How changes in Mexican agriculture affect Mexico-US migration?

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It is likely that migration of Mexicans to the US from both the rural and the urban sectors will continue to be a matter of fact, at least in the short to medium runs. What is much less certain is whether or not these emigration flows will tend to grow, to remain fairly constant or to decrease during this period [1].

To answer these questions we have to study the determinants of migration and how these determinants change through time. For example, if NAFTA and other economic liberalization policies in Mexico cause a sharp growth of labor demand in this country, international migration flows will tend to decrease. This applies to rural out-migration, since if urban Mexico experiences a high employment growth, and if rural population is well prepared to fill those jobs, rural migration (one of the most pervasive features of agricultural transformation) will flow to Mexico's urban economy.

To study international migration is complex matter, because it involves historical and political phenomena (Smith. R.: 2000), and since its dynamic nature arising from forces in different nation States: the supply-push variables and network factors from Mexico and the demand-pull ones from the US (see, for example, the Report of the Binational Study on Migration compiled by Loaeza Plank and Gomez: 1997). In addition, data constraints limit the empirical evaluation of the different theories of migration (Taylor, J.E. and P. Martin: forthcoming), as well as the conduction of analyses intended to contrast predictions made of future migration flows with actual facts.

These limitations explain why the characteristics of this paper are of an essay. That is, my objective here is not to present results of particular quantitative analyses, but rather to discuss how the structure and changes in the Mexican agricultural economy may have affected and may influence Mexico-to-US migration in the short-to-medium run. My reflection is based on the recent trends of the Mexican economy --with special emphasis on its agricultural component-- and on the results of some of the most recent studies on the migration of Mexicans to the US.

To focus on rural areas in Mexico is valid because nearly the entire U.S. farm workforce from Mexico comes from rural areas (and this is particularly the case of California's Imperial Valley). However, this tendency may change if jobs in Mexico's

[1] There is another relevant concern for the purposes of this Workshop, which I do not deal with in the paper. It is related to the question of where in the US will Mexicans migrate (regionally and to what sectors of the US economy).

urban economy experience higher growth rates, and/or if the conditions under which Mexican farmers live and produce are modified.

As we all know, beginning in the eighties, Mexico has witnessed major changes in its State economic policies and has experienced deep economic crises. This has had and will have repercussions in the dynamics of its rural and urban sectors, and hence, on rural out-migration. So, in the next section of the paper I present a summary of policy changes, an overall view of their expected impacts, and contrast predictions with the tendencies of the Mexican economy during the nineties. In this section I also present some of the reasons why, Mexico-to-US migration may or may not decrease in the medium run. I conclude the section revising some data of rural and urban migration to the US during the last decade, pointing out the different tendencies between these two sources of migration. Section two is dedicated to the agricultural sector of Mexico, where I propose reasons explaining why the expected collapse of its staple sub sector (and its consequence: huge rural out migration flows) has not happened. In section three I discuss the perspectives of rural out migration and on policy issues that may reduce rural emigration to the US. I finish the paper presenting a suggestion of the data and the type of economic research required to analyze and predict –from a nation-wide perspective-- migration flows from rural Mexico to the US.

1) The Mexican economy: Policy changes, expected impacts and tendencies

Beginning in the eighties –and particularly so, during the nineties-- the economic development model of Mexico has been transformed by the Mexican State: from import substitution to outward orientation policies. For the agricultural sector, this transformation has included the elimination or reduction of producer price supports of what historically were considered as basic crops (barley, beans, maize, rice, sorghum, wheat and five oleaginous crops); the abolition of import licenses for these products; and, for Mexico's NAFTA partners, the elimination of tariffs and the establishment of tariff rate quotas (TRQs) for three crops that the Salinas Administration considered to be sensitive: barley, beans, and maize [2]. Other reforms in the agricultural arena included the abolition of CONASUPO (Mexico's Agricultural State Trade Enterprise); the reduction or elimination of input, credit and insurance subsidies; and the liberalization of land property rights of the ejidal sector (See Casco: 1999, OCED: 1997, Cornelius and Myhre: 1998, and Yunez-Naude and Barceinas: in press).

The expected impact of these reforms on the Mexican economy, on its agricultural sector and on the emigration flows of Mexicans to the US has been a matter of deep controversy since the beginning of NAFTA negotiations. In one extreme is the official stand (specially held before the crisis of 1995) that with the reforms and NAFTA, Mexico will acquire macroeconomic stability and will experience sustained and high growth rates (one of the leading forces to sustain it being foreign direct investment, mainly directed to the urban-manufacturing and service sectors). For this line of thought, both phenomena will lead to a reduction of the supply-push forces that

[2] TRQ for barley will end in 2003 and those for beans and maize in 2008, see Table 5 of Yunez-Naude and Barceinas: in press.

promote emigration to the US. In the other extreme there are the critics of liberalization. They argue that with the reforms and with NAFTA, losers will outweigh gainers, one of the consequences of this being the tendency of staple production in Mexico to disappear (see, for example, Calva: 1995). However and during the beginning of the nineties everybody --from the government, to scholars and the critics of liberalization and NAFTA— predicted that policy reforms will promote rural out-migration in the short and medium runs. [3]

After more than a decade of liberalization, and six years of NAFTA implementation, the extreme predictions have not happened. From 1995 to 1996 Mexico experienced one of its deepest macroeconomic crisis, and overall growth rates were low during the nineties (Table 1). At the same time, the agricultural sector of Mexico –in particular, its grain sub sector—has not collapsed, and rural out-migration has not increased as much as it was predicted (see below). Furthermore, according to the data of Mexico's National Population Council, the sum of migration rates to the US did not increase during the nineties as compared to those prevailing during the eighties (Tuiran, R.: 2000).

The shock that the Mexican economy experienced during the mid-nineties poses serious problems to evaluate the short to medium run impacts of liberalization in the economic structure of Mexico, and so, the repercussions of the economic reforms on the emigration of Mexicans to the US.

What can be said with is that economic factors that promote emigration from Mexico to the US will continue to be present. For example, using a keynesian-demand-lead model for the Mexican economy, Hernandez Laos (2000) predicts that, even under an optimistic scenario, where the Mexican economy experiences an annual average rate of growth of 4.7% from 1996 to 2015 (that is, higher than the one occurred in years previous to 1996), new "remunerative" (formal) employments in Mexico will grow at a rate of 2.3% per year [4]. This figure is 0.2 points lower than the predicted increase in Mexico's labor force for the same period, meaning that an average of 88,000 people at working ages per year will not be absorbed by the formal labor market. For a less optimistic scenario, where the Mexican economy grows at the historical annual rate of 3.1%, the number of people not finding formal jobs per year would be much higher: 440,000.

Another reason to foresee that supply-push factors will continue to be present is wage differentials. The prevailing ratio between minimum wages in the US with respect to Mexico is around 13 to 1. This figure is in sharp contrast with what Martin and Cornelius estimate to be the critical ratio of wage differentials for international migration to be inhibited. Based on Eastern Europe experience, the authors estimate that the ratio is between 4 to 1 and 5 to 1 (Smith, R: 2000, p. 299).

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[3] For example, Luis Tellez, Mexico's former Undersecretary of Agriculture, predicted that about one-half of the Mexican rural population would be forced to move "within a decade or two." New York Times, November 27, 1991, p. A1. The studies of Robinson et. al. : 1991, and Levy and van Wijnbergen: 1992 are examples of rigorous estimations done during NAFTA negotiations that predicted huge rural out migration flows.

[4] These estimations are similar to the ratio of 2 to 1 between economic and job growth in Mexico estimated by the IMF (Escobar and Martin: 2000).

In addition to wage differentials, the deepening of migration networks will likely promote the emigration of Mexicans to the US.

However, demographic change in contemporary Mexico may reduce emigration. According to Escobar and Martin (2000), the process of declining fertility in Mexico could reduce Mexico-US migration. This is so because declining fertility reduces migration directly, with fewer people, and indirectly, because households with fewer children tend to keep them in school longer, reducing the need for jobs for young people entering the labor market, and reducing the probability of emigration [5].

Mexico to US migration will hence depend on forces acting in opposite directions. This makes very hard to answer the question as to what will be its tendencies in the short to medium runs (even the reasons explaining recent migration flows is controversial). To tackle the main theme of this paper not easier, since we first need to do a diagnosis of rural emigration, distinguishing the forces that promote rural out migration to other places in Mexico from those explaining rural migration to the US. For this, unavailable nation-wide data is required, not only of rural emigration flows, but also of the conditions under which Mexican rural households produce and live, including their labor supply (see the concluding section below).

Notwithstanding the above, a reflection on future rural-out migration prospects for Mexico can be provided, based on policy changes, and on recent trends of the Mexican agricultural sector and of rural international migration flows and remittances, using Mexico's national official data and some results of microeconomic surveys of Mexican villages.

The data provided by Castro and Tuiran (2000), using the results of the National Surveys of Households Incomes and Expenditures, indicate that, from a remittances perspective, during the nineties migration is an increasingly important activity of Mexican households. This is so because the data show that the number of Mexican households receiving remittances increased by more than 60% from 1996 with respect to 1992, and that the value of remittances grew by 50% during the same period (Table 2). However these figures also reflect differences according to where households are located. The number of households in locations with 2,500 or more habitants receiving remittances (as well as the value of remittances) decreased during 1994 as compared with 1992, and increased sharply from 1996 with respect to 1994. By contrast, both, the number of rural households receiving remittances and the value of them increased during the two periods.

These data reflect that the 1995-96 crisis of the Mexican economy hit harder urban households as compared to rural households, making the former to choose migration as an economic option. This interpretation is consistent with the fact that the non-agricultural sector suffered a sharp depression during 1995, whereas agriculture did not (Table 1). I will argue below that these observed differences may be explained

[5] To demograpghic change, the growth of maquiladoras in Mexico and the US government efforts to impede non-documented border crossings could be added. However, the impact of maquiladoras to reduce Mexic to US migration and the effectiveness of INS border controls are matters of deep disagreement (see Smith: 2000, for example)

by the specific characteristics of the Mexican agricultural sector and, in particular, by the relative isolation of rural households to some external shocks.

2) The performance of Mexico's agricultural sector during the nineties: facts and explanations

From 1989 to 1998 the annual average rate of growth of Mexico's gross domestic product (GDP) was around 3.7% (Table 1). This change has been insufficient to incorporate all people at a working age to the Mexican formal labor force. This argument is backed even if we use the official figures on the dynamics of Mexico's labor market. According to the last Address to the Congress of President Zedillo, from 1990 to 1999, the economically active population of Mexico increased annually by 1,065.3 thousands of persons, and the growth of the number of occupied persons was very similar (around 1,066.9 thousands, Table 3). It can be said that these figures are optimistic, due to the definitions used in the official labor statistics (see notes for Table 3). For example, Hernandez Laos (2000) estimates that, from 1988 to 1996 and as a yearly average, 943 thousands of new employments were created in Mexico, a figure that is considerably less than the official datum.

With respect to the overall growth of the Mexican economy from 1989 to 1998, agriculture was the sector that experienced a lower growth rate (1.9%), as compared to the service and industrial sectors (services grew at an annual average rate of 3.5%, and manufactures at 4.8%, Table 1). However, non-agricultural sectors have at the most just barely absorbed the new comers to Mexico's labor force. This is reflected by the official figures, since they indicate that agricultural employment did not change during the nineties (Table 3).

This latter tendency is consistent with the fact that the production of basic crops has not collapsed with the abolition of agricultural producer's price supports and NAFTA. As Table 4 shows, the volume of production of basic crops (those formerly controlled by CONASUPO) has increased during the nineties, and even more from 1993 to 1998 (1.4% from 1990 to 1998 and 2.8% from 1993 to 1998). In addition and as expected, the production of competitive crops (fruits and vegetables) has also grown with NAFTA (Table 5). Finally, and as fruits and vegetables, livestock production grew during these two periods (Table 6), an event that was also expected, based partially on the reduction of the prices animal feeds provoked by NAFTA and by the liberalization of price supports to domestic producers of staples.

There are two complementary arguments explaining why the Mexican supply of basic crops has not collapsed after the reforms and NAFTA.

Based on the fact that the two main basic crops (maize and beans) are still protected under NAFTA's regime of Tariff Rate Quotas, Andres Rosenzweig (a public official from SAGAR, the Mexican Ministry of Agriculture) maintains that during the next three years the phase out of tariffs will “bite” more than trade liberalization achieved so far. In addition to the prevailing protection from US competition of maize and beans, Rosenzweig refers to PROCAMPO and ASERCA, two governmental programs that have in different ways sustained Mexico's production of basic crops: PROCAMPO through direct income transfers to the producers of these crops and

ASERCA, through producers' price supports and marketing subsidies to the producers of basic and other non-competitive crops (Rosenzweig, A.: Dec. 2000).

The second argument takes into account that a considerable proportion of Mexico's supply of basic crops (maize and beans in particular) comes from small farmers [6]. These producers face high transaction costs in some markets, and these costs explain (at least partially) why small farmers produce staples for their families' own consumption [7]. This situation means that small farmers do not face competition in maize and beans, hence not suffering directly from agricultural price and trade liberalization. This is particularly so if transaction costs included small farmers' lack of access to CONASUPO's silos to sell their basic crops at guaranteed prices. This is so because the elimination of these prices would not affect them at all (see Taylor, Yunez-Naude and Hampton: 1999).

So, It can be argued that the existence of transaction costs for small Mexican farmers is one of the reasons explaining why domestic production of maize and beans has not collapsed. With this basis --and contrary to the prediction that has been taken for granted--, one can hypothesize that the reduction of staple prices provoked by the liberalization of the agriculture of Mexico, had and will not necessary lead to a raise of rural out-migration (either to urban Mexico or to the US).

In addition to this, there are other features of Mexico's rural economy that could explain why rural emigration has not sharply increased by the reforms and as expected. Small farmers in Mexico are part of a wider decision unit: rural households. This means that staple production is just a portion of rural households' economic activities and sources of income: as well as producing staples for their own consumption, a typical rural household in Mexico produces cash crops and livestock, is involved in non-agricultural activities (production of articrafts and materials for construction, local commerce, etc.), and participates in the local, regional, national and international labor markets (see for example Yunez-Naude, Taylor and Becerril: 2000). So, instead of leaving altogether staple production (as conventional studies and models predict), rural households have options to react against changes in the economic scenario, and in such ways as to remain as rural households. Impact analyses that model these characteristics will produce results showing lower effects of external shocks than studies that ignore them. This includes Mexico's rural-out migration to the US (Taylor, Yunez-Naude and Hampton: 1999).

Of course, these later arguments have an important implication: as agricultural transformation proceeds (that is, as transaction costs are reduced) small farmers will be more and more exposed to external shocks and to macroeconomic policy changes.

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[6] At the national level, the importance of Mexican small farming in the domestic supply of maize and beans can be approximated using the data on the participation of rain fed and irrigated agriculture in this supply, and by considering that small farmers are typically the ones producing under rain fed conditions. With this base, we can say that during the nineties, more than 60% of the national production of these two crops was produced by small farmers (SAGAR Web Site, Centro de Estadistica Agropecuaria).

[7] For example, and according to the Agricultural Census of 1991, more than 55% of the agricultural units with less than 5 have of arable land produced for own consumption. See Hernandez Estrada: 2000.

3) Perspectives and Policy options

The non violent character that the process towards democracy in Mexico has had and, more specifically, the last week's approval by the Congress of the public budget for next year proposed by the new President of Mexico, are two fundamental events to foresee that the prospects of a stable economy at the macro level are good. So it is likely that Mexico will not suffer the economic crises that has experienced since 1976, and each time a new president had come into power. However, even in a stable macroeconomic setting, challenges prevail for the Mexican economy to attain sustained growth. In addition, economic growth must be accompanied by increasing employment and wages so as to reduce the incentives to emigrate. In this setting, rural migrants will tend to go more to Mexico's urban sector and to its growing regional urban centers, than to the US.

However I think that this scenario is for the long run. So, we need to know the probable tendencies of the Mexican economy in the short to medium run, and, for the purposes of this essay, those of its agricultural sector.

If Rosenzweig's proposition that deep liberalization in the basic grains sub sector of Mexico is still to come in the next few years is valid; if the plans of the current government to investment in rural infrastructure ad to capitalize medium size farmers do not proceed fast; and if urban growth does absorb those displaced from the rural sector, rural out migration to the US may increase.

Notwithstanding this, there are some policy options that may promote agricultural growth and employment, retaining in the rural sector at least part of the potential new international migrants.

If ones take into account the heterogeneous character of the agricultural sector of Mexico, sound policy proposals have to be specific to capitalistic or entrepreneurial farmers and to small-household farming. Policy design must also take into consideration that typically, small farmers produce both staples for their own consumption and agricultural products for the market. To consider these features in any discussion of agricultural policies is fundamental, not only because the decision making process differ between capitalist and small farming, but also because big Mexican farmers do not live in the rural sector and household farmers and rural population with no land are the ones with high propensities to emigrate.

Production (and exports) of fruits and vegetables has grown (Table 5). But Mexican supply of these crops could experience higher growth rates if incentives for crop substitution (from grains to fruits and vegetables) created by trade policy cease to be partially nullified by programs operating in the opposite direction such as PROCAMPO and ASERCA (Rosenzweig: Dec. 2000). This potential is specially applicable to medium farmers if we consider that a high proportion of the growth that the fruits and vegetables sub sector experienced during the nineties was conducted by Mexican traditional exporters that have been making business with their US counterparts before the reforms.

That a potential for medium size farmers to produce fruits and vegetables could still be present is backed by the evaluation that the United Nations' Food and Agriculture Organization recently did (FAO: 2000) of the set of policies called *Alianza para el Campo* (Alliance for the Countryside) [8]. Alianza was designed for small and medium farmers and in order to help them to capitalize their agricultural activities; to enhance the application by them of international sanitarium standards; and to promote technological change and productive reconversion [9]. According to FAO's evaluation, the capitalization and the sanitation programs were the ones where Alianza really succeeded. By contrast the results of Alianza were poor in its purposes to promote technical change and crop substitution. As well as the reason proposed by Rosenzweig (related to the contradictory character of agricultural policies of the nineties), another one explaining these results is the lack of access to formal credit that farmers have faced since the beginning of the nineties, and even more, since the crisis of 1995. So, instead of reorienting their agricultural activities towards competitive crops, the beneficiaries of Alianza used its capitalization program, together with the resources of PROCAMPO and ACERCA's subsidies to continue to produce basic crops.

High interest rates and lack of credit access are indeed mayor problems that Mexican entrepreneurial farmers (as well as those with a potential competitive edge) had and will face in the short and medium runs. The problem is particularly acute in a context of trade liberalization, and the promotion of credit cooperatives is one way out to the problem (this is precisely one of the projects of the new Presidency of Mexico).

According to FAO, as well as helping to capitalize farmers' activities, Alianza promoted agricultural waged employment, productivity and product quality. However, most of the beneficiaries of Alianza were farmers with irrigated plots. So, small poor farmers with rain fed land were not included, at least in the capitalization, sanitation, and productive conversion's components of Alianza. Due to the characteristics of the Program, this is not surprising. The farmers that participated in Alianza acquired the information of it through public channels, and had to contribute with around a third of the costs of the program (the remaining costs were covered proportionally by the Federal and State governments). So, only those farmers with access to information and with cash were the ones that could and did participate.

The remaining of rural households has been subject more to programs to fight poverty than to promote production. The most important governmental program for rural poverty alleviation has been PROGRESA, one of the major components of the

[8] Alianza para el Campo began in 1996 and is one of the three major components of President Zedillo's agricultural policies. The other two policies are PROCAMPO and ASERCA, which began to function during the Salinas Administration. It can be said that Alianza's had two main objectives. The first one was to capitalize the medium and small farmers in face of the macroeconomic crises of mid-nineties. The second objective of Alianza was to promote agricultural transformation. PROCAMPO and ASERCA were more specific, since they were designed to cushion the effects of liberalization on basic crops and other non-competitive crops. In terms of the public budget, PROCAMPO has been the most important agricultural program (during 1997-89 it accounted for the 37.1% of the agricultural budget). PROCAMPO was followed by ASERCA (12.6% of the budget for the same period) and Alianza (7.2%, Rozensweig, *op.cit*).

[9] Productive reconversion meaning the substitution of competitive agricultural products in the international (US) markets for non-competitive ones Unfortunately, FAO did not evaluate one of the components of Alianza, called Integral Development Projects.

Ministry for Social Development created during the Salinas administration. The evaluations of PROGRESA indicate that it has been successful to focalize supports to the poorest rural households, promoting amongst other benefits for the poor, an increase in their nutritional levels and school participation. However, its impacts on the Mexican economy will crystallize in the longer run and will promote in the medium run rural out-migration (see (see, Schultz, P. T: 2000 for an evaluation of the impacts on poor rural households of PROGRESA's school program and Taylor and Yunez-Naude: 2000 for a study on the returns (and activity selection) to schooling in Mexican villages).

Notwithstanding the above, I am convinced that, even in a context of lower transaction costs, poor rural households have productive options for the short to medium run. One of them is related to maize. We have shown in a participatory experiment with small farmers in one of the poorest rural areas of Mexico that it is possible to increase the productivity of maize production, while maintaining this crop's local genetic diversity and, at the same time, allowing farmers to dedicate more land to produce cash crops (see Pita, A. *et.al*: 2000). In relation to maize, demand for quality maize for human consumption in Mexico and in US cities with population of Mexican origin, makes plausible the commercialization of speciallity maize by promoting its distribution.

Other alternative is the development of rural cooperatives for productive, credit, input acquisition and/or distribution purposes (accounts of successful small farmers' cooperative experiences are in Arriaga Jordan, *et.al*: 2000, García Hernández, L.A., *et.al*: 2000, Juárez Varela, X, *et.al*: 2000, Muñoz Rodriguez, M.: 2000, and Plessow, Ch.: 2000).

A third option (which could be included in the former two) is the one all of us know, that is, to enhance a more productive use of the remittances that small Mexican farmers receive from their relatives working in the US (see, for example, Arroyo and Berúmen: 2000 and Castro and Tuirán: 2000) [10].

These options are examples of how the living standards of poor rural households can increase in the medium run, something that may reduce emigration incentives of at least of a portion of Mexico's rural population. This is specially so for the case of villages and regions whose households still do not have migration networks.

To put into practice policies that promote the options that small farmers have is more likely now. This is so because the break of the control that the Mexican State exerted in rural Mexico through the ejidos and by conditioning its agricultural programs to political support. To this, the purposes of the current presidency to deepen federalism and to promote regional development must be added. However, federal authorities have still to be convinced that small farming could be a viable economic option for at least a part of Mexico's rural population.

[10] A research of this nature (founded by UCMEXUS and, partially, by PRECESAM), and for migrant villages and towns of the States of Jalisco, Oaxaca and Zacatecas is underway. Preliminary results for the case of five villages and a town in Oaxaca (all having migrant organizations in the US) are in Reyes, R *et.al*: 2000a and 2000b and in Yunez-Naude, A., *et.al:* 2000.

If incentives to emigrate to the US for members of Mexico's rural households prevail, it is possible that the regional rural origin of Mexican migrants to rural US change. As some regions in Mexico shift their US destinations from rural to urban, others like Oaxaca and for the case of California, have filled the vacuum and begun sending migrants to rural jobs. Increasingly, they will probably shift over to urban jobs, as well. So, the question then will be: Who will take the Oaxacans' place on Californian farms?

What I have said in the last paragraphs indicate that rigorous quantitative studies of the probable tendencies of rural Mexico out migration to the US for the short to medium run have yet to be done.

4) Research Requirements

The supply of migrant labor from Mexico to U.S. farms has not been a focus of economic research. A major obstacle to such research has been the lack of representative data from households in rural Mexico from which this labor supply originates.

Three sets of factors will be critical in determining the future availability of US migrant farm labor from Mexico: Recent changes in U.S. immigration and welfare policies; demographic trends underway-in Mexico; and income opportunities in Mexico.

To understand and model the labor supply to US farm production, economic analysis of labor supply decisions of rural Mexico households is required. Since no representative data exisit, it is urgent to conduct a nation-wide survey of households in rural Mexico. This information would represent a Mexico-side complement to the National Agricultural Worker Survey (NAWS), necessary to estimate an econometric model of migration to U.S. farm jobs; and to use this model to predict future impacts of policy changes, demographics, and economic trends on the supply of labor to U.S. farms.

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Table 1. Mexico, Gross Domestic Product

(millions of 1993 pesos and percents)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1998/89
Gross Domestic Product											
	1,085,815.1	1,140,847.5	1,189,017.0	1,232,162.3	1,256,196.0	1,311,661.1	1,230,771.1	1,294,196.6	1,381,665.6	1,447,945.5	
Change (%)		5.07	4.22	3.63	1.95	4.42	-6.17	5.15	6.76	4.80	3.71
Agriculture *	65,891.8	69,603.9	71,221.9	70,533.1	72,702.9	72,833.9	74,168.2	76,983.6	77,105.8	77,146.4	
Change (%)		5.63	2.32	-0.97	3.08	0.18	1.83	3.80	0.16	0.05	1.90
Industry	268,421.3	286,437.4	296,065.5	309,012.7	309,897.1	324,810.0	299,376.9	329,650.5	360,209.6	384,038.1	
Change (%)		6.71	3.36	4.37	0.29	4.81	-7.83	10.11	9.27	6.62	4.79
Services	664,145.8	693,022.5	726,070.4	753,486.3	772,532.2	808,491.1	758,207.7	783,441.4	833,255.1	870,310.1	
Change (%)		4.35	4.77	3.78	2.53	4.65	-6.22	3.33	6.36	4.45	3.45

* Includes fisheries and forestry

Source: INEGI's Web Site (INEGI is the National Institute of Statistics, Geography and Informatics)

Table 2. Remittances from the US to Mexican Households

	1992		1994		1996		1996/92
		(%)		(%)		(%)	(%)
Remittances to Mexico							
No. of households with remittances	659,673.0	3.7	665,259.0	3.4	1,076,207.0	5.3	
Change (%)			0.8		61.8		63.1
Value of remittances *	1,393,735.9	100.0	1,443,734.3	100.0	2,089,953.2	100.0	
Change (%)			3.6		44.8		50.0
Remittances to towns and cities **							
No. of households with remittances	389,109.0	2.9	319,746.0	2.2	584,293.0	3.8	
Change (%)			-17.8		82.7		50.2
Value of remittances *	903,958.6	64.9	778,127.5	53.9	1,311,717.3	62.8	
Change (%)			-13.9		68.6		45.1
Remittances to villages ***							
No. of households with remittances	270,564.0	6.2	345,513.0	7.3	491,914.0	10.0	
Change (%)			27.7		42.4		81.8
Value of remittances *	489,777.3	35.1	665,606.8	46.1	778,235.9	37.2	
Change (%)			35.9		16.9		58.9

* At the average exchange rate for the year in question: 1992, 3.0945; 1994, 3.3752; and 1996, 7,5995

** To households living in Mexican locations with 2,500 people or more

*** To households living in Mexican locations with less than 2,500

Source: Castro and Tuiran: 2000, Table 2, p. 321, Based on INEGI, National Surveys of Households Incomes and Expenditures

Table 3. Mexico. Labor Force and Employment
(Thousands and percents)

	1991	1993	1995	1996	1997	1998	1999	Average 1991-99
Total Labor Force *	31,229.0	33,651.8	35,558.5	36,580.7	38,344.7	39,507.1	39,751.4	1,065.3
Absolute change		1,211.4	953.3	1,022.2	1,764.0	1,162.4	244.3	
Relative Change (%)		3.9	2.8	2.9	4.8	3.0	0.6	3.41
Occupied Population (National) **	30,534.1	32,832.7	33,881.1	35,226.0	37,359.8	38,617.5	39,069.1	1,066.9
Absolute change		1,149.3	524.2	1,344.9	2,133.8	1,257.7	451.6	
Relative Change (%)		3.8	1.6	4.0	6.1	3.4	1.2	3.49
Agriculture	*8,189.8*	*8,842.8*	*8,378.3*	*7,921.7*	*9,020.3*	*7,817.4*	*8,208.7*	*2.4*
Absolute change		326.5	-232.3	-456.6	1,098.6	-1,202.9	391.3	
Non-Agricultural sectors	*22344.3*	*23,989.9*	*25,502.8*	*27,304.3*	*28,339.5*	*30,800.1*	*30,860.4*	*1,064.5*
Absolute change		822.8	756.5	1,801.5	1,035.2	2,460.6	60.3	
Unemployed Population (National)*	433.2	590.9	1,167.7	844.0	588.2	616.2	481.1	
Absolute change		78.9	288.4	-323.7	-255.8	28.0	-135.1	
Relative Change (%)		18.2	48.8	-27.7	-30.3	4.8	-21.9	
Open Unemployment Rate	1.39%	1.76%	3.28%	2.31%	1.53%	1.56%	1.21%	

* All people with 12 years of age or more that were involved in any economic activity (occupied population) or actively looking for employment (openly desoccupied population) during the two months previous to the week of refernece.

** All people with 12 years of age or more that during the week of reference were involved in any economic activity for at least one hour a day or one week in exchange of an income (monetary or in kind); those people that did not work but have employment; and those people that begin working at the end of the month.

*** Excludes people without labor experience

Note: the above definitions of employment categories are taken from Zedillo, E.: 2000 (the translation is mine).

Source: Zedillo, E: 2000

Table 4. Mexico, Production of Basic Crops

(thousand of metric tons)

Product	1990	1991	1992	1993	1994	1995	1996	1997	1998	Average Growth Rate (%) 1990-98	Average Growth Rate (%) 1993-98
Maize	14635.40	14251.50	16929.30	18125.30	18235.80	18352.90	18026.00	17656.30	18454.70	2.9	0.4
Beans	1287.40	1378.50	718.60	1287.60	1364.20	1270.90	1349.10	965.10	1260.70	-0.3	-0.4
Wheat	3930.90	4060.70	3620.50	3582.50	4150.90	3468.20	3375.00	3656.60	3235.10	-2.4	-2.0
Rice	394.40	347.20	394.00	287.20	373.60	367.00	394.10	469.50	458.10	1.9	9.8
Soybeans	575.40	725.00	593.50	497.60	522.60	189.80	56.10	184.50	150.30	-15.4	-21.3
Sesame	59.90	37.00	22.80	22.60	8.90	21.10	47.40	21.50	31.70	-7.7	6.9
Cotton seed	293.30	307.30	50.40	41.80	187.10	343.90	420.90	347.70	388.00	3.6	56.1
Safflower	159.40	88.20	41.00	63.90	63.90	113.30	181.60	163.40	171.20	0.9	21.8
Sorghum	5978.20	4307.80	5353.20	2581.10	3701.10	4169.90	6809.50	5711.60	6474.80	1.0	20.2
Barley	491.90	580.20	550.00	540.50	307.30	486.60	585.80	470.70	410.80	-2.2	-5.3
TOTAL	27806.20	26083.40	28273.40	27030.00	28915.40	28783.50	31245.30	29646.70	31035.30	1.4	2.8

Source: Rosenzweig, A.: 2000, based on Centro de Estadística Agropecuaria, SAGAR.

Table 5. Mexico, Production of Selected Fruits and Vegetables

(Thousands of metric tons)

Product	1990	1991	1992	1993	1994	1995	1996	1997	1998	Average Growth Rate (%) 1990-98	Average Growth Rate (%) 1993-98
Oranges	2,220.30	2,369.50	2,541.50	2,913.70	3,191.10	3,571.50	3,984.60	3,943.90	3,329.20	5.2	2.7
Bananas	1,986.40	1,889.30	2,095.40	2,206.90	2,295.50	2,032.70	2,209.60	1,714.50	1,556.60	-3.0	-6.7
Mangoes	1,074.40	1,117.90	1,075.90	1,151.20	1,117.90	1,342.10	1,190.00	1,501.40	1,504.20	4.3	5.5
Limes	685.40	716.50	777.50	725.20	813.30	947.50	1,089.20	1,095.60	1,211.50	7.4	10.8
Apples	456.50	527.40	598.20	537.80	487.70	413.20	426.70	629.30	374.30	-2.5	-7.0
Melons	523.20	645.30	495.70	394.20	446.70	424.00	472.00	590.20	572.70	1.1	7.8
Watermelons	404.10	392.70	499.00	387.60	428.00	484.80	533.60	709.60	649.90	6.1	10.9
Avocados	686.30	780.40	724.50	709.30	799.90	790.10	837.80	762.30	813.90	2.2	2.8
Grapes	428.90	529.60	522.00	466.60	536.90	475.90	408.30	473.30	482.00	1.5	0.7
Tomatoes	1,885.30	1,860.40	1,413.30	1,692.70	1,368.30	1,935.50	1,993.70	1,919.30	2,236.90	2.2	5.7
Green peppers	850.90	921.10	1,275.70	1,219.30	987.50	1,187.40	1,206.10	1,832.10	1,660.30	8.7	6.4
Onions	770.60	810.00	674.40	662.10	667.70	662.20	702.50	814.50	892.00	1.8	6.1
Potatoes	1,285.80	1,211.10	1,212.90	1,133.70	1,167.20	1,269.10	1,282.40	1,316.50	1,272.20	-0.1	2.3
Carrots	198.50	213.30	239.60	264.70	191.80	199.60	219.50	306.80	287.60	4.7	1.7
TOTAL	13,456.60	13,984.40	14,145.70	14,464.70	14,499.40	15,735.50	16,556.00	17,609.30	16,843.20	2.8	3.1

Source: Rosenzweig, A.: 2000, based on Centro de Estadística Agropecuaria, SAGAR.

Table 6. Mexico, Livestock Production
(thousands of metric tons)

Product	1990	1991	1992	1993	1994	1995	1996	1997	1998	Average Growth Rate (%) 1990-98	Average Growth Rate (%) 1993-98
Carcass Meat	2,704.40	2,945.10	3,059.60	3,206.30	3,451.00	3,704.90	3,589.50	3,805.70	4,028.70	5.1	4.7
Bovine	1,113.90	1,188.70	1,247.20	1,256.50	1,364.70	1,412.30	1,329.90	1,340.10	1,379.80	2.7	1.9
Swine	757.4	811.9	819.8	821.6	872.9	921.6	910.3	939.2	960.7	3	3.2
Poultry	772.3	878.9	921.8	1,058.00	1,144.40	1,303.40	1,284.00	1,460.90	1,619.50	9.7	8.9
Ovine	24.7	26.3	27.9	28.7	30.3	29.9	29.4	30.2	30.5	2.7	1.2
Goat	36.1	39.3	42.9	41.5	38.7	37.7	35.9	35.3	38.2	0.7	-1.6
Milk *	6,265.90	6,847.80	7,114.10	7,555.20	7,461.50	7,537.60	7,709.30	7,968.60	8,442.00	3.8	2.2
Eggs	1,009.80	1,141.40	1,161.30	1,233.60	1,246.20	1,242.00	1,235.90	1,328.90	1,461.20	4.7	3.4
Honey	66.5	69.5	63.9	62	56.4	49.2	49.2	53.7	56.1	-2.1	-2

* Millions of liters. Includes bovine and goat milk.

Source: Rosenzweig, A.: 2000, based on Centro de Estadística Agropecuaria, SAGAR.