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Structural change in Mexico's employment and the impact of Nafta

Mudança estrutural no emprego no México e o impacto do Nafta

ENRIQUE DUSSEL PETERS*

RESUMO: A sociedade e a economia mexicana estão numa encruzilhada histórica extremamente complexa. A estratégia mexicana de liberalização, da mesma forma que em muitos outros países da América Latina, privilegiou os aspectos macroeconômicos, ignorando questões cruciais como a poupança e o investimento doméstico, o crescimento e o emprego, dentre outras. Os resultados dessa estratégia são insustentáveis e apresentam diversas fragilidades, como ficou manifestado na crise de dezembro de 1994. Um aspecto importante dessa situação é que o setor privado está no centro da crise. Apenas algumas atividades econômicas têm sido capazes de gerar oportunidades de emprego acima do mínimo necessário à sociedade mexicana. Diversos modelos de séries de tempo demonstram que o crescimento do PIB é fundamental para a geração de emprego; entretanto, é difícil imaginar que seja possível obter um crescimento anual do PIB maior que 10%, o nível necessário para absorver o crescimento da população economicamente ativa. Para atenuar essa situação, uma profunda reformulação da estratégia de liberalização e uma política explícita de geração de empregos são sugeridas.
PALAVRAS-CHAVE: Estabilização; globalização; crise financeira; desemprego; NAFTA.

ABSTRACT: Mexican society and economy are at an extremely complex historical crossroads. The Mexican liberalization strategy, as in many other Latin American countries, has privileged macroeconomic aspects, ignoring crucial issues such as savings and domestic investment, growth and employment, among others. The results of this strategy are unsustainable and present several weaknesses, as was evident in the crisis of December 1994. An important aspect of this situation is that the private sector is at the center of the crisis. Only a few economic activities have been able to generate employment opportunities above the minimum necessary for Mexican society. Several time series models demonstrate that GDP growth is fundamental for job creation; however, it is difficult to imagine that it is possible to achieve an annual GDP growth greater than 10%, the level necessary to absorb the growth of the economically active population. To mitigate this situation, a profound reformulation of the liberalization strategy and an explicit job creation policy are suggested.
KEYWORDS: Stabilization; globalization; financial crisis; unemployment; NAFTA.
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* División de Estudios de Posgrado – Facultad de Economia, Universidad Nacional Autonóma de Mexico. E-MAIL: dussel@unam.mx.

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1. INTRODUCTION

Mexico's ongoing transition is especially significant for Latin America and other nations in the periphery. Since the end of 1987, Mexico has taken a leading role in implementing liberalization, significantly supported by multilateral agencies and US administrations. Moreover, the nine years since the implementation of the liberalization strategy in Mexico present an important theoretical and empirical case to evaluate the impact of these policies on its economy and the specific form of Mexico's growth pattern.

From this perspective, the following paper has two goals. On the one hand, to emphasize the evolution of employment in Mexico during the 1982-1992 period, particularly since 1987, stressing the challenge of generating employment given the rapid expansion of the economically active population (EAP) and an economy in transition. It analyzes the structural change in the generation of employment in the "post trade liberalization" period. Macroeconomic and microeconomic institutional changes imposed since 1985-1987, particularly general economic liberalization, have had multiple effects, notably a growing and general exclusion in the labor market. As argued in the paper, a profound understanding of Mexico's macroeconomic liberalization is necessary to analyze its labor market and the impact of North American Free Trade Agreement among Canada, Mexico and the United States (Nafta). The second goal of the paper refers to the impact of the Nafta, implemented since January 1, 1994, on Mexico's employment structure and potential.

The study stresses the development of those branches of the Mexican economy – according to the National Accounting System of INEGI[1] – that generate employment and associates them with other variables, such as productivity, GDP and exports. Given the importance of the analysis at a branch level, other characteristics of employment, such as gender, age, regional and ethnical aspects, among others, which are also important, are omitted.[2] Similarly, the paper will only deal with formal employment, since informal employment has been explored in other studies (Roberts, 1992; STPS, 1993a). The analysis will also exclude the in-bond or *maquiladora* sector since its evolution and dynamism would require a specific examination and would go beyond the purpose of this paper.

The second section reviews the main elements of the macroeconomic liberalization strategy imposed since 1987, stressing the macroeconomic conditions for the

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[1] Inegi's National Accounting System presents its data for Mexico's economy in 9 subsectors ("divisiones") and 73 branches ("ramas"). Their surveys, estimations and extrapolations are insufficient in various aspects. Nevertheless, their data is the most disaggregated data at a national level in Mexico and offers sufficient information (since 1970) for use in different time-series models. Moreover, it is important to note that the INEGI data is not necessarily compatible with the data from Banco de México, Secofi, IMSS or other government institutions (Rendón & Salas, 1993).

[2] Moreover, the employment issue will not be considered from the perspective of the micro, small, and medium firms, which account for more than 50% of employment in the manufacturing sector during 1982-1993 (Serra Puche, 1994).

productive sectors and the evolution of employment and labor policies. The third section stresses the development, the structural change and the challenge that employment represents for the Mexican society and economy. The fourth section briefly considers some of the hypothesis formulated in the former sections and estimates several models for the evolution of Mexico's employment. The fifth section highlights the evolution of Mexico's labor market since 1993 and explores the impact of Nafta on Mexico's employment. Finally, the six section offers conclusions and stresses the most important issues related to employment in Mexico.

This paper will not go in depth into the current crisis of Mexico's economy.

However, it attempts to analyze the conditions and contradictions that have emerged from Mexico's liberalization strategy. As stressed in the paper, it is particularly important to understand the growth patterns that led to Mexico's current economic and social crisis and to profound structural changes, such as in the case of employment.

2. MACROECONOMIC LIBERALIZATION IN MEXICO SINCE 1982

2.1 General Tendencies[3]

The period after 1987 constitutes a crucial economic, political, and institutional change with the past. Several *pactos económicos*, the first established in December of 1987, were imposed by official unions, the government, and the private sector. They became the centrepiece of the new liberalization strategy. Control over inflation, financial deficit as well as the attraction of foreign investment were the main priorities of the government. The crucial elements for macroeconomic liberalization included deepening of tariff reductions, privatization of State-owned enterprises, as well as an overall shift towards "flexible specialization" in industrial relations. The latter involved the continued prevalence of authoritarian political structures and non-democratic official unions to guarantee cheap labor power and energy. Various new policies and institutions differentiate the macroeconomic conditions of the period since then (Aspe Armella, 1993; Córdoba, 1991):

(i) The reduction of inflation rates and of the financial deficit, as well as the attraction of foreign investment, became the main "exogenous" variables (or priorities) of liberalization.

(ii) The government expected that a change in the macroeconomic environment[4] i.e., a reduction of inflation rates, and of the financial deficit, would induce

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[3] See Dussel Peters (1995).

[4] The government's understanding of "macroeconomy" is very narrow, since it only includes the three exogenous variables, and not other classical macroeconomic issues such as employment, domestic investments and savings, and growth, among others.

a sectoral and microeconomic structural change. Sectoral policies were thus not be implemented because they could distort or revert the macroeconomic strategy.

(iii) The private manufacturing sector was placed at the centre of the export-oriented and modernization strategy. Structural change was primarily understood as the process of privatization or reduction of State activities, which would reallocate factors of production efficiently. The "disincorporation" of State-owned enterprises, which began in 1983, has been reinforced since 1989. Privatization was not only important to increase the role of the private sector in the economy, but it also became a strong source of revenue for the government, accumulating US$ 23.7 billion for 1989-1993.

(iv) Import liberalization became a crucial aspect of this new strategy, since it would allow an export-orientation of the economy, particularly of manufacturing, through cheap imported inputs and the adjustment of domestic relative prices and the economy in general.

By the end of 1985 import licenses were replaced by tariffs. In order to join GATT in 1986, Mexico continued unilateral import liberalization in 1986 by the elimination of official import prices. The pace of liberalization was accelerated in 1987 and achieved a definitive status, reducing tariffs to a maximum of 20% *ad valorem*. As a result, five tariff levels accounted for 5 categories (ranging from 0% to 20%), and the weighted average tariffs declined from 28.5% in 1985 to 12.5% in 1992. Moreover, Nafta reduced even further the tariff levels with Canada and the U.S. Most of these reductions are at the product level (Secofi, 1994).

(v) Besides cheap labor power and energy, foreign investment would become the main financing source of the new export-oriented model. Up to 1972, the Law to Promote Mexican Investment and to Regulate Foreign Investment, gave the government the discretionary power to determine in which activities and sectors up to 51% of ownership had to be national. These conditions were substantially changed in 1989, primarily addressing small and medium-sized firms, since it permitted an automatic 100% share of foreign capital if foreign investments could show a positive balance in their current account for the first three years and could guarantee employment and abide by environmental protection laws. Finally, Nafta significantly changed investment related issues. Each nation has to treat investors and their investments no less favorably than national investors. More importantly, new performance requirements, such as export levels and trade balancing will have to be phased out over the next 10 years (Hufbauer & Schott, 1993; Secofi, 1994).

As shown in Table 1, FI flows to Mexico have been one of the most outstanding successes of the Salinas Administration, accumulating US$ 61 billion since 1988, and evolving as the main source to finance Mexico's current account deficit. However, the share of manufacturing's foreign direct investment (FDI) on FI has declined from 54.4% in 1988 to levels below 30% in 1993. From this perspective, and in spite of the high absolute values of FDI and FI, the high share of portfolio investments in FI have become one of the most important sources of financial and macroeconomic instability in Mexico.

What is the dynamism and some of the outcomes of the model followed after

1988? Since the control of inflation rates and fiscal deficits, as well as the attraction of foreign investments (FI), are "exogenous" or imposed variables by the government, the initial export-oriented industrialization (EOI) proposal became substantially modified and reversed in a short period of time. In order to sustain low inflations rates and the attraction of FI, the government resorted to two policy instruments. On the one hand, it allowed for a fixed exchange rate from December 1987 to January 1989 and began a daily and pre-announced depreciation of 1 Peso per day. Such depreciation, however, was lower than the difference between internal and external relative prices, which eventually led to the overvaluation of the exchange rate. On the other hand, attracting FI was imperative to continue servicing the external debt, and to offset the private sector's trade deficit. The latter could only be achieved with a stable macroeconomic environment.

Thus, the model shows at least six critical aspects of the macroeconomic dynamism for 1988-1994, i.e., for the period before the crisis of December of 1994 (see Table 1).

(i) Given the structure of Mexico's economy particularly of its manufacturing sector's historical high trade deficit exacerbated by import liberalization, an appreciation of the exchange rate became an unavoidable outcome of the strategy pursued. For 1994 the exchange rate was estimated to be substantially overvalued (see Table 1).

(ii) High absolute and real interest rates have been able to attract FI[5], but also reflect the inefficiency of the financial system. They exacerbated the declining domestic propensity to invest since 1982. Table 1 shows that the coefficient of investments to GDP has remained relatively stable since 1988, and well below the levels of the beginning of the 80s. However, domestic investments have declined significantly, while external capital inflows have allowed for maintaining a relative stable level of the coefficient.

(iii) The structure of manufacturing (item (i)) and the investment coefficient led to a reversal of the initial intent of the strategy. Macroeconomic liberalization resulted in an increase in manufacturing's imports, the overvaluation of the exchange rate, and a fall in manufacturing's exports, producing a widening trade balance deficit. This runs contrary to the initial strategy in which macroeconomic changes were expected to induce efficiency and microeconomic structural change. The impact of these policies has caused one of the most significant structural changes in Mexico's economy since 1988, and resulted in a shift from export-oriented industrialization to import-oriented industrialization. The economy's coefficient of trade balance to GDP increased from -0.51 % in 1988 to -6.98% in 1992. Two important developments stand out for Mexico. On one hand, exports have contin-

[5] Since the beginning of 1994, CETES – government bonds issued in Pesos, which were the main form of borrowing by the government- were almost completely substituted by Tesobonos, which are issued in $US. CETES' interest rate included an extremely high-risk premium for devaluation, which is not included in Tesobonos. Tesobonos constitute a new form of "internal" debt held by foreigners (see Table 1).

ued to increase during 1988-1992 at an average annual growth rate (AAGR) of 2.9%. However, the export dynamism was well below the performance of 1982-1987, with an AAGR of 4.7%. On the other hand, the economy's AAGR of imports was 21.3% for 1988-1992, which manifests one of the most significant negative features of liberalization, with important effects on domestic value-added and employment, among others. The import structure reflects an increasing share of consumption and capital, in contrast to intermediate goods. They accounted, respectively, for 9.48% and 19.78% of total imports in 1988 and 15.7% and 22.48% in 1994. Hence, it is not accurate to argue that capital goods have caused most of the increase in imports. In fact, the AAGR in imports of capital goods for 1988-1994 was of 21.9%, while that for consumption goods was 29%.

(iv) Trade and productive specialization patterns of manufacturing are strongly affected by macroeconomic adjustment. Rapid liberalization and the overvaluation of the exchange rate will cause a fall in domestic inputs, value-added and backward linkages, while high real and absolute interest rates limit investments, technological upgrading, and forward linkages.

(v) The outcome of the model did not only reverse the initial conditions of EOI, but also produced an overkill of the economy in terms of GDP growth, and subsequently of employment. As a result, cheap labor power and energy became the main domestic variables in which Mexico has an absolute and declining comparative advantage. However, the specialization on labor-intensive or capital-intensive production is yet not clear, since relatively cheap imported inputs would call for a specialization in more capital-intensive production, while the absolute advantages of Mexico's cheap labor power and energy would call for specialization in labour-intensive activities.

From a macroeconomic perspective, what are the conditions for sustainability of the liberalization strategy? A "double-squeeze" has occurred since 1988: on the one hand, declining backward linkages (given massive imports), on the other hand, declining forward linkages (given overall disincentives to invest). The continuation of the model could result in a de-industrialization process with a sharp negative impact on investments, the trade balance, value-added, backward and forward linkages, while other variables such as employment and growth would also be directly and negatively affected. Finally, it is assumed that FI has a high elasticity and would be willing to enter Mexico under any circumstances, which is by no means guaranteed.

Interestingly, Mexico's liberalization strategy since the late 80s increasingly relied on external debt, in addition to FI to finance the current-account deficit. This surge of foreign debt is primarily due to private borrowing and the new government bonds, Tesobonos. Total foreign debt including "internal" debt held by foreigners increased from $99.2 billion in 1988 to $142.9 billion in 1993. The need to finance the current-account deficit has been a structural condition of Mexico's economy since the 1940s. It was exacerbated since liberalization particularly in the manufacturing sector.

(vi) Finally, from the government's perspective, Nafta appears as a possibility

and necessity. The capacity to respond to increasing competition in the domestic markets and the export potential can only be achieved if there is guaranteed access to external markets, in this case, to the markets of Canada and the US, after unilateral trade liberalization during 1985-1987.

2.2 The Labor Market

Given the restructuring of international industrial patterns, there is an increasing tendency to change the Fordist type structures of industrial organization within the OECD nations. The crisis of Fordism, the Welfare State and US-hegemony, the implementation of new technologies and technological processes, particularly by transnational corporations of the OECD nations and the increasing internationalization of financial and monetary markets have required, moreover, a more flexible specialization of industrial organization as well as of the control over the productive process. Furthermore, this flexible specialization of production and of labor power is characterized, given the increasing specialization of technology, by a decentralization of the production sites, with greater regard for closeness to markets, participative and skilled labor power, and the benefits granted by the recipient nation/region. Also, craft production and the quality of the respective commodities, where the skills of the workers become a factor of crucial importance, play an important role (Lipietz 1987; Piore & Sabel, 1984).

Within this international framework, and given its own domestic conditions, Mexico's industrial organization and employment structure go through an important transition period beginning in 1982. First, there is an increasing segmentation of the manufacturing labor market and a high degree of State intervention to keep real wages low (Casar et. al. 1989; Márquez & Ros, 1990). These mechanisms have been partially institutionalized by several *pactos económicos* since 1987 which establish nominal wage growth ceilings in order to maintain low inflation rates. Second, the huge growth of the informal sector and of maquiladoras in terms of output, but particularly in terms of employment (Carrillo, 1990; Rendón/Salas 1993) strengthens the segmentation and heterogenization of industrial organization and of the employment structure in the manufacturing sector. Third, in Mexico, recent industrial restructuring implies a radical transformation of traditional corporatism. The increasing informalization of labor, the tendencies in maquiladoras and in key sectors of the Mexican industry (Telmex, Pemex, Ford/Volkswagen) lead to the, sometimes violent, breaking of collective bargaining contracts, and dissolution of regional and national labor unions, to establish unions at the firm level thus granting more control to the government and the respective firms (Middlebrook, 1989).

Several programs have been initiated since the late 80s regarding labor issues, such as the National Employment System (SNE), the Project on Modernization of the Labor Market (PMMT), the Program for Capacitating Small and Medium Firms (PCMO), and the Program of Integral Quality and Modernization (CIMO) (STPS, 1993b). Most of these policies are part of the National Agreement for Increasing Productivity and Quality (ANEPC), signed in May of 1992 and the already

mentioned *pactos económicos*. Since they have begun so recently, it is not possible to measure or observe the impact of these programs yet.

After the outburst of the crisis of December of 1994, the government unveiled the Action Program to Reinforce the Unity Agreement to Overcome the Economic Emergency (PAAUSEE). This program highlights the need to cut Mexico's current account deficit and to control inflation. The survival of the Mexican financial sector through different mechanisms is at the center of this program. However, the costs of the crisis are to be financed by a decrease of real wages; the government imposed a 27% increase in wages and inflation rate for 1995 was of 55%, i.e., a real wage loss of around 25% for 1995. These measures are to "secure employment" and to avoid inflationary pressures. So far, up to 1996, the government has not shown much concern with clear and long-term labor policies.

Thus, recent flexibilization and apparent modernization of Mexico's industrial organization acquires several facets. On the one hand, flexible specialization of the firms at the productive level given increasing international integration and penetration by transnational corporations, intrafirm trade, and economies of scale. This process has taken place in a few branches, particularly those linked to transnational corporations, although it is not the goal of this paper to elaborate more on this question. On the other hand, this flexible specialization and the government's macroeconomic liberalization strategy have imposed, since the beginning of the 80s, a restructuring of and radical change in the relationship workers-entrepreneur-government, aimed to control industrial trade unions through new structures to enhance productivity and the modernization of the economy. Moreover, and contrary to other Latin-American cases, "labor flexibilization" in Mexico has been induced by the fall of real wages, modifications in collective contracts and agreements on increments in productivity.

Moreover, the specific employment problem, partly created by the crisis during 1982-1986, but also due to the economic restructuring since 1987, has become one of the most serious challenges facing the government, but has practically been neglected and left to the private sector's recovery and to market forces, contrary to the experience of many other nations.[6]

3. DEVELOPMENT, STRUCTURAL CHANGE AND EMPLOYMENT POTENTIAL IN MEXICO

As in other nations, the generation of employment presents a crucial challenge for Mexico 's society and economy. Mexico, as other regions in Latin America (Wells, 1987), is characterized by an exceptionally high growth rate of its eco-

[6] As stated before, the paper will not analyze the quality of employment. However, it is important to keep in mind that between 60 and 70% of total EAP does not have any social security, nor, in general, any kind of social services.

nomically active population (EAP). This is due, in particular, to the high population growth, a drop in mortality rates and growing female participation in the EAP.

Nevertheless, since there is no unemployment insurance or any other institutional mechanism that supports the unemployed population, the generation of employment becomes a much more formidable task than in other nations

3.1 Mexico's Employment Challenge[7]

The annual growth rate of remunerated employment in Mexico has been significantly lower than the growth rate of the EAP during 1970-1990, with an annual difference of 385,000 jobs. This gap has widened recently.

Given the weight of the young population in Mexico's demographic structure in Mexico, it has been estimated in recent years that 1.2 million persons enter the EAP annually.[8] This amount equals 5% of total formal employment, i.e., the economy should increase its remunerated employment by at least 5% annually to satisfy the minimum employment requirements of Mexican society. From this perspective, the evolution of Mexico's employment presents severe problems since 1987 and will become even more problematic for Mexican society in the future.

Thus, it is estimated that the EAP increased by 1.2 million annually during 1990-1992, while the economy only generated 339,974 jobs, i.e., only 28% of the population entering the EAP was absorbed by the formal labor market.

Taking this 5% level as the turning point for the generation of net employment during 1987-1992, the post trade liberalization period, only the Subsector IV (construction)[9] generated employment above the minimum required. The rest of Mexico's subsectors do not generate employment in net terms, i.e., above the 5% annually required (see Table 1).

Nevertheless, it is important to stress the differences in the generation of employment at the subsectoral level. Table 2 underlines the impressive differences in the employment generation between the periods 1970-1981 and 1982-1992. In the first period, Mexico's economy generates employment by a factor of at least five times greater than in the period 1982-1992, which is also observable in the average annual growth rates for the total economy, of 4.9% in 1971-1981 and of 0.7% for 1982-1992. This drastic structural change is general throughout the economy and

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[7] The basis of Mexico's official unemployment statistics is the "open unemployment rate", which refers to persons older than 12 years which have not worked even for one hour a week, although they have searched for a job. Given the Mexican labor market conditions – particularly the inexistence of institutions that support the unemployed population – the open unemployment rate in Mexico is useless; it is even surprising that there is any open unemployed population at all. Given these difficulties, the paper attempts to highlight the levels of employment required according to Mexico's population and EAP structure.

[8] Data provided by INEGI estimated in the National Employment Survey (ENE) for 1991-1993.

[9] As mentioned earlier, the National Accounting System presents its data for Mexico's economy in 9 subsectors and 73 branches

its subsectors, particularly for the manufacturing sector, which expelled 58,148 workers during 1982-1992. Thus, the structural change imposed since 1982, particularly since 1987, has manifested itself as extremely excluding with respect to the labor market.

The composition of employment also shows significant structural changes at the level of subsectors. There has been a growing and continuous tertiarization of the economy since 1970, particularly since 1982. Hence, the shares for agriculture and mining and manufacturing fell significantly, while employment increased for the service sector, from 50.66% of the total in 1970 to 61% in 1982 and 63.04% in 1992. Subsectors IX (communal, social, and personal services), VI (trade, restaurants and hotels) and IV (construction) are most important due to their share in total employment, while it fell for Subsectors I (Agriculture, forestry and fishing) and III (manufacturing industry) (see Table 1).

3.2 A Typology of Mexico's Economy in Terms of Generating Employment for 1987-1992

Based on the prior analysis and with the goal of disaggregating the development of employment at a branch-level, all 73 branches of Mexico's economy were classified according to their respective average annual growth rate (AAGR) of remunerated employment for the period 1987-1992. This "post-liberalization period" is most important since it covers a relative recovery in terms of GDP growth. The analysis of this period will be also interesting since it will explain many of the difficulties that Mexico's economy faced after 1993, particularly in terms of employment.

Three groups were considered, so that branches in Group I account for an AAGR of employment higher than 5%, branches in Group II an AAGR of employment lower than 5% but higher than the average for the whole economy (of 1.18%), and branches in Group III with an AAGR lower than the economy's average (see Table 3).

Moreover, subgroups within each of the groups were established. Hence, the branches with an AAGR of GDP higher than the economy's average during 1987-1992 (of 2.9%) are in the respective Subgroups A, while the branches with an AAGR of GDP lower than the economy's are in subgroups B. Only Group I do not include Subgroups, since all its branches grow more than the average for the economy.

This typology of Mexico's economy stresses the development of Mexico's post trade liberalization period from the perspective of the employment generation. On the other hand, it associates the dynamics of generation of employment with the growth of GDP through the respective Subgroups. Thus, it is expected that the branches in subgroups A, with a higher AAGR of GDP, present the highest potential for generating employment for 1987-1992.

Characteristics and Evolution of the Groups

The established groups show that, on the one hand, only three branches (automobiles, other manufacturing industries and construction) demonstrated for an AAGR of employment above 5% during 1987-1992, the turning point for net employment generation for Mexico's society. Branches in Group I have also a low but increasing share in total employment, of 10.5% in 1987-1992. Without doubt, Construction, with a share of 9.94% of total employment, is the most significant branch in this group. Group II, with 29 branches, has an AAGR of 2.0% and a share of 39.15% of total employment during 1987-1992. Commerce (with a share of 12.35% in total employment), educational services (9.62%) and transportation (4.26%) are the most important branches. Group II, with 41 branches and an AAGR and share of employment of -0.4% and 50.35%, respectively, includes branches that expel labor power. Agriculture (with a share of 22.52% of total employment), other services (10.76%) and public administration and defense (4.69%) are the most important branches in Group III. Groups II and III together account for 89.5% of total employment and do not generate enough new jobs to meet Mexican society's growing demand for employment during 1987-1992.

The subgroups established according to the typology display several tendencies and stress the significant positive association between the growth of GDP and the dynamics of employment generation. On the one hand, the three branches in Group I are the three branches with the highest AAGR in employment and GDP during 1987-1992. This positive association also exists in Groups II and III, were the respective Subgroups A have a higher AAGR in employment and GDP. Therefore, the initial hypothesis regarding the growth of GDP as a necessary condition for employment generation, is reinforced.

In what follows, the most important features of the groups are presented (see Table 4).

(i) **Employment.** Due to the structure of the typology, Group I have the highest average annual growth rate (AAGR) in employment during 1987-1992 which declines as we move on to Group II and Group III. Nevertheless, this indicator points out that the typology has been valid since 1970, during the period of import substitution. Thus, Group I display the highest AAGR in employment during 1971-1981 (9.8%) which is lower for Group II (6.0%) and Group 3 (3.5%). Given the relative coherence of the established Groups, the shares of Groups I and II increased since 1970 and fell for Group III, from 61.6% in 1970 to 52.6% in 1982 and 47.86% in 1992. It is most important to stress that Group I, the most dynamic in the generation of employment during 1987-1992, only represents 10.5% of total employment. The rest, the branches of Groups II and III, generate employment below the requirements of society and account for 89.5% of total employment.

(ii) **GDP.** As with employment, the typology also presents an interesting continuity since 1971, i.e., Group I is the most dynamic in terms of GDP since 1971 and the AAGR of GDP falls for Group II and even more so for Group III. Despite this continuity, a significant structural change occurs, as with employment, since

the AAGR of GDP during the import substitution period (1971-1981) is much higher for the economy, its sectors and groups than during 1982-1992. Thus, during 1971-1981 10 branches show an AAGR of GDP above 10%, while in 1987-1992 only 3 do it. The branch automobiles display the strongest dynamism in both periods, with AAGRs of 13.3% and 24.9%, respectively, while the branch hard textiles show a continuous decline since 1971 (see Table 4).

It is most important to stress that Group I, similar to employment, has little weight in total GDP, only of 6.8% in 1987-1992.

(iii) Real wages per worker.[10] Real wages per worker present a sharply declining tendency since 1982, with a slight recovery after 1989 (see Chart 2). It stands out that, just as with the variables examined before, the period 1971-1981 displays a much more favorable behavior than the period 1982-1992, with an AAGR of real wages per worker of 2.4% and -2.0%, respectively, for the whole economy. During 1982-1992 all the sectors of the economy show a significant structural change with respect to the evolution of real wages, although at different levels. A drastic fall in real wages is exhibited by all sectors during 1982-1986, although only the manufacturing sector displays a significant recovery during 1987-1992, with an AAGR of 3.6%. On the other hand, agriculture and mining continue to show a marked decline of real wages throughout 1987-1992 of -5.2%. Therefore, Mexico's economy and its sectors are still far from reaching the real wage levels of 1980; in 1992 real wages for the total economy were only 83.2% of the 1980 level, in agriculture and mining 65.4% and 98% in manufacturing.

At the group level, it stands out that the most dynamic branches in terms of employment and GDP, i.e., those in Group I, display the lowest recovery in real wages. Hence, in 1992 real wages of Group I were only 63.8% of the 1980 level, 77.1% in Group II and 91.41% in Group III. The cases of automobiles (with 117% of real 1980 wages), pharmaceutic products (132.5%), steel and iron (123.3%), financial services (130%) and tobacco (152.7%) stand out due to their high performance in terms of real wages.[11]

(iv) Labor and capital productivity.[12] Labor productivity for the whole economy and its sectors, particularly for manufacturing, displays a significant structural change during 1982-1992. In the first period, 1982-1986, there is a generally falling tendency, with recovery for 1987-1992, with an AAGR of 0.2% and 4.0%, respectively, for manufacturing. Thus, as it has been stressed by the government,

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[10] Real wages per worker were calculated as Sr= Sc* Dr were Se are remunerations per worker in millions of pesos of 1980 and D r is the implicit deflator of GDP (GDP in millions of pesos / GDP in millions of pesos of 1980).

[11] It is necessary to recall that the increase in real wages per worker in several cases is due to the massive layoff of workers, which increases the average of real wages per worker, such as in the case of tobacco.

[12] Labor productivity was calculated as the coefficient of GDP and remunerated employment, capital productivity as the coefficient of GDP and net capital stock. The data on net capital stock presents serious problems. Nevertheless, the evolution of capital and labor productivity display similar tendencies for the analyzed periods and are considered to be appropriate for the analysis.

increasing labor productivity has been one of the major successes of the liberalization strategy.

At the group level it can be noticed that labor productivity recovers significantly during 1987-1992 in Groups II and III, which include the least dynamic branches in employment generation and GDP. However, this increase in labor productivity is caused by a slight increase (or fall) in GDP and an AAGR of employment lower than that of GDP. From this perspective, the increase in the AAGR of labor productivity for Group I, of 0.8% during 1987-1992, while generating employment, and with a high growth of GDP, is of utmost importance for the economy and opposite to the "perverse" increase of labor productivity in the rest of the groups. Again, the automotive branch stands out with an AAGR of labor productivity of 16% during 1987-1992, one of the highest AAGRs ever shown by any branch since 1970 (see Table 3).

Similar to labor productivity, capital productivity also displays an important structural change during 1982-1992 due to its general recovery during 1987-1992. It has to be stressed that most of the increase in this coefficient is caused by an increase in GDP and relatively stable or falling net capital stocks, particularly in the manufacturing sector (Dussel Peters 1994b). At the sectoral level, only manufacturing has contributed to the increase in capital productivity, while the agriculture and mining and services sectors continue to have negative AAGRs of -1.0% and -0.2%, respectively, during 1987-1992. Group I, characterized by the evolution of automobiles, accounts for the highest AAGR in capital productivity. And, again, only Group I show a significant increase in GDP and capital productivity, while the rest of the groups register an increase in capital productivity by way of declining net capital stocks.

(v) Exports and imports.[13] Mexico's international trade has been, without a doubt, one of the most significant factors affecting structural change since 1982. Examining only the relevant issues for this analysis, total exports have waned in their dynamism since 1970, with an AAGR of exports of 15.6% in 1971-1981, 7.9% during 1982-1986 and 4.5% during 1987-1992. Nevertheless, an important recomposition in the structure of exports has taken place, since the share of manufacturing exports has increased significantly since 1987, reaching more than 50% of total exports in 1992.[14] At the Group level, group I has been the most dynamic in terms of exports, with AAGRs of 45.7% and 25.4%, respectively, for 1982-1986 and 1987-1992. However, Group's I share of exports is only 5.78% during 1987-1992, while Group's III exports, although less dynamic in employment and GDP, represents 76.14% of total exports.

The impressive dynamism of exports is also relativized when evaluating the evolution of imports, with an AAGR of -9.8% and 22.7% for 1982-1986 and

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[13] As mentioned earlier, this analysis does not include data on in-bond or maquiladora activities.

[14] It is most important to remember that manufacturing exports were already 52.59% of total exports during 1970-1981, which relativizes the structural change in the composition of exports.

1987-1992, respectively. Hence, much of the structural change in Mexico's trade has occurred during 1982-1992; in the first subperiod (1982-1986) there is a great dynamism of exports and a decline in imports, which reverts drastically during 1987-1992. Agriculture and mining and manufacturing stand out for their high shares in imports and AAGRs of 15.8% and 23.5% during 1987-1992. Moreover, manufacturing's share reached a historical record of 94% of all imports in 1992. The trade balance/GDP coefficient reflects much of the drastic structural change in Mexico's economy since 1987. The coefficient fell from 4.18% to -6.98% for total economy from 1987 to 1992, and from -6.67% to -42.42% for manufacturing. This dramatic loss of backward linkages, as well as of employment among others, manifested in all groups, particularly in Groups II and III. For the latter, the coefficient fell from 10.5% to -10.24% for the same period. Most importantly, the coefficient deteriorates most significantly in all Subgroups A, i.e., in all the branches which presented the highest recovery in terms of GDP. Hence, one of the most important growth patterns of the Mexican economy for 1987-1992 is that the most dynamic branches in terms of GDP have a significant tendency to lose their backward linkages, and, subsequently, of employment. This is one of the most striking features of Mexico's import-oriented industrialization.

3.3 Estimations of Mexico's Employment

This section briefly examines some of the most significant associations between employment and other variables for the Mexican economy for the period 1970-1992. In the preceding sections a statistically positive association was established at the group level between employment and GDP, while the relationship was negative for real wages.

Hence, several regressions were estimated for each of the groups and sectors, based

on (see Table 5):

$LE = c + \hat{A}_1 LPIB + \hat{A}_2 LSR + \hat{A}_3 LX + \hat{A}_4 LE(-1)$ [15]

Where:

LE = logarithm of remunerated employment

LPIB = logarithm ofGDP at 1980 prices

LSR = logarithm of real wages

LX = logarithm of exports at 1980 prices

The results are satisfactory and partially reflect the different dynamics of the groups and sectors of Mexico's economy with respect to employment (see Table 5). First, and with the exception of Group III and agriculture and mining, the elastic-

[15] The respective time-series models include lags, as specified in the results. All the variables were transformed into logarithms. The regressions were carried out according to the Ordinary Least Squares (OLS) method and the respective tests for incorrect specification were done. The period of analysis is 1970-1992.

ity of employment-GDP is positive and the most significant for all sectors and groups. Second, the significant elasticities of employment-real wages and employment-exports are very low and negative and positive, respectively. Third, at the sectoral level, manufacturing displays the highest elasticities for employment-GDP and employment-real wages, of 0.57 and-0.24, respectively. Therefore, manufacturing displays a significantly different process than the rest of the sectors: an increase in real wages is associated with a decline in employment. Moreover, exports only display a negative elasticity with respect to employment for manufacturing. Fourth, at the group level, Group I shows the highest (positive) employment-GDP and (negative) employment-real wages elasticities and demonstrates that it has the highest capacity to respond to changes in GDP and real wages. On the other hand, exports are not significantly associated with employment in the respective groups and sectors.

The results of the different models stress the crucial importance of economic growth for the generation of employment in all the sectors and groups, as also analyzed for other nations (Singh 1991). According to these estimates, GDP would have to increase between 5% (for Group I) and over 10% (for total economy) in order to generate employment growth above 5%. However, GDP is not significant for the generation of employment in Group III and agriculture and mining, which contain the branches with the highest propensity to expel labor power. On the other hand, real wages are negatively associated with employment, particularly in Group I and manufacturing, which partially explains the expulsion of labor power in the latter. Finally, the increase in exports is not related to a significant expansion in employment, which is most significant for future expectations, including Nafta.

4. RECENT EVOLUTION IN MEXICO'S EMPLOYMENT (1993-1995) AND THE IMPACT OF NAFTA

Mexico's macroeconomic and sectoral performance has deteriorated significantly since the end of 1992, particularly since the outburst of the crisis in December of 1994. After a slowdown in manufacturing and total economy's GDP growth, the economy apparently recovered in 1994, with a GDP growth of 3% and 2.5%, respectively. Moreover, the financial deficit was of 1.6%, 0.7% and -1% for 1992, 1993, and 1994.

However, as stressed earlier, Mexico's economy presented serious and unsustainable macroeconomic and sectoral problems. The increasing current account deficit created by the trade deficit of the manufacturing sector was being financed by extremely volatile foreign investments. Thus, and contrary to the crisis of 1982, the cause of the crisis of 1994 was the manufacturing and private sector, i.e., the central sectors for Mexico's future development, as determined by the government's strategy. Moreover, the crisis of 1994 is directly related to the macroeconomic liberalization strategy and the sectoral impasse, particularly in the manufacturing sector. As analyzed earlier, the initial export-oriented industrialization resulted in

an import-oriented industrialization in which the manufacturing sector, with high GDP, productivity and export growth, decreased drastically backward and forward linkages with the rest of the economy. This process manifested clearly in the sector during 1987-1992, since the trade balance/GDP coefficient increased from -6.67% to -42.42%, i.e., during this period manufacturing's net import penetration increased by a factor of almost 7.

This process had radical consequences for the labor market. During the recovery period 1987-1992, as examined, the economy was not able to generate employment in net terms, i.e, above the 5% annually required by the Mexican society. However, total economy, particularly the manufacturing sector, expelled labor power since 1992 in absolute terms. In the case of manufacturing, employment growth for 1992, 1993, and 1994 was of -2.1 %, -7.2%, and -5.7%, and estimations for 1995 and 1996 are expected to deepen this falling tendency, since GDP growth accounted for -6.9% in 1995. Total economy expelled more than 1,000,000 persons in 1995 according to official sources. Thus, the serious challenge of employment generation in Mexico has sharpened radically since 1994-1995, and, as highlighted earlier, the latest economic programs do not foresee specific measures to solve some of these structural conditions of Mexico's economy.

What has been the impact of Nafta on Mexico's employment?

So far, any evaluation has to be preliminary. First, the relatively short implementation period (since January of 1994) does not allow for definitive results. Second, several major political and economic events since the beginning of 1994, such as the indian-peasant rebellion in Chiapas, the assassination of several politicians, federal elections, and the crisis of December of 1994, would have to ease a first-year analysis of the impact of Nafta on Mexico's employment. Finally, so far there is no data available regarding employment and the impact on Mexico's employment. Thus, the following will have to be an introduction to future work on this area.

However, it has to be stressed that, from the Mexican government's perspective, Nafta was a necessary element of the macroeconomic liberalization strategy. Hence, the macroeconomic liberalization strategy has been a failure, particularly in the case of employment since it has not been able to provide employment for the increasing EAP during 1987-1992 and has expelled labor power since 1992. This process, as suggested earlier, is directly related to the results of the import-oriented industrialization. From this perspective, Nafta is only able to alleviate or sharpen the radical structural change that has occurred in Mexico's economy since 1987.

On the one hand, Banco de México (1995) strengthens the argument that the structural change during 1987-1992 has continued throughout 1994, since construction has been the most outstanding sector generating employment, of 2.6% up to November of 1994. On the other hand, information provided by the National Trade Data Bank on US-Mexican trade for 1994 suggests that:

(i) Mexico's trade deficit with the United States has been reduced signifi-

cantly, from US$ 1597.8 million in 1993 to US$ 530.8 million in 1994.[16] This reduction in Mexico's trade deficit was a result of increasing exports to the US (by 25.7%) and less dynamic imports, of 15.2% for 1994. At the division level, Electric machinery and TV equipment, and vehicles were the most dynamic divisions regarding trade among both nations.

(ii) The structure of bilateral trade has not changed significantly since the implementation of Nafta. At a 10-digit level, several vehicle, oil, TV, and in-bond branches have benefitted most since Nafta. Thus, electrical equipment and TV exports participated with more than 44% in Mexico's growth of total exports to the US in 1994, vehicles with more than 20%, in-bond activities with 5.9%, and oil related exports with more than 4%. On the other hand, Mexico's imports from the US in 1994 were much more diversified, including many consumer goods such as meat, cereals, fruits, and oil seeds. At the product level, imports in electrical machinery and equipment from the US for 1994 participated with more than 35% of total growth of imports, vehicles for more than 10.23%, and plastics for more than 8%.

This preliminary evolution suggests that Nafta did not have a significant impact on Mexico's trade structure. On the contrary, changes in trade flows with the United States in 1994 show that the trade deficit declined substantially with the United States but increased with the rest of the world. Similarly, the increase in Mexico's exports have also increased its concentration in a few branches, particularly electrical equipment and vehicles, which are characterized by intra-firm trade and a high intensity of capital. From this perspective, Nafta's impact on Mexico's employment might not be significant, but might deepen the economic, industrial and employment structure that has evolved since macroeconomic liberalization in Mexico since 1987.

5. CONCLUSIONS

This paper concludes that the macroeconomic liberalization strategy implemented since 1987 has had an extremely heterogeneous impact on Mexico's economy and was characterized by a general process of exclusion, which has produced serious contradictions and high social, political, and economic costs. So far, "flexible production" and overall economic restructuring in Mexico has increased informal employment and the government has not provided the conditions for and has in fact even violently opposed the organization of independent labor unions. Moreover, it has been demonstrated that only a few sectors and branches of the economy participated in the structural change that has occurred since 1987, particularly in terms of productivity and foreign trade. The "desfacement" of govern-

[16] Mexico's trade balance with the United States has remained relatively stable since the late 80s. However, it has increased drastically with the European Community and Asian nations.

ment's strategy – i.e., the time lag that elapsed between the imposition of macroeconomic policies and acknowledgement by the government of contradictions and failures at the sectoral and microeconomic levels- has been a matter of great concern. In the case of employment, the government's policies have not shown yet the need to confront this issue explicitly. Recent governmental programs have not been able to offset the tremendous challenge of employment; on the contrary, the latest programs have the goal to secure already existing employment.

Similar to other Latin-American economies, the issue of employment represents a crucial task and there does not appear to be a solution in the short run given the dimensions of the challenge. Mexico's yet incomplete structural change reveals that only a few economic activities, representing a share of 10.5% in total employment, have been able to generate employment above the minimum social requirements. This problem has been exacerbated during the 80s, since the prior decade – still under import-substitution – generated significantly more employment.

The tertiarization of Mexico's employment has been significant since 1970 and, particularly since 1982, largely because manufacturing expelled labor power during 1982-1992 and because employment in agriculture and mining has been relatively stable. Hence, the generation of employment in Mexico during 1987-1992 has been associated with inferior jobs in terms of quality, productivity, and real wages. This has been the case for construction.

Many branches of Mexico's economy, particularly those in Groups II and III, present a "perverse" increase in labor and capital productivity, at the expense of employment. Only the branches of group I shows a simultaneous growth in employment, GDP and labor and capital productivity.

In the Mexican case, the most dynamic activities in terms of the generation of employment and GDP are not associated with an increase of real wages, with the significant exception of automobile production. Thus, at an aggregate level, the real wage level in all the Groups and sectors and the total economy are still far below those of 1980, in spite of a slight improvement since 1989. The "lost decade" of the 80s and the structural change initiated in that decade have exacerbated the exclusion process in a double sense: it has generated employment far below Mexico's social requirements, even expelling labor power in absolute terms, and the economic recovery, at least in terms of GDP growth, since 1987, has not been reflected in a significant increase of real wages.

Thus, it can be concluded that the weaknesses of the economic growth process and of the macroeconomic adjustment process itself initiated in 1982 are directly related to the low generation of employment since 1987.

The statistical and econometric results, similar to the experience of many other nations, point out that in the case of Mexico, GDP growth is of crucial importance for the generation of employment at the branch, group and sectoral level, and for the economy as a whole. The time-series models stress this tendency since the respective employment-GDP elasticities are the highest and positive in all cases. On the other hand, real wages are associated negatively with employment, particularly for manufacturing, which to some extent explains the expulsion of labor

power in this sector. Finally, the increase in exports is not related to a significant increase in employment. This is most significant for Mexico's employment perspectives, since the government has stressed that exports will prove to be the central mechanism for Mexico's future development strategy.

Mexico's society and economy are at a highly complex historical crossroads. In spite of important macroeconomic successes, the high growth rate of the EAP presents a high economic, social and political risk. On the other hand, massive investments, public and/or private, do not necessarily generate employment, particularly in the most modern and capital-intensive sectors. This is especially notorious in the Mexican manufacturing sector, which is characterized by a high capital intensity. However, a high growth rate in GDP creates, without doubt, the necessary conditions for higher generation of employment, although it is difficult to imagine that the economy will grow annually at 10% in order to generate the employment required.

The analysis has shown that the labor market conditions in Mexico have worsened drastically since 1993, since the economy was not only not able to generate employment according to the needs of its increasing EAP, but also expelled labor power in absolute terms. This has been particularly the case for manufacturing, the sector which has increased significantly its share in total exports. After the crisis of December of 1994, it is expected that more than 2,000,000 workers will lose their jobs. And, so far, there are no perspectives for better conditions in the labor market in the short and medium run.

The preliminary analysis on the impact of Nafta on Mexico's employment concluded that Nafta was one element of Mexico's government macroeconomic liberalization strategy, and has, thus, enhanced a deepening of the labor market conditions. It has allowed for a continuation of Mexico's high concentration in foreign trade. As it has occurred since 1987, only a few branches, most of them relatively capital intensive and of intra-firm character, continued with their growth dynamism in exports. However, as examined earlier, the employment-export elasticities for Mexico's activities are either statistically or economically not significant. Thus, even in the best of the scenarios, in which Mexico would account for a significant growth in exports through Nafta, it cannot be expected that the employment conditions would improve. As analyzed in the paper, the priorities of the macroeconomic liberalization strategy initiated in 1987, which resulted in an import-oriented strategy, are at the center of the development contradictions of the current crisis and of the inability of its economy to generate sufficient employment.

It is indispensable to implement an explicit employment policy in Mexico, as it has already occurred with other sectoral issues. It is crucial that the goals of this policy be formulated and negotiated among independent unions, businessmen, the government, and the civil society on a long-term basis and coordinated in time and space as a "package". The high costs of modernization and of macroeconomic adjustment, particularly regarding employment, are no longer sustainable, neither economically, politically nor socially. In some cases, a more active government policy should envision higher growth and employment, in spite of higher inflation

rates. Thus, it is no longer possible to delay a discussion and redefinition of the compatibility of the macroeconomic aspects of the adjustment process and with microeconomic goals, particularly with that of an employment policy. Such a policy, on the other hand, would also be in the interest of the United States and Canada, as an option to massive migration from Mexico.

The government has a fundamental responsibility to coordinate and enhance the generation of employment and to evaluate whether structural change – only three branches have generated employment above the minimum required – is desirable and economically and socially sustainable. Moreover, it is indispensable, within this "negotiated package", to pinpoint the strategic economic activities from an employment perspective and to improve infrastructure, education, and research in accordance. On the other hand, much of this responsibility also relies on the rest of the social classes, workers, businessmen and civil society in general. This perspective is highly uncertain and is directly related to the exercise of greater political democracy in Mexico and the organization of independent labor unions.

Many lessons can be learned from Mexico's liberalization strategy. The paper has stressed that the emphasis on the control of inflation, on the fiscal deficit as well as in attracting foreign investment resulted, given Mexico's economic structure, in an import-oriented industrialization. One of the most outstanding features of Mexico's liberalization strategy during 1987-1994 has been the failure of its private and manufacturing sector. Import-oriented industrialization is not an alternative, neither for Mexico nor for other Latin-American nations. Nevertheless, many other Latin-American nations are following Mexico's liberalization strategy. It is, thus, most important to design alternatives to liberalization strategy, stressing issues such as the growth pattern, the specific form of integration to the world market, domestic backward and forward linkages, industrial policy, and employment.

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TABLE 1

Main macroeconomic indicators (1980-1996)[a]

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995[b]	1996[d]
GDP	8,2	8,8	-0,6	-4,2	3,6	2,6	-3,8	1,7	1,2	3,5	4,4	3,6	2,8	0,9	3,5	-6,9	1,6
GDP per capita	5,4	6,1	-3,0	-6,5	1,2	0,5	-5,5	0,0	-0,2	1,7	2,5	1,7	0,9	-0,9	1,7	-8,7	-0,2
Employment	14,7	6,2	-0,3	-2,3	2,3	2,2	-1,4	1,1	0,9	1,3	0,9	2,6	0,4	-1,9	-0,2	-6,4	1,1
Real wages (1980=100)	100,0	106,4	99,7	81,5	80,5	80,9	78,6	73,9	72,1	73,1	73,5	76,7	83,2	87,0	89,3	76,0	75,0
Real wages (1980=100), minimum wage	100,0	101,3	104,7	84,8	71,8	70,9	63,2	60,3	53,6	49,4	43,1	40,7	39,3	38,9	38,8	34,0	30,0
Gross fixed investment / GDP	24,8	26,4	23,0	17,5	17,9	19,1	19,5	18,4	19,3	18,2	18,6	19,5	20,8	20,7	21,6	16,1	15,7
Private	14,1	14,3	12,3	11,0	11,3	12,5	12,9	13,2	14,2	13,3	13,7	14,9	16,6	16,6	17,3	12,7	12,0
Public	10,7	12,1	10,2	6,6	6,6	6,6	6,5	5,2	5,0	4,8	4,9	4,6	4,2	3,3	3,6	3,7	3,8
Gross investments / GDP	27,2	27,4	23,0	20,7	19,9	21,2	18,5	19,3	20,4	21,4	21,9	22,4	23,3	21,6	22,0	14,3	—
Domestic	13,6	12,8	12,6	12,5	11,1	11,2	4,4	8,9	7,3	8,2	9,6	8,3	7,0	5,5	6,1	11,6	12,5
External	5,0	6,0	0,5	-3,9	-2,6	-1,3	0,4	-2,7	1,1	2,6	2,7	4,6	6,7	6,6	7,6	0,3	0,0
Depreciation	8,6	8,6	9,8	12,2	11,4	11,2	13,7	13,1	12,0	10,6	9,6	9,6	9,6	9,6	8,3	2,4	—
Inflation	29,8	28,7	98,8	80,8	59,2	63,7	105,7	159,2	51,7	19,7	29,9	18,8	11,9	8,0	6,9	54,5	31,5
Financial deficit / GDP[e]	7,5	14,1	16,9	8,6	8,5	9,6	16,0	16,1	12,5	5,6	3,9	-1,5	1,6	0,7	-0,1	0,1	1,0
Exports	35,2	18,8	23,8	12,3	7,3	-6,1	2,2	8,8	6,4	-0,1	3,8	6,5	1,5	9,2	7,4	25,9	15,8
Imports	34,8	16,9	-40,2	-35,4	20,5	14,5	-8,3	6,8	44,2	21,6	19,9	20,0	24,0	0,2	18,8	-8,7	5,5
Trade balance[c]	-4,7	-5,7	8,7	12,6	11,9	7,7	3,3	5,9	-0,9	-4,1	-6,3	-13,4	-23,0	-18,9	-22,3	7,8	8,7
Current account[c]	-10,7	-16,1	-6,2	5,4	4,2	1,2	-1,7	4,0	-2,4	-5,8	-7,5	-14,9	-24,8	-23,4	-28,3	-0,7	2,5
Capital account[c]	11,4	26,4	9,8	-1,4	0,0	-1,5	1,8	-0,6	-1,4	6,2	11,1	23,0	26,3	30,7	11,2	-16,9	8,7
International reserves[c]	4,2	5,0	1,8	4,7	8,0	5,7	6,7	13,7	6,6	6,9	10,3	18,1	19,3	24,3	6,1	15,7	18,0
Foreign investments[c]	1,6	1,7	0,6	0,7	1,4	1,9	2,4	3,9	3,2	2,9	5,0	9,9	8,3	15,6	16,1	-6,5	8,7
Total foreign debt[c]	57,5	78,3	86,1	93,1	94,9	96,9	100,9	109,5	99,2	93,8	100,8	103,8	112,9	127,6	136,5	161,1	157,3
Public foreign debt[c]	34,0	43,1	51,6	66,9	69,8	72,7	75,8	84,3	80,6	76,1	77,8	80,0	75,8	78,7	85,4	100,9	94,5
Private foreign debt[c]	7,3	10,2	8,1	14,8	16,3	15,7	15,1	14,1	5,9	13,9	16,5	17,0	37,1	48,9	51,1	60,2	62,8
External debt service[c]	9,4	10,6	12,3	13,0	15,9	15,3	12,9	12,1	8,1	14,5	11,2	16,1	25,7	24,7	32,9	31,6	38,8
Interest payments[c]	4,6	6,1	7,8	8,2	10,3	10,2	8,4	8,3	6,4	6,9	5,5	5,8	5,3	4,8	5,4	6,3	15,8
Principal repayments[c]	4,8	4,5	4,5	4,8	5,7	5,1	4,6	3,8	1,7	7,6	5,7	10,3	20,4	19,9	27,5	25,3	23,0
Nominal / real exchange rate (1978=100)[f]	85,2	78,6	116,3	131,5	115,8	116,2	150,7	151,9	122,4	115,8	110,3	100,5	91,9	86,8	90,2	130,7	115,0

[a] All data refers to growth rates, unless otherwise specified. Does not include maquiladora activities.
[b] Preliminary.
[c] Billion $U.S.
[d] Estimations.
[e] Refers to total income minus total expenditures of the public sector.
[f] The nominal exchange rate is calculated as the nominal exchange rate deflacted by the consumption price index of Mexico and the United States (1978=100).
Sources: Own estimations based on Banco de México, CEPAL, INEGI, Oxford Economic Forecasting.

TABLE 2
General Data on Employment (1982-1992)
By subsectors

		Generation of employment				Share in employment				Average annual growth rate of employment			
		1970-1981	1982-1986	1987-1992	1982-1992	1970-1981	1982-1986	1987-1992	1982-1992	1971-1981	1982-1986	1987-1992	1982-1992
GD1	Agriculture, forestry and fishing	1.362.783	309.585	(170.372)	229.133	30,54	27,42	26,79	27,11	2,7	0,4	-0,2	0,1
GD2	Mining	69.045	20.189	(3.083)	29.609	1,19	1,15	1,23	1,19	3,5	2,9	0,6	1,7
GD3	Manufacturing industry	831.775	(101.214)	17.354	(58.148)	12,95	11,21	11,05	11,13	3,7	-1,2	0,3	-0,4
DI	Food products, beverages and tobacco	173.504	23.400	27.803	49.200	3,30	3,01	3,00	3,01	3,0	1,3	0,6	1,0
DII	Textiles, apparel and leather	115.285	(32.617)	(43.732)	(82.327)	2,51	1,98	1,79	1,89	2,7	-2,0	-2,1	-2,0
DIII	Wood and its products	50.118	(20.250)	(8.217)	(22.143)	0,70	0,56	0,52	0,54	4,0	-4,2	-0,2	-2,0
DIV	Printing and publishing	33.041	(2.175)	1.874	(141)	0,66	0,55	0,55	0,55	2,8	-0,7	0,3	-0,1
DV	Basic petrochemicals, rubber and plastic	105.579	9.373	(4.902)	15.015	1,49	1,44	1,50	1,47	4,1	1,3	0,3	0,8
DVI	Non-ferrous metals	41.583	1.631	(3.932)	9.071	0,85	0,73	0,77	0,75	2,8	-0,5	0,9	0,3
DVII	Structural metal products	44.738	(10.941)	(18.952)	(35.500)	0,51	0,47	0,38	0,43	5,0	-2,7	-4,9	-3,9
DVIII	Metal products, machinery and equipment	252.581	(74.278)	41.376	(26.531)	2,66	2,22	2,22	2,22	5,4	-4,3	1,7	-1,0
DIX	Other manufacturing industries	15.346	4.643	26.036	35.208	0,27	0,23	0,31	0,27	3,3	1,2	7,7	4,8
GD4	Construction	1.441.871	(301.200)	732.158	437.370	7,64	9,02	9,66	9,34	10,1	-3,0	5,8	1,8
GD5	Electricity, gas and water	48.718	11.690	6.548	21.071	0,33	0,44	0,49	0,46	8,3	3,2	1,5	2,3
GD6	Commerce, restaurants and hotels	1.118.081	(49.830)	372.030	366.307	14,82	14,52	14,74	14,63	4,2	-0,1	2,1	1,1
GD7	Transportation, storage and communications	528.525	(1.771)	72.291	95.314	4,01	4,74	4,74	4,74	7,4	1,3	1,5	1,4
GD8	Financial insurances, real estate	157.721	44.586	28.157	80.583	1,84	2,11	2,19	2,15	4,9	4,1	1,2	2,5
GD9	Communal services, social and personnal	3.127.539	225.223	293.853	532.233	26,67	29,39	29,11	29,25	6,7	1,0	0,8	0,9
Agriculture and mining		1.431.828	329.774	(173.455)	258.742	31,26	28,57	27,75	28,13	2,7	0,5	-0,1	0,2
Manufacturing		831.775	(101.214)	17.354	(58.148)	13,13	11,21	10,96	11,08	3,7	-1,2	0,3	-0,4
Services		6.422.455	(71.302)	1.505.037	1.532.878	55,62	60,21	61,28	60,80	6,5	0,2	2,0	1,1
Total		8.686.058	157.258	1.348.936	1.733.472	100,00	100,00	100,00	100,00	4,9	0,1	1,2	0,7

Source: own calculations based on INEGI data.

TABLE 3

Typology of Mexico's economic branches according to their growth in employment and GDP
Averange Annual growth rote (1987-1992)

		Employment	GDP
Group I		5,9	6,6
56	Automobiles	7,9	24,9
59	Other manufacturing industries	7,7	4,5
60	Construction	5,8	3,6
Group II		2,0	3,1
Subgroup II.a		3,1	4,7
55	Electrical equipment	4,4	5,4
57	Motors and autoparts	4,3	8,7
68	Professional services	4,2	3,9
12	Fruits and vegetables	4,1	8,2
63	Restaurants and hotels	3,7	6,0
67	Rent of real estate	3,6	3,5
07	Ferrous mining	3,4	5,4
22	Soft drinks and flavorings	2,9	4,7
34	Basic petrochemicals	2,7	10,5
09	Stone, sand, gravel, clay	2,2	5,8
52	Machinery and electric equipment	2,2	6,4
54	Electronic equipment	2,1	7,6
39	Cleaning and toilet prep.	1,9	6,0
43	Glass and products	1,7	7,2
42	Plastic products	1,7	3,8
48	Metal furniture	1,6	6,3
21	Beer and malt	1,6	6,8
38	Medicinal products	1,6	4,0
61	Electricity, gas and water	1,5	4,3
19	Other food products	1,2	5,1
Group II.b		1,8	2,3
04	Fishing and hunting	4,1	2,8
70	Medical services	3,6	1,5
30	Other wood products	2,1	0,4
08	Non-ferrous mining	1,9	1,9
64	Transportation	1,6	2,9
62	Trade	1,8	2,6
27	Apparel	1,4	2,4
69	Educational services	1,3	1,1
14	Corn milling	1,2	1,5
Group III		-0,4	1,9
Subgroup III.a		-0,3	5,6
45	Ceramics	1,1	3,6
40	Other chemicals	1,0	3,5
65	Communication	0,9	14,6
41	Rubber products	0,8	3,9
20	Alcoholic beverages	0,5	8,1
32	Printing	0,5	3,9
53	Household aplliances	0,4	5,3
11	Meat and milk products	0,4	4,1
26	Other textile industries	0,3	2,9
50	Other metal products	0,0	3,6
51	Non-electrical machinery	-0,3	6,7
35	Basic inorganic chemicals	-0,3	4,7
49	Structural metal products	-0,9	4,2
47	Non-ferrous metals	-1,1	4,8
37	Plastic resins, syn. fiber	-1,6	5,2
44	Cement	-1,7	5,3
46	Steel and iron	-6,1	3,7
17	Fats and oils	-2,6	4,5

Group III.b		-0,4	0,5
13	Wheat milling	0,9	0,9
71	Amusements	0,4	-0,5
15	Coffee	0,3	0,5
31	Paper and paperboard	0,0	2,1
03	Forestry	0,0	0,1
73	Public administration and defense	-0,1	0,0
01	Agriculture	-0,1	0,5
06	Crude oil and gas	-0,2	1,6
72	Other services	-0,2	1,9
16	Sugar	-0,4	-0,5
66	Financial services	-0,9	2,7
02	Livestock	-1,1	-0,6
18	Food for animals	-1,7	-0,4
05	Coal and products	-2,3	-1,7
29	Lumber, plywood	-2,4	-1,1
33	Petroleum refining	-2,8	2,4
24	Cotton, wool, syn. textiles	-3,0	-2,5
28	Leather and footwear	-4,2	-3,5
58	Other transportation equipment	-4,9	-2,6
36	Pesticides and fertilizers	-5,0	-2,0
10	Other non-metal minerals	-5,3	-7,7
23	Tobacco	-7,7	0,7
25	Jute, rough textiles	-18,9	-20,2
Agriculture and mining		-0,1	0,7
Manufacturing		0,3	4,3
Services		2,0	2,9
Total		1,2	2,9

Source: Own calculations based on INEGI data.
Group I: Growth rate of employment > 5%.
Group II: Growth rate of employment < 5% AND > 1.18%.
Group III: Growth rate of employment < 1.18%.
Subgroups: Growth rate of GDP higher or lower than 2.89%.

TABLE 4A
Basic data of the groups

	GDP[a]			GDP[b]			Employment[a]			Employment[b]			Labor productivity[a]		
	1971-1981	1982-1986	1987-1992	1982	1987	1992	1971-1981	1982-1986	1987-1992	1982	1987	1992	1970-1981	1982-1986	1987-1992
Group I	8,1	-5,7	6,6	7,60	6,27	7,55	9,8	-3,0	5,9	10,67	9,14	11,96	-1,3	-3,0	0,8
56 Automobiles	13,3	-5,9	24,9	0,71	0,66	1,71	8,7	-5,4	7,9	0,23	0,19	0,27	4,1	-2,7	16,0
59 Other manufacturing industries	5,8	-2,3	4,5	0,58	0,50	0,57	3,3	1,2	7,7	0,23	0,27	0,37	2,5	-3,6	-3,0
60 Construction	7,9	-5,7	3,6	6,32	5,11	5,27	10,1	-3,0	5,8	10,21	8,68	11,33	-1,8	-2,8	-1,9
Group II	7,1	-0,2	3,1	59,11	59,59	60,52	6,0	1,5	2,0	36,73	38,33	40,18	1,1	-1,6	1,0
Subgroup II.a	6,5	1,0	4,7	18,29	19,51	21,28	5,2	0,8	3,1	7,61	7,81	8,63	1,3	0,1	1,6
55 Electrical equipment	8,5	-0,9	5,4	0,22	0,22	0,24	3,9	-0,2	4,4	0,12	0,13	0,14	4,4	-0,8	0,9
57 Motors and autoparts	9,9	-1,3	8,7	0,53	0,55	0,75	8,0	-2,6	4,3	0,34	0,33	0,39	2,0	0,6	4,2
68 Professional services	8,3	0,7	3,9	1,61	1,69	1,79	4,0	3,0	4,2	0,80	0,91	1,06	5,1	-2,2	-0,3
12 Fruits and vegetables	4,1	5,8	8,2	0,14	0,16	0,20	1,8	-0,8	4,1	0,14	0,13	0,14	3,0	6,5	3,8
63 Restaurants and hotels	6,5	-4,7	6,0	3,43	2,69	3,15	6,6	-0,2	3,7	2,41	2,31	2,61	0,0	-4,6	2,2
67 Rent of real estate	4,6	4,0	3,5	6,68	8,14	8,23	4,0	5,9	3,6	0,78	0,98	1,13	0,6	-1,8	-0,1
07 Ferrous mining	7,6	-3,4	5,4	0,12	0,11	0,12	6,6	-1,9	3,4	0,03	0,03	0,03	1,0	-1,5	1,9
22 Soft drinks and flavorings	6,8	-0,1	4,7	0,52	0,48	0,55	5,9	0,8	2,9	0,42	0,41	0,47	1,2	-0,9	1,7
34 Basic petrochemicals	13,3	11,7	10,5	0,16	0,29	0,38	16,9	10,4	2,7	0,06	0,09	0,09	0,3	1,6	8,4
09 Stone, sand, gravel, clay	8,0	-0,6	5,8	0,36	0,35	0,40	7,9	1,9	2,2	0,43	0,41	0,44	0,1	-2,3	3,6
52 Machinery and electric equipment	9,3	-3,7	6,4	0,28	0,26	0,32	6,3	-0,9	2,2	0,17	0,17	0,17	2,9	-2,9	4,3
54 Electronic equipment	10,0	-3,7	7,6	0,36	0,35	0,45	4,4	-5,7	2,1	0,27	0,23	0,24	5,7	2,0	5,4
39 Cleaning and toilet prep.	8,8	2,1	6,0	0,45	0,50	0,56	3,6	1,2	1,9	0,14	0,15	0,15	5,1	0,9	4,0
43 Glass and products	7,6	-1,6	7,2	0,25	0,28	0,32	2,4	-3,0	1,7	0,11	0,11	0,11	5,0	1,4	5,4
42 Plastic products	10,8	0,7	3,8	0,43	0,44	0,47	4,6	0,9	1,7	0,25	0,24	0,26	6,6	-0,3	2,1
48 Metal furniture	3,9	-7,0	6,3	0,11	0,09	0,10	0,1	-6,5	1,6	0,10	0,08	0,08	3,7	-1,1	4,6
21 Beer and malt	7,9	-1,3	6,8	0,45	0,46	0,54	3,9	0,5	1,6	0,12	0,11	0,11	4,1	-1,9	5,1
38 Medicinal products	8,9	-0,1	4,0	0,45	0,43	0,47	2,2	-1,4	1,6	0,20	0,18	0,19	6,6	1,4	2,4
61 Electricity, gas and water	9,6	5,5	4,3	1,12	1,39	1,48	8,3	3,2	1,5	0,42	0,48	0,48	2,0	2,2	2,8
19 Other food products	6,7	2,2	5,1	0,63	0,64	0,75	3,8	2,2	1,2	0,31	0,33	0,34	2,8	-0,1	3,8
Group II.b	7,4	-0,7	2,3	40,82	40,07	39,24	6,2	1,6	1,8	29,12	30,52	31,55	1,2	-2,3	0,5
04 Fishing and hunting	9,7	0,7	2,8	0,29	0,33	0,29	6,6	6,8	4,1	0,25	0,36	0,38	3,0	-5,6	-1,2
70 Medical services	9,8	2,2	1,5	3,21	3,40	3,17	9,7	2,3	3,6	2,47	2,59	2,96	0,2	0,0	-2,0
30 Other wood products	6,7	-1,3	0,4	0,51	0,49	0,43	4,7	-6,6	2,1	0,32	0,26	0,26	2,0	6,3	-1,6
08 Non-ferrous mining	4,1	4,3	1,9	0,69	0,90	0,80	2,9	2,3	1,9	0,33	0,39	0,38	1,2	1,9	0,0
64 Transportation	10,4	-1,7	2,9	5,27	5,43	5,37	7,7	1,1	1,6	4,40	4,34	4,39	2,5	-2,6	1,3
62 Trade	7,0	-1,9	2,6	24,91	22,82	22,92	3,8	-0,1	1,8	12,29	12,10	12,57	3,2	-1,9	0,8
27 Apparel	4,6	-2,6	2,4	0,91	0,81	0,83	2,3	-2,7	1,4	0,58	0,52	0,53	2,4	0,1	0,9
69 Educational services	7,5	4,3	1,1	4,48	5,28	4,85	11,2	4,6	1,3	8,15	9,61	9,72	—	—	—
14 Corn milling	3,9	3,2	1,5	0,56	0,62	0,58	1,5	2,5	1,2	0,33	0,36	0,36	2,4	0,7	0,2
Group III	5,7	0,4	1,9	34,47	35,51	33,45	3,5	-0,2	-0,4	52,60	52,53	47,86	2,2	0,6	2,3
Subgroup III.a	7,7	-0,7	5,6	8,75	8,94	10,17	4,1	-1,1	-0,3	4,19	4,01	3,68	3,4	0,4	5,9
45 Ceramics	5,7	-1,5	3,6	0,90	0,91	0,90	2,6	-0,5	1,1	0,55	0,58	0,54	3,1	-1,1	2,6
40 Other chemicals	9,0	0,7	3,5	0,47	0,51	0,53	4,7	-0,6	1,0	0,18	0,18	0,18	4,2	1,2	2,4
65 Communication	16,3	3,6	14,6	0,75	0,91	1,66	5,1	3,6	0,9	0,43	0,51	0,48	10,7	0,0	13,9
41 Rubber products	9,0	1,2	3,9	0,39	0,39	0,40	4,5	-0,1	0,8	0,15	0,14	0,14	4,4	1,1	3,1

20 Alcoholic beverages	7,5	1,7	8,1	0,33	0,35	0,44	1,6	-2,8	0,5	0,05	0,05	0,04	5,7	4,6	7,6
32 Printing	5,9	-0,9	3,9	0,54	0,51	0,56	3,1	-1,1	0,5	0,34	0,32	0,31	2,7	0,1	3,4
53 Household aplliances	13,3	-9,6	5,3	0,22	0,13	0,16	8,6	-9,1	0,4	0,13	0,08	0,08	4,5	-0,9	4,9
11 Meat and milk products	5,0	2,1	4,1	0,93	0,93	1,05	3,9	2,0	0,4	0,40	0,42	0,41	1,5	0,1	3,7
26 Other textile industries	9,8	-0,6	2,9	0,29	0,29	0,30	5,0	-1,0	0,3	0,19	0,18	0,18	4,6	0,4	2,6
50 Other metal products	5,7	-3,2	3,6	0,65	0,58	0,59	3,0	-3,5	0,0	0,39	0,33	0,31	2,6	0,3	3,6
51 Non-electrical machinery	10,1	-8,1	6,7	0,69	0,51	0,64	5,7	-5,8	-0,3	0,38	0,29	0,28	4,3	-2,9	6,8
35 Basic inorganic chemicals	9,1	4,1	4,7	0,27	0,33	0,35	4,1	0,7	-0,3	0,09	0,09	0,08	5,0	3,4	5,2
49 Structural metal products	4,8	-4,5	4,2	0,19	0,13	0,16	1,7	-5,8	-0,9	0,13	0,10	0,09	3,9	1,2	5,0
47 Non-ferrous metals	6,9	-2,0	4,8	0,26	0,34	0,30	6,0	-1,3	-1,1	0,10	0,10	0,09	1,0	-0,8	6,0
37 Plastic resins, syn. fiber	12,3	4,8	5,2	0,34	0,49	0,50	8,2	2,0	-1,6	0,13	0,15	0,13	3,9	2,7	6,9
44 Cement	8,8	2,8	5,3	0,29	0,35	0,36	6,0	3,9	-1,7	0,08	0,09	0,07	2,7	-1,1	7,2
46 Steel and iron	7,3	-1,9	3,7	0,94	0,98	0,97	4,9	-3,1	-6,1	0,39	0,30	0,21	2,3	1,2	10,7
17 Fats and oils	5,3	1,0	4,5	0,29	0,30	0,31	4,9	2,0	-2,6	0,09	0,10	0,08	0,3	-1,1	7,4
Group III.b	5,1	0,8	0,5	25,72	26,56	23,28	3,5	-0,1	-0,4	48,41	48,52	44,18	1,7	0,9	1,0
13 Wheat milling	5,2	0,1	0,9	0,55	0,55	0,48	1,5	-0,6	0,9	0,56	0,53	0,51	3,7	0,8	0,0
71 Amusements	4,1	-3,8	-0,5	0,76	0,61	0,54	2,1	-3,3	0,4	0,33	0,27	0,27	2,1	-0,6	-1,0
15 Coffee	5,6	1,9	0,5	0,23	0,25	0,21	2,0	1,3	0,3	0,07	0,08	0,07	3,5	0,6	0,2
31 Paper and paperboard	7,2	2,4	2,1	0,64	0,73	0,68	2,5	-0,1	0,0	0,24	0,24	0,22	4,6	2,5	2,0
03 Forestry	3,0	1,0	0,1	0,40	0,43	0,35	2,4	0,9	0,0	0,40	0,42	0,38	0,6	0,1	0,2
73 Public administration and defense	8,0	3,0	0,0	3,13	3,37	2,92	7,2	3,8	-0,1	4,38	4,91	4,58	0,8	-0,8	0,1
01 Agriculture	3,8	0,3	0,5	4,58	5,02	4,30	2,6	0,1	-0,1	22,31	23,32	21,39	1,5	0,2	0,9
06 Crude oil and gas	15,1	0,9	1,6	2,29	2,15	1,94	-1,0	7,7	-0,2	0,16	0,22	0,17	21,8	-6,3	5,8
72 Other services	3,3	-1,4	1,9	4,50	4,21	3,97	4,7	-2,7	-0,2	12,73	11,16	10,41	-1,3	1,3	2,1
16 Sugar	1,9	8,0	-0,5	0,42	0,62	0,49	2,3	6,2	-0,4	0,27	0,36	0,32	-0,4	1,7	-0,1
66 Financial services	7,6	5,4	2,7	2,19	2,71	2,67	5,6	2,8	-0,9	1,21	1,21	1,05	1,9	2,8	3,7
02 Livestock	3,3	1,7	-0,6	2,65	2,73	2,33	3,4	2,5	-1,1	3,28	3,50	3,12	-0,1	-0,8	0,5
18 Food for animals	7,7	-4,7	-0,4	0,15	0,10	0,10	5,2	-4,1	-1,7	0,10	0,08	0,07	2,5	-0,3	1,4
05 Coal and products	8,8	1,4	-1,7	0,11	0,13	0,09	9,2	4,3	-2,3	0,08	0,11	0,08	-0,4	-2,8	0,8
29 Lumber, plywood	5,4	-0,2	-1,1	0,35	0,37	0,27	3,4	-1,4	-2,4	0,31	0,30	0,23	2,0	1,2	1,3
33 Petroleum refining	8,3	0,5	2,4	0,38	0,42	0,40	2,0	4,8	-2,8	0,17	0,21	0,15	6,7	-3,8	6,0
24 Cotton, wool, syn. textiles	5,7	-2,3	-2,5	0,83	0,81	0,59	1,8	-1,4	-3,0	0,55	0,53	0,41	4,0	-0,9	0,5
28 Leather and footwear	5,9	-2,3	-3,5	0,67	0,51	0,41	4,4	-2,0	-4,2	0,72	0,59	0,45	1,8	-0,3	0,8
58 Other transportation equipment	6,1	-5,9	-2,6	0,23	0,20	0,12	19,7	-2,1	-4,9	0,23	0,21	0,14	-4,6	-4,0	2,3
36 Pesticides and fertilizers	8,1	7,5	-2,0	0,09	0,10	0,06	4,0	5,1	-5,0	0,06	0,05	0,03	4,8	2,5	2,8
10 Other non-metal minerals	2,6	0,0	-7,7	0,15	0,17	0,08	1,0	1,6	-5,3	0,07	0,07	0,05	1,9	-1,5	-2,7
23 Tobacco	2,1	-0,9	0,7	0,30	0,28	0,25	9,7	3,8	-7,7	0,13	0,09	0,07	-1,5	-2,0	12,3
25 Jute, rough textiles	-1,5	-2,7	-20,2	0,13	0,10	0,02	-2,3	-0,4	-18,9	0,06	0,06	0,01	1,7	-2,4	-2,0
Agriculture and mining	5,1	0,8	0,7	11,64	12,33	10,71	2,7	0,5	-0,1	27,34	28,84	26,42	2,6	0,4	0,9
Manufacturing	6,7	-0,9	4,3	21,19	21,30	22,80	3,7	-1,2	0,3	11,66	11,11	10,54	3,0	0,2	4,0
Services	7,0	-0,5	2,9	68,36	67,74	68,00	6,5	0,2	2,0	61,00	60,05	63,04	0,5	-0,6	0,9
Total	6,7	-0,5	2,9	100,00	100,00	100,00	4,9	0,1	1,2	100,00	100,00	100,00	1,8	-0,6	1,7

(a) Average annual growth rate.
(b) Percentage share over total.
Source: own calculations based on INEGI data.

TABLE 4B
Basic data of the groups

	Capital productivity[a]			Exports[a]			Exports[b]				Imports[a]		Imports[b]		
	1970-1981	1982-1986	1987-1992	1970-1981	1982-1986	1987-1992	1970-1981	1982	1987	1992	1982-1986	1987-1992	1982	1987	1992
Group I	-8,4	-8,9	3,1	12,3	45,7	25,4	2,56	0,58	3,90	7,74	-7,4	23,8	5,91	5,00	5,68
56 Automobiles	2,8	-11,6	25,4	126,2	51,0	37,3	0,66	0,34	2,92	5,74	-24,3	37,8	1,22	0,66	0,77
59 Other manufacturing industries	-0,4	-1,9	7,6	3,0	50,4	14,1	1,90	0,24	0,98	2,01	-2,7	23,2	4,69	4,34	4,91
60 Construction	-9,5	-8,6	-0,1	0,0	0,0	0,0	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00
Group II	-1,7	-2,6	1,2	9,5	14,2	7,1	20,06	10,49	16,35	18,46	-1,3	24,2	23,85	33,39	34,75
Subgroup II.a	-2,0	-1,2	2,7	12,1	16,3	6,0	13,03	7,88	12,89	13,69	-0,4	23,0	22,02	32,01	31,55
55 Electrical equipment	2,1	-1,2	9,3	53,3	22,5	25,9	0,32	0,16	0,64	0,80	7,6	15,8	1,53	2,11	1,87
57 Motors and autoparts	0,1	1,9	13,8	41,3	42,8	2,0	2,01	1,56	4,63	4,47	2,3	25,2	9,03	17,07	16,31
68 Professional services	—	—	—	7,2	58,1	47,3	0,07	0,00	0,01	0,02	29,6	77,0	0,01	0,01	0,02
12 Fruits and vegetables	1,4	12,9	5,2	3,5	13,1	4,9	1,95	0,51	0,82	0,71	-0,6	71,2	0,21	0,14	0,80
63 Restaurants and hotels	-3,3	-3,3	4,6	0,0	0,0	0,0	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00
67 Rent of real estate	0,4	12,2	4,2	0,0	0,0	0,0	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00
07 Ferrous mining	-6,9	-3,1	3,4	0,0	0,0	0,0	0,00	0,00	0,00	0,00	4933,5	759,5	0,00	0,02	0,01
22 Soft drinks and flavorings	-1,9	0,3	9,3	1,0	14,3	34,3	0,00	0,01	0,02	0,05	5,7	80,4	0,00	0,00	0,01
34 Basic petrochemicals	9,6	-6,5	10,8	107,5	31,8	16,1	0,68	0,74	1,62	2,44	1,5	10,5	3,13	4,30	2,06
09 Stone, sand, gravel, clay	-6,3	4,7	2,4	7,6	12,6	0,7	0,14	0,05	0,06	0,05	-2,2	14,9	0,15	0,26	0,12
52 Machinery and electric equipment	-3,0	-3,4	19,1	26,2	86,1	21,5	0,05	0,04	0,38	0,83	-5,9	19,1	2,36	1,70	1,80
54 Electronic equipment	9,5	-3,1	8,2	27,4	44,5	-3,8	0,18	0,09	0,17	0,17	3,8	31,5	2,96	3,17	4,63
39 Cleaning and toilet prep.	2,1	2,6	3,7	1,3	47,1	17,3	0,00	0,02	0,12	0,11	-13,6	47,5	0,24	0,08	0,23
43 Glass and products	2,5	-0,8	14,5	7,3	43,9	11,7	1,04	0,27	0,76	1,05	-5,4	37,1	0,26	0,23	0,40
42 Plastic products	2,4	0,8	8,0	0,0	0,0	0,0	0,00	0,00	0,00	0,00	9,8	25,0	0,56	0,86	1,13
48 Metal furniture	-3,2	1,4	7,1	9,9	44,7	72,8	0,05	0,01	0,05	0,59	-1,9	141,2	0,01	0,00	0,06
21 Beer and malt	5,0	2,3	5,4	27,9	38,0	8,3	0,15	0,11	0,69	0,41	-16,4	58,9	0,04	0,06	0,07
38 Medicinal products	1,2	-4,9	5,4	4,3	20,9	14,1	1,15	0,30	0,69	0,91	-3,6	18,1	1,04	1,30	0,98
61 Electricity, gas and water	-1,1	2,4	0,5	0,2	198,2	6,6	0,50	1,87	0,17	0,14	43,6	72,5	0,03	0,09	0,23
19 Other food products	7,4	-0,6	11,2	7,3	4,7	-5,2	4,74	2,16	2,06	0,95	2,9	38,5	0,45	0,62	0,83
Group II.b	-1,3	-3,1	0,6	7,1	7,9	11,8	7,03	2,60	3,46	4,77	-14,6	46,1	1,83	1,38	3,20
04 Fishing and hunting	—	—	—	8,0	26,4	42,3	0,13	0,01	0,05	0,16	4,2	4,6	0,03	0,04	0,00
70 Medical services	9,1	5,6	7,3	0,0	0,0	0,0	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00
30 Other wood products	-3,0	8,8	4,0	3,8	53,1	25,1	0,91	0,21	1,04	2,09	-9,8	68,7	0,09	0,05	0,23
08 Non-ferrous mining	-7,9	-0,1	-2,8	8,9	0,7	-6,9	5,12	2,13	1,72	0,99	-9,1	19,9	0,64	0,77	0,49
64 Transportation	0,5	-3,4	-1,2	0,0	0,0	0,0	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00
62 Trade	-0,8	-3,2	2,8	0,0	0,0	0,0	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00
27 Apparel	0,5	-11,2	14,5	16,3	28,7	40,7	0,87	0,24	0,65	1,52	-8,8	68,0	1,06	0,52	2,47
69 Educational services	—	—	—	0,0	0,0	0,0	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00
14 Corn milling	0,7	5,7	-3,1	-9,1	0,0	0,0	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00
Group III	2,3	0,5	3,1	17,2	6,6	2,8	77,38	88,93	79,76	73,40	-12,6	21,9	70,25	61,61	59,57
Subgroup III.a	0,4	1,8	6,8	7,0	27,6	14,7	12,74	4,69	12,41	17,03	-9,9	23,3	46,55	37,49	39,72
45 Ceramics	0,8	3,9	3,3	12,9	13,5	9,7	0,74	0,21	0,37	0,27	-3,2	38,9	0,56	0,49	0,94
40 Other chemicals	0,2	-4,1	-3,0	10,3	35,6	33,9	0,56	0,34	0,79	2,44	-3,1	16,2	1,94	2,83	1,84
65 Communication	-14,3	2,7	5,9	0,0	0,0	0,0	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00

41 Rubber products	3,7	2,0	7,7	19,2	18,9	54,5	0,31	0,07	0,43	0,72	-10,0	28,1	0,54	0,54	0,68
20 Alcoholic beverages	4,1	6,7	11,8	23,3	3,1	8,0	0,46	0,32	0,23	0,26	-10,1	73,3	0,35	0,14	0,45
32 Printing	-6,8	7,3	7,7	8,3	-4,8	5,8	0,85	0,32	0,30	0,20	1,5	24,6	1,07	0,71	0,91
53 Household aplliances	1,4	-0,7	13,3	47,4	75,9	38,5	0,06	0,05	0,32	1,28	-1,9	92,7	0,11	0,10	0,43
11 Meat and milk products	-1,6	0,6	7,2	4,1	29,9	6,1	1,22	0,04	0,12	0,08	-5,9	34,9	2,20	2,35	3,55
26 Other textile industries	3,9	3,6	1,2	92,8	68,5	22,3	0,22	0,07	0,25	0,59	-3,9	64,0	0,24	0,13	0,44
50 Other metal products	9,1	-0,3	6,1	9,6	62,8	6,1	0,48	0,16	0,66	0,67	-5,4	27,3	3,16	2,68	3,61
51 Non-electrical machinery	5,0	-6,1	13,5	16,8	18,0	18,4	2,04	1,03	2,08	3,39	-10,8	22,5	21,25	14,01	14,77
35 Basic inorganic chemicals	7,6	9,5	11,0	17,7	8,1	3,4	1,27	0,71	1,08	0,91	-7,7	21,6	2,60	3,27	2,74
49 Structural metal products	-1,4	-3,5	6,6	78,3	76,2	-0,7	0,28	0,05	0,18	0,11	-6,7	30,7	0,27	0,19	0,34
47 Non-ferrous metals	7,7	-1,9	9,1	14,1	48,6	57,4	0,85	0,23	0,66	2,06	3,4	24,1	2,21	2,11	2,06
37 Plastic resins, syn. fiber	5,8	12,7	6,1	64,0	36,9	14,1	0,51	0,57	1,84	2,15	-1,5	11,2	2,49	3,55	1,94
44 Cement	-0,4	4,6	13,1	22,7	131,1	-11,8	0,29	0,05	0,73	0,19	-30,0	20,1	0,09	0,03	0,02
46 Steel and iron	-1,0	0,8	9,7	4,4	93,9	1,6	2,60	0,46	2,30	1,55	-13,4	22,9	6,47	3,67	3,89
17 Fats and oils	0,3	4,2	8,2	-0,8	73,0	198,2	0,00	0,00	0,07	0,16	9,0	38,9	0,99	0,71	1,11
Group III.b	6,8	-1,3	0,1	19,1	5,1	0,5	64,63	84,25	67,35	56,37	-11,3	19,8	23,70	24,12	19,85
13 Wheat milling	-3,1	6,0	0,0	-1,2	24,0	21,7	0,00	0,02	0,05	0,10	16,9	297,2	0,01	0,00	0,06
71 Amusements	-2,2	-10,4	-5,7	-0,5	59,1	-6,9	0,07	0,01	0,00	0,00	-10,3	24,9	0,02	0,02	0,01
15 Coffee	4,8	6,0	-0,1	6,3	12,7	3,3	6,95	1,93	2,72	2,12	2,6	92,7	0,01	0,00	0,05
31 Paper and paperboard	6,8	3,8	4,2	16,2	64,9	8,2	0,06	0,06	0,50	0,27	-9,5	22,7	2,42	3,46	2,44
03 Forestry	—	—	—	-1,2	-6,2	26,1	0,50	0,07	0,04	0,07	-3,1	11,7	0,64	1,04	0,39
73 Public administration and defense	—	—	—	0,0	0,0	0,0	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00
01 Agriculture	—	—	—	1,0	15,1	1,0	7,85	2,16	2,81	2,20	-3,7	17,1	6,24	8,29	5,39
06 Crude oil and gas	—	—	—	225,7	4,4	0,8	27,69	75,22	53,42	45,36	0,0	0,0	0,00	0,00	0,00
72 Other services	-11,5	7,4	4,1	0,0	0,0	0,0	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00
16 Sugar	7,0	17,9	-3,7	-20,2	81,0	94,4	5,11	0,14	0,52	0,02	-40,2	0,0	2,31	0,00	0,14
66 Financial services	-2,9	-6,5	-6,7	0,0	0,0	82,5	0,00	0,00	0,00	0,02	0,0	0,0	0,00	0,00	0,00
02 Livestock	—	—	—	3,0	26,1	-20,5	2,21	0,71	0,90	0,00	37,0	60,9	0,76	0,57	0,93
18 Food for animals	4,5	-2,4	0,6	-8,4	46,7	4760,8	0,00	0,00	0,00	0,77	-1,4	77,5	0,07	0,06	0,17
05 Coal and products	6,1	7,4	-0,5	-4,3	14,9	-7,6	0,01	0,03	0,03	0,01	7,6	22,6	0,41	0,20	0,19
29 Lumber, plywood	-1,1	10,0	18,2	-3,4	122,1	-5,2	0,00	0,03	0,14	0,02	-6,4	29,2	0,40	0,41	0,54
33 Petroleum refining	-5,3	-3,4	5,7	42,2	52,1	-19,7	1,28	0,90	2,50	0,15	27,6	25,3	2,93	4,93	5,23
24 Cotton, wool, syn. textiles	0,8	4,2	5,2	0,1	5,3	18,0	6,48	1,38	1,82	2,48	5,9	46,0	0,38	0,45	0,89
28 Leather and footwear	0,2	-0,9	-1,4	8,9	21,7	45,5	0,42	0,10	0,52	1,16	-14,0	75,6	0,10	0,11	0,43
58 Other transportation equipment	2,4	-8,6	4,2	68,3	8,3	30,5	0,83	0,28	0,25	0,70	-16,9	17,4	5,17	2,82	2,22
36 Pesticides and fertilizers	4,4	3,8	2,6	24,1	27,7	38,1	0,37	0,12	0,19	0,36	-11,7	13,0	0,91	0,21	0,11
10 Other non-metal minerals	0,0	-1,2	-4,3	5,4	-3,0	-1,1	3,13	0,75	0,83	0,48	4,4	3,8	0,85	1,36	0,26
23 Tobacco	0,7	3,0	1,3	9,0	-7,8	-4,3	0,59	0,17	0,04	0,02	5,0	77,8	0,00	0,00	0,01
25 Jute, rough textiles	0,2	6,6	-14,2	3,4	-12,4	-1,1	1,09	0,17	0,07	0,05	11,6	44,3	0,07	0,16	0,39
Agriculture and mining	-3,9	0,2	-1,0	26,8	4,5	0,5	46,78	81,14	59,86	50,10	-7,4	15,8	9,72	12,55	7,78
Manufacturing	1,0	-1,0	7,2	4,0	21,8	10,0	52,59	16,99	39,96	49,74	-8,5	23,5	90,22	87,33	91,96
Services	-2,9	-2,6	-0,2	536,7	24,9	8,2	0,64	1,88	0,18	0,16	9,0	48,2	0,07	0,12	0,26
Total	-1,1	-2,1	2,2	15,6	7,9	4,5	100,00	100,00	100,00	100,00	-9,8	22,7	100,00	100,00	100,00

(a) Average annual growth rate.
(b) Percentage share over total.
Source: own calculations based on INEGI data.

TABLE 5

Results of the time-series models[a]

Dependent variable: employment

	Independent variables						
	C	LPIB	LSR	LX	LE(-1)	R2 (adjusted)	F
GROUP I	-0,67 (0.0017)[b]	0,95 (0.0000)[b]	-0,29 (0.0000)[b]	-0,01 (0.4382)	0,23 (0.0023)[b]	0,9922	671,6
GROUP II	0,34 (0.1823)	0,6 (0.0002)[b]	-0,11 (0.1409)	-0.02 [c] (0.5235)	0,39 (0.0024)[b]	0,9971	1783,6
GROUP III	4.78 [c] (0.0009)[b]	-0.07 [c] (0.6023)	0,14 (0.0132)[b]	0,11 (0.0061)[b]	0,31 (0.1647)	0,9648	144,68
AGRICULTURE AND MINING	5.31 [c] (0.0001)[b]	-0,23 (0.4892)	-0,16 (0.0273)[b]	0,1 (0.0406)[b]	0,29 (0.2637)	0,9191	60,6
MANUFACTURING	3,06 (0.0000)[b]	0,57 (0.0000)[b]	-0,24 (0.0005)[b]	-0,09 (0.0000)[b]	0,008 (0.9499)	0,9825	295,3
SERVICES	0,81 (0.0000)[b]	0,75 (0.0000)[b]	-0,07 (0.0259)[b]	0,008 (0.0035)[b]	0,18 (0.379)	0,9976	2197,2
TOTAL	4,54 (0.0038)[b]	0.42 [c] (0.0485)[b]	0.11 [c] (0.1751)	0.13 [c] (0.0349)[b]	-0.09 [c] (0.7856)	0,9843	330,1

LPIB = Logarithm of GDP at 1980 prices.
LSR = Logarithm of real wages.
LX = Logarithm of exports at 1980 prices.
LE = Logarith of remunerated employment.
Student-t probabilities in parenthesis.
[a] The following misspecification tests were done: Serial correlation, normality, heteroskedasticity Arch and White, lineality, Ramsey, CUSUM and CUSUM2.
[b] These coefficients are significant at 0.05%.
[c] Lagged variable (-1).