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The Impact of Foreign Direct Investment in Mexico

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The Impact of Foreign Direct Investment in Mexico

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Introduction

In the 1990s, Mexico was one of Latin America's and, indeed, the world's most successful countries in attracting foreign direct investment (FDI). This paper examines the extent of this process and its effects on the Mexican economy. We provide an overview of Mexican FDI since the early 1990s, identify the factors that led to FDI inflows, and describe the effects of FDI in terms of output, employment, trade, and R&D expenditures, among other variables. Specifically, we analyze these effects using newly available data on the industry level. Finally, we make several policy proposals aimed at improving both the quantity and quality of FDI in the future.

The paper is divided into four sections. The first briefly outlines theories of FDI and development, including an overview of the literature on the impacts of FDI in Mexico. The second section highlights the main trends in Mexican FDI since the 1990s from an aggregate perspective, as well as some major sectoral tendencies. The third section analyzes the effects of FDI in Mexico's manufacturing sector at the industry level, considering more than 25 variables. The final section outlines the main conclusions and presents various policy proposals.

Brief Conceptual Background

The debate on the determinants of FDI and its effects is still unsettled. The current process of globalization – the opening of national economies, the growing role played by multinational corporations, and the increasing transfer of segments of the production chain outside these corporations' home countries – has promoted the growth of global FDI flows (UNCTAD 2006). Flows of capital and FDI have an increasing impact on national economies. Dunning's "eclectic" approach (1993, 1998, 2005 and 2006) has done a great deal to explain the reasons for FDI, the factors affecting FDI flows, and the effects of FDI, but some issues still need further exploration.

The existing FDI literature points to such varied factors affecting FDI flows as the size and dynamism of host-country markets, the costs of production and distribution (in particular, labor costs and tax levels), geographic location, the macroeconomic environment of the host country, and its level of commercial openness and capacity to attract FDI for specific purposes.[iii] On the other hand, Sanjaya Lall and Michael Mortimore have made a significant contribution to the literature by classifying the aims of multinational corporations undertaking FDI into three broad categories: efficiency-seeking, market-seeking and natural-resource-seeking.

Findings on the causes and effects of FDI depend a great deal on the level of analysis undertaken, whether micro, meso, macro, or regional. Studies done at different levels of analysis have arrived at differing and even contradictory empirical results. On the one hand, various studies using different methodologies have found positive associations between FDI and exports, GDP, wages, and employment. However, others have found no positive associations between FDI and aggregate investment, investment in analyzed firms, imports, or trade balances (Dussel Peters, Galindo Paliza and Loría Díaz 2003:293-298).

By 2003, a growing body of research, employing varied approaches and data showed the complexity of the effects of FDI, especially when considered at different levels of aggregation. This research displaced earlier, more simplistic, results and proposals. The variety of findings owes not only to the study of different countries and sectors, but also the use of different methodologies, levels of aggregation, and periods of analysis that do not permit meaningful comparisons. Almost all existing studies and conceptual approaches focus on the intra-sectoral effects of FDI while inter-sectoral effects – which could be much more important, but for which information is lacking – have not received much attention.

The same document concludes–with an analysis conducted at the macro, meso, micro and regional levels, including international literature and results – that the overall effect of FDI in Mexico has been limited. While FDI in Mexico is high in terms of percentages of GDP and employment, and there is a strong positive association between FDI and exports, much of this is based on "temporary" imports processed for re-export. The spillover effects of FDI – in terms of productivity, technology transfer, and investment in R&D – may be positive or negative, depending on the level of aggregation of the analysis. Most FDI, however, involves only limited linkages with the rest of the Mexican economy, both in manufacturing as a whole and in specific regions.

Recent debates on competitiveness, territorial endogeneity and the international integration of specific products and processes, in this case through FDI (Dussel Peters and Bair 2006), highlight three aspects of the current globalization process:

> **1. Global Commodity Chains and its Segments.** Gereffi, Jennifer Bair and Miguel Korzeniewicz, among others, have highlighted the enormous importance of the international insertion of firms in global commodity chains and in specific segments of these chains (Gereffi and Korzeniewicz 1994; Bair and Dussel Peters 2006). Global commodity chains are composed of various segments with very different characteristics: In the textile-apparel chain, for example, the research and development segments have much higher value added than the manufacturing segments (and the assembly segment in particular). Even though authors like Hirschman (1958) examined global commodity chains long ago, their methodology emphasized the development of international linkages, rather than the differing characteristics of various value-chain segments. A purely macroeconomic perspective – of structural adjustment, for example – does not explain the specific conditions and challenges of different chains, much less the conditions under which particular firms or countries "upgrade" from one segment to another within a specific chain (Rodrik 2006a). In the Harmonized Tariff System (HTS) there are around 17,000 items registered (at the 10 digit level) for foreign trade. Their characteristics vary dramatically in terms of the firms, their size, the technology used, financing, employment, quality, training requirements, learning capacity and upgrading, commercial conditions, etc. If the analysis of FDI does not disaggregate at the product and process level, any specific proposals may be trivial and lack any content.
>
> **2. Systemic Competitiveness and Collective Efficiency. S**ince the 1990s, in an open critique of Michael Porter and of the competitiveness vision proposed by the Organization Economic Cooperation and Development (OECD), a series of authors have pointed out the importance of integrating micro, meso and macro analyses of competitiveness (Esser 1999; Messner and Meyer-Stamer 1994). An exclusive emphasis on any of these analytic levels, they argue, fails to recognize the complexity of socioeconomic processes in time

and space. These authors have highlighted the mesoeconomic level of competitiveness (the relationship between firms) and the role of institutions (Meyer-Stamer 2005), the control of specific value chains and their segments (Messner 2002), and and the characteristics of particular global commodity chains (Humphrey 2004). These authors show the importance of integration between firms in fostering learning, innovation,[iv] and collective efficiency.

3. Territorial Endogeneity. Even though the previously mentioned studies are useful in counteracting the dominance of microeconomic and macroeconomic approaches, they generally fail to address territorial variations in forms of global integration. In the alternative approach of "territorial endogeneity," it is not firms but territories or regions that are the analytic starting point (Bair and Dussel Peters 2006; Vázquez Barquero 2005). This kind on analysis emphasizes how different territories are integrated into global commodity chains (from a "glocal" – global and local – perspective).[v]

In the last few decades some segments of manufacturing value chains, particularly from industrialized countries, have been transferred to less-developed countries. This process is likely to continue and even to deepen in the services sector, which is much more significant than manufacturing, in terms of GDP and employment, in the countries of origin (Lall 2005; Sturgeon 2006). In the coming years, the repercussions of the "globalization of services" on receiving countries may be much more significant than the results, over the last few decades, of changes in the industrial organization of manufacturing.

Recent research on FDI at the international level calls attention to three issues:

Firstly, recent scholarship has pointed out, with particular attention to the case of China (Rodrik 2006a),[vi] that the most successful countries in terms of GDP growth and development broadly understood have followed heterodox policies (Rodrik 2004. However, it also highlights macroeconomic stability, integration to the world market, the protection of private property rights, and social cohesion and social stability as the principal factors in economic growth (Fernandez-Arias and Hausmann, 2000)[vii]. This kind of analysis suggests the need for bigger empirical studies, a certain skepticism (as implied by Dunning's eclectic theory of FDI) about sweeping theories on economic growth, and openness to a diversity of heterodox policies (Hausmann, Rodrik and Velasco, 2004).

Secondly, traditional authors like Dunning (2006) argue that in the current context of globalization the potential for technological development, new networks within and between firms, and new learning experiences have increased substantially. In this view, institutions and their quality – through incentive structures, property rights, etc. – and the diverse types of FDI – market, efficiency, resource or strategic asset seeking – are critical to understanding the conditions and effects of FDI[viii].

Thirdly, the origins and destinations of FDI in specific sub-national regions or territories has been scarcely studied. This is largely due to statistical and methodological issues, especially the lack of information about specific firms.

Background on the relevance of FDI for the Mexican Economy

A series of analyses have described the growing significance of FDI in the Mexican economy since the liberalization at the end of the 1980s (Dussel Peters 2000; Dussel Peters, Galindo Paliza

and Lora Díaz 2003; Ibarra and Moreno-Brid 2004; Gallagher 2004; Gurría Treviño 1993). These studies have highlighted FDI both as one of the main means of financing the trade deficit – along with oil revenue, remittances and the surplus generated by the *maquila* industries – and as a source of potential modernization and integration into world markets.

Murillo Romo (2001) has made a particularly detailed analysis on the effects of FDI in Mexico. Including a general view of spillover effects and linkages, as well as several sectoral studies (e.g., for the chemical fiber and pharmaceutical industries), the research concludes that FDI has generated a modern sector with high levels of productivity, but has also displaced Mexican firms. It still has not been proved that domestic firms absorb new technologies and processes as a result of FDI. In the case of Mexico, it is necessary not only to determine how to attract FDI but also to understand in more detail what will be the likely results for the country's economy[ix].

The strategic importance of FDI has already been established for the public sector and, in accord with the liberalization strategy in place since 1988, on the macroeconomic level (Sojo Garza-Aldape 2005). In the period 1998-2004, FDI represented more than 100% of the country's current account deficit. [Advocates of liberalization consider it important to Mexico's integration into world markets and the modernization of its productive base. Mexican policymakers since the 1980s have considered a favorable macroeconomic environment a pre-requisite for attracting FDI.

Main Trends in FDI in Mexico

Currently, FDI is regulated by the Foreign Investment Law of 1993 (*Ley de Inversiones Extranjeras*, or LIE) (DOF 1993). The LIE incorporated changes made over the years to the law of 1973 as well as investment provisions of the North American Free Trade Agreement (NAFTA) (Dussel Peters 2000). It also simplified the procedures of the National Committee on Foreign Investment (CNIE), leaving only four criteria for evaluating investment petitions.

Without attempting to analyze in detail the regulation on FDI up to 2007[x], three issues stand out in regard to the current legal framework on FDI:

1. Since the beginning of the 1990s, there has been persistent controversy about the opening, either totally or partially, of the petroleum and electricity sectors to private and foreign capital. There still is not, however, a proposal agreed by all political parties on the advantages or disadvantages of foreign participation in these industries? This will certainly remain an important issue in political and legislative debates in the future.

2. Another important debate in the last few years has revolved around "neutral investment." The concept of neutral investment, which means investment by Mexican firms or in trusteeship granting only beneficiary rights to its foreign investors (or, at most, limited corporate rights), was adopted for the first time in the Foreign Investment Law of 1993. This kind of investment is directed mainly at sectors reserved for Mexicans, and requires authorization by the Ministry of the Economy and registration at the Foreign Investment National Registry (RNIE). Neutral investment is not counted when determining the share of foreign investment in the total capital of Mexican firms nor in the statistics published by the RNIE. For several years there have been reform initiatives aimed at making this kind of investment more transparent.

3. Although the Foreign Investment Law has not been directly modified since the 1990s, the Mexican government has adopted some measures – particularly in the arena of trade

policy – to promote FDI. It has signed several free-trade agreements and agreements for the reciprocal promotion and protection of foreign investment. Although most of these agreements were signed in the 1990s, since then Mexico has signed a free-trade agreement with Uruguay (2004) and entered into an economic association with Japan (2005). In addition to Mexico's joining the Organization for Economic Cooperation and Development (OECD) in 1994 and the entry into force of NAFTA in the same year, the country also undertaken some sectoral competitiveness programs and entered into the International Agreement on Information Technology (ITA-Plus) to attract foreign investment.

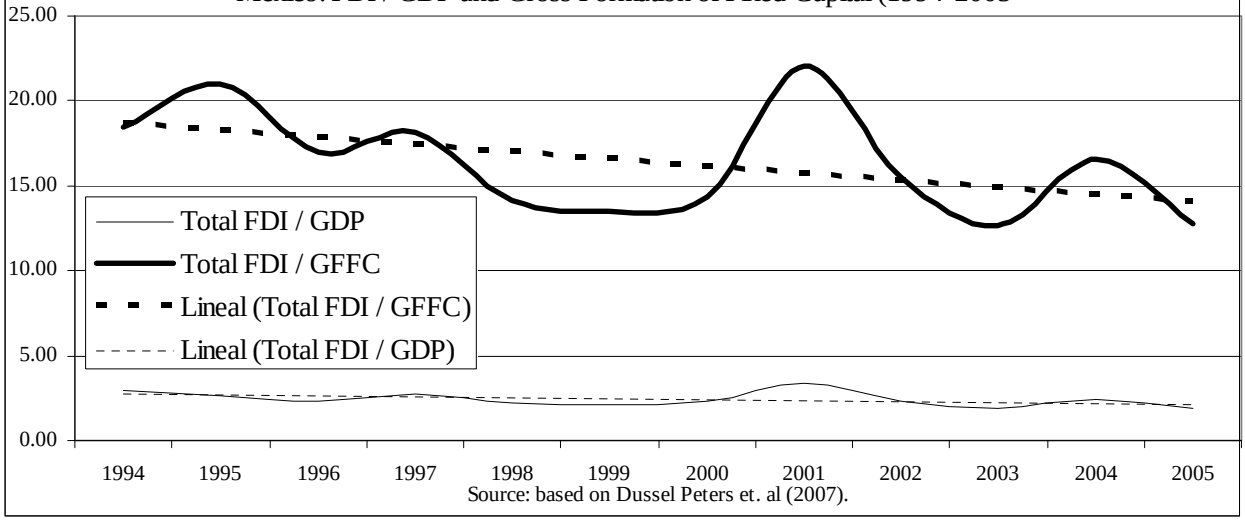
Against this background, what have been the most important trends on FDI in Mexico?

Mexico has lost importance as a host of FDI at the global level (UNCTAD 2006). From accounting for about 3.6% of global FDI in 1990-1995, it declined to only 2.0% in 2005.

On the other hand, FDI has a high degree of importance in the Mexican economy. Although national and international statistics show different absolute values – due to methodological issues (Dussel Peters *et al*. 2007) – the overall picture is clear (UNCTAD 2006): Worldwide, FDI has grown with respect to gross formation of fixed capital (GFFC) from 4.1% in 1990-1995 to more than 10% since. For Mexico, the ratio was significantly higher than the world average (14% for the entire period1990-2005). While FDI in Mexico declined relative to GDP and GFFC over the period 1994-2005 (see Graph 1), the averages for FDI/GDP and FDI/GFFC were 2.35% and 15.63%, respectively.

Graph 1

Mexico: FDI / GDP and Gross Formation of Fixed Capital (1994-2005



Source: based on Dussel Peters et. al (2007).

Table 1
FDI in Mexico (1994-2006) 1/
Millones de dólares

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006 Jan.-Sep. 4/		Accum. 1994-2006 2/	
													Value	Share % 5/	Value	Share %
New Investments	*9,752*	*7,008*	*6,431*	*10,465*	*6,263*	*6,203*	*8,106*	*20,516*	*11,385*	*6,012*	*13,328*	*9,463*	*5,106*	*36.2*	*120,038*	*57.1*
New Investments	7,405	6,309	6,042	5,198	5,257	6,059	4,221	6,271	7,669	5,848	8,458	6,975	4,686	33.2	80,399	38.2
Notified to RNIE	7,405	6,309	6,042	5,198	5,257	6,059	4,221	6,271	7,669	5,848	8,458	6,975	1,436	10.2	77,149	36.7
Estimated 3/												0	3,250	23.0	3,250	1.5
Mergers and Acquisitions	2,347	699	389	5,268	1,006	144	3,884	14,245	3,716	163	4,870	2,488	419	3.0	39,639	18.8
Notified to RNIE	2,347	699	389	5,268	1,006	144	3,884	14,245	3,716	163	4,870	2,488	419	3.0	39,639	18.8
Estimated 3/												0	0	0.0	0	0.0
Reinvestment of profits	*2,367*	*1,572*	*2,590*	*2,150*	*2,864*	*2,333*	*3,850*	*3,854*	*2,440*	*2,067*	*2,330*	*3,460*	*3,048*	*21.6*	*34,923*	*16.6*
Notified to RNIE						2,333	3,850	3,854	2,440	2,067	2,330	3,460	3,048	21.6	23,381	11.1
Estimated 3/	2,367	1,572	2,590	2,150	2,864										11,542	5.5
Intra-firm Transfers	*2,039*	*-250*	*-350*	*-116*	*1,179*	*2,390*	*2,834*	*886*	*3,476*	*5,308*	*4,150*	*3,190*	*3,688*	*26.1*	*28,422*	*13.5*
Notified to RNIE						2,390	2,834	886	3,476	5,308	4,150	3,190	3,688	26.1	25,921	12.3
Estimated 3/	2,039	-250	-350	-116	1,179										2,501	1.2
Imports of fixed assets made by maquiladora	*895*	*1,366*	*1,417*	*1,680*	*2,111*	*2,778*	*2,983*	*2,172*	*2,044*	*1,961*	*2,475*	*2,822*	*2,274*	*16.1*	*26,976*	*12.8*
TOTAL	15,052	9,696	10,087	14,180	12,416	13,704	17,773	27,429	19,344	15,348	22,283	18,934	14,114	100.0	210,359	100

Source: authors' elaboration based on Secretaria de Economia
1/ Figures notified by September 30th, 2006.
2/ From January 1st, 1994 to September 30th, 2006.
3/ Estimation of Executed FDI not yet notified to RNIE
4/ Includes estimation of executed FDI not yet notified to RNIE
5/ In accordance with international practices, the sum of partial percentages may differ from the corresponding totals or sub-totals because the rounding is done automatically by the spreadsheet.

Note: The figures given in this paper are not comparable -and, therefore it is not valid to sum them up- with the statistics on FDI published by the Secretaría de Economía for years previous to 1994, due to the methodologies used
Before 1994 annual FDI was integrated with the figures notified to the RNIE every year (without taking into consideration the lag with respect to the dates where the investments were actually made), in addition to the amounts involved in the authorized pr

In the figures obtained with the new methodology are integrated with the amounts notified to the RNIE that effectively materialized each year, an estimation of the amounts not yet notified to the RNIE and the value of imports of fixed assets.

Table 1 shows the main aggregate characteristics for FDI in Mexico between 1994 and 2006, in particular:

1. The composition of FDI in Mexico has changed substantially over this period: Until 1998, more than 50% of FDI (in 1997, 73.8%) was "new investment." Since then, new investment has fallen below 40% of total FDI in some years. The flipside has been the growth in reinvestment of dividends and, more importantly, in intra-firm transfers. For the latter, the average annual growth rate was 4.2% between 1994 and 2005, compared to -0.3% for new investments.

2. Within the "new investment" category, some important changes are also observable: investment in new fixed assets has declined steadily compared with mergers and acquisitions. [The issue of greatest relevance regarding FDI in new fixed assets –using new investments as a proxy- has been constantly decreasing for the period.

3. Imports of fixed assets by *maquiladoras* with FDI have gone through several cycles: between 1994 and 2000 they grew at an average annual rate of 22.2%; for 2001-2005, at a much lower annual rate of 4.5%, though with a significant recovery since 2004. These figures are intimately liked with the conditions of the export *maquila* industry and the state of the U.S. economy.

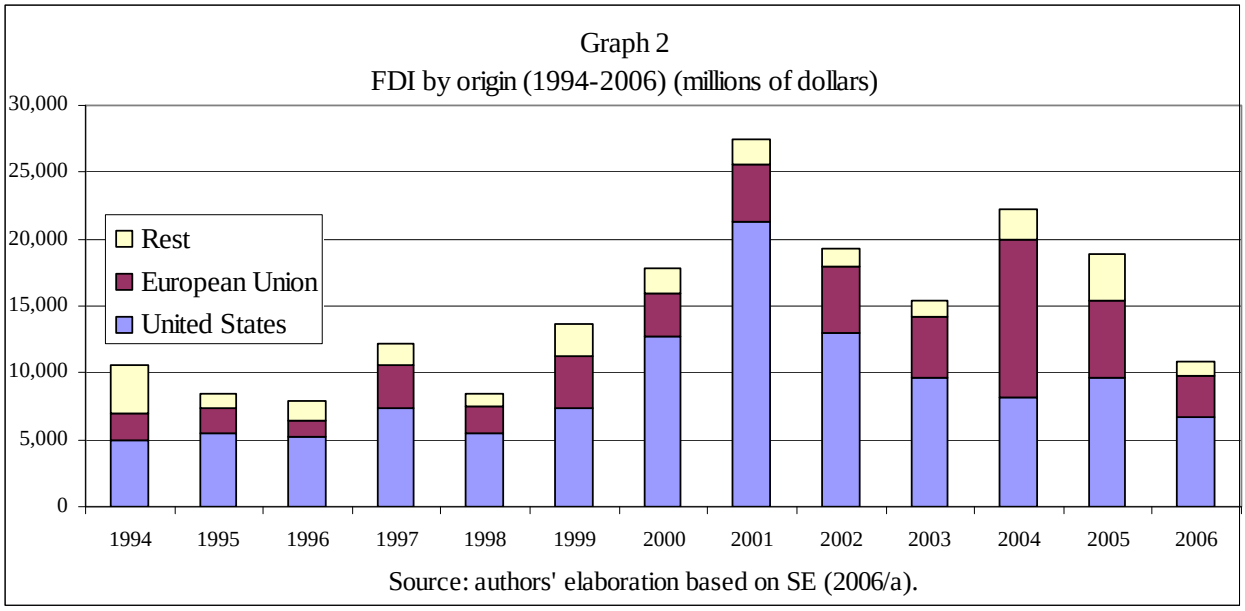
The manufacturing sector (which includes *maquiladoras*) accounted for 49% of executed FDI[xi] between 1994 and 2005, constituting the most important sector. The financial services sector, which ranks second in this category, increased its share of executed FDI substantially as a result of the sale of national banks between 2000 and 2002, although this tendency is likely to diminish. The third-ranked sector, accounting for 10.8% of executed FDI between 1994 and 2005, is commerce, with an average annual growth rate (AAGR) of 6.7% for the period[xii].

For both agriculture and for mining, FDI has been minimal, totaling only $455 million and $1,285 million, respectively, for the whole period, with average annual growth rates of 11.3% and 16.4%, respectively. The electricity and water sectors, surprisingly, have been the most dynamic for the period, with an AAGR of 25.9% between 1994 and 2005.

At the aggregate level, FDI is highly concentrated by place of origin and destination. The United States and the European Union together accounted for 87.4% of incoming FDI between 1994 and 2006 (see Graph 2). While the U.S. share has been relatively stable, the EU's grew from less than 20% until 2002 to levels steadily higher than 30% since. In particular, Holland, Spain and Germany have increased their investments in Mexico. In contrast, the U.S. remains dominant in *maquila industry for export* (MIE), with close to 90% of total FDI. The shares of the EU and Japan were 4.4% and 2%, respectively, between 1994 and 2006.

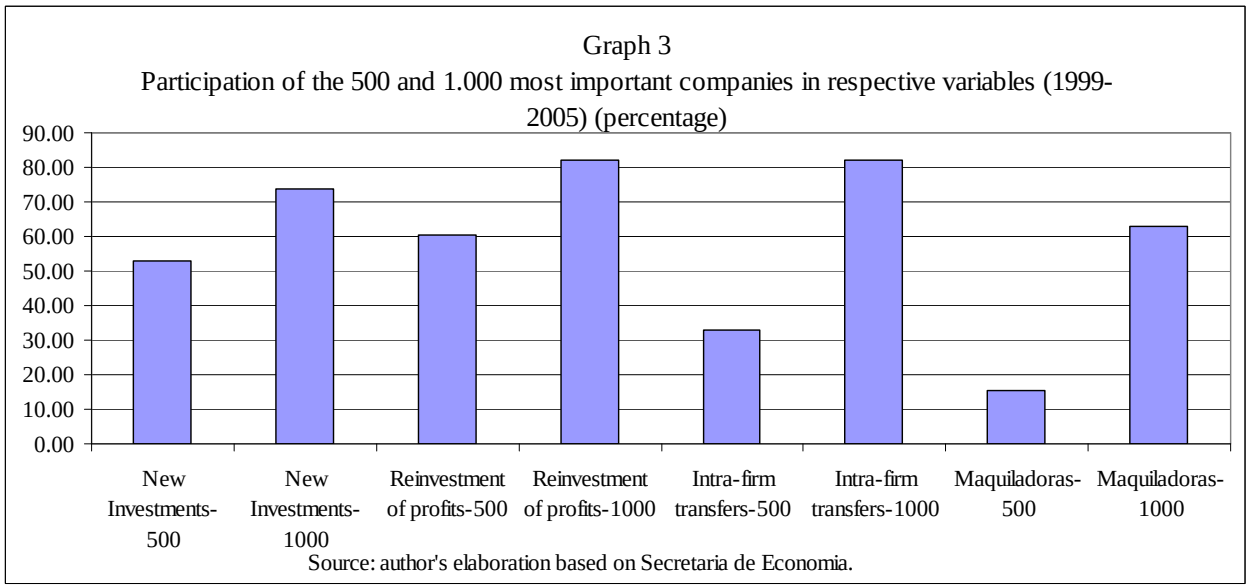
Executed FDI has been located mainly in the Federal District (DF). The DF accounted for 57.5% of FDI during the period 1994-2006, though with its share declining since the 1990s and falling below 50% since 2005. Nuevo León, Estado de México, Jalisco, Chihuahua and Baja California have increasingly attracted executed FDI.

Finally, the top 500 and 1000 companies by FDI in Mexico accounted for an enormous percentage of total FDI during 1999-2005[xiii]:



1. The 500 and 1.000 most important companies account for a very high proportion of total executed FDI (64.9% and 74.7%, respectively). This concentration is increasing , as the average annual growth rates in FDI by the 500 and 1.000 most important companies (4.9% and 4.8%, respectively) are much higher than for overall FDI (3.8%). In future studies, a detailed analysis of this group of companies would cover a very large share of total FDI and would render unnecessary a study of the more than 30,000 companies registered with the RNIE in 1994-2005.

2. For all the major FDI categories except MIE (in which the 1000 most important companies account for 62.9% during 1999-2005) the share of the 1000 top companies is more than 70%, reaching 82.98% for reinvestment of profits (see Graph 3).



Effects of FDI at the industry level in manufacturing

Newly available data for the 653 industries in Mexico's manufacturing sector make possible a much more detailed analysis. Looking at the characteristics of the 20 most important industries -- ten with growing shares of FDI between 1994 and 2005 and ten with declining shares – the results are surprising. Table 2 shows substantial changes in the destinations of executed FDI by industry, including:

1) The ten industries that have grown the most in terms of executed FDI increased their total share from 8.73% in 1994 to 48.58% in 2005. Meanwhile, the ten whose shares declined went from a total share of 45.18% to a share of only 7.08% over the same period. In a relatively short period, these 20 industries -- out of 653 -- have been responsible for most of the sectoral changes in FDI.

2) Among the industries whose shares of FDI have grown the most, several are particularly noteworthy: The auto and truck parts and accessories industry accounted for 9.97% of total executed FDI in 2005. Food retail, highly linked with a small group of large retail companies, increased from 0.04% of FDI to 6.39% between 1994 and 2005. Two industries linked to real estate, meanwhile, accounted for 8.07% of executed FDI in 2005. FDI to the ten FDI-growth industries grew at an average annual rate of 21.3% during the period 1994-2005 (compared to 3.8% for total executed FDI).

3) On the other hand, the industries whose shares of total FDI fell during the years 1994-2005 were linked to sectors such as petroleum retail, telephone services, pharmaceutical products, multiple banking, steel products manufacturing, and restaurants and bars. Although the causes of the decline in their shares vary, in several cases we observe FDI in the form of acquisitions of existing firms (often in quasi-monopolistic industries), followed by declines in FDI thereafter. For these industries, the AAGR of FDI was –12.3% during 1994-2005. After FDI inflows of more than $1,100 million in 1994, the steel-products manufacturing industry disappeared from the FDI register. Inflows fell constantly – even registering some negative figures -- after 2002.

Building on previous efforts to analyze FDI at the industry level (Dussel Peters, Galindo and Loría 2003), we develop a typology of the most important industries in the manufacturing sector during 1994-2005. Using detailed information from the National Institute of Statistics, Geography and Informatics (INEGI) and the Ministry of the Economy for the 205 existing industries in manufacturing (of which we analyzed 197 due to missing data for the others),[xiv] we developed selection criteria for the ten and twenty most important industries by FDI share during 1994-2005. We describe the characteristics of not only the most important industries, but also the other 177.

Table 2

FDI by Economic Classes
Millions of Dollars

		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	1994-2005
	10 Classes with the greatest increase in participation (1994-2005)						**Millions of Dollars**							
1	Manufacturing of parts and accessories for cars and trucks	299	343	364	407	391	680	824	1,112	805	883	890	1,601	8,598
2	Retail of food products in supermarkets and convenience stores	4	45	113	1,632	320	263	1,108	978	433	578	613	1,026	7,112
3	Other professional, technical, and specialized services non mentioned before	96	61	50	47	113	664	1,073	575	309	438	50	1,140	4,617
4	Trusteeship of real estate located in the restricted zone	0	0	2	6	11	17	45	97	242	250	322	630	1,623
5	Manufacturing, assembly and repair of information processing machines	31	31	117	73	224	220	279	275	190	145	235	584	2,403
6	Preparation and mix of animal food	3	2	17	-6	4	26	56	52	11	26	-3	514	703
7	Manufacturing of air conditioning, refrigeration and heating equipment	15	43	18	36	36	63	34	58	70	268	104	478	1,223
8	Manufacturing of products not elsewhere classified	85	72	118	194	290	474	1,203	458	497	333	340	541	4,605
9	Other telecommunication services	168	435	156	262	123	245	401	718	-8	157	30	623	3,309
10	Services of purchase, sale and management of real estate (real estate agencies).	229	68	18	70	61	181	303	155	169	63	138	666	2,120
	Subtotal	931	1,101	971	2,721	1,574	2,833	5,325	4,478	2,718	3,140	2,719	7,801	36,313
	Rest	9,733	7,273	6,876	9,419	6,797	10,863	12,449	22,664	16,321	11,999	16,204	8,259	138,859
	10 Classes with the greatest decrease in participation (1994-2005)													
644	Petroleum and tractoline retail	121	54	49	0	0	0	0	0	0	0	0	0	224
645	Phone Services	496	289	263	90	256	16	-2,524	1,934	695	1,467	1,159	517	4,657
646	Building of industrial plants	169	23	5	2	15	-23	11	-3	45	27	34	24	328
647	Manufacturing of pharmaceutical products	157	119	158	165	198	294	58	-710	788	120	329	-23	1,653
648	Beer and Malt industry	510	0	0	605	561	77	36	27	58	310	343	419	2,947
649	Manufacturing of snacks and corn products not elsewhere classified	425	0	2	0	-148	77	202	-676	177	1,060	1	2	1,123
650	Manufacturing and assembly of cars and trucks	558	517	236	558	25	1,380	460	115	339	153	1,182	89	5,614
651	Multiple Banking	654	276	129	312	58	33	1,610	12,466	3,100	947	4,485	197	24,266
652	Restaurant and Bar Services	605	18	3	19	35	107	51	29	80	26	108	-72	1,011
653	Manufacturing of other steel products	1,123	95	315	30	33	21	32	17	31	9	23	-15	1,715
	Subtotal	4,818	1,390	1,159	1,782	1,033	1,983	-63	13,200	5,314	4,120	7,664	1,137	43,537
	Rest	5,846	6,984	6,688	10,358	7,338	11,714	17,837	13,942	13,726	11,019	11,260	14,923	131,635
	TOTAL	10,664	8,375	7,848	12,140	8,370	13,697	17,773	27,142	19,040	15,139	18,923	16,060	175,171

Source: authors' elaboration based on Secretaria de Economía (Dirección General de Inversión Extranjera). Data coverage up to April 2nd 2006

Several characteristics of the ten and twenty most important manufacturing industries are noteworthy, in contrast to both the rest of the manufacturing sector and the characteristics highlighted by previous research. At the industry level, three types of activities stand out by their weight in FDI: a) the automotive and auto parts chain, b) the electronics chain (including parts and accessories, telecommunications product repair, television sets and sound equipment, etc.), and c) industries linked to the manufacturing of alcoholic (beer) and non-alcoholic beverages, cigarettes, pharmaceuticals, cosmetics, perfumes, plastics and home products, among others. There are some industries with negative FDI flows for the whole period, while 98 industries (half of the manufacturing universe studied) had as share of FDI flows less than 0.1% of the total during 1994-2005.

Table 3
Typology of manufacturing economic classes by participation in total FDI (1994-2005)

	TOTAL ECONOMIC CLASSES		100.00
	MOST IMPORTANT 10		
1	384126	Manufacturing of other parts and accessories for cars and trucks.	11.72
2	384110	Manufacturing and assembly of cars and trucks.	7.65
3	313050	Manufacturing of sodas and other non-alcoholic beverages.	4.82
4	314002	Manufacturing of cigarettes.	4.71
5	383109	Manufacturing of electric material and accessories.	4.35
6	313040	Beer and malt industry.	4.02
7	382302	Manufacturing, assembly and repair of data processing machines.	3.28
8	383202	Manufacturing of parts and repair of communication equipment.	3.07
9	352221	Manufacturing of perfumes, cosmetics and similar products.	3.07
10	383103	Manufacturing of accessories for automotive electrical systems.	3.01
	11-20 MOST IMPORTANT		
11	352100	Manufacturing of pharmaceutical products.	2.25
12	312129	Manufacturing of food products for human consumption.	1.87
13	383206	Manufacturing of components and repair for radios, television receivers and audio equipment.	1.87
14	352222	Manufacturing of soaps, detergent and toothpaste.	1.86
15	383101	Manufacturing, assembly and repair of electric motors and equipments for the generation, transformation and use of electric, solar or geothermic energy.	1.80
16	383204	Manufacturing and assembly of radios, television receivers and audio equipment.	1.71
17	382206	Manufacturing of equipment and machines for air conditioning, refrigeration and heating.	1.67
18	383304	Manufacturing and assembly of small domestic goods.	1.62
19	356012	Manufacturing of other plastic products not elsewhere classified	1.61
20	312127	Manufacturing of snacks and corn products not elsewhere classified.	1.53
	REST		32.49

Source: authors' elaboration based on data directly provided by INEGI.

The results of the typology shown in Table 4 characterize the performance of the most important manufacturing industries for 1994-2003. It is particularly worth noting:

1. The ten and twenty most important industries have a growing share of manufacturing FDI , of 48.93% to 66.77% for 1994-2003, respectively. The remaining 177 industries represent only a third of total FDI for the period and are declining in importance.

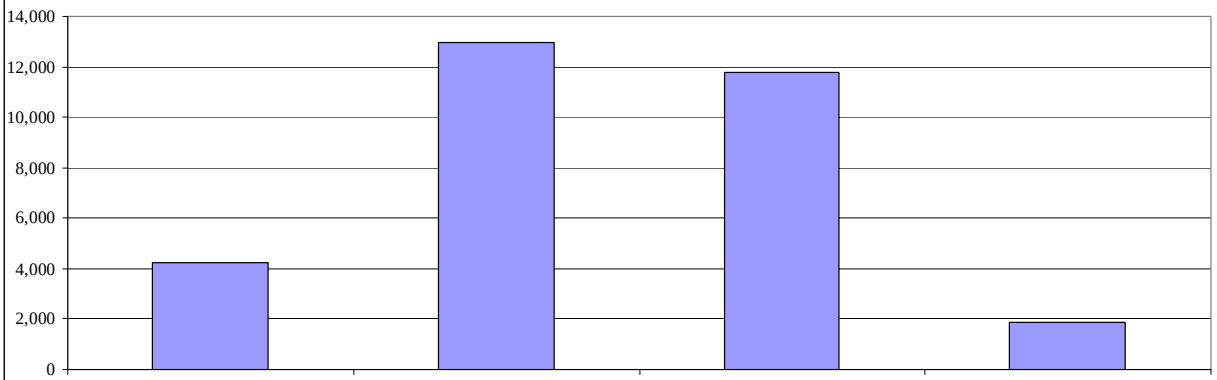
2. The executed FDI in manufacturing has substantially increased as a percentage of gross fixed capital formation, from 90.07% in 1994 to 160% in 2003. This trend is much more dramatic for the ten and twenty most important industries, for which the equivalent figure was over 300% in

2002 and 2003. In other words, in manufacturing and particularly in the most important industries FDI has been much more important than domestic investment.

3. FDI as share of total output (by value) decreased over the period, both for the manufacturing sector as a whole and for the ten and twenty most important industries: For the latter it declined from 9.69% in 1994 to 7.41% in 2003.

4. As manufacturing employment has declined since 2000, total FDI per employee has increased from less than $10,000 in the mid 1990s to more than $13,000 for the twenty most important industries. The differences between manufacturing as a whole and the ten and twenty most important industries are significant (see Graph 4).

Graph 4
Executed FDI in manufacturing by employee (in dollars) (1994-2003 average)



Source: authors' elaboration based on INEGI and SE.

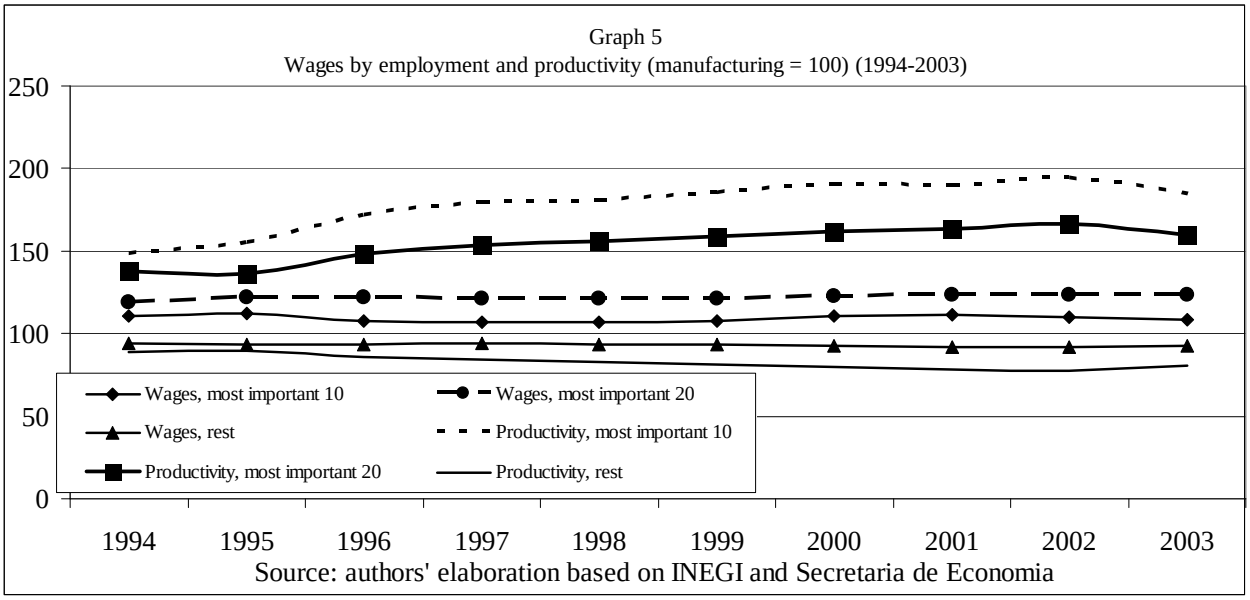
5. Job creation was negative for manufacturing as a whole, the ten and twenty most important industries, and the remaining manufacturing industries. Employment in manufacturing, and particularly in the ten and twenty most important industries, increased until 1999, but has declined since 2000. The share of the ten and twenty most important classes in total manufacturing employment has been quite steady, with the twenty most important industries averaging 23.66% of total manufacturing employment for 1994-2003.

6. Wages in the ten and twenty most important industries are significantly higher than the average in manufacturing (see Table 4), with the differences remaining constant over the period 1994-2003. Graph 5 shows that the gap between productivity and wages has increased significantly for the ten and twenty most important industries, but has decreased for the rest of the 177 manufacturing industries. Productivity gains in the most important industries have not been redistributed in terms of wage growth, while the rest of the industries in manufacturing have shown, during 1994-2003, unsustainable rates of wage growth above their rates of productivity growth.

7. Table 4 and Graph 5 show huge differences in productivity between different industries. In 2003, productivity in the ten and twenty most important industries exceeded that in manufacturing as a whole by 84.53% and 59.91%, respectively. Productivity in the other 177 manufacturing industries was 20% below the manufacturing average. There is a clear positive association, then, of FDI with productivity levels and growth rates, although without job creation.

8. The typology establishes a clear positive association between the industries with the greatest weight in executed FDI and foreign trade (both exports and imports). Although the most important industries' share of total sales increased – from 31.14% in 1994 to 39% in 2003 – the increase in their share of foreign trade stands out. These industries increased their exports as a function of total output (by value) from 25.16% in 1994 to 43.55% in 2003 and decreased their imports as a function of total output from 27.29% to 27.08%. Both exports and imports (as a share of total output) are about 50% lower for the rest of the manufacturing sector. The twenty most important industries now have a significant trade surplus relative to total output, going from a deficit in 1994 to a surplus of 16.47% in 2003. The trade surplus relative to output was only 2.89% for the rest of the industries in the manufacturing sector in 2003.

Graph 5
Wages by employment and productivity (manufacturing = 100) (1994-2003)



Source: authors' elaboration based on INEGI and Secretaria de Economia

9. One of the most surprising results of this typology is that FDI is not positively associated with research and development (R&D) expenditures. The twenty most important industries in terms of executed FDI actually exhibit a clear declining trend in R&D expenditures over the period, from 0.39% of output value in 1994 to 0.07% in 2002, The latter was well bellow the equivalent figure for the remaining industries, which was 0.14% in 2002. These figures are particularly important as indicators of the potential for technological upgrading and spillovers through FDI.

10. The weighted tariff rate in manufacturing with respect to imports has fallen significantly, from 7.24% in 1994 to 0.69% in 2002 (see Table 5). This trend has been stronger for the most important industries in terms of FDI than for the rest of the manufacturing sector, although the differences are small: while the weighted tariff rate for the twenty most important industries was 0.53% in 2002, it was 0.90% for the remaining manufacturing industries.

Table 4
Typology based on most important manufacturing economic classes (by participation in total FDI during 1994-2005) \a \b

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	1994-2003
FDI (millions of dollars)	4,625	4,298	3,977	6,638	4,291	7,904	7,835	4,342	7,523	5,749	57,182
10 Most Important Classes, by FDI participation	2,086	1,785	1,253	4,310	1,671	3,851	3,483	2,904	3,908	2,335	27,587
20 Most Important Classes, by FDI participation	3,362	2,675	2,160	5,138	2,256	4,921	4,937	2,411	5,561	4,227	37,646
Rest, by FDI participation	1,263	1,623	1,817	1,500	2,035	2,983	2,898	1,931	1,963	1,523	19,536
FDI (1994=100)	100.00	92.92	85.98	143.52	92.77	170.88	169.39	93.87	162.65	124.30	--
10 Most Important Classes, by FDI participation	100.00	83.95	62.74	200.19	81.99	182.63	155.57	85.19	200.79	103.95	--
20 Most Important Classes, by FDI participation	100.00	89.27	81.41	171.70	93.71	172.38	180.91	75.62	181.79	134.61	--
Rest, by FDI participation	100.00	99.53	94.26	92.49	91.09	168.14	148.54	126.91	128.01	105.64	--
FDI (total = 100)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
10 Most Important Classes, by FDI participation	48.12	43.48	35.12	67.13	42.53	51.44	44.20	43.68	59.41	40.25	48.93
20 Most Important Classes, by FDI participation	64.42	61.89	60.99	77.07	65.07	64.99	68.80	51.89	72.00	69.76	66.77
Rest, by FDI participation	35.58	38.11	39.01	22.93	34.93	35.01	31.20	48.11	28.00	30.24	33.23
FDI/ Gross Fixed Capital Formation	90.07	111.87	75.43	123.93	74.48	138.33	126.81	71.16	139.84	160.34	111.74
10 Most Important Classes, by FDI participation	237.08	182.42	112.59	340.92	141.52	323.41	221.97	192.59	303.50	267.79	235.31
20 Most Important Classes, by FDI participation	269.12	222.91	152.37	317.12	138.29	293.73	236.58	118.89	325.83	369.79	239.71
Rest, by FDI participation	32.51	61.45	47.14	40.15	49.28	73.86	70.83	47.40	53.43	62.34	55.31
FDI / Production Value	4.15	4.99	3.79	5.40	3.40	5.61	4.92	2.79	4.78	3.93	4.35
10 Most Important Classes, by FDI participation	8.21	8.90	4.59	12.97	4.68	9.21	6.96	5.88	7.87	5.52	7.22
20 Most Important Classes, by FDI participation	9.69	10.16	6.21	12.10	4.93	9.18	7.74	3.76	8.51	7.41	7.53
Rest, by FDI participation	1.65	2.72	2.59	1.86	2.52	3.42	3.04	2.11	2.13	1.71	2.40
FDI / Employment (dollars by worker)	3,401	3,434	3,096	4,891	3,049	5,551	5,420	3,137	5,715	4,585	4,241
10 Most Important Classes, by FDI participation	9,983	9,496	6,437	21,072	7,606	16,847	14,586	12,556	18,274	11,881	12,982
20 Most Important Classes, by FDI participation	10,959	9,497	7,511	16,806	6,886	14,401	13,825	6,907	16,977	13,819	11,799
Rest, by FDI participation	1,200	1,673	1,823	1,427	1,885	2,756	2,662	1,866	1,985	1,606	1,898
Gross Fixed Capital Formation (total=100)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
10 Most Important Classes, by FDI participation	17.13	25.47	21.11	23.60	20.50	20.84	25.40	24.71	23.94	24.32	23.00
20 Most Important Classes, by FDI participation	24.33	31.23	26.88	30.25	28.32	29.32	33.78	33.24	31.72	31.87	30.60
Rest, by FDI participation	75.67	68.77	73.12	69.75	71.68	70.68	66.22	66.76	68.28	68.13	69.40
Employment (1994=100)	100.00	92.05	94.47	99.80	103.50	104.70	106.31	101.77	96.80	92.22	--
10 Most Important Classes, by FDI participation	100.00	89.96	93.19	97.91	105.18	109.41	114.30	110.68	102.37	94.06	--
20 Most Important Classes, by FDI participation	100.00	91.80	93.72	99.66	106.81	111.39	116.40	113.79	106.77	99.70	--
Rest, by FDI participation	100.00	92.12	94.69	99.84	102.53	102.75	103.37	98.27	93.90	90.04	--
Employment (total=100)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
10 Most Important Classes, by FDI participation	15.36	15.02	15.16	15.07	15.61	16.06	16.52	16.71	16.25	15.67	15.76
20 Most Important Classes, by FDI participation	22.56	22.50	22.38	22.53	23.28	24.00	24.70	25.22	24.88	24.39	23.66
Rest, by FDI participation	77.44	77.50	77.62	77.47	76.72	76.00	75.30	74.78	75.12	75.61	76.34
Wages (total=100)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
10 Most Important Classes, by FDI participation	17.02	16.87	16.31	16.10	16.67	17.24	18.27	18.58	17.85	16.96	17.39
20 Most Important Classes, by FDI participation	26.88	27.42	27.34	27.34	28.20	29.18	30.28	31.12	30.71	30.21	29.45
Rest, by FDI participation	73.12	72.58	72.66	72.66	71.80	70.82	69.72	68.88	69.29	69.79	70.55
Wages / Employment Level (pesos)	37,486	44,898	54,568	64,435	75,762	91,615	106,966	119,664	127,454	134,707	85,931
10 Most Important Classes, by FDI participation	41,535	50,455	58,732	68,818	80,865	98,347	118,329	133,054	140,031	145,784	94,850
20 Most Important Classes, by FDI participation	44,665	54,726	66,662	78,202	91,749	111,400	131,109	147,637	157,320	166,860	106,951
Rest, by FDI participation	35,395	42,046	51,081	60,432	70,910	85,367	99,047	110,228	117,561	124,335	79,416
Wages / Employed Population (total=100)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
10 Most Important Classes, by FDI participation	110.80	112.38	107.63	106.80	106.74	107.35	110.62	111.19	109.87	108.22	110.38
20 Most Important Classes, by FDI participation	119.15	121.89	122.16	121.36	121.10	121.60	122.57	123.38	123.43	123.87	124.46

Preliminary Conclusions and Proposals

This chapter has examined a new approach to the analysis of growth and competitiveness with an emphasis on systemic competitiveness and territorial endogeneity. While recognizing the importance of trade liberalization and macroeconomic stability, these are not sufficient for long-run sustained economic growth. It is indispensable to consider new “glocal” forms of organization and the integration of territories and regions into specific products and processes. It is these segments of value chains that determine the characteristics of territorial endogeneity, technological diffusion and learning, and potential for growth. The potential of FDI to contribute

tot technological diffusion and upgrading of activities also depends on specific global commodity chains, the conditions for systemic competitiveness, and the degree of territorial endogeneity.

Current research on the origins and destinations of FDI is insufficient; for Mexico there are so far no studies at all on the issue. Methodological and statistical challenges likely explain the lack of such research, despite its importance for understanding the role of FDI in achieving the main aims of the liberalization, both in terms of the balance of payments and of the modernization of manufacturing.

The second section addresses the main characteristics and effects of FDI in the Mexican economy. FDI flows have remained relatively constant during the period1994-2006, diminishing as a share of GDP and gross fixed capital formation. The "new investments" category of FDI has diminished substantially, while the shares of mergers and acquisitions, intra-firm transfers, and reinvestment of dividends have increased. At the sectoral level, manufacturing accounted for 49% of total FDI, although the services sector, particularly the financial sector, has significantly increased its share since 2000. This section also highlighted the enormous weight of the 500 and 1,000 most important companies in terms of FDI during 1994-2005, suggesting that future studies may focus on this group of companies rather than studying all 30,000 companies that reported their activities to the RNIE in 1994-2005.

The twenty most important industries in terms of FDI exhibit a lack of job creation, a growing gap between productivity and wages, a growing trade surplus, and a lack of R&D expenditures. In keeping with the findings of previous studies (Dussel Peters 2000; Dussel Peters, Galindo, Loría and Mortimore 2007), FDI may have actually exacerbated Mexico's the socioeconomic and territorial polarization since the implementatipon of the liberalization strategy in 1988.

FDI flows to Mexico offer potential that has yet to be sufficiently exploited . A new long-term strategy is needed to promote and attract FDI that will transfer knowledge, technology and value added to Mexico. [–a perspective of territorial endogeneity as advanced in this chapter- in the context of NAFTA and the growing competition with Central American countries, China and India, among others. Similarly, the attraction of strategic and high-quality FDI requires a dynamic perspective. Segments of value chains that are currently of interest to Mexico may not be a few years down the road. It is crucial to manage a steady upgrading to more desirable (more knowledge-intensive and higher value-added) segments of global value chains. It is critical to have a strong institution in charge of this process.

FDI can clearly allow for development – in terms of technology, employment, wages, and overall learning processes – but only if it is part of a larger socioeconomic strategy. In Mexico there have been no regional or sectoral policies, accompanying FDI flows, to promote technological development, training, support for particular products and processes, etc. The new government's National Development Plan for 2007-2012 (PEF 2007) clearly reflects this failing: It views macroeconomic stabilization as the sole basis for competitiveness, while ignoring trade, industrial, regional and sectoral policies, as Mexico's governments have since the end of the 1980s. Mexico requires a commitment from the public sector – at the municipal, regional and national levels – to policies that will promote such a development process.

Is it possible to implement policies to improve the performance of FDI in Mexico in the context of NAFTA? NAFTA has decreased the options for its three members in terms of national policies (e.g., trade policies, industrial policies, etc.). This is particularly worrisome for Mexico, the least developed nation in the region and the one with the most acute socioeconomic and territorial

polarization. Nevertheless, the three countries are able to implement local policies to enhance FDI and this is probably, in Mexico's current situation, its best option.

Are reforms in the FDI law are necessary [to allow for an agile and transparent normative framework UNCLEAR] to promote a long-term perspective and improve the quality of FDI and its links with the rest of the country's productive structure. It is indispensable – as suggested by the experiences of countries as diverse as Ireland, the United Kingdom and the People's Republic of China – to establish an institution for the strategic promotion of FDI, and not only the management of licenses and registration of FDI, as is currently done by the RNIE and the SE.

It is necessary to evaluate in much greater detail the effects of FDI by sector and industry, as well by geographic origins and final destinations. Although this work has already begun (Dussel Peters, Galindo, Loría and Mortimore 2007), much more research into the effects of FDI at the macro, meso, and micro level in Mexico is still required. Last but not least, it is important not to overvalue the potential of FDI: for Mexico, although there are positive associations between FDI in manufacturing and foreign trade, productivity, and wages, among other important variables, it is also clear that the aggregate impact of FDI on the economy is relatively small. Hence, even a coherent and long term strategy on FDI cannot substitute for a long-term national development strategy. FDI will not resolve the structural socioeconomic problems of entire countries, much less of countries as large and complex as Mexico.

Finally, there are a number of more specific issues Mexico should address in a future reform of FDI policy. Among the most important is the liberalization of FDI in sectors such as petrochemicals and electricity. So far, there has not been sufficient analysis of the potential effects of FDI on these sectors, especially its likely fiscal impact. Over the last decade, Petróleos Mexicanos (PEMEX), the state-owned oil company, has accounted for 30%-40% of public sector income. A rapid process of privatization would have dramatic fiscal impacts in Mexico. The concept of "neutral FDI" lacks transparency and should be abolished, as it allows hidden FDI in sectors, such as telecommunications and air transportation, in which foreigners are barred by Mexican law from ownership of more than 49% of any enterprise. The liberalization of these sectors, allowing foreign ownership of majority interests, should be considered. Finally, FDI-promotion policies should guide investment in terms of places of origin and final destination. Japanese FDI in Mexico, for example, has been concentrated in a few states and sectors. Promotion efforts should concentrate according to these specialization patterns. Otherwise, and as discussed throughout the chapter, FDI will continue to deepen Mexico's overall polarization process since the end of the 1980s and be unable to increase potential endogeneity processes.

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[i] I am very thankful to Roberto Porcecanski for the translation.

[ii] I am very thankful to Roberto Porcecanski for the translation.

[iii] For further analysis on this issue, see: Bengoa y Sánchez-Robles (2003); Blomström, Lipsey y Zejan (1994); Culem (1988); de Mello (1997, 1999); Dussel Peters, Galindo y Loría (2003); Görg y Greenaway (2001); Lall y Narula (2006); Mortimore y Vergara (2003)

[iv] Lester and Piore (2004) highlight the importance of inter-firm linkages (the mesoeconomic level) -- in contrast with processes based on single-firm efficiency, competition, and the market -- on the "interpretive process" that generates creativity in the economy. In terms of economic policy, the authors lean towards the creation of protected spaces such as educational institutions that contribute to innovation in management and engineering.

[v] This implies a territorial perspective on competitiveness at the municipal and city level, the state or province, the country level, and the group-of-countries (world region) level. Commercial, industrial and business policies should begin with a territorial perspective, taking into account the specific characteristics of these territories and their integration into specific segments of global commodity chains (that, in turn, determine the specific socioeconomic characteristics of these territories according to their particular products and processes, the size and type of companies involved, their specific financing, technological, training, and R&D needs, their orientation to the domestic or foreign market, their potential for upgrading, etc.

[vi] Rodrik (2006[a]) highlights the fact that countries like China and Vietnam have implemented market policies and have massively expanded to the world market, but without abandoning massive public incentives and the methods of a planned economy; they have opened to foreign trade through special economic zones in a generally protectionist environment.

[vii] The capacity to attract and promote FDI, from this perspective, is a critical element in the growth experiences of Asian countries.

[viii] This research proposal (Dunning 2006) is similar to that proposed by students of "systemic competitiveness" and the "meso" analytical level.

[ix] The 1993 Foreign Investment Law actually allows for the evaluation of FDI petitions on the basis of criteria like employment, technology, environment and competitiveness.

[x] For more on this issue, see: Dussel Peters, Galindo, Loría y Mortimore (2007).

[xi] Executed FDI –*inversión extranjera directa realizada* – refers to real FDI, in contrast to expected FDI recorded in official statistics before 1994. It includes only new investments, not reinvestment of profits or intra-firm transfers of capital.

[xii] The tendency is strongly linked to service sector companies like Wal-Mart.

[xiii] For an analysis of the specific methodology used to select these companies, see: Dussel Peters, Galindo, Loría y Mortimore (2007).

[xiv] The industry-level information obtained by INEGI and Ministry of the Economy allows for a comparison between industries on employment, wages, sales, production, exports, imports, etc. However, when cross-referencing the information from both databases we could not obtain the characteristics of eight industries (which could be found in only one of the two databases). As a result, we analyze 197 manufacturing industries out of 205. The data do not include the exports and imports for the "maquila industry for export" [and in most of the cases for the period until 2003 since this is the last year where INEGI published this information.