consider relevant for under-standing the Chinese chain. Using the extensive Statistical Annexes as a base, the third section gives a breakdown of the segments and products in which Central America and Mexico compete with China, both in the United States and in their respective domestic markets.

First, however, it is appropriate to present a context for the two chains that will be analyzed in detail in this chapter and the next in regards to their 1985–2001 export performance in the world market. Chart 15 shows that for the yarn-textile-garment chain (in this case, for statistical reasons, yarn and textile are grouped together), there is increased Asian participation in the yarn-textile segment as well as in garments: In 2001 this amounted to 48.58 % in yarn-textile and 54.75 % in garments. In both cases China's performance is remarkable, with a significant increase in its world market share: in 2001 it was 12.48 % and 26.14 % in the respective segments. In this context, Central America and Mexico's world market share has been low although there has been an substantial increase in this period; in the case of garments the percentage share in 2001 was 3.54 % and 4.36 %, respectively, reflecting a six fold increase from 1985–2001.

In the case of Code 752 of the Uniform Classification for International Trade (UCIT) – office machines and electronic data processing – Central America's world market share was 0.03 % in 2001. Although a general Asian predominance is also evident – in view of the drop in United States and European Union shares – China alone increased its percentage share from 0.04 % to 8.78 % during the period, while Mexico's share rose from 0.25 % to 4.53 %. From this perspective, the chain is highly dynamic for China and Mexico, and is concentrated in a sector marked by increasing global demand.

Chart 15: Market shares of exports by selected countries in the world market (1985–2001) (percentages)

	1985	1990	1995	2001	1985	1990	1995	2001
	(market share)				(share in exports)			
Office machines and automatic data processors \a								
ALADI	1,49	1,25	1,54	4,67	0,38	0,71	1,01	2,87
CACM	0,00	0,00	0,00	0,03	0,01	0,02	0,03	0,33
Mexico	0,25	0,94	1,41	4,53	0,20	1,66	2,39	5,53
United States	42,33	24,83	18,56	12,71	4,68	4,86	4,29	3,37
European Union	37,82	30,30	26,27	25,30	1,25	1,68	2,12	2,69
Asia	15,87	41,04	51,15	53,22	0,83	3,66	5,12	5,83
China	0,04	0,33	2,60	8,78	0,03	0,27	1,60	4,50
Yarns and threads, woven goods, garments made of textile fibers \b								
ALADI	2,40	2,08	2,30	2,89	1,37	1,62	1,47	1,17
CACM	0,14	0,14	0,13	0,13	1,54	2,19	1,37	0,82
Mexico	0,36	0,45	0,81	1,44	0,64	1,09	1,33	1,16
United States	4,92	4,88	6,13	8,50	1,21	1,31	1,38	1,49
European Union	49,02	44,55	36,12	30,70	3,63	3,39	2,84	2,15
Asia	35,17	40,91	46,87	48,58	4,09	5,01	4,56	3,51
China	7,99	8,67	10,49	12,48	14,17	9,80	6,26	4,23
Clothing and accessories \c								
ALADI	1,44	1,62	2,70	5,20	0,82	1,41	2,17	3,29
CACM	0,37	0,79	1,99	3,54	4,03	14,34	27,41	36,11
Mexico	0,61	0,73	1,86	4,36	1,12	1,98	3,85	5,47
United States	0,93	1,51	3,08	2,62	0,23	0,46	0,87	0,71
European Union	35,29	32,13	23,48	16,56	2,63	2,75	2,32	1,81
Asia	52,00	52,24	52,99	54,75	6,09	7,19	6,48	6,17
China	8,45	15,27	23,07	26,14	15,09	19,39	17,32	13,78

\ a Refers to fraction 752 of UCIT
\ b Refers to Code 65 of UCIT
\ c Refers to Code 84 of UCIT

Source: Self-compiled, based on TradeCan (ECLAC 2004a).

In the case of Code 752 of the Uniform Classification for International Trade (UCIT) – office machines and electronic data processing – Central America's world market share was 0.03 % in 2001. Although a general Asian predominance is also evident – in view of the drop in United States and European Union shares – China alone increased its percentage share from 0.04 % to 8.78 % during the period, while Mexico's share rose from 0.25 % to 4.53 %. From this perspective, the chain is highly dynamic for China and Mexico, and is concentrated in a sector marked by increasing global demand.

3.1   The global industrial organization of the chain

The yarn-textile-garment chain has historically been one of the most highly regulated chains, and this is still the case. According to GATT, as well as NAFTA, CAFTA, and other free trade agreements, a large part of the norms and regulations have focused on this sector. Which aspects stand out, synthetically speaking, with respect to the trade norms that affect it, particularly pertaining to the United States?[63]

In the first place, at the present time the products in this chain are subject to the provisions of the Agreement on Textiles and Clothing (ATC) agreed upon in the Uruguay Round of the WTO, in which four stages were established – in 1995, 1998, 2002, and 2005, respectively, 16 %, 17 %, 18 % and the remaining quotas would be lifted – for the elimination of quotas that restrict trade. Even though all quotas in the yarn-textile-garment chain are supposed to be eliminated by January of 2005, it is important to consider that other trade barriers may exist, especially tariffs, but also antidumping norms that are relatively lax towards China, as analyzed in the second chapter.[64]

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63   For a detailed analysis, see: Appelbaum (2003); Appelbaum / Gereffi (1994); Bair / Dussel Peters (2004); Bair / Gereffi (2002); Buitelaar / Rodríguez (2000); Canaintex / Werner International (2002); Dussel Peters (2004).

64   During 2004 39 countries have endorsed the Istanbul Declaration, signed on March 12, 2004, in which the respective countries ask that the WTO postpone the last and most sensitive quota liberalization in the chain. The ATMI (2004), for example, considers that China could attain a share of 65 %–75 % of the United States imports in the chain, in view of the fact that this is the share that it has attained in other products for which quotas were recently abolished.

In the second place, taking the particularities of the United States market into consideration, ever since the eighties the trade regime has created diverse programs with the aim of fomenting the maquiladora industry in other countries and exclusively taxing the value added of the final product (and not the United States inputs). The production sharing regime, the 807 laws (now 9802), the Special Access Program, and the Caribbean Basin Trade Partnership Act (CBTPA) in 2000, are among the measures that particularly benefited Mexico and the Caribbean Basin countries and had significant effects on the yarn-textile-garment chain (as will be seen in chapter 3.1.3.).[65]

In the third place, the critical aspect – in NAFTA as well as in CAFTA, among other regimes – has to do with whether or not the processes carried out in the region – from cutting out a garment to processes such as serigraphy, embroidery, and the application of different kinds of washes and dyes, in Mexico and Central America – require the payment of tariffs since they are considered part of the "regional" norm of origin. Up until 2004, including CAFTA norms, the United States Tariff regimen has not been very flexible and has not permitted inputs from other countries – such as cotton, yarn, or Asian textiles – to benefit from this tariff arrangement (known as the "yarn forward" rule of origin). Nevertheless, in 1994, NAFTA allowed processes carried out in Mexico to be considered as regional without requiring the payment of tariffs on their value. (Bair / Dussel Peters 2004).[66]

In this normative context, what tendencies can be perceived in both the global and the United States industrial organization of the yarn-textile-garment chain? The chain is considered as one of the typical "buyer-led" or "buyer-controlled" organizations such as Wal Mart or K-Mart. Likewise, ever since the nineties different networks and segments of the yarn-textile-

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65 Evans / Harrigan (2004) emphasize that tariff measures favoring Mexico, Central America, and the Caribbean during the '90s effectively permitted a substantial increase in this chain's exports to the United States and negatively affected Asian exporters. With the elimination of quotas in 2005 it is possible that the Asian countries will recover their lost share even though the authors point out that a geographical advantage still exists.

66 Furthermore, and independently of the normative issue, it is important to consider whether the domestic production capacity of cotton, fibers, yarn, and textiles exists or not; if it doesn't exist, the origin of "yarn forward" has no real benefit, although it could be beneficial when plants are installed in these processes.

garment chain can increasingly be distinguished, regardless of whether products are made of natural or synthetic fibers. In the first case, for example, there is a need for raw materials networks (cotton, wool, silk, etc.), component networks (yarn, cloth, etc.), garment production networks according to a specific market (in the United States' case, there are links with Asia, Central America, and Mexico), export networks (via retail stores in the United States' case), and sales in retail, department, and specialty stores, and huge commercial chains (Appelbaum / Gereffi 1994).

In brief, there are three major actors in the chain, each with its respective networks: retailers, brand-name marketers, and manufacturers of brand-name products. The final markets are characterized by a high degree of segmentation – in Europe as well as in the United States and Asia, for example, where they are broken down into men's, women's, or children's clothing; sportswear; casual, or elegant apparel; or garments of different colors and styles, etc. – and according to the success of fabric stores, discount clubs, and outlets (Consolidated Stores, Costco, Dollar General, Family Dollar, K Mart, Target Corporation, and Wal Mart, to name a few) with respect to department stores (including JC Penney's, Dillard's, Neiman Marcus, May, Dayton-Hudson).

Considering this process of the concentration of control of the chain by department stores, at least five additional aspects are relevant.

First, there is a relative saturation of markets at a global level, despite exceptions made for specific segments. Thus, Canaintex and Werner International (2002) estimate that the world consumption of textiles, with average annual growth rates near 3 % in the sixties, will decline to less than 1 % during 1990–2020. The issue is significant since it implies much more competitive markets and strong pressure to diminish the cost of the garments.

Second, since the beginning of the nineties – in Asia since the sixties[67] – processes known as "full packaging" have become widespread. These processes – unlike those of the traditional maquiladora that receives inputs

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67 This issue is highly relevant; Asia has had experience in "full packaging" processes ever since the sixties, which has allowed them to make significant advances in integrating the segments of the chain, as opposed to Central America and Mexico, where these processes only go back as far as the nineties (Bair / Gereffi 2002).

and previously cut cloth from the United States – imply that the buyers, via contracts and strict product specifications, transfer the logistics, organization, and production of the garments to the subcontractor. The process, which implies a learning process and territorial diffusion with the subcontractor, also generates important financing costs that may be up to 7-10 times greater than those of the traditional maquiladora processes (Dussel Peters 2004).

Third, textile production can generate as much as 50 % of the costs of the final product, depending on the specific product. The difference in price between the textiles made in China and in the United States can be around 50 %; even including the costs of transport, quotas, and higher tariffs for the Asian garments, these continue to be more cost competitive than those of Mexico and Central America, which use United States inputs in order to benefit from preferential tariffs (Canaintex / Werner International 2002; Dussel Peters 2004). Additionally, the cost of labor in China and India in garment making is 56 % and 61 % less than in Mexico and Honduras (Canaintex / Kurt Salmon Associates 2002; Hightower 2004).[68]

Fourth, the segment of the chain that defines the specific processes – technological level, jobs and their quality, type of company, financing requirements, etc. – is crucial in understanding the potential for upgrading: in similar products, for example, whether one has a brand name or not can result in a price differential of 4 to 1 (Canaintex y Werner International 2002, 143); the price difference between a dozen plain t-shirts and the same quantity with a silkscreen design is 2:1 (Dussel Peters 2004).

Fifth, for several decades most of Asia has used full packaging processes and original equipment manufacturing (OEM); one of the main characteristics of this upgrading process[69] was a relatively rapid transition from the maquiladora process to full packaging processes. Other Asian companies, particularly the Japanese firms, continued to upgrade the value

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68 Also see: http://www.cacs.gov.cn/new/ztbd/gyfzck/wgfy/wgfy03/wgfy0704-5.htm (consulted in July 2004).

69 The "triangulation of manufacturing" in Asia – a process that began in the seventies and eighties, in which buyers place orders with manufacturers, who transfer part of the orders to other territories, including Mexico and Central America, and end up delivering the final products to the United States – has been significant in the learning process in Asia (Gereffi 2002, 15).

chain as they integrated OEM exportation processes into others like original brand manufacturing (OBM) and incorporated their knowledge, experience, and development in OEM into processes of design, sales, and marketing in both the domestic and global market.

3.2   The chain in China

With the urban reforms initiated in the 1980s, which included the textile and garment sectors, there was a push towards a higher degree of autonomy and towards the option of channeling all production to the market that exceeded the goal set in central planning. These incentives were significant for understanding the increase in production that followed. Likewise, these reforms allowed for an increase in companies with other forms of ownership, particularly the rural companies, which began to form alliances with the State-owned enterprises (SOEs): they made use of cheap labor from rural areas as well as high investments with important technological levels in the textile industry of the SOEs (Liu Sun 1997; Quinliang 2004). In 1998 a series of economic reform measures were adopted that significantly affected the yarn-textile-garment value-added chain: The Council of State reduced public sector jobs by around 4 million at central, provincial, and local levels, which also led to a reduction in the ministries from 40 to 29. In the particular case of the textile and garment sector, the Ministry of the Textile Industry formed part of the Council of State. In 1998, however, the National Chamber of Exports and Imports of Textiles and Garments was created, with the aim of coordinating the activities of the companies. In other words, the coordination of companies in this chain, as well as that of policies and strategies is now based in an institution with public-private interests.

As analyzed in detail in Chapter 2, the yarn-textile-garment chain is one of those that received the most subsidies during the 1990s (see chart 7); its percentage of the total subsidies that the central government granted to State-owned companies rose from 1.61 % in 1990 to 20.57 % in 1998. In order to enhance exports, the reimbursements given to the chain have been substantial.

China is now the number one international producer and exporter of textile and clothing products. In official circles there is a consensus on the chain's limitations, especially in regards to design, the development of brands, and

the manufacture of sophisticated materials for the manufacture of garments. China has specialized in the assembly stage and has a low capacity for designing its own fashions and brands, as well as for the final distribution of the products. In this context of seeking to upgrade the segments of the greatest value added, the Tenth Five-Year Plan for 2000–2005 has set the following goals:

1. Increasing the value added of the sector from 267.8 billion yuan in 2000 to 430 billion yuan in 2005, or an increase of 60.6 %.

2. Increasing the production volume of textile fiber from 12.1 million tons in 2000 to 14.25 million tons in 2005, and increasing the apparent consumption per person from 6.6 kgs. to 7.4 kgs. for the period.

3. Increasing exports from 52 billion dollars in 2000 to between 70 and 75 billion dollars in 2005, in other words an average annual growth rate (AAGR) near 7 %.

4. Modifying the structural relation between the segments of dresses, decorations, and industries from a proportion of 67 %, 20 %, and 13 %, respectively, to 64 %, 21 %, and 15 % in 2005, which reflects an explicit effort to develop the diversification of the chain.

5. Increasing labor productivity from 25,000 yuan per worker in 2000 to 35,000 yuan in 2005.

6. Reducing energy consumption for every 10,000 yuan of production by 15 %.

7. Using recycled water in production for 30 % of current consumption by 2005; in the prints sector, reducing water consumption for every 100 meters from 3.6 tons to 3.0 tons.

In order to reach the goals that have been set, the Chinese government will apply a series of measures[70]:

1. Reinforcing global productive capacity and avoiding duplication of investments, particularly in the saturated sectors.

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70 Also see the China National Textile Industry Council (CNTIC), http://www.cnfti.org. cn/ecnfti.htm.

2. Guaranteeing the stability of the surface area sown in cotton, with the goal of maintaining production at a level surpassing 4.5 million tons.

3. Providing incentives for technological progress by fomenting all

4. iances between companies and research centers and establishing development centers for the large companies (see the investment schemes examined in chapter 2).

5. Diversifying exports with a better product structure by means of the consecutive application of the competitive advantage derived from a cheap and abundant labor supply.

6. Continuing to pursue a sustainable development strategy.

What is the state of the yarn-textile-garment chain in China? In 2000 there were 18,900 state companies and companies with other forms of ownership[71] with a sales volume higher than 5 million yuan; with total assets of 977,300 million yuan, they generated tax revenue of 267,800 million yuan in value added taxes that represented 11.9 %, 8.3 % and 11.3 %, respectively, in the entire manufacturing industry. Employment was around 13 million (see chart 16).[72]

In the context of China's membership in the WTO and the elimination of quotas in the chain, official figures from 2003 reflect a rise in investment in this sector of 80.4 % as opposed to the 26.7 % registered at the national level. It is important to mention that the performance of fixed investment observed in the textile and garments sector was in fifth place in 2003, after the sectors of iron, aluminum, cement, and automobiles, with growth rates

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71 According to the USITC (1999, 8–5), at the end of the 1990s China had around 40,000 garment companies, of which 42 % were TVEs, 42 % with FDI, 7 % private, and 6 % SOEs. According to the same source (USITC 2004, E17), the number of establishments fell from 45,600 to 21,144 during 1997-2001, while the number of workers in these companies fell from 10.7 million to 7.9 million.

72 According to other employment sources, in 2002 there could have been close to 15 million (CNTIC 2004) and even as many as 18 million (Vallés Costas 2004). As a reference point for the following paragraphs, the maquiladora industry in Central America in 2003 had 383,245 employees (Remy 2003) and in Mexico 600,000 employees (Vallés Costas 2004), which is to say, they represent between 5.5 % and 7.6 % of the employees in China in the sector.

Chart 16:   Textile and Garments Industry in China (2000)

	Total	Per employee
Number of companies	18,900	
Number of employees	13,000,000	
Total assets (millions of yuan)	977,300	75,200
Value added (millions of yuan)	267,800	20,600
Profit and tax (billions of yuan)	57,880	4,400
Fiber production (millions of tons)	12.1	0.9
Synthetic fiber production (millions of tons)	6.9	0.5
Clothes (millions of pieces)	16,500	1,269,000 pieces
Exports (millions of dollars)	52,100	4,000

Source: National Reform and Development Commission of China, (consulted in July, 2004).

of more than 90 % of the production in the 1970s to less than 30 % in the mid-1990s, marking massive joint investments between the SOEs and TVEs (Moore 2002, 160).

According to diverse analyses and company reports, China's main benefits and advantages in the yarn-textile-garment chain now consist of (see chart 17):

Chart 17:   Cost comparison in $ (2004)

	MEXICO	CHINA
Salary per hour	2,35	0,4
Raw materials (Yarn NE 20/1)	1,22	0,88
Dye/Chemicals	0,06	0,03
Energy ($ / 1000 pounds)	6,5	2,3
Water	0,05	0,02
Transport to US ($ per pound)	0,08	0,16
Construction ($ per square foot)	52	12
Depreciation of equipment (years)	12	10
Bank interest rate	4,50%	2%
Income tax	32%	33%

Source: Hightower (2004).

1. Having gained experience in full packaging processes since the 1980s and, also having generated an important supply system, especially in textile production: since the 1990's China accounts for more than 25 % of the global spinning machines (USITC 1999), whose share has increased since then.[73] Furthermore, the country has integrated a good many of the segments of the value chain: raw materials (cotton and fibers); accessories; thread, yarn, and textile manufacturing; and the processing of these products into garments, rugs, and industrial textiles (USITC 2004, E5–E10). China now has the national and global supply and input companies necessary to make almost all products, while Mexico, for example, concentrates on only a few products (jeans and T-shirts), as does Central America (Hightower 2004). Around 60 % of production in the garment industry is exported and is mainly concentrated in the Guangdong province.[74]

2. It is crucial to understand Hong Kong and China's thoroughgoing commercial and productive integration: During the 1990s and even before its integration into China in 1997, Hong Kong companies had already transferred a substantial portion of their lower value added segments to China, and particularly to the SOEs (Quinliang 2004; USITC 1999). This experience has allowed China to substantially increase the technological level of its plants, and also to improve sales and distribution channels both internally and abroad. Even though this process is still in its first stages, international buyers increasingly find a small group of internationally known brands, as well as a high degree of innovation and design (Gao / Woetzel / Wu 2003; USITC 2004).

3. As opposed to other Asian countries, China has highly competitive maritime transport times, taking between 12 and 18 days to reach the East Coast of the United States, while other Asian countries may take three times as long to arrive. (USITC 2004, E9).

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73 In 2002 China had around 22.8 % of all spinning machines and had acquired more than 50 % of them during 2000–2002. On the contrary, the installed capacity in Mexico represented less than 2.3 % (Hightower 2004).

74 In the garment industry segment, there are a series of actors, including: a) Chinese companies with Hong Kong capital that export most of their production, b), the SOEs that sell their production for internal consumption, and c) the privatized SOEs or TVEs that are mainly oriented towards the internal market and make up the most significant part of this strata of enterprises (USITC 2004, E9).

4.   The success of China's exports in Japan and Australia is extremely important, a sign that the country can offer and export garments of the highest quality; since it has eliminated its import quotas with China, Australia imports practically all of its garments from China. (Appelbaum 2003).

In spite of China's growing percentage share in diverse markets and its global expansion, there is a concern about the future potential of its yarn-textile-garment chain in international markets, in view of existing conditions and structures as well as recent investment efforts. On one hand, as analyzed in Chapter 2, even though the conditions of membership in the WTO will probably allow for the elimination of quotas by 2005, they also include antidumping measures and other relatively lax practices that work explicitly against China.[75] In the second place, China has significantly reduced its reimbursements with respect to exports, especially in the case of the yarn-textile-garment chain,[76] with the objective of giving preference to other sectors, as will be seen in the next chapter. In the third place, China will also be faced with competition from other countries, including India, Pakistan, and Bangladesh, some of which have a cheaper work force than China does.[77] Fourth, the price of the inputs required in the chain, particularly that of cotton, has increased significantly, as a result of adverse climatic conditions.[78] In the fifth place, according to the Tenth

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75   From the perspective of the countries that have to abide unilaterally imposed quotas, Kathuria and Bhardwaj's analysis (1998) shows that in the case of India, as a counter-measure, the Indian government used subsidies as an incentive for exports to those nations where restrictions via quotas existed. These countries have to contend with generalized agricultural subsidies in the United States and the European Union, as well as additional subsidies to cotton producers approaching $ 3.706 billion dollars in 2001/2002 (BM 2003), on top of quotas and high tariffs.

76   In the case of exports in this chain, the reimbursement rate was reduced from 17 % to 13 %, http://www1.cacs.gov.cn/DefaultWebApp/showNews.jsp?newsid=201140001836, (consulted in July, 2004).

77   According to these official sources, India, as well as China, will be a winner in the liberalization of international trade. See: http://www.cacs.gov.cn/new/cybg/cybg04/cybg 0211-1.htm and http://www.cacs.gov.cn/new/ztbd/gyfzck/wgfy/wgfy03/wgfy0704-5.htm, consulted in July, 2004; USITC (2004, E11).

78   At the end of 2003, the price per pound of cotton in international markets registered a growth rate of 38 % in comparison with the level reached at the beginning of the same year, arriving at 0.75 dollars. The price of oil has increased significantly, and, moreover, the prevailing electrical energy scarcity in China must be considered. All these factors

Five-Year Plan for the Textile and Garment Industries, the state companies had operated at a loss on the aggregate level during the nineties: in 1997 this amounted to 10,600 million yuan[79]; according to other estimates during 1994–1996 the 4,031 textile companies of 1997 generated around $ 1 billion dollars in losses (USITC 1999, 8–8). Other authors estimate that around one third of the SOEs have recently operated at a loss (Hightower 2004). Sixth, China's garment industry must now import around 63 % of its total textile consumption (USITC 2004),[80] in case garment exports increase, a similar increase in textiles is expected. Finally, the textile industry and the SOEs, particularly, require significant technological advances; despite massive lay-offs and the process of modernization undertaken as of the mid-nineties, as well as the build-up of an excessive capacity, 90 % of the machinery in the cotton sector was more than 10 years old in 2001 (USITC 2004).

3.3 China's trade structure

The following implications regarding the international commercial structure of the yarn-textile-garment chain are drawn from Statistical Annex 2:

1. With an AAGR of 118.2 % during 1996–2002, exports in this chain in 2002 attained a percentage share of 16.94 % of all exports in 2002. Considering possible triangulations of this chain's exports via Hong Kong, the three primary recipients of Chinese exports – Japan, Hong Kong, and the United States – represented 23.55 %, 20.03 %, and 10.61 %, respectively, with a diminishing tendency in the case of Japan and a rising tendency in the other two cases. Mexico has become the tenth most important recipient, with 1.52 % of Chinese

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generate pressures on production costs in this sector. See: http://www1.cacs.gov.cn/De-faultWebApp/showNews.jsp?newsId=201140001836, http://caitec.mofcom.gov.cn/ article/200405/20040500218394_1.xml and http://www.cacs.gov.cn/new/ztbd/gyfzck/ wgfy/wgfy03/wgfy0704-7.htm (consulted in July, 2004).

79 As a result of these measures, it is estimated that around 1.4 million employees in this sector were relocated. See: http://www.drcnet.com.cn/new_product/drcexpert/showdoc.asp?doc_id=124853 (consulted in July, 2004).

80 This information, also used by official Chinese sources, is not corroborated by the commercial information presented further on.

exports in 2002. This export structure of the yarn-textile-garment chain is of the greatest importance given that, unlike Central American countries and Mexico, it reflects a relatively high level of export diversification, in which United States exports represent less than 1/3 of the exports in this chain, even if all exports from Hong Kong in 2002 are included.

2. The imports for this chain have been very low, and during 1996–2002 accumulated $ 155 dollars or 0.009 % of total imports.

3. As a result the chain is highly profitable for China, given that in 1996–2002 alone it generated more than $ 187 billion dollars or 86.52 % of China's export surplus during the period. Even considering the chain's low level of imports, China records a trade surplus with all the nations that it deals with in this chain – Japan, Hong Kong, and the United States being the main recipients.

Likewise, by segment, the chain reflects the following series of characteristics:

1. Despite a reduction in total imports, 89.64 % of the 1996–2002 imports are in the textile segment.

2. Graph 6 8 and Statistical Annex 2 reflect impressive growth in the Chinese exports of this chain, with an AAGR of 79.1 % during 1996–2002. It is interesting to point out that even though the garment industry occupies a primordial place in the chain – with 75.53 % of the exports during 1996–2003 – its share has diminished; significant growth in yarn and textile exports can be seen, with an AAGR of 164.4 % and 174.1 %, respectively. As will be examined further on, this tendency reflects a process of relative diversification of Chinese exports within the chain.

3. Considering China's 25 most important export products in this chain, the results reflect a relatively low level of concentration, given that they represent 42.01 % of the exports of the chain in this period.

**Graph 6:   China: Exports in yarn-textile-garment chain (1996–2002)
(millions of dollars)**
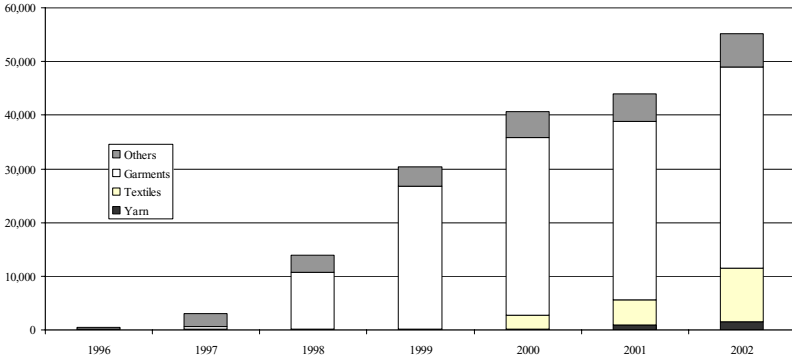
Source: Self-compiled, based on Statiscal Annex 2.

3.4   The United States market: complementary or competitive exports?

The United States market is of the greatest relevance for the exports of the yarn-textile-garment chain from Central Americaand Mexico; in 2002 these represented levels higher than 95 % and 92.73 % of their exports in the chain, respectively, while only at 10.61 %[81] for China. In which segments of the chain have the respective countries specialized in the United States market?

Statistical Annex 5 is a detailed presentation of the performance of the exports from these three countries to the United States during 1990–2003 in the yarn-textile-garment chain. Graph 7 is an overall reflection of the dynamic between the countries in question. On one hand, it shows that Central America, China, and Mexico were the principal exporters to the United States during this period – with an AAGR of 20.4 %, 13.3 %, and 23.3 % respectively – and in 2003 represented 34.44 % of the total imports in the United States chain. Furthermore, a distinction is made between two periods: a) 1990–2000, when United States imports increased, with an

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81   In the case of China it is important to remember that most of its exports are re-exported via Hong Kong.

AAGR of 12.1 %, and b) 2000–2003, with an AAGR of 3.3 %. During the first period, the exports from Central America and Mexico were very dynamic and significantly increased their percentage share in total exports to the United States, rising to 9.43 % and 13.49 % in 2000; since then, however, they have fallen to 9.19 % and 10.25 % in 2003, respectively. On the contrary, while China's growth dynamic was lower than that of the countries considered in the first period, with an AAGR of 10.9 %, in the 2000–2003 period it rose to 21.8 %. Since 2001 it has displaced Mexico and Central America, becoming the United States' principal importer in this chain; in 2003 its percentage share was 14.99 % – with Hong Kong, 19.92 % – much higher than that of its competitors.

Graph 7: United States: Imports in yarn-textile-garment chain (1990–2003) (millions of dollars)
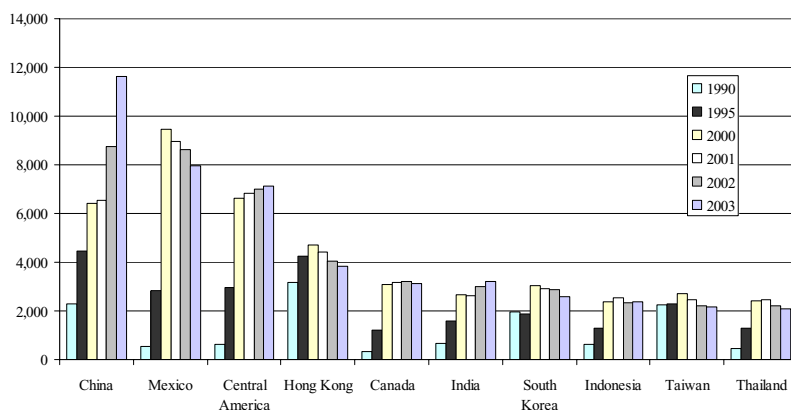
Source: Self-compiled, based on Statistical Annex 5.

Likewise, Statistical Annex 5 allows for a detailed analysis by country of the difference in the application of tariffs to United States imports. On one hand, an overall reduction is foreseen in tariff rates actually paid – based on the sum total of imports – on imports of this chain, a drop from 18.64 % to 10.88 % in 2003.[82] While Latin American countries have been the main beneficiaries of the tariff regime during this period, Asian

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82   This means that even in the face of the drop in the tariff rate, the United States took in $ 8.422 billion dollars in tariffs on imports in the yarn-textile-garment chain in 2003.

countries paid much higher rates: of this chain's main exporters to the United States, Mexico has benefited the most – its tariff rate fell from 18.12 % to 0.66 % during 1990–2003 – while that of Central America[83] diminished from 18.93 % to 10.88 %. On the contrary, China y Hong Kong are the countries with the highest tariff rates, 11.88 % and 17.46 % in 2003, respectively, which is to say, they are 1,694 % and 2,537 % higher than the Mexican rate.

These tendencies are reflected in the fact that even if Central America, China, and Mexico increased their percentage shares in United States imports in much the same way from 1990–2000, this trend changed during the second period: China alone had a 71.36 % rise in its share of United States imports in this chain (see graph 8).

Graph 8:   United States: Share in increases in imports in yarn-textile-gar-ment chain ((1990–2003) (percentage)
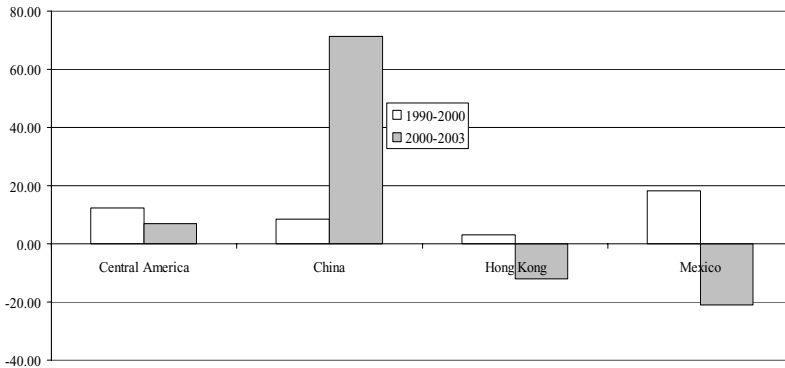
Source: Self-compiled, based on Statistical Annex 5.

In which segments of the chain do the countries in question participate? Chart 18 reflects the main characteristics of imports in the chain as well as their composition:

1.   While Central America and Mexico have specialized in garment exports – with 99.18 % and 86.94 % of their exports coming from this

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83   It is important to consider that big differences exist in tariff arrangements in the region: in 2003 Honduras paid a tariff of 3.16 % on its exports, while Guatemala paid 11.48 %.

Chart 18: United States: imports of products in yarn-textile-garment chain (1990–2003)

	Value (millions of dollars)						Percentage (US segment=100)				Percentage (respective country total)				Growth rate		Tariff rate	
	1990	2000	2001	2002	2003	1990-2003	1990	2000	2003	1990-2003	1990	2000	2003	1990-2003	1990-2000	2000-2003	1990-2000	2000-2003
Total																		
Yarn	361	1,404	1,293	1,304	1,310	12,868	100.00	100.00	100.00	100.00	1.68	2.00	1.69	1.89	14.5	-2.3	9.12	4.37
Textiles	2,077	5,454	5,087	5,492	5,407	55,225	100.00	100.00	100.00	100.00	9.68	7.77	6.98	8.13	10.1	-0.3	12.14	6.89
Garments	17,635	56,219	56,576	56,968	61,165	548,198	100.00	100.00	100.00	100.00	82.18	80.10	78.99	80.71	12.3	2.9	20.21	11.77
Others	1,385	7,107	7,398	8,421	9,554	62,923	100.00	100.00	100.00	100.00	6.45	10.13	12.34	9.26	17.8	10.4	10.90	8.30
Total imported by US	21,458	70,183	70,354	72,184	77,436	679,214	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	12.6	3.3	18.64	10.88
Central America																		
Yarn	15	11	11	8	8	150	4.09	0.79	0.63	1.16	2.32	0.17	0.12	0.26	-2.8	-9.7	7.07	6.56
Textiles	10	9	5	5	5	161	0.47	0.17	0.09	0.29	1.53	0.14	0.07	0.28	-0.4	-20.7	10.44	8.99
Garments	598	6,555	6,767	6,933	7,058	55,942	3.39	11.66	11.54	10.20	93.96	99.10	99.18	98.82	27.0	2.5	19.55	6.08
Others	14	39	36	41	46	359	1.00	0.55	0.48	0.57	2.18	0.59	0.64	0.63	11.0	5.2	10.55	7.40
Total exported to US	637	6,615	6,819	6,987	7,117	56,612	2.97	9.43	9.19	8.33	100.00	100.00	100.00	100.00	26.4	2.5	18.93	6.09
China																		
Yarn	6	13	11	15	13	135	1.56	0.95	1.01	1.05	0.25	0.21	0.11	0.18	9.0	-0.3	9.49	8.84
Textiles	182	324	268	396	454	3,709	8.77	5.95	8.40	6.72	7.99	5.04	3.91	4.97	5.9	11.9	9.99	9.05
Garments	1,773	4,477	4,602	5,594	7,258	53,321	10.05	7.96	11.87	9.73	77.82	69.60	62.52	71.43	9.7	17.5	19.21	12.59
Others	317	1,618	1,656	2,739	3,883	17,482	22.93	22.77	40.64	27.78	13.93	25.15	33.45	23.42	17.7	33.9	10.62	10.90
Total exported to US	2,278	6,433	6,536	8,744	11,608	74,647	10.62	9.17	14.99	10.99	100.00	100.00	100.00	100.00	10.9	21.7	17.25	11.88
Hong Kong																		
Yarn	3	1	1	0	0	24	0.73	0.08	0.01	0.19	0.08	0.02	0.00	0.04	-8.1	-45.5	12.51	1.97
Textiles	122	187	160	111	58	1,796	5.89	3.42	1.07	3.25	3.83	3.97	1.51	3.21	4.3	-32.3	8.66	8.37
Garments	3,033	4,478	4,211	3,877	3,702	53,795	17.20	7.97	6.05	9.81	95.42	95.30	96.96	96.13	4.0	-6.2	19.28	17.70
Others	21	33	31	45	58	344	1.48	0.47	0.61	0.55	0.65	0.70	1.53	0.62	4.9	20.7	9.55	11.71
Total exported to US	3,178	4,699	4,403	4,032	3,818	55,960	14.81	6.70	4.93	8.24	100.00	100.00	100.00	100.00	4.0	-6.7	18.80	17.46
Mexico																		
Yarn	33	250	226	214	213	1,903	9.19	17.79	16.23	14.79	6.17	2.64	2.68	2.80	22.4	-5.2	10.72	0.01
Textiles	40	398	376	430	392	3,288	1.95	7.30	7.25	5.95	7.52	4.20	4.94	4.83	25.7	-0.5	9.16	0.13
Garments	403	8,236	7,811	7,425	6,904	58,946	2.30	14.68	11.29	10.75	75.28	87.18	86.94	86.64	35.2	-5.8	20.34	0.73
Others	59	566	531	551	432	3,899	4.29	7.97	4.53	6.20	11.04	5.98	5.44	5.73	25.3	-8.6	13.22	0.06
Total exported to US	538	9,470	8,945	8,620	7,941	68,036	2.51	13.49	10.25	10.02	100.00	100.00	100.00	100.00	33.2	-5.7	18.12	0.66

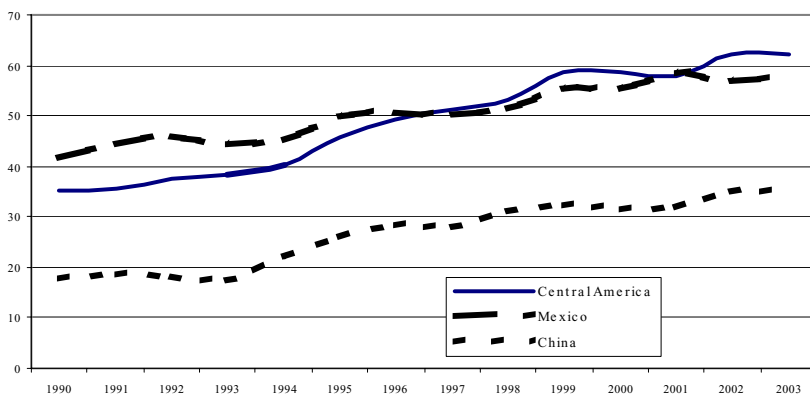Source: Self-compiled, based on Statistical Annex

chain in 2003 – China has diversified its exports considerably: those in the garment industry have diminished their percentage share in the total amount exported from 77.82 % to 62.52 % during 1990–2003, and the export of other goods, particularly accessories and inputs required for making clothes and other products like rugs (see Statistical Annex 5), has increased during 1990–2003, with an AAGR of 21.2 %, comprising 33.45 % of China's exports to the United States in this chain. This performance has allowed the segment of accessories or "other" Chinese exports in 1990–2003 to almost double the total United States imports and reach 40.64 % in 2003; it reflects the previously analyzed capacity of generated supply and the quest for diversification fomented by the previously identified policies.

2. During the 2000–2003 period, a period of stagnation in United States imports, China almost doubled the AAGR with respect to 1990–2000 in all its segments, with the exception of yarn: in the garment segment, for example, the AAGR was 17.5 %, while that of Mexico was 2.5 % and 5.8 %.

3. In the garment segment, Central America, China, and Mexico are "tied" in 2003, with 11.54 %, 11.87 %, and 11.29 % of United States imports, respectively. Nevertheless, Central American garment exports stagnated in 2000–2003, those of Mexico dropped, and those of China rose substantially.

4. The tariff rate paid by China in the garment segment was 12.59 % in 2003, 2.1 times higher than Central America and 16.8 times higher than Mexico.

Finally, at the 10digit level of the Harmonized System, the United States imports from the countries analyzed exhibit the following tendencies (see Statistical Annex 5):

1. Central America and Mexico reflect relatively high coefficients in the concentration of the 25 main export products out of the total exported to the United States in the yarn-textile-garment chain; in both cases its is near 60 % in 2003, while for China it is 35.39 % (see graphic 11). The issue is relevant, given that the export dynamic in the case of the first countries depends on a relatively reduced group of products at 10 digits of the Harmonized System.

Graph 9: **United States: Share of 25 main products in the total imports of the yarn-textile-garment chain (1990–2003) (percentage)**

Source: Self-compiled, based on Statistical Annex 5.

2. Charts 61 to 84 in Statistical Annex 5 analyze, at the 10 digit level of the Harmonized System, the 3 principal export products to the United States and the 5 principal competitors, respectively. Even though each fraction requires a detailed study, even for a company, a couple of aspects stand out. First, that the three main Chinese products only compete with those of other Asiatic countries like Korea, Taiwan, the Philippines, Thailand, and Sri Lanka, among others. Second, that the three main Central American export products to the United States compete with those of China, Hong Kong, Turkey, Mexico, the Dominican Republic, and other Central American countries. In the principal Central American export product – fraction 6110202075 (Sweaters, jerseys, pullovers, cardigans, vests and similar articles, either knitted or made of wool or fine animal hair) – that generated exports of 723 million dollars or 10.16 % of the total exports of this chain in the region in 2003, a strong competition between Guatemala, Hong Kong, Honduras, Mexico, and Turkey can be observed (see graph 10). The situation is much the same for the main Mexican products: they basically compete with those of Central American and Asian countries. In all these cases at the tariff fraction level, the high tariffs paid by the Asian countries stand out.

Graph 10: United States: 5 main competitors in imports of item 6110202075 (1990–2003) (percentage over total imports)
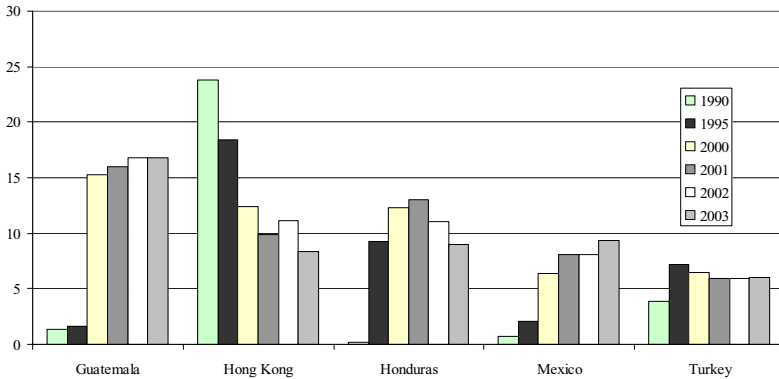
Source: Self-compiled, based on Statistical Annex 5.

3.5   Central American and Mexican trade relations with China

As previously analyzed according to Central American information sources, Central America has an extremely low level of aggregate bilateral trade with China, yet an important dynamic exists. Statistical Annex 4 and Chart 19 give a detailed presentation of the main commercial characteristics of the yarn-textile-garment chain for the region and each of its countries from1994–2002:

1.   During this period Central America didn't export to China.

2.   Even so, China increasingly attracted regional imports and, in conjunction with Hong Kong, attained 9.71 % of the imports in this chain in 2002, starting out from 4.20 % in 1994. China's AAGR was 40.8 % during the period.

3.   Costa Rica and Guatemala are the main importers in the Chinese chain, with a regional share of 75.84 % in 2003, especially in the segments of textiles and garments. In the case of Guatemala, for example, the imports of China and Hong Kong generated 19.39 % of all the imports in the chain in 2003.

Chart 19: Central America: Selected trading partners in the yarn-textile-garment chain (1994–2003) (in millions of dollars with the exception of average annual growth rate, AAGR)

	Imports (millions of $)				Exports (millions of $)				Trade Balance (millions of $)		
	1994	2000	2002	AAGR 1994-2002	1994	2000	2002	AAGR 1994-2002	1994	2000	2002
Costa Rica	118	473	449	18.2	96	435	423	20.3	-22	-38	-26.3
United States	38	346	275	28.0	65	390	390	25.1	27	44	114.6
Mexico	3	25	21	27.6	4	3	2	-9.8	1	-22	-19.6
China	2	20	31	46.0	0	0	0	--	-2	-20	-31.2
Hong Kong	2	2	3	4.9	0	0	0	--	-2	-2	-3.1
El Salvador	77	146	169	10.2	107	149	160	5.2	30	3	-8.4
United States	22	56	52	11.4	42	50	54	3.4	20	-6	2.0
Mexico	9	9	9	-1.3	6	6	11	7.7	-3	-3	2.6
China	1	2	9	37.2	0	0	0	--	-1	-2	-9.1
Hong Kong	0	3	4	32.4	0	0	0	--	0	-3	-3.7
Guatemala	71	99	165	11.1	72	91	55	-3.3	1	-8	-109.7
United States	20	21	28	4.5	16	27	5	-14.5	-4	7	-23.6
Mexico	5	19	17	16.1	6	5	3	-8.3	1	-14	-14.1
China	0	2	27	85.8	0	0	0	--	0	-2	-26.5
Hong Kong	3	1	5	8.6	0	0	0	--	-3	-1	-5.5
Honduras	77	78	100	3.3	17	48	56	16.2	-60	-30	-43.9
United States	46	41	34	-3.9	11	33	44	18.6	-35	-8	10.5
Mexico	1	3	3	9.4	0	0	0	--	-1	-3	-2.9
China	2	1	1	-13.2	0	0	0	--	-2	-1	-0.6
Hong Kong	5	1	1	-19.9	0	0	0	--	-5	-1	-0.7
Nicaragua	25	46	49	9.1	11	3	3	-14.6	-14	-43	-46.5
United States	3	5	9	14.5	6	1	1	-23.1	3	-4	-7.9
Mexico	0	1	2	24.1	0	0	0	--	0	-1	-1.5
China	0	1	9	54.9	0	0	0	--	0	-1	-8.6
Hong Kong	0	0	1	14.9	0	0	0	--	0	0	-1.4
Central America	368	841	933	12.3	303	726	698	11.0	-65	-116	-234.7
United States	129	469	398	15.1	140	502	494	17.0	11	33	95.7
Mexico	19	56	52	13.0	17	14	16	-0.2	-3	-43	-35.6
China	5	26	76	40.8	0	0	0	--	-5	-26	-76.0
Hong Kong	11	7	14	4.0	0	0	0	--	-11	-7	-14.3

Source: Self-compiled, based on Statistical Annex 4.

In the case of Mexico – whose information source makes a distinction between maquiladora and non-maquiladora activities – trade with China increased its weight during 1993–2003. Yet 91.94 % of the exports in this chain were oriented towards the United States in 1993–2003, showing an upswing in the period. On the other hand, Mexico, didn't export products in this chain to China, and its exports to Hong Kong came to $ 190 million dollars, or 0.22 % of all exports.

Nevertheless, the presence of the Asian countries, especially China, has been very dynamic in the chain's imports to Mexico. Graph 11 shows that the United States is the main exporter to Mexico during this period. On the other hand, despite high tariff rates – and also as a result of antidumping measures – Chinese exports increased, with an AAGR of 20 % during 1993–2003, attaining a percentage share of 4.58 % of Mexican imports in 2003 (or 7.96 % including Hong Kong).

Graph 11: Mexico: Imports in the yarn-textile-garment chain by selected country (1990–2003) (percentage)
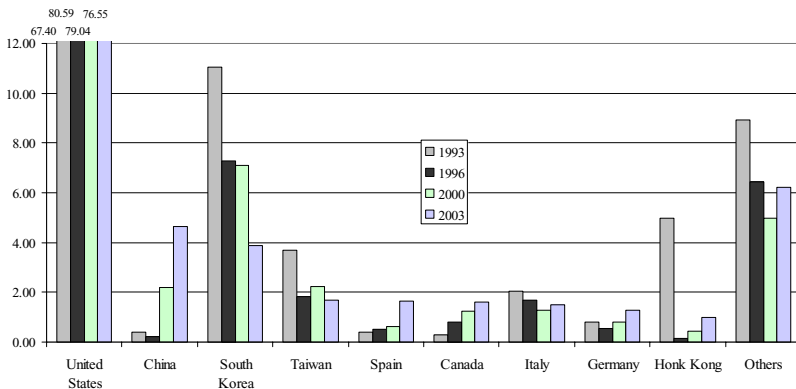
Source: Self-compiled, based on Statistical Annex 3.

Despite Mexico's important trade surplus in the garments segment of the total chain, it presents a growing trade deficit in the textile segment. For the 1993–2003 period, the surplus rose to $ 29.846 billion dollars and the deficit in textiles, to $ 25.772 billion dollars (see Statistical Annex 3). As a result, the trade surplus in the chain has gradually decreased to a low of $ 645 million dollars in 2003, in contrast to $ 1,480 million in 1997. If this

tendency continues, Mexico could become a deficit country within a short time in the chain (see graph 12).

Graph 12: Mexico: Trade balance in yarn-textile-garment chain by segments (1993–2003) (millions of dollars)
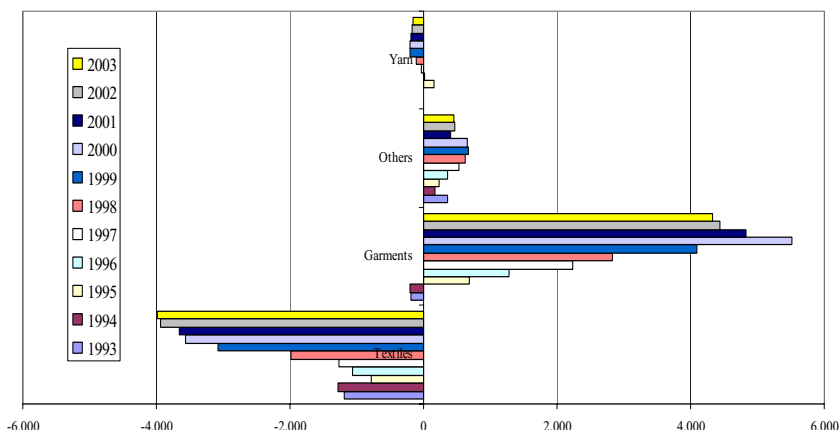
Source: Self-compiled, based on Statistical Annex 3.

The information presented above, however, is insufficient for under-standing the massive penetration of imports from this chain into Mexico. According to recent estimates, 58 % – around $ 9.5 billion dollars – of Mexico's domestic garment consumption is now illegal, with most of the goods coming from Asia and China. These same sources (CNIV 2004; SE 2003; Vallés Costas 2004) estimate that only 20 % of all domestic consumption is locally supplied, while around 22 % is legally imported. As mentioned in Chapter 2, these illegal imports may enter via the triangulation of merchandise, through changes in tariffs – in other words, new clothing is imported as used clothing under another tariff fraction – aided by the lack of inspection by United States customs agents,[84] and/or

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84   The USGAO (2004b) recognizes the existence of massive illegal imports of textiles that are not dealt with, at this time, by the United States Customs service, which is a cause for concern in view of the approaching opening in 2005. The Office highlights the lack of an automated system, the lack of inspections and incoherent practices at different the entry points, the legal possibility for temporary importers to change the destination of the merchandise without informing Customs agents, and the long periods of time taken for the goods to arrive at their legal destination, all of which particularly affects Mexico.

illegally due to robberies and illegal and/or informal sales. Antidumping measures generate powerful incentives for this process.

4 Challenges and opportunities: the PC chain

The PC chain[85] was selected because of its important export dynamic in Mexico during the nineties and because it is a relevant sector in the electronics industry. At the beginning of Chapter 3 there was an explanation that Code 752 of the UCIT – office machines and electronic data processing – concentrates its global exports in Asia, with a share of 53.22 %, which is similar to that of the garment industry. Likewise, Chart 15 reflects that China's world market share, which increased from 0.04 % in 1985 to 8.78 % in 2001, is much lower than that recorded in the yarn-textile-garment chain. In this chain, Central America's market share is minimal – 0.03 % in 2001 – while that of Mexico increased from 0.25 % to 4.53 % in the period. By contrast, the market shares of the United States and the European Union fell from a level of near 80 % to less than 40 %.

The structure of this chapter is similar to that of Chapter 3: it begins with a global perspective on the chain and then, in the second part, emphasizes the Chinese government's fomentation policies regarding the chain. The third section approaches the chain's commercial structure in China, the competitive/complementary relations existing among the exports to the United States by the three countries considered here during 1990–2003, as well as the bilateral trade relations of China with Central America and Mexico.

Unless it is absolutely necessary, references or explanations of data sources will not be given in this chapter so as not to repeat what has already been stated in Chapter 2.

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85 Specific PC activity consists of three segments: a) storage devices, b) electronic computers, and c) other peripheral equipment (AEA 2003). In Statistical Annexes 3 and 5 the sector and its respective segments are defined, at 6 and 10 digits of the Harmonized Tariff System.

4.1   The global industrial organization of the PC chain

Unlike the yarn-textile-garment chain, the PC and electronics chains, have gone through an important trade liberalization process ever since the nineties. Even though non-tariff barriers persist, they are minimal or next to nothing, like the tariffs themselves. These are some of the basic factors that allow for the transfer of segments of the chain in the industrialized countries to other territories on the global level.

This process of the transfer of segments of the PC chain has been accelerated during the nineties by United States companies as well as European and Japanese firms (Dedrick / Kraemer 1998). Another characteristic of this chain – unlike the yarn-textile-garment chain – is the growing presence of producer-led company networks: thousands of companies at the global level are organized into production and supply tiers around OEM (original equipment manufacturing) companies or brand-name companies like IBM, HP, Apple, Ericsson, Toshiba, Dell, Sony, Acer, and Siemens, among others.

The main features of the PC chain are summarized as follows:

1.   In general, the computer industry is highly capital intensive, yet there are important differences displayed according to the segment; this implies high entry and exit barriers for the respective companies.[86] These barriers, particularly high in the production of parts and components such as semiconductors, DRAMs, monitors, and others – where a plant installation is the result of several years of research and development – imply that an initial investment can amount to several billion dollars.

2.   The electronics industry and the PC chain are characterized by a high degree of innovation: it is estimated that every 18–24 months, the number of transistors in a chip is doubled, a trend known as Moore's Law (Yu 1998). This process is characteristic of this industrial organization and helps in understanding the high degree of competition in all segments of the chain, as well as the speed, volatility, and

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86   Known as Rock's Law, the cost of building a semiconductor plant doubles every four years, from around $ 100 million dollars in the mid-eighties to around $ 3 billion dollars at the current time, to more than twice this amount in 2007.

reduced cycle time of the innovation process, the technology itself, and the depreciation of the production of generations of products, including the PCs themselves.

3. Even though scale economies and increasingly standardized processes and products play a crucial role in the value chain, there is also a high degree of diversification of the final products (and, consequently, of the required processes), with increasing territorial and cultural modalities. These divergent dynamics[87] require diverse strategies on the part of business leaders in the respective value chains, and, in many cases, allow for the creation of important market niches.

4. The PC value chain can be broken down into the following general segments, which go from lesser to greater added value: a) Assembly and sub-assembly processes for parts and components b) Procurement of parts, components, products, and processes with OEM and ODM (original design manufacturing) companies, c) Manufacture of parts and components, d) Engineering and design of products and processes, e) Research and development of products and components. Moreover, there is a series of segments consisting of sales and distribution services and support services, which generates a high level of value added. Recent studies and analyses stress that the most important part of the value added in the electronics industry is generated through software, which means that a change can be perceived in the industry's center of gravity towards design standards and knowledge-intensive services (Ernst 2000). Each segment requires highly sophisticated enterprises with their respective supply circles and sub-segments.

5. In the computer industry, the transfer of segments in the value chain has become an extremely widespread practice, first in the United States in the eighties, and later in Japan and Europe. For the three producers, Asia has become the main source of parts and components, and shows increasing strength in R&D. At the present time, the transfer of segments of the chain has been profound in the most highly

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87 Some authors (Lüthje 2004) emphasize that the industry's industrial organization is increasingly "modular": parts and components, as well as services, are obtained from CMs and on the market, while the final product configuration follows OEM specifications.

labor-intensive segments, particularly the assembly and sub-assembly of parts and components, but increasingly so in the manufacture of parts and components, including the manufacture of semiconductors, as in Asia and Costa Rica.[88]

6. The industrial reorganization led by the brand-name companies has been significant since the eighties and has deepened the vertical structure. In general, these companies control the standards pertaining to parts, components, products, and processes, as well as the supply companies in different circles, also known as "*Wintelism*" (Borrus / Zysman 1998), in which a company like Microsoft imposes its standard on operative systems and software, while Intel does the same with microprocessors and hardware.[89] In a parallel fashion, they have transferred (completely, in some cases), the segments linked to the manufacture of products to national and global suppliers. Companies like IBM and HP, among many others, no longer participate in manufacturing processes or fabless companies. Since the nineties the electronic contract manufacturers (CMs) have emerged, and, in the context of the "full packaging" referred to in the previous chapter, they take complete responsibility for production of parts and com-ponents, and even the assembly of the final product (Solectron, Flextronics, SCI-Sanmina, and Celestica, among others, with sales higher than $ 10 billion dollars en 2001 (Lüthje / Schumm / Sproll 2002).[90] These company networks – with a percentage share of

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88 Dutheil (1998), in a study for the electronic products and semiconductors company ST Microelectronics – 40 % property of the Chinese company SEG High-Tech and 60 % of the French company St. Microelectronics, with plants at a global level – has observed that its plant, in comparison with another in Muar (Malaysia), the Shenzhen plant, pre-sents lower productivity levels, higher indirect cost levels, and salary levels that are al-most 30 % lower.

89 Zysman (2003, 7) comments: "Consider the PC, the personal computer. Where in the value chain would you want to be? Do you want to be the producer of the final product, the box, even if, like Gateway or H.P., the box carries your logo? Or would you prefer being the producer of the constituent elements, the components of the system such as the chip, the screen, and the operating system? The value added is in the components, the subsystem, and in that sense that standards to which they must be built."

90 Lüthje (2004) analyzes this kind of company in detail. Asia is the global leader, concen-trating its CM company activities in Malaysia and China; Mexico in North America; and Hungary, Poland, the Czech Republic, and Rumania for Europe. Even though the CMs specialize in basic, standardized manufacturing processes, the final assembly,

between 15 % and 20 % of the global added value in the informational technology chain – compete in order to offer their services to the OEMs, which concentrate on the chain's organization and logistics, its parts, components, respective companies, and particularly on the development of future generations of technology. A basic element of the logistics of this global value chain is that its weakest segment determines the behavior of the entire chain; in other words, a supplier's error, independently of the complexity and/or cost of the process or product, can delay the final product or even cause its failure.

7. The value chain led by these big brand-name ETNs or OEMs now function in "real time; the old "just in time" industrial organization is no longer sufficient or functional. This shift is also the result of the fact that many companies like Dell offer to send their final products within 48 or 72 hours in the United States directly to the client, thereby reducing the number of inventories and intermediaries in the chain. As a result, the segments of the value chain communicate with each other by means of electronic systems in real time, as they also do with their suppliers. The response speed of the segments, in addition to costs and nearness to markets, are important aspects for the establishment of the respective segments, and particularly of the manufacture and the final configuration of the products. The competition between countries in integrating themselves into diverse segments of the computer value chain is very intense. Asia has been particularly successful in increasing its share in the manufacture of parts and components, as well as in their assembly (Dedrick / Kraemer 2001; Kraemer / Dedrick 2002).

8. At a global level, the electronics industry, especially the CMs and the producers of parts and components, increasingly use labor agencies for various reasons. On one hand, the CM businesses don't require the payment of the same salaries and services as their workers do, resulting in significant reductions in remuneration. In the second place, they guarantee worker attendance – in most cases social security is

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software application, and equipment testing, important differences exist with regards to plant location. The Product Introduction Centers, especially in industrialized countries, for example, design prototypes and begin with production lines, concentrating the large part of the highest value added activities.

minimal or non-existent – with less rotation, and prohibit unionization (CAFOD 2003; Woo 2001).

9. Several different authors (Dedrick / Kraemer 1998; Ernst 2004) point out that one of the main tendencies in the PC and electronics industries since the nineties has been the genesis of Asia as a massive export platform (see chart 15). China, Korea, Singapore, and Taiwan have percentage shares of more than 25 % of the world production in the manufacturing of electronic products based on late international knowledge[91] as suppliers for OEM companies and the CMs themselves.

10. Since the end of the year 2000 the computer industry has been immersed in a severe crisis. On one hand, there is a widespread excess supply of parts and components, as well as final products, which has led to drops in their respective prices. The integration of several countries, especially Asian, into diverse segments of the value chain, has intensified this excess supply. On the other hand, and independently of structural causes, the recession of Japan and the United States since 2001 has also intensified this performance. Since the end of 2003 the chain would seem to have initiated a recovery process, led by the increase in demand in the United States (Runiewicz 2004) in office and computer equipment, estimated at 15 % for 2004, with an intense competition process between companies like Dell and HP (Bank / McWilliams 2004). In addition, it is estimated that there will be a continuation of the intensification of the transfer of segments and jobs in the informational technology and electronics industries, increasingly in services (ITAA 2004).

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91 Ernst (2004) points to the relevance of the concept of "late innovations" in the case of these countries –excluding Japan– since they have been able to innovate in highly complex technological knowledge industries, even with significant deficiencies relative to the OEMs and R&D in industrialized countries. So innovation is not limited to "cutting edge" technologies and centers of excellence.

4.2   The chain in China

a)   Policies to promote high technology

In 1988, in the face of accelerated renovation of sciences and technology at the world level, and in the context of the diversification and reorientation of the export structure (see chapter 2), the central government implemented the "China Torch Program" with the aim of fomenting the development of new, high technologies and their respective applications in the industries. One of the main components is that of constructing high-tech industrial parks and establishing support centers for high tech industries, a responsibility of the Chinese Science and Technology Commission (formerly the Ministry of Science and Technology).

In the Ninth Five-Year Development Plan (1996–2000) the policies covered all kinds of computers, but particularly the PC with the intention of increasing the Chinese components and the capacity to produce peripheral equipment like monitors, printers, hard discs, and to establish several large companies in this segment. With this aim in mind, large companies like IBM, HP, Toshiba, and Compaq were invited to make joint investments with Great Wall, Legend, Trontru and Stone and Star, among others (Kraemer / Dedrick 2002).

In line with the Tenth Five-Year Development Plan that covers the 2001–2005 period, the high-tech sector is considered as strategic. The need to foment the development of high-tech industries was identified in order to achieve competitive advantages at the national level through a variety of actions, including[92]:

- Carrying out large-scale projects with the following concrete aspects: a high-speed information network, integrated circuits,[93] biological technologies, state of the art airplanes, and rocket transporters.

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92   It should be mentioned that since 1997 China has doubled its expenditure in R&D to $ 13 billion dollars and has established three new regions for electronic production (the Zhujiang Delta, the Yangtze Delta in Jiangsu and in Beijing) (USDC 2003).

93   In the case of semiconductors, the plans are to increase production from $ 2 billion in 2000 to $ 24 billion in 2010.

German Development Institute

- Promoting the development of digital electronic products, new printers, materials, and electronic equipment, renovated Chinese medicines, and satellite applications.

- According to the goals set for the software sector, sales will reach 250 billion yuan (around $ 30.5 billion dollars), the national production share will rise to 60 % of aggregate supply, and exports will increase to $ 5 billion dollars, which will represent 3 % on the international market.

Parallel to this initiative, numerous central government actions are planned to promote the software industry. Since it was created in 1998, the Ministry of the Information Industry has actively fomented the software sector. In 2000, a sectorial integral development program was published for the first time in China (MII 2000), designed and applied jointly by the ministries of Finance, Information Industry, Commerce, and the Customs Department. Since then, the development of the high-tech sector, especially in the area of software and computer-related products, has formally begun to receive the benefits offered by the government in its respective efforts. Another measure, at least equally as relevant, is the initiative of creating a software degree in 35 universities beginning in 2002, which means that tens of thousands of students will graduate annually with this specialized degree as of 2005–2006. Since 1999 the China Torch Program – with funds that have varied annually between around $ 125 million dollars in 1999 to half of that in 2003[94] – is highly relevant because it reflects the Chinese government's effort to intensify the industrialization process it has been going through since the seventies. Its general goal is to support companies devoted to research and its application in the industries of new materials, biology, electronics and information; the integration of machinery and electronics; and ways of fomenting the use of high-tech processes and products in Chinese companies. According to their size, technological level, sales perspectives, etc., the projects are classified at the local and national level, respectively. In 1999 the program was explicitly oriented towards fomenting high-tech exports.[95]

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94 See: http://www.innofund.gov.cn/innocomm/, with various communications in 2003, consulted in July, 2004.

95 Recently, for example, it fomented the establishment of 91 companies with Program support in Zhejiang Province, obtaining additional guarantees for around $ 800 million

Thus, in 2000 the first list of high-tech products for export was jointly formulated by the ministries of Commerce, Technology, Information Industry, and Finances, together with the Development and Reform Commission, the General Customs Administration of China, and the Revenue and Licensing Administration. The list of products was newly revised in 2003. A revision and evaluation of the list and achievements is to be carried out annually.

Based on the Torch Program, the high-tech sector in China is made up of 8 industrial branches, 1,875 products and 808 tariff fractions.[96] The 8 industrial branches consist of:

a)   The electronics and information industry

b)   The software industry

c)   The airlines and aeronautical industry

d)   The electronics and machinery industry

e)   Medicines and biological medicinal equipment

f)   New materials

g)   New energy sources and energy-saving products

h)   Other (environmental conservation products)[97]

One of the Program's explicit objectives – based on expectations for 2020 (see chapter 2) – is to increase Chinese high-tech exports from 25 % to 40 %.[98] Of the list, the products related to the production of computers and software represent the most dynamic areas during the last 3 years. According to statistics, the IT (informational technology) products achieved an cumulative growth rate higher than 30 % during 2000–2003 and now represent around 90 % of the Chinese exports in the high-tech sector.

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dollars for 4,550 high-tech companies. See: http://www.innofund.gov.cn/innocomm/, consulted in July, 2004.

96   For the complete list of the 808 fractions, see Chart 4 of Statistical Annex 1.

97   For the Ministry of Science and Technology, the list is made up of nine sectors, given that the rest are divided into two: environmental, planetary, and oceanic conservation; and modern agriculture. Nevertheless, the institutions handle the same mass of fractions.

98   For more on this theme, see document: http://kjs.mofcom.gov.cn/article/200404/20040 400204504_1.xml, consulted in July, 2004.

The most important instruments for applying these political proposals are listed as follows:

1. High-tech industrial parks have been selected as a base for fomenting exports of products with a high technological content. From 1999 until now, 25 parks have been selected in Beijing, Tianjin, Shangai, Shenzhen, and Suzhou.

2. An important part of the Export Development Fund (a fund of the central government) has been designated for the high-tech sector, and the amount increased gradually year by year.

3. High-tech companies can also turn to the Fund for Small and Medium Enterprise Incursions into International Markets.

4. The Chinese Export-Import Bank grants credits at preferential rates established by the Central Bank of China to the high-tech sector.

5. Incentives are given to the Chinese Export Security Company to grant a preferential rate to companies that export high-tech products.

6. Customs stations are to give preference to high-tech export products.

7. As emphasized in Chapter 2, the fiscal stimulus policies basically consist of value added tax refunds to export companies in this sector. In addition to general incentives, local governments have applied complementary measures so that companies can get their tax refunds sooner. For example, the Beijing city government offers a credit for a sum of up to 50 % of the tax refund at an interest rate of 0 %. The Beijing city government also applies a policy of a special stimulus for export companies: 1 Renminbi cent for every dollar received under the heading of general merchandise exports and 2 Renminbi cents for software exports.

During 1988–1999 an objective of the program was to enhance the establishment of industrial parks, among other projects.[99] According to the size, technological level, and sales, among other variables, the projects were classified according to the respective government level. From 1988

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99 For a current list of high-tech parks in China, and some of their characteristics in terms of the number of companies, jobs, gross income, net profit, taxes collected, and exports, See Charts 5 and 6 and Statistical Annex 1.

to 1999, a total of 18,888 projects were undertaken, 5,045 of them at the national level. As of the year 2000, 53 industrial parks had been established and measures were taken to promote 20,796 companies with exports exceeding $ 18,58 billion dollars and 2.5 million employees (see chart 20). Of the total personnel working in the high-tech industrial parks, more than 500,000 are scientists, 52,103 have Masters Degrees, and 9,358 have Doctoral Degrees, and 5,615 have studied abroad.

Chart 20: Evaluation of the China Torch Program, 1991–2000

	1991	**1993**	**1996**	**2000**
Number of companies	2,587	9,687	13,722	20,796
Production /a	8,730	56,360	230,030	920,930
Exports /b	160	540	4,300	18,580
Employment /c	0.1	0.5	1.3	2.5

/a Billion yuan
/b Billion dollars
/c Million persons

Source: Self-compiled, based on figures from the Ministry of Science and Technology of the Peoples Republic of China, http://www. most.gov. cn/gxjscykfq/index.htm

b)   The chain's condition

In 2003, 17,506 companies in the electronic industry recorded sales of around $ 218.7 billion dollars that contributed $ 48.6 billion dollars to the GDP. External sales, on the other hand rose to a total of $ 142.1 billion dollars, with a growth rate of 51.4 % in 2003; representing 65 % and 32.4 % of the total of the manufacturing sector and of Chinese exports. Employment rose from 2.9 million to 4.1 million, with a growth rate of 38.4 % (see charts 21 and 22).

Chart 21: The electronics industry in China: number of companies and sales effected, 2000–2003

	2000	2001	2002	2003
Number of companies	6,893	7,522	9,065	17,506
Number of employees (Millions)	2.9	3.0	3.3	4.1
Sales effected (Billions of yuan)	989	1,188	1,400	1,880

Source: Self-compiled, based on figures from China's Ministry of Information Industry.

Chart 22:   Electronics and information industry exports, 2000–2003

		2001	2002	2003
Exports (millions of dollars)	1. Total (1)	266,160	325,570	438,370
	2. Electronics and information industry (2)	65,020	92,040	142,090
Growth rate	3. Total	6.8	22.3	34.6
	4. Electronics and information industry	17.8	41.6	54.4
Percentage	2/1	24.4	28.3	32.4

Source: Self-compiled, based on figures from China's Ministry of Information Industry.

Chart 23 indicates the growing orientation towards exports of electronic production, given that with regards to the majority of products, exports increase more than domestic sales. Furthermore, the performance is truly spectacular in both markets: in products like personal computers, domestic sales increased almost 100 % in 2003, while exports increased 55.5 %, and in several sectors even more.

Chart 23:   Production and sales effected of the main electronic articles (2003)

	Production		Sales effected		Exports	
	Volume (millions)	Growth rate	Volume (millions)	Growth rate	Millions of dollars	Growth rate
Total /a	12,915.6	37.7	12,745.7	40.5	28,880	61.1
Cellular telephones	186.4	54.5	183.2	56.1	7,380	39.4
Digital telephones	58.1	39.0	53.8	34.6	450	81.8
Color televisions	65.2	30.3	65.0	23.8	2,560	16.6
Personal computers	32.2	98.0	30.8	98.9	2,200	55.5
Printers	73.3	56.2	73.7	55.2	9,570	62.4
Color transmissions	90.5	16.1	89.1	15.7	750	17.7
Integrated circuits	12,410.0	37.5	12,250.0	40.5	5,970	165.7

/a The total may not coincide with the total due to round offs.

Source: Self-compiled, based on figures published by the Chinese Ministry of Information Industry.

The foreign capital companies have played a crucial role during the last 20 years because of their participation in sector growth.[100] In 2003, there were 4,026 companies with foreign investment registered in the electronics industry, representing 23 % of the sector's establishments. Nevertheless, with regards to the indicators of effected sales, tax collection, income obtained, value added, and share of total exports by the electronics industry, the foreign capital companies contributed more than 50 %, 67.5 %, 57.9 %, 52.0 % and 82.7 %, respectively. Chart 24 reflects the significant incidence and weight of exports according to the type of ownership and generally reflects the remarkable export growth under all categories, including private, collective, and SOEs. Nevertheless, it is notable that the 100 % foreign companies have been the most dynamic, in the case of computers, components, and peripherals, with an AAGR of 56.1 % during 1993–2003.[101] As a result, the 100 % foreign companies have displaced the companies with other kinds of ownership in the three sectors – attaining 75 % of the exports of computers, components, and peripherals in 2003 – although in all cases they have increased significantly in absolute terms: in the case of the SOEs, for example, their share in the exports of computer, components, and peripherals diminished from 64 % to 15 % during 1993–2003, although it increased from around $ 200 million dollars to more than $ 2.5 billion dollars in 2003.[102]

For the moment, Chinese electronics and SOEs companies have not had an outstanding direct international presence. This tendency, nevertheless, could be reverted before long for various reasons (Sigurdson / Long 2003). On one hand, the sector has continued to display a significant dynamism, even in the face of industry-wide problems during 2001–2003, particularly with regards to domestic dynamics. This process has allowed for an increase in the share of Chinese companies in the internal telecommunications market, among other sectors, and, in a parallel fashion, for the accumulation of

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100 Of the exports and imports of high-tech products, foreign companies had percentage shares of 84.6 % and 72.3 %, respectively, in 2003 (Rosen 2003).

101 Taiwanese companies such as Acer, Quanta, Arima, Hon Hai, FIC, and GVC, among others, have transferred a significant part of their assembly segments to China since the early nineties (Kraemer / Dedrick 2002).

102 These tendencies are also congruent with a growing tendency for FDI to participate in 100 % foreign projects; such transactions now participate with more than 50 % of FDI (Woetzel 2004).

significant earnings to be invested in joint-investment processes or in the acquisition of companies in China or abroad. On the other hand, several of the large Chinese companies in this category have opted for making joint investments and participating in joint projects – in the case of the China Putian Group more than 90 joint investments with 47 companies – that will bear fruit in the next few years both in the strengthening of their own brands via new technologies and in the commercialization of their products.

According to annual report of the Ministry of Information Industry (MII 2004), the software sector has increased production from 59,300 million yuan (approximately 7.2 billion US dollars) in 2000 to 160 billion yuan in 2003 (approximately 17 billion dollars). Other indicators in the sector also showed impressive figures: 8,582 companies devoted to manufacturing approximately 18,000 registered software products were established and identified. Furthermore, jobs were directly created for more than 5000,000 people and indirectly created (in the areas of application, research, and education) for another 400,000 people, of whom 250,000 work on systems development. At the same time, software exports registered a value of $ 2 billion dollars. Of the total companies registered in 2002, 1,100 obtained an annual income higher than 10 million yuan, or 398 companies more than in 2001; those with annual incomes higher than 100 million yuan increased from 200 to 368. In the same period, the foreign capital companies (including those of Taiwan, Hong Kong, and Macao) repre-sented 13.7 % of the registered companies and generated 17.7 % of the sector income.

Finally, since the nineties, China has become the main center for mass assembly and production, including diverse peripheral products for PCs, with greater technological complexity recently. All the main United States, European, Japanese, and Taiwanese CMs now have plants in China, particularly in Shangai, Nanjing, Beijing, Dongguan, and Shenzhen. Guangdong,[103] particularly, has increasingly become the center of these ac-

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103 The region benefits from Hong Kong's logistics and infrastructure and a population of between 30 and 40 million inhabitants. These businesses mainly employee migrant workers – registered in their region of origin, they have second class status in real terms – through public or private employment agencies, with a requirement of official registra-tion with local authorities. Despite this system (*hukou*), the rotation in the plants is be-tween 25 %–40 % annually; the workers live at the company's plant and earn salaries of

Chart 24: China: Exports by type of ownership (1993–2003)

	Billions of dollars		Percentage		AAGR
	1993	2003	1993	2003	1993-2003
Industrial machinery	4.2	83.0	100	100	34.8
Collective	0.0	2.5	1	3	50.4
State-owned company (SOC)	2.7	12.5	64	15	16.6
Joint production	0.1	2.5	3	3	34.8
Joint investment	0.6	12.5	15	15	34.8
Foreign company (100%)	0.7	51.5	17	62	53.4
Private	0.0	2.5	0.2	3	76.7
Computers, components, peripherals	0.7	41.0	100	100	50.2
Collective	0.0	0.4	0	1	--
State-owned company (SOC)	0.2	2.5	26	6	29.7
Joint production	0.0	0.8	4	2	40.2
Joint investment	0.1	6.2	19	15	46.7
Foreign company (100%)	0.4	30.8	51	75	56.1
Private	0.0	0.4	0	1	--
Electronics, telecommunications equipment	12.3	89.0	100	100	21.9
Collective	0.1	2.7	1	3	36.0
State-owned company (SOC)	6.6	16.0	54	18	9.2
Joint production	0.9	2.7	7	3	12.0
Joint investment	2.8	24.9	23	28	24.3
Foreign company (100%)	1.8	38.3	15	43	35.4
Private	0.0	4.5	0	5	--

Source: Self-compiled, based on Gilboy (2004, 39).

tivities, with more than 15 plants of the main CMs and at least around 85,000 employees (Lüthje 2004). These plants can employ more than 60,000 workers in one location, while other CMs have established a strategy of plants with a greater degree of specialization and a smaller size. Nevertheless, one highly relevant aspect is that China has increasingly integrated processes of higher value added and, in the case of the CMs, has replaced Hong Kong as an operation center of these companies, considering massive investments of Hong Kong and Taiwanese companiesin Guangdong. Chinese companies such as Huawei, CSMC Technologies Corporation, ZTE, or TLC, among others, are important associates and brand

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between $ 60-$ 100 dollars (operators), including extraordinary work days, while the starting salaries for engineers and technicians are around $ 250 dollars. Surprisingly enough, incentives are not generally offered for productivity, given that the dormitory and food costs amount to 30 % to 50 % of the cost of a worker, in addition to the salary. The 2 or 3-day training session for operators is held in the companies themselves, while the higher level personnel train in universities owned by the company and/or electronically or digitally. In general, there are no unions whatsoever in this segment of foreign enterprise (Lüthje 2004 and Brooks 2004 on the issue of *hukou*).

name suppliers of these CMs and reflect the upgrading process of activities carried out in China, although concentrated in one relatively small group of companies with CM requirements. Other companies like Hisense, Langchao, Stone, Great Wall, Founder, Legend, and Tsinghua Tofang have been able to rank as electronic brand name companies[104] (Lazonick 2003; USDC 2003) with significant investments in R&D.[105] Since the nineties, companies established in China in other sectors like semiconductors – 8 in 2002, of which 5 were Chinese joint investments (4 of them with a Chinese majority) with Philips, Alcatel, NEC, and CMSC and 3 of 100 % foreign capital – have been able to rank in semiconductors with cutting edge technology within only one generation (USGAO 2002).

4.3   China's trade structure

Among the main aspects of China's commercial structure in the PC chain, the following trends stand out (see Statistical Annex 2):

a)   PC exports, with an AAGR of 35.6 % during 1996–2002, represented 10.24 % of all Chinese exports, or $ 33,360 million dollars in 2002. This impressive performance is particularly concentrated in four recipients in 2002: Hong Kong, the United States, Japan, and Holland, with a share of 28.34 %, 23.30 %, 11.36 %, and 8.38 %, respectively. The exports to Mexico have been the most dynamic of all the

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104 The type of ownership of the main brand name countries in China is unique: the leader, Lenovo (formerly Legend), is intimately connected to the Academy of Sciences; the main governmental research institution, Founder, to the University of Beijing; and Great Wall came from the Ministry of the Electronic Industry. Local and provincial governments, however, play a direct role in the supply of infrastructure, financing, and other supports for attracting this kind of company (Kraemer / Dedrick 2002).

105 Sigurdson / Long (2003) present a detailed analysis of the cases of Huawei, ZTE, Datang Telecom Industry Group, Putian Group, Huaqiang Group, and Lenovo. One notable feature of all these cases, in addition to the fact that they are large groups with activities in the electronics industry, is the significant search for and adaptation of new technologies via joint investments or purchases from companies in foreign countries – in November, 2003, TCL announced a joint investment with Thomson of SA, with a 2/3 share in the new company and an annual television set production of around 18 million units, considerably more than Sony or Panasonic (Sigurdson 2004) – a growing orientation towards higher added value segments and towards external markets.

countries considered, with an AAGR of 102 % during 1996–2002, reaching a total of $ 293 million dollars en 2002.

b) The chain's imports have been even more dynamic than its exports, with an AAGR of 243.7 %, and a total of $ 16.279 billion dollars. With the exception of the United States, whose exports to China represented 12.36 % in 2002 and a strong downward trend during 1996–2002, only Asian countries are listed within the 10 principal suppliers. Mexico has significantly increased its participation although at levels still lower than those of other Asian countries, and captured 2.42 % of Chinese PC imports in 2002.

c) As a result, the trade balance in the chain presents a pattern similar to China's general trade balance: a significant surplus with Hong Kong, the United States, and Japan, as well as with European countries, and a substantial deficit with the rest of the Asian countries, from which it imports parts and components for export (see grapc 13). As a result, the PC chain's trade surplus increased $ 5.363 billion dollars in 1996, to $ 17,082, or 56.14 % of the trade surplus obtained in 2002. Thus, both the yarn-textile-garment chain and the PC chain are the most significant with regards to the surplus generated for the Chinese economy.

Graph 13: China: Cumulative trade balance in PC chain for selected countries (1996–2002) (millions of dollars)
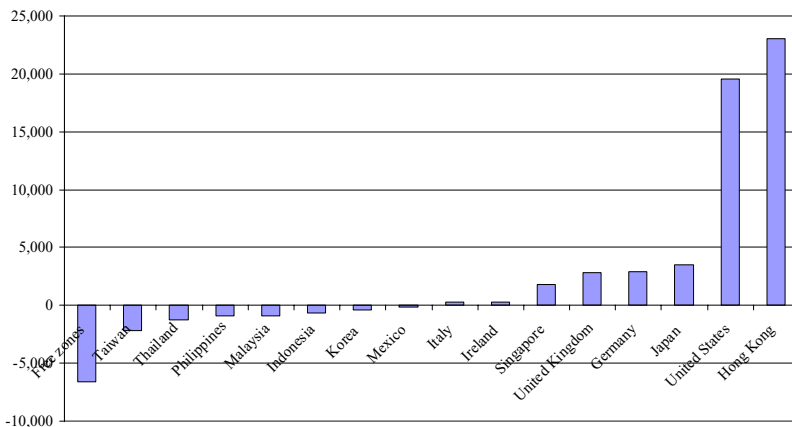
Source: Self-compiled, based on Statistical Annex 3.

Chart 25 reflects a pattern of commercial specialization of the chain, by segment. On one hand, it is interesting that China has increasingly specialized in its exports under the segment of "other computer peripheral equipment," attaining 72.79 % of the exports in the chain in 2002. Thus, of the 14 main products exported at 6 digits of the Harmonized System (see Statistical Annex 2), only the first three participated with more than 80 % in the chain in 2002. Surprisingly, China has an excess surplus in all the segments in the chain.

Chart 25: **China: total trade balance in PC chain (1996–2002) (millions of dollars)**

	1996	1997	1998	1999	2000	2001	2002	1996-2002
				Exports				
Electronic computers	481	590	431	483	1,423	2,521	5,102	11,031
Computer storage equipment	1,114	2,098	2,897	2,171	2,560	3,209	3,977	18,025
Other computer peripheral equipment	3,778	4,902	6,918	9,097	12,675	15,474	24,282	77,126
Total	5,372	7,590	10,246	11,751	16,658	21,203	33,360	106,181
				Imports				
Electronic computers	--	--	--	1,613	1,723	1,912	1,864	7,112
Computer storage equipment	--	--	--	862	1,737	1,844	2,976	7,420
Other computer peripheral equipment	10	9	9	4,678	6,682	8,155	11,439	30,981
Total	10	9	9	7,153	10,143	11,911	16,279	45,513
				Trade balance				
Electronic computers	481	590	431	-1,130	-301	609	3,238	3,919
Computer storage equipment	1,114	2,098	2,897	1,308	823	1,364	1,001	10,605
Other computer peripheral equipment	3,768	4,893	6,909	4,420	5,993	7,319	12,843	46,145
Total	5,363	7,581	10,237	4,598	6,515	9,292	17,082	60,669

Source: Self-compiled, based on Statistical Annex 2.

4.4   The United States market: complementary or competitive exports?

As is true in the yarn-textile-garment chain, the United States market is the most important one for Central America and Mexico, with shares of 46.77 % and 90.41 %, respectively in 2002 and 2003, and 23.30 % for China.[106] Graph 14 reflects, in aggregate terms, the Asian predominance in

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106 Central America exported $ 10 million dollars to the United States in 2003 in the chain; thus, it is not considered here.

United States imports: of the main exporters in 2003, with the exception of Mexico and Ireland, all are Asiatic. While Japan, Taiwan, Singapore, and South Korea have seen a significant drop in their share during 1990–2003, China and Mexico have benefited. Nevertheless, during the 2001–2003 period, there was a qualitative change: after a decade of two digit growth of the United States imports in the PC chain, since 2001 the dynamic was negative and exhibited stagnation. It is in this context that the participation of all the main exporters diminished, with the exception of China and Malaysia. During the 2001–2003 period China increased its percentage share from 13.84 % to 29.14 %. Unlike the yarn-textile-garment chain, in the PC chain since the late nineties, tariffs have been reduced to their lowest levels for all countries, without exception (see Statistical Annex 5).

With regards to the United States import structure, by segments of the PC chain, since the mid-nineties this has changed substantially: while electronic computers increased their percentage share from 13.1 % to 30.8 % during 1997–2003, the computer storage equipment decreased from 35 % to 18 %, while the category of other computer equipment remained unaltered with around 52 % during the period.

Graph 14:   United States: Imports in PC chain (1990–2003) (percentage)
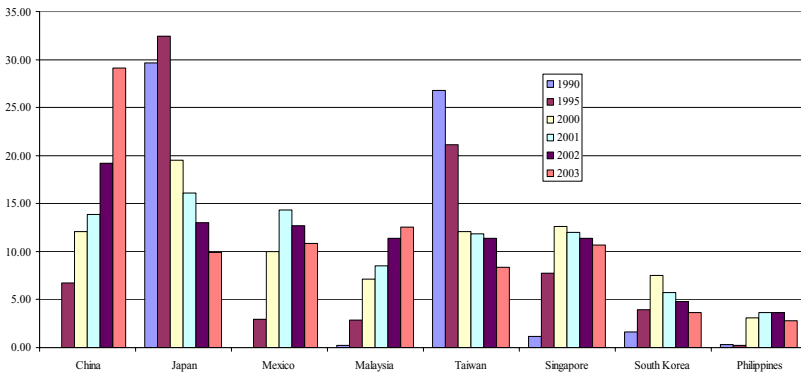
Source: Self-compiled, based on Statistical Annex 5.

In which segments of the United States market have Mexico and China specialized? Chart 26 reflects an increasingly high degree of specialization for Mexico in the electronic computer segment, which represented

56.82 % of all Mexican exports in the chain in 2003, while China's participation in this segment is very low; on the contrary, China has specialized in the "other computer peripheral equipment" segment. Despite this apparent complementary relation, the former structure underwent significant changes in 2001–2003. In 2003 alone, Chinese exports registered a spectacular increase of 56.1 %, and in the electronic computer segment, of 335.6 %. As a result, China's market share in this segment increased from 4.23 % in 2001 to 28.19 % in 2003, while that of Mexico dropped from 26.95 % to 20.05 %. This rapid adjustment would seem to indicate a direct displacement of Mexican exports by Chinese exports in the United States market. In the segment of other computer peripheral equipment, tendencies similar to those dating from 2001 can be discerned, although in this case China has had a higher share than Mexico since the nineties.

Statistical Annex 5 presents the results of the main export products at the 10 digit level of the Harmonized System, as well as those of the main competitors with their respective 3 main export products. On one hand, a high degree of concentration of the 25 main products is notable: for both Mexico and China these 25 products represent more than 95 % of the chain's exports to the Unites States in 2003. Of the three main Mexican products, Mexico competes directly with China in two of them: in one, Mexico has been supplanted by China (fraction 8471603500), while in the other (8471500085) Mexico supplants China. In the third fraction (84713 00000) Mexico has suffered significant losses in its share of the United States market with regards to Taiwan and Malaysia.

Finally, it is important to emphasize that as of March of 2004, an important debate and ongoing process was initiated between China and the United States regarding the value added tax applicable to integrated circuits. China – in line with the incentives analyzed in Chapter 2 – reimburses part of this tax of 17 % to producers established in China, if and when they comply with a series of requirements. The United States importers – whose exports to China rose to $ 2.02 billion dollars in 2003, paid around $ 340 million dollars in tariffs, which can't be reimbursed. The issue is highly relevant, specifically with regards to the incentives utilized in the high-tech sector, but also in relation to the logic of incentives utilized by the government in its different initiatives. It is hoped that solutions will be reached in this controversy before the WTO in the year 2004.

Chart 26: United States: imports of PC chain products (1990–2003)

	Value (millions of dollars)						Percentage (US segment=100)						Percentage (Total respective segments)					
	1990	2000	2001	2002	2003	1990-2003	1990	2000	2001	2002	2003	1990-2003	1990	2000	2001	2002	2003	1990-2003
TOTAL																		
Electronic computers	12	13,494	12,134	15,576	19,714	60,931	100.00	100.00	100.00	100.00	100.00	100.00	6.08	19.69	20.55	24.99	30.79	23.98
Computer storage equipment	-	16,206	13,353	12,167	11,522	53,328	100.00	100.00	100.00	100.00	100.00	100.00	0.00	23.76	22.61	19.52	18.00	20.98
Other computer peripheral equipment	191	38,738	33,561	34,580	32,784	139,875	100.00	100.00	100.00	100.00	100.00	100.00	93.92	56.55	56.84	55.48	51.21	55.04
Total imported by US	204	68,538	59,049	62,323	64,021	254,134	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
MEXICO																		
Electronic computers	0	2,803	3,270	3,654	3,953	20,836	0.21	20.77	26.95	23.46	20.05	34.23	100.00	40.80	38.62	46.22	56.82	45.67
Computer storage equipment	0	217	218	183	152	870	0.00	1.33	1.63	1.51	1.32	1.63	0.00	3.16	2.57	2.32	2.18	1.90
Other computer peripheral equipment	0	3,849	4,978	4,069	2,852	23,975	0.00	9.93	14.83	11.77	8.70	17.14	0.00	56.03	58.81	51.47	41.00	52.43
Total imported by US	0	6,869	8,466	7,906	6,956	45,731	0.01	10.02	14.34	12.68	10.87	17.99	100.00	100.00	100.00	100.00	100.00	100.00
CHINA																		
Electronic computers	0	1,135	514	1,276	5,557	8,725	0.00	8.41	4.23	8.19	28.19	14.32	0.00	13.75	6.29	10.68	29.79	13.66
Computer storage equipment	0	1,210	1,327	1,713	1,727	9,221	0.00	7.43	9.94	14.08	14.99	17.29	0.00	14.66	16.24	14.34	9.26	14.43
Other computer peripheral equipment	0	5,911	6,332	8,958	11,368	45,940	0.02	15.25	18.87	25.91	34.68	32.84	100.00	71.59	77.48	74.98	60.95	71.91
Total imported by US	0	8,256	8,173	11,947	18,653	63,886	0.02	12.05	13.84	19.17	29.14	25.14	100.00	100.00	100.00	100.00	100.00	100.00
HONG KONG																		
Electronic computers	0	5	3	6	8	49	1.49	0.03	0.03	0.04	0.04	0.08	4.28	2.20	2.02	2.42	3.09	2.80
Computer storage equipment	0	20	14	14	14	140	0.00	0.12	0.10	0.12	0.12	0.26	4.28	9.64	8.17	5.37	5.53	8.02
Other computer peripheral equipment	4	184	149	247	232	1,539	2.16	0.47	0.44	0.71	0.71	1.11	95.72	88.16	89.81	92.22	91.38	89.18
Total imported by US	4	208	166	268	254	1,748	2.12	0.30	0.28	0.43	0.40	0.69	100.00	100.00	100.00	100.00	100.00	100.00

Source: Self-compiled, based on Statistical Annex 5

4.5   Central American and Mexican trade relations with China

Chart 27 – which, due to the method of collecting of statistical information, includes semiconductors belonging to the Intel company in Costa Rica[107] – reflects the fact that exports are mainly concentrated in Costa Rica in 2002, at a percentage of 99.60 %. Nevertheless, it is interesting to note that this company's exports would seem to be relatively diversified, given that less than 50 % of Intel's exports go to the United States. Considering that the company initiated these processes in 1998, the exports reflect drastic fluctuations during the period.

In the case of imports, Costa Rica is also predominant, with 56.54 % of the region's imports in 2002. Likewise, the United States is the principal exporter of PC chain products to Central America, with a percentage share of more than 85 % during 1994–2002. The share of China and Hong Kong together was 1.78 % in 2002.

The commercial relation between Mexico and China in the PC chain is much deeper than China's relation with Central America. The results of Statistical Annex reflect that China, in less than 5 years, has become the main exporter to Mexico and the second recipient of Mexican exports in the chain in 2003. In both cases, the dynamic has been extremely rapid: the AAGR of Mexican imports from China was 107.5 % – in other words, more than double each year – during 1993–2003, and was 314.3 % during 1996–2003. More than 80 % of the Chinese exports fall under the category of "other computer peripheral equipment". Nevertheless, the trade balance with China has been increasingly negative (see graph 15), while the surplus trade balance with the United States is what allows for a continued surplus in the total balance of the chain.

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107   As previously explained, the definition of the chains comes from a group of fractions at 10 digits of the Harmonized System. In the case of Central America and each of its countries, China, and Mexico, however, the only trade information available is at 6 digits. One of the implications of his problem, which must be solved in the next phase of the Project, was that some activities like those of semiconductors are included in the application of this aggregation method.

Chart 27: **Central America: Selected trading partners in PC chain (1994–2002) (in millions of dollars, except for average annual growth rate, AAGR)**
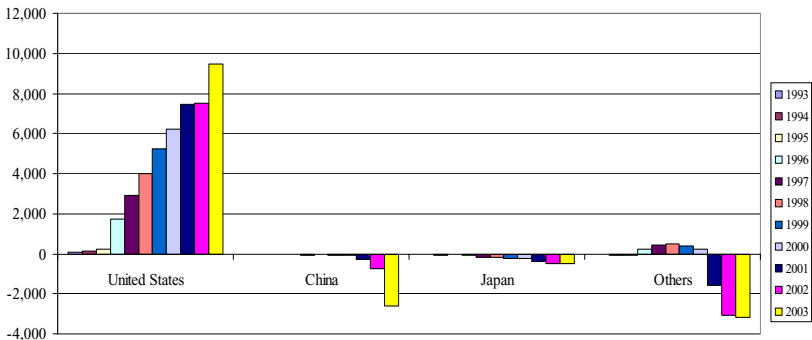
	Imports (millions of $)				Exports (millions of $)				Trade balance (millions of $)		
	1994	2000	2002	AAGR 1994-2002	1994	2000	2002	AAGR 1994-2002	1994	2000	2002
Costa Rica	29	163	284	33.2	0	1628	903	201.6	-29	1,465	619
United States	25	142	260	33.8	0	874	423	188.7	-25	732	163
Mexico	0	1	2	24.5	0	11	7	--	0	10	5
China	0	3	1	42.5	0	0	8	--	0	-3	7
Hong Kong	0	1	1	36.5	0	7	38	--	0	6	37
El Salvador	26	99	89	16.6	0	1	1	32.5	-26	-98	-87
United States	23	87	76	15.8	0	0	1	29.2	-23	-87	-75
Mexico	0	1	4	35.8	0	0	0	--	0	-1	-4
China	0	0	1	22.1	0	0	0	--	0	0	-1
Hong Kong	0	0	1	43.6	0	0	0	--	0	0	-1
Guatemala	23	118	126	23.7	0	0	1	29.8	-23	-117	-125
United States	20	104	101	22.3	0	0	0	36.1	-20	-104	-100
Mexico	0	4	5	40.3	0	0	0	--	0	-4	-5
China	0	1	3	84.9	0	0	0	--	0	-1	-3
Hong Kong	0	0	1	44.0	0	0	0	--	0	0	-1
Honduras	14	49	50	17.3	0	2	1	30.7	-14	-46	-49
United States	13	46	41	15.6	0	2	1	37.9	-13	-44	-41
Mexico	0	0	0	14.9	0	0	0	--	0	0	0
China	0	0	0	10.4	0	0	0	--	0	0	0
Hong Kong	0	0	0	28.0	0	0	0	--	0	0	0
Nicaragua	4	24	31	30.0	0	0	1	78.6	-4	-24	-31
United States	3	21	26	29.7	0	0	0	73.5	-3	-21	-26
Mexico	0	0	1	31.0	0	0	0	--	0	0	-1
China	0	0	2	--	0	0	0	--	0	0	-2
Hong Kong	0	0	0	--	0	0	0	--	0	0	0
Central America	95	453	580	25.3	0	1,632	907	156.1	-95	1,179	326
United States	85	400	503	24.9	0	877	424	160.9	-85	477	-79
Mexico	1	7	12	34.1	0	11	7	--	-1	4	-5
China	0	4	7	51.3	0	0	8	--	0	-4	1
Hong Kong	0	1	3	39.4	0	7	38	--	0	6	35

Source: Self-compiled, based on Statistical Annex 4.

Even though the region and the chain itself have initiated a recovery through the upgrading of the chain – Jalisco now has 27 design centers and several companies such as Solectron SCI-Sanmina, Flextronics, Pemstar, and Jabil that have even recuperated some projects Finally, it is important to point out that the decrease in Mexican export activity in the United States market – as analyzed in the previous chapter subdivision and also in the general information on maquiladoras in Chapter 2 – has been generated directly, in part, through competition and the highly competitive nature of the chain in China. Based on the information from Cadena Productiva de la Electrónica A.C. (Cadelec), the Department of Economic Promotion of the State of Jalisco, and the companies themselves, during 2001–2003, the electronics industry showed a decline of 21,217 in direct employment and 23,880 indirect employment, as well of investment projects of $ 514 million dollars by companies that outsourced their activities to China, for the most part, and/or outsourced their production lines to that country (see chart 28).

linked to PC and telecommunications products like cards and electronic cabinets, significant problems still persist with regards to their competitiveness with Asia and, particularly, with China. As a result, after achieving double digit growth rates in the export of PC and telecommunications products, reaching a peak in 2001 with $ 10.529 billion dollars, these exports fell to $ 7.872 billion in 2003.

Graph 15: Mexico: Trade balance in PC chain by principal country (1993–2003) (millions of dollars)

Source: Self-compiled, based on Statistical Annex 3.

Chart 28: **Jalisco: Project losses in electronics industry (2001–2003)**

	Investment (millions of dollars)	Direct employment	Indirect employment	Total	Exports	Migrant destination country	Reason
Hard disc sub-assembly	108	4,250	1,200	5,450	400	China,	D
Manufacture of components	30	1,200	400	1,600	60	China	D
Communications systems	nd	3,720	2,480	6,200	100	China	A, B
Cell phones and routers	nd	400	100	500	72	China	A, B
Semiconductors	200	2,100	1,500	3,600	400	Filipinas	A, B, D
Cellular	24	1,493	130	1,623	260	China	A, C, D
Cellular	25	1,085	116	1,201	181	China	A, C, D
Electronic cards	24	1,049	104	1,153	117	China	A, C, D
Telecommunications	15	2,500	nd	2,500	750	China	A, D
Printers	12	1,900	15,200	17,100	400	China	A, D
Printing systems	3	295	2,360	2,655	120	China	A, D
Electronic cards	70	925	250	1,175	400	Malasia	A, C, D
Electronic equipment	3	300	40	340	1	China	A
Total	514	21,217	23,880	45,097	3,261		

A. Cost competitiveness   B. Country cost (uncertainty, security, etc.)
C. Supply chain   D. Incentives (Fiscal, promotion)

Source: Self-compiled, based on CADELEC and SEPROE.

5   Conclusions

In the first chapter, this document points out that in the current globalization process, territories are integrated into the world market through specific segments of value chains and company networks, with important conceptual consequences as well as consequences for economic policy. The specific segment is of the greatest importance in understanding the potential for endogeny or polarization in the territories, as well as characteristics in variables such as the processes and products effected, the generation of jobs and their quality, intra and interfirm relations, the development of R&D, the potential for diffusion and for generating learning processes, and the population's living conditions. By the same token, the generation of competitive conditions for the productive sector, in view of the insertion of the territory in specific segments, generates opportunities and systemic policy challenges that go beyond exclusively macro or microeconomic visions. As a result – and part of the current debate and growing consensus on going "beyond macroeconomic fundamentals" –, international and multilateral institutions, as well as a number of different schools of thought regarding the theory of economic development, have promulgated a battery of instruments and policies for improving levels of competitiveness, territorial insertion in the globalization

process, and improvement in the living standards of the population, including macro, meso, and microeconomic aspects.

The rest of the document presents a detailed analysis of the socioeconomic and economic policy changes that China has experienced and examines the opportunities and challenges existing among the Central American, Chinese, and Mexican economies in other markets and in the internal markets of Central America and Mexico.

The first section of Chapter 2 reflects the profound socioeconomic and territorial transformations experienced by the People's Republic of China in the last three decades. The socioeconomic performance has been significant and the short and medium-term perspectives are positive.[108] At the present time, China has not only become the "world factory," but also one of the main sources of income for the transnational corporations. Several different scenarios, analyses, and estimates regarding the GDP, FDI, and trade in China confirm vigorous short and medium-term growth. Despite these important advances – as well as those in the terrain of combating poverty and increasing consumption – the chapter highlights significant socioeconomic and territorial challenges that China will have to face in the short, medium, and long-run. Among the important are the widespread polarization in income, especially at the territorial and household levels, including growing disparities between urban and rural regions. Others include difficulties in the restructuring of the SOEs and the generation of jobs in the face of the expected process of massive displacement of the population in the agricultural sector, as well as problems in the finance sector and that of environmental issues. The effects of membership in the WTO on agriculture and services are uncertain, although this status could intensify some of the previously examined tendencies. Thus, in the long run – that is to say in this generation – it is not expected that salaries will increase significantly. [109]

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108 Since 2003 there has been a debate on the "overheating" of the Chinese economy and the apparent need to diminish its domestic demand and its growth rate (Samuelson 2004; The Economist 2004). Despite measures to diminish the growth rate in sectors like construction, it is not expected that the growth rate of the GDP will fall below 7 %.

109 Reynolds (2003) analyzes this aspect, pointing out that in the face of a reserve army of nearly 140 million people with jobs in the agricultural sector, low salaries, at least in rural areas, will continue to affect the rest of the economy.

Despite the previously mentioned aspects, it is of the greatest relevance to understand an aspect not reflected in the large part of the Latin American, Central American, and Mexican bibliography: that the Chinese reforms carried out since the end of the seventies are extremely thoroughgoing, involving numerous institutional and political changes extending beyond the economic and commercial spheres.

The economy and international trade of China have gone through an intense, accelerated, industrialization process based on the accumulation of capital, parallel to an orientation towards exports and the implementation of programs that favor import substitution and a higher technological level of production and international trade through a multiplicity of State policies. Even though direct incentives for foreign investors are now reflected in the possibility of obtaining added value tax reimbursements, it is important to note that agriculture, industry, the SOEs, and FDI have historically obtained massive incentives of great importance from the central, provincial, and local governments, incentives that are now noticeably diminished. Consequently, in 2004 it is possible that instruments for direct intervention will not be found despite the fact that they were used massively for several decades.

The remarkable institutional effort made in China since the seventies is examined in detail in both the yarn-textile-garment chain and the high-tech chain in chapters 2 and 3. On one hand there has been a high degree of decentralization of resources and personnel, with direct interference on the part of provincial governments in granting incentives to the SOEs and FDI, to mention a few examples.[110] On the other hand, important efforts to channel massive investment into infrastructure, anti-poverty programs, and education, as well as to sectors and companies engaged in the industrialization process, reflect the depth of the new economic structures and their potential for integration into the world market. According to extremely

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110 With the aim of continuing these institutional efforts to attract high-value-added and high-tech companies, China recently launched two interesting projects. One is the "One Stop Shop", a unique kind of window for coordinating mechanisms between the various levels of government and diminishing times and costs for national and foreign businesses. The other is a program called "Business Parks for Returning Students" in the Development Zones for New and High-technology Companies, in consideration of the specific needs of Chinese and foreign people, including access to prestigious schools, as well as the provision of infrastructure and fiscal benefits (CNIME / Global Insight 2003).

diverse estimates on the impact of China's entry into the WTO, China's international trade will continue to display high growth rates in the long run, despite the strict commitments the country agreed to follow.

From this perspective, and considering socioeconomic, territorial, and ecological limitations, most studies conclude that China will be able to continue with this growth trajectory. Nevertheless, as manifested in the majority of the analyses referred to in Chapter 2, growth based on high investment coefficients presents high levels of inefficiency and other short and medium-term difficulties: the incremental capital-output ratio (ICOR) – defined by the relationship between the investment coefficient over the GDP and economic growth – reflects an important drop since the nineties, which implies a continual rise in the investment coefficient in order to maintain high growth rates.[111] Two issues have stood out in the debate on the viability of this process. First, the possibilities for an "overheating" of the Chinese economy and its possible inflationary effects.[112] In 2004 the Chinese authorities have taken diverse measures to reduce this potential threat, and, at least in the short run, they don't foresee factors that affect the long-term growth route. Second, – as analyzed in Chapter 2 – a number of multilateral petitions have indicated the need to adjust the exchange rate. In this regard, however, even a moderate rise would not substantially affect the productive and commercial structure; moreover, overseeing institutions have said any number of times, as recently as 2004, that monetary policy and the exchange rate itself have permitted the growth of imports and Chinese exports, as well as macroeconomic stability in Asia. In addition, as is argued throughout Chapters 2, 3, and 4, the competitiveness of the Chinese economy in the chains examined is more far-reaching than an exchange rate that could already be undervalued

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111 Various authors (Fu 2004; Zheng / Hu 2004) indicate that, surprisingly, employment has been the main source of economic growth in the last decades, while the returns on capital have diminished and exports have not contributed significantly to the increase in productivity of all factors (Perkins 2001). This observation is highly relevant, given that in the future, in order to maintain high growth rates in the GDP, the Chinese economy should continue with high investment coefficients / GDP, unless it substantially improves its efficiency (Kwan 2004).

112 In June, 2004, as compared with the same month in 2003, FDI increased by 14 % and, in that month alone, reached $ 7.97 billion dollars, while exports increased 46.5 % and imports 50.5 %, resulting in a monthly surplus trade balance of $ 1.84 billion dollars (Innes / Lee 2004).

at around 20 %. The conditions in the finance sector – in view of its liberalization in 2007 –, however, and its relationship with the SOEs could alter medium-term growth.

The aggregate and disaggregate study of China's commercial structure, as well as of China's relations with Central America and Mexico make it possible to come to concrete conclusions regarding the subject of the opportunities and challenges posed by China. [113] The Chinese commercial structure, as well as its productive apparatus, reflect an important structural change: while in the early eighties raw materials and oil held a 50 % share of the exports, in the early nineties, garment production, with massive investments in textile plants, became the motor for the growth of exports. Since the mid-nineties, however, the principal export chapters were chapters 84 and 85 – auto parts and electronics – and in 2002 they were more than 50 % higher than labor-intensive exports (garments, toys, and shoes, among others). This structural commercial change – although China still maintained a trade deficit in these two chapters of more than $ 10 billion dollars and a surplus of more than $ 60 billion dollars in garments, shoes, and toys in 2002 – is also reflected in trade relations with its main trading partners: with countries like Japan, Korea, and Taiwan, China imports electric parts and components with increasingly high trade deficits, while the United States[114] and the European Union are recipients of electronic products, auto parts, and garments, among others, with increasingly high trade surpluses. In view of this performance and dynamic, China has become a highly relevant actor in Asian commercial integration during the last decade. On the other hand, during 1992–2002 Chinese imports have presented a spectacular performance in their demand for energy and raw materials, both agricultural and agro-industrial (legumes, vegetables, food and drink, etc.) and mining products and others with a certain level of transformation involved (plastics, metals, fertilizers, organic chemical products, etc.).

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113 Seen in the context of the relatively complementary nature of the commercial structure between China and Latin America and the Caribbean, according to the aggregate analysis of ECLAC (2004b).

114 Gilboy (2004) points out that the commercial relation between the United States and China has been very beneficial for the United States, permitting increased efficiency, reduced costs, and savings of more than $ 100 billion dollars since 1978.

Based on the commercial analysis, the performance of Chinese, Central American, and Mexican exports in the United States market – a high priority for Central America and Mexico – reflects a high level of competition.[115] Even though they are not the only competitors, they are among the most dynamic of Mexico's and Central America's principal export categories: auto parts, electronics, and garments. With the exception of the automotive chapter – although it is also expected that China's share in this category will continue to rise in the face of massive investments by foreign companies – the main chapters in the United States market appear to be affected. In the case of Mexico, companies formerly established in Mexico have made significant decisions to move to Asia and China. The big exceptions to this process of competition in the United States market are the agricultural, agro-industrial, and raw materials chapters.

As of now there are no detailed analyses on the penetration of Chinese imports into Central America: the statistical information reveals that even though they have increased dynamically, they still reflect very low shares with respect to total imports. In the case of Mexico, on the contrary, China has been the second most important importer since 2002, with almost $ 10 billion dollars and an AAGR of 26.3 % during 1993–2003. These imports are not only concentrated in auto parts and electronics, but also register a high percentage share in certain sectors – such as toys and shoes – and China has recently become the principal importer under these categories.

As a result, unlike other Latin American countries such as Argentina, Brazil, and Chile, which have found channels for exporting agricultural and agro-industrial products to China (ECLAC 2004b), the Central American and Mexican exports under these categories has been minimal. This low level is due to the fact that their pattern of productive and commercial specialization during the nineties mainly was mainly concentrated on the transformation of imported products and their export to the United States, and much less on agriculture, agro-industry, and other inputs in great demand in China.

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115 The aggregate study in Chapter 2 concludes, as does Watkins (2002), that this is a *"head to head"* competition in other markets, but also in Mexico's domestic market, and less so in Central American markets.

The case of the yarn-textile-garment chain is paradigmatic for under-standing the profound socioeconomic changes that China has undergone during the last decades: since the mid-eighties the chain became the motor of the industrialization process and the main export category in the Chinese economy until the mid-nineties.[116] The case of the chain in question is relevant because it manifests the depth and breadth of the institutional changes and the variety of instruments used by the central and provincial governments: while the Ministry of the Textile Industry, as an organ of the Council of State, coordinated and assigned resources to the SOEs and coordinated industrial policy regarding this sector until the late nineties, as of 1998, the National Chamber of Exports and Imports of Textile and Garment Products, together with the central government implemented fomentation mechanisms with greater subtlety and discre-tion, with the aim of avoiding controversies with the WTO and other trading partners. Nevertheless, for decades, up until 2004, the Chinese government, through different initiatives, has directly provided incentives in the form of subsidies to the textile sector with the objective of promoting the yarn-textile-garment chain as a whole and creating a base of national and foreign support and supply companies; it has been successful in this endeavor according to the analyses of extremely diverse national and international institutions. One of the primary goals in this regard is the restructuring of the SOEs producing textiles.

Chapter 3 helps to concretize the complementary or competitive aspects among the Central American, Chinese, and Mexican economies in this chain. On one hand, it is important to understand the magnitude of China's chain with respect to Central America and Mexico: in terms of jobs the relation was approximately 37.5:1.5:1, in terms of installed textile capacity the relation with Mexico was 10:1, in terms of the chain's exports, the relation was 7.2-1.3-1 in 2002; moreover, in the first case there was an established, competitive supply network. According to the policies established for 2000–2005, China proposes to continue with the export diversification process in the chain and to go beyond garment making. The latest figures pertaining to its export dynamic with the United States and investment in the chain in 2003 – 83 % with respect to the previous year

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116 The analysis of Meng / Wang / Li (2000) presents an interesting summary of how this process has transformed entire regions, such as Shenzhen, one of the highest growth re-gions in the chain and in other manufactured products.

reflect a strategy that is coherent in terms of these objectives. The third quota liberalization stage in the United States market since 2002, in which China substantially increased its share at the expense of Latin American and Asian countries, is significant in view of the fact that all the models and estimates present China as the main winner in the last phase of the quota liberalization cost in 2005, and Central America and Mexico as losers, particularly Mexico. Since 2002 China has crowded out Central American and Mexico from the second and first place positions in this chain's exports to the United States; as explained in Chapter 3, however, there was a "tie" in the garment segment in 2003, which is of the greatest relevance for Central America and Mexico. Recent decisions made by various companies would seem to intensify this worrisome performance.[117]

With regards to the domestic effects of the chain, China's performance has been dynamic in its exports to Central America and Mexico, considering that these countries don't export products from the chain to China: in 2002, China and Hong Kong had a 9.71 % percentage share of Central America's imports and 4.58 % of Mexico's in 2003, although it is estimated that the percentages for illegal imports are higher.

Most Central American and Mexican studies, which are still scarce, do not start out from these facts and from China's tremendous level of preparation – more than two decades – for entering the WTO. At the least, China clearly expects to continue with the growth dynamic that it displayed before joining the WTO, considering that this provided an opening in sectors like agriculture and services (see chapter 2). This is China's bet and its long-term strategy. On the other hand, even though the conditions are a cause for concern, it is important to mention that both exports and jobs in the maquiladoras in the chain have maintained a

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117 In June, 2004 the Sara Lee corporation informed that as part of its global consolidation process, it would close 5 plants, 3 of them in Mexico, 1 in Honduras, and another in the United States, at a loss of 2,525, 1,300, and 350 jobs, respectively; its operations in Mexico would be transformed into distribution centers. The Canadian company Gildan Activewear, very important due to the fact that it is one of the "vertically organized" companies with recent investments in a textile industry (Dussel Peters 2004), announced the closing of its plant Progreso/Honduras as of September, 2004, leading to the firing of 2,200 workers.

relative stability during 2000–2003 in Central America, in contrast to the plunge in jobs in Mexico.[118]

There are several relevant short and medium-term aspects regarding the chain in Central America and Mexico. First, in the face of the recent recovery of United States manufacturing, it will be important to evaluate the way in which the chains are behaving in both countries and with respect to China. Second, companies like Hilasal in El Salvador (Rodríguez Ocampo / Sequeira 2003) and Koramsa in Guatemala (Wall Street Journal 2004), among many others, show that Central American and Mexican companies need to make a greater effort to increase productivity and efficiency. Geographic proximity and a lower reaction time, as well as cultural knowledge and historical experiences are relevant advantages, although they are not absolute. Last, Chinese companies have had interesting and important experiences in Central America – especially at Comayagua in Honduras (Dussel Peters 2004) – and Mexico, where they have made the highest Chinese foreign investment in a textile plant.[119] These experiences would seem to be a starting point for concretizing possible short, medium, and long-term joint investments and mutual cooperation.

The PC chain, on the other hand, has initiated a rapid process of the territorial transfer of segments, starting with those connected to assembly and transformation processes, although increasingly extending to engineering, systems design, software, and research. The high level of capital intensity and the short cycle of product life imply a relatively high degree of uncertainty for all the actors in the chain, including the OEMs and CMs that control the chains.

China has made enormous efforts towards integration into the world market in high-tech products and processes since the late nineties. While the yarn-textile-garment chain was paradigmatic for the labor-intensive industrialization process during the seventies and eighties, the Chinese government, in its different initiatives, has bet on high technology for the next decade. Although still in its initial state, fomentation of high-tech

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118 From 2000 to 2003 the maquiladora chain in Mexico lost almost 100,000 jobs, or 32.3 % of all jobs in the sector.

119 The Sinatex SA de CV company, located in the city of Obregón, Sonora, has existed in Mexico since 2001 and has invested around $ 96 million dollars for the production of fibers and textiles

processes and products includes countless instruments and mechanisms: the China Torch Program, the focalized attraction of companies and individuals to industrial parks, the massive creation of curriculum for the generation of software in educational institutions, as well as financial incentives and tax reimbursements, among many others. Likewise, the co-operation between different ministries or departments is interesting with similar objectives – in other words, the "horizontalization" of public insti-tutions in order to arrive at solutions of major problems in the chains –, as is the cooperation and competition for attracting this kind of company among provincial and local institutions, and a long-term vision, at least unto 2020. Considering the aspects analyzed in Chapter 4 and the instru-ments used by the government in its diverse initiatives, microprocessors have become the most important controversy between China and the United States in the WTO in 2004, given that from the perspective of the United States companies, these are not able to reimburse the value added tax paid for their exports to China; the consequences of this controversy can be highly significant for the central government's broad incentive scheme for fomenting and coordinating economic policy.

Although still in its initial phase, the 2003 results have been notable in the PC chain. On one hand, they have generated a significant investment dynamic, considering that at the present time around 4.1 million people and approximately 1/3 of all Chinese exports are linked to the electronics and information industries. Even though these dimensions are still relatively small for China, they are very large for their Central American and Mexican counterparts; in Mexico, there were 95,000 jobs in assembly, machinery, and electric and electronic equipment in the maquiladora companies at the end of 2003, which is to say 2.3 % that of China, and the gap in terms of jobs with other electronics groups in Guadalajara, Tijuana, and Ciudad Juárez is even wider. All these experiences – including those of China, Costa Rica, and Mexico – seek to upgrade the PC value added chain in order to obtain greater benefits from global integration.

The success pf the transformation process towards high-tech products and processes in China, however, is not guaranteed at this time. One aspect that differs from the Chinese strategy of the eighties with regards to the yarn-textile-garment chain is that the high-tech sector is now led by foreign companies, a small group of Chinese suppliers, and a group of brand-name Chinese companies that is still small. The capacity for

coordination and planning on the part of the central government in the face of the expected loss of jobs in the state businesses is very low and is characterized by a high level of uncertainty.

Although the majority of the productive plant of PC companies established in China have specialized in massive assembly processes and products that are relatively simple, it has recently integrated more complex segments in engineering and design services (Businessweek 2002c; Lazonick 2003; Lüthje 2004; Sigurdson / Long 2003; Sigurdson 2004).[120] From this perspective, the medium and long-term strategy of China's central government is to integrate FDI into capital-intensive processes and products, with the software, design, and infrastructure provided by China. The growth and expectations of the internal market are, unlike those of many other nations, especially in Latin America and the Caribbean, a great incentive for foreign and national businesses: since 2002 China has become the second PC market at the global level, only topped by the United States, with an AAGR estimated at 26 % for 2002–2006 (USDC 2003).[121]

The case of the PC chain makes it possible to concretize the depth of the competition among the Central American, Chinese, and Mexican economies. As previously analyzed, Central America has no significant share in the chain. Nevertheless, China and Mexico compete directly in the chain, both in the United States market and in the internal Mexican market. In both markets, particularly during 2001–2003, China has displaced Mexico: the market share in the United States market in the electronic computer segments rose from 4.23 % to 28.19 %, while the Mexican share fell from 14.34 % to 10.87 %. Likewise, in 2000–2003 alone China increased its share in the Mexican market from 4.01 % to 29.09 %, thus becoming the number one exporter in the PC chain. As formerly analyzed, Chinese competition with Mexico in this segment

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120 Kraemer / Dedrick (2002) highlight numerous limitations in this upgrading process, especially the lack of scale economies, the specialization in standardized PCs, and the segmentation of regional markets in China. Nevertheless, companies like Legend have increasingly concentrated their activities in software, internet services, and information applications, as well as computer equipment (see also MIGA 2003).

121 In the internal PC market the Chinese companies lead in sales, with Legend, Founder, and Great Wall, among others, obtaining percentage shares of more than 50 % (Kraemer / Dedrick 2002; USDC 2003).

generated losses of more than 21,000 direct jobs and investments estimated at around $ 500 million dollars during 2001–2003.

In qualitative terms, it is notable that China and Mexico, until the mid-nineties, had been integral parts of the production networks of Asian and United States businesses, especially. Since then, however, China has engaged in an active integration into European markets and, particularly into the United States market, affecting trading partners like Mexico.

Two aspects are relevant in this context. In the first place, even though direct competition between China and Mexico in the PC chain has generated worries and significant losses in the Mexican economy, in certain products – as detailed in Chapter 4 for the United States market – Mexican exports would seem to have come out ahead in the competition with Chinese products. In the second place, the large part of the competition between China and Mexico is the result of intrafirm strategies and of PC networks that have decided to open or close plants and/or eliminate/amplify production lines for new products.

It is important to consider that in the current debate on the challenges posed by China for Central America and Mexico, as well as for Latin America and the Caribbean in general, China now directly participates and competes in their respective domestic markets and in other markets, as is detailed in this document. In the case of Mexico, it has been its second most important trading partner since 2003. China's entry into the WTO and the elimination of quotas in the yarn-textile-garment chain permit assurances that these tendencies will deepen the significant productive and commercial shifts at the global level and in Latin America. China's integration into the world market and its intensification will also generated pressures towards lower prices and will affect most of the commodities exported by Central America and Mexico, particularly to the United States. From the regional perspective it is indispensable to deepen the analysis of other value chains and the challenges or complementary aspects generated by China, with the aim of measuring short, medium, and long-term policies for fomenting competition in the productive apparatus and concretizing cooperative projects in the face of China's demand for specific products (see Statistical Annex 2) and the existing competition in other fractions.

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