

**National Institute of Statistics and Geography  
(INEGI)**

**Economic Growth Strategy in Mexico**

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**The views expressed herein are those of the author and do not necessarily reflect the views of INEGI.**

## **Growth Strategy in Mexico**

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## Introduction

This document describes the preliminary results obtained by the National Institute of Statistics and Geography (INEGI) on Total Factor Productivity indicators (TFP), and the contributions to economic growth under the KLEMS model, first published on the Institute's website on August 12<sup>th</sup> 2013. It is worth to mention that this indicator like the KLEMS database corresponds to the sixth indicator named "Total Factor Productivity Index" as part of *chapter IV Goals and Indicators within the Program to Democratize Productivity (PDP)* as part of one of the transversal axes within the National Development plan 2013 – 2018 (NDP) of the Mexican Federal Government; and as one of the instruments establishing the strategy on Mexican TFP's growth under the objectives and goals of the NDP.

The TFP results and contributions to economic growth for the 1990 – 2011 series are a product of a three years research work program done jointly with the United Nations Economic Commission for Latin America (ECLAC), under the framework established in the OECD's manuals for capital and productivity measurement, and with the experience of EU – KLEMS, within the context of growth accounting. Data is shown for 67 economic activities accordingly to the North American Industrial Classification System 2007, considering the year 1995 as the reference year.

The first part of this paper describes briefly some preliminary results obtained for the annual series 1990-2011 of Total Factor Productivity and Total Factor Contributions (TFC) to economic growth, constructed under the growth accounting framework.

It is important to clarify that INEGI coordinates the National Statistical and Geographical Information System and generates as a exclusive task data for Economic, Dwelling and Population Census, National Accounts and National Price Indices, as well as data of National Interest, among others, like TFP statistics, thus, the interpretation of results nor the evaluation of progress of government policies on the subject are not functions of the Institute. Thus the second part of this paper describes the strategies implemented by the Mexican Federal Government in The Program to Democratize Productivity, which aims to reduce economic growth's inequalities and to promote productivity and competitiveness of economic sectors.

The third and last part of this document describes the conclusions and next steps to consolidate these results.

## 1. TFP and contribution to growth, according to the model KLEMS Mexico

### 1.1. Total economy

Total Factor Productivity results (TFP) of Mexico; it corresponds to 67 economic sectors obtained in the LA KLEMS project. They have been incorporated in the Government's National Development Plan 2013-2018; considered as the sixth indicator among metrics and indicators of the Program to Democratize Productivity, one of the transversal axes of such plan. This is done with the aim of monitoring the progress and economic growth of the country, coming from the fulfillment of the objectives set up in the program.

TFP was constructed annually from the trends displayed by Gross Production Value and from the weighted contributions made by capital services (K), labor services (L), energy (E), materials (M) and services (S), which aggregated form the Total Factor Contributions (TFC). With this TFP was calculated as the difference between growths in production and growths in Total Factor Contributions (CTF). For the period 1991-2011 TFP shows a decrease of -0.39% in the total economy, as seen in Table 1, where it is possible to observe years 1996, 1997, 1998, 2000, 2006 y 2010 where production grew 7.6%, 8.1%, 6.4%, 8.4%, 7.4% and 8.0% respectively, and in the same order the TFC trend was of 4.7, 6.8, 5.7, 6.8, 6.8 y 5.4, therefore a positive TFP was obtained located of 2.9, 1.3, 0.7, 1.7, 0.3 y 2.6 for those years. An opposite case is observed for years 2001-2003 y 2007-2009, specifically year 2009, not forgetting year 1995 which were years of economic crisis.

**Total Factor Productivity and contribution to Mexico's Economic Growth,  
From Value of Production**

Table 1

#### Total Economy

(annual percentage growth rates)

Periodo	Production	Total Capital Services	ICT Capital Services*	Non ICT Capital Services**	Labor Services	Energy	Materials	Services	Factor Contribution	Total Factor Productivity TFP
<b>1990</b>										
<b>1991</b>	4.70	1.31	0.17	1.14	0.68	0.26	1.07	0.94	4.27	0.43
<b>1992</b>	3.96	1.78	0.25	1.54	0.73	0.01	1.06	0.87	4.46	-0.50
<b>1993</b>	1.84	1.54	0.23	1.31	0.39	0.02	0.40	0.65	2.99	-1.16
<b>1994</b>	5.60	1.28	0.22	1.06	0.95	0.32	1.76	1.08	5.40	0.20
<b>1995</b>	-5.62	0.50	0.12	0.38	-0.39	-0.29	-0.14	-1.66	-1.99	-3.63
<b>1996</b>	7.55	0.04	0.09	-0.05	0.70	0.48	3.13	0.35	4.69	2.86
<b>1997</b>	8.08	1.06	0.28	0.78	1.45	0.05	2.81	1.39	6.76	1.33
<b>1998</b>	6.40	1.80	0.42	1.38	0.36	0.16	2.25	1.14	5.71	0.69
<b>1999</b>	5.08	2.06	0.57	1.50	1.00	0.11	1.72	1.07	5.95	-0.87
<b>2000</b>	8.36	2.39	0.76	1.64	0.08	0.20	2.82	1.32	6.81	1.55
<b>2001</b>	-1.12	2.15	0.68	1.47	0.39	-0.08	-1.03	0.31	1.73	-2.85
<b>2002</b>	1.35	1.48	0.36	1.12	0.00	0.05	0.38	0.47	2.38	-1.02
<b>2003</b>	1.62	1.19	0.21	0.98	0.22	0.27	0.47	0.12	2.26	-0.64
<b>2004</b>	5.50	1.42	0.34	1.08	0.64	0.10	1.64	1.01	4.81	0.69
<b>2005</b>	4.62	1.83	0.46	1.37	0.21	0.05	1.32	1.15	4.56	0.06
<b>2006</b>	7.41	2.20	0.56	1.64	0.64	-0.16	2.58	1.53	6.80	0.61
<b>2007</b>	4.49	2.47	0.63	1.84	0.48	0.17	1.06	1.23	5.42	-0.93
<b>2008</b>	0.87	2.52	0.59	1.93	0.38	0.02	-0.24	0.59	3.27	-2.40
<b>2009</b>	-8.05	1.78	0.43	1.35	-0.57	-0.17	-2.87	-0.70	-2.52	-5.52
<b>2010</b>	8.01	1.11	0.32	0.79	0.20	0.11	2.85	1.13	5.40	2.61
<b>2011</b>	4.58	1.33	0.37	0.96	0.41	0.30	1.34	0.79	4.17	0.41
<b>Promedio 1991-2011</b>	3.58	1.58	0.38	1.20	0.43	0.09	1.16	0.70	3.97	-0.39

Note: \*ICT: Information and Communication Technologies

\*\*Non ICT: Non Information and Communication Technologies

Source: INEGI

Overall when observing the trend of Production and weighted contributions, it is observed that TFP is heavily influenced by the trend observed in the latter as can be seen in years 1997, 2000 y 2010, recording higher increments in production with 8.1%, 8.4% y 8.0% and productivity gains of 1.3%, 1.7% y 2.6% respectively as a result of the lower contribution of labor services, the growth in capital services contributions, jointly with a 2.8% increment in the contribution of materials, promoting productivity growth.

Regarding capital services it is observed that for the complete study period they show percentage contributions higher than those of labor services. This trend is influenced by Non-ICT assets noting the growth of over two percentage points in years 1999 to 2001 and 2006 to 2008, also there is a dynamic contribution from ICT assets going from a contribution of 0.17% in 1991 to 0.37% in 2011, twice as much than the beginning of the period.

On their own account labor services show an average contribution of 0.43% for the 1991-2011 time frames. In this sense, specifically, there is the year 1995 that shows a contribution of (-) 0.39% influenced by the negative trend of production of minus 5.6%. A similar situation presents in 2009, while in the year 2000, production grows 8.4% and labor services 0.08%, so it is possible to note that this level of labor services contributed to the 1.6% growth in TFP.

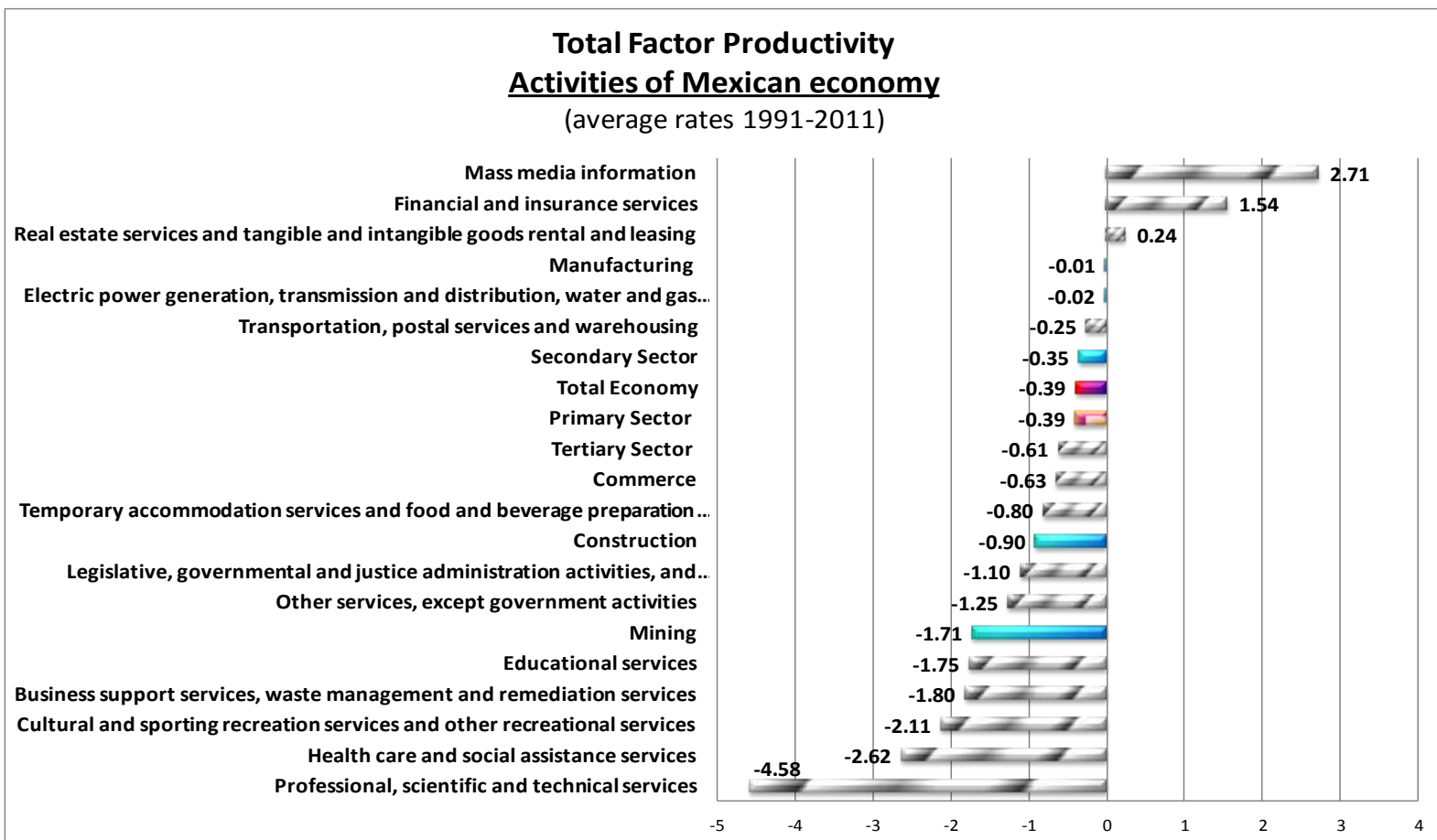
Other interesting cases are the ones observed for years 1996 and 2010, where production grew 7.6% in 1996 and the TFP indicator recorded an increment of 2.9% and in 2000 production grew 8.0% and the TFP 2.6%. In both cases, the variations constituted themselves as the higher ones of the period, trends preceding the years of crisis 1995 and 2009; thus it is observed that productivity growth responds mainly to a non use of installed capacity in previous years.

These results, as it was mentioned above, are used as part of the indicator used to monitor the objectives outlined in the National Development Plan 2013-2018, in specific, the transverse axis "Democratizing productivity." The results of TFP can also be observed for 67 sectors, allowing an analysis that is both general and particular.

## **1.2. By Economic Activity**

At economic activities level Total factor productivity expressed as average rates for the whole period shows that sectors like "Mass Media Information" is the one presenting higher productivity than the other one, showing a 2.71% growth in TFP. In addition "Financial and Insurance Services" and "Real estate services and tangible and intangible goods rental and leasing" also registered positive productivities of 1.54% and 0.24% respectively. The opposite occurs with the activity "Professional, scientific and technical services" showing a negative productivity of 4.58%; also the activities "Health care and social assistance services" and "Cultural and sporting recreation services and other recreational services" report a negative TFP of 2.62% and 2.11% respectively. (Figure 1).

Figure 1



Source: INEGI

### 1.3. Two Representative economic activities

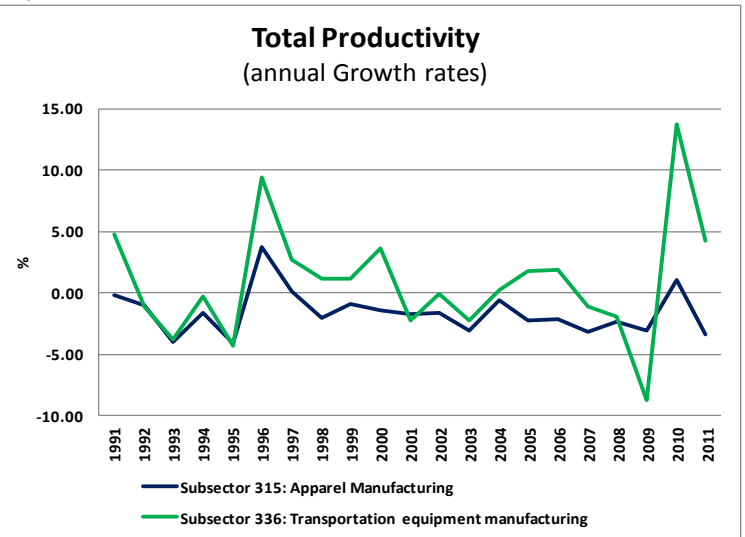
It is important to mention the results observed in two economic sectors with different evolutionary processes: Transportation equipment manufacturing and Apparel Manufacturing. The first includes economic activities of the automobile industry, auto parts and aerospace representing the most dynamic industries of the country with higher growths and investments; the second groups the apparel industries with less favorable results regarding scales and strategies coming from abroad. The transportation equipment manufacturing sector shows an average growth in TFP of 0.89 resulting from a strong increase in the production of 7.9 and an increase of 7.0% in total factor contribution as a consequence primarily of materials that contribute with 4.5%. Meanwhile the apparel manufacturing presents a fall in TFP of 1.62%, mainly due to a minor growth in production of 1.1% related to the growth of 2.7% in total factor contributions, explained mainly by the contributions of raw materials (0.89%), and ICT capital services (0.8%). (See Table 2 and Figure 2).

Table 2

Contribution to Mexico's economic growth, (Average Growth 1991-2011)		Transportation equipment manufacturing	Apparel Manufacturing	
<b>A</b>	<b>Production (average annual growth rate)</b>	7.86	1.08	
<b>B</b>	<b>Capital</b>	Computer and communication equipment	0.87	0.76
		Machinery and equipment	0.01	0.02
		<b>Total</b>	0.86	0.74
	Labor	0.42	0.47	
	Energy	0.04	0.00	
	Raw Materials	4.48	0.89	
	Services	1.15	0.59	
<b>Total B</b>	<b>Factor Total</b>	6.96	2.70	
<b>A - B = C</b>	<b>Total Productivity (average annual growth rate)</b>	0.89	-1.62	

Source: INEGI

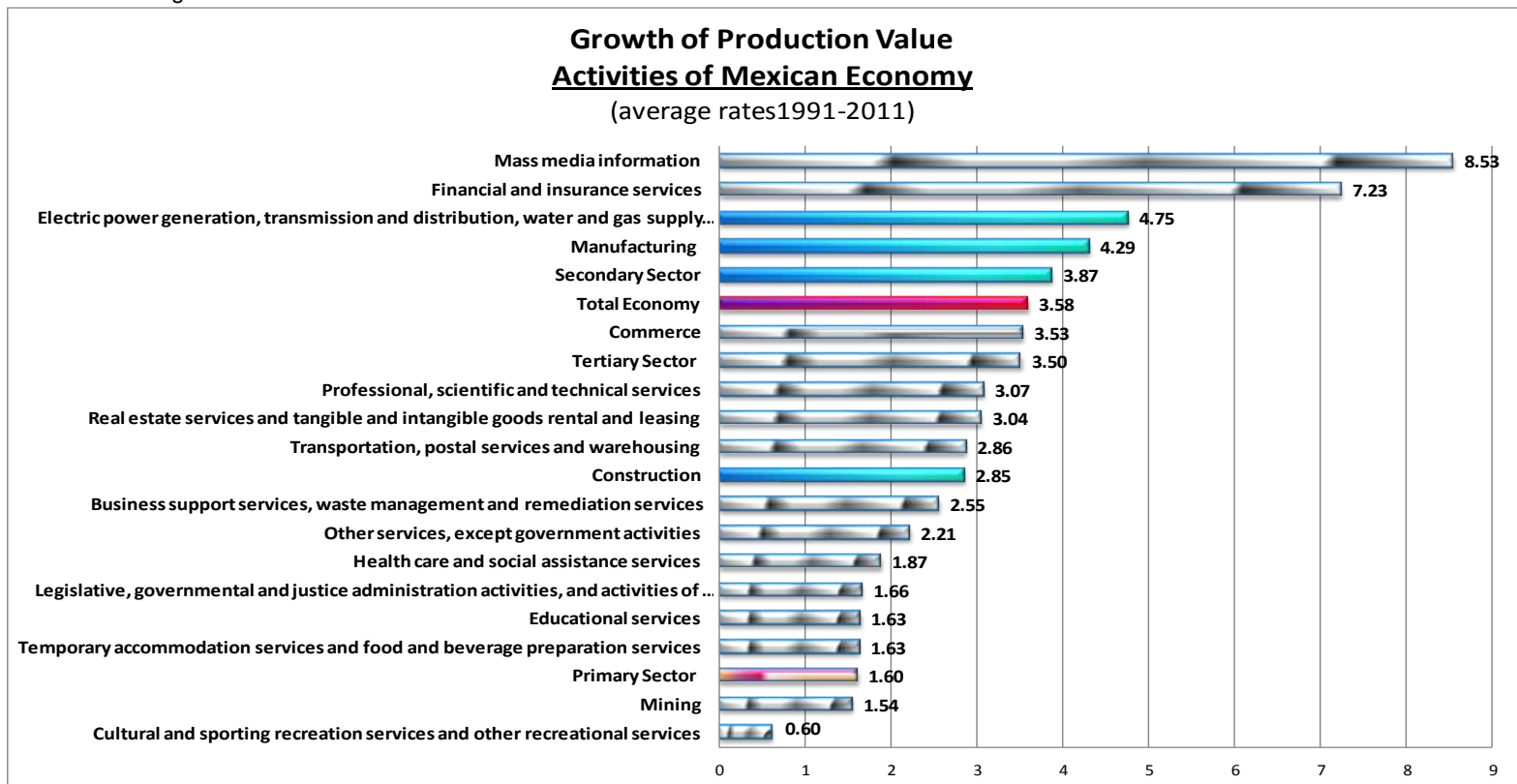
Figure 2



### 1.4. Growth of production value

As for the evolution of the production of goods and services in the country, all activities showed average positive growths, however, uneven, which can be seen below (Figure 3).

Figure 3

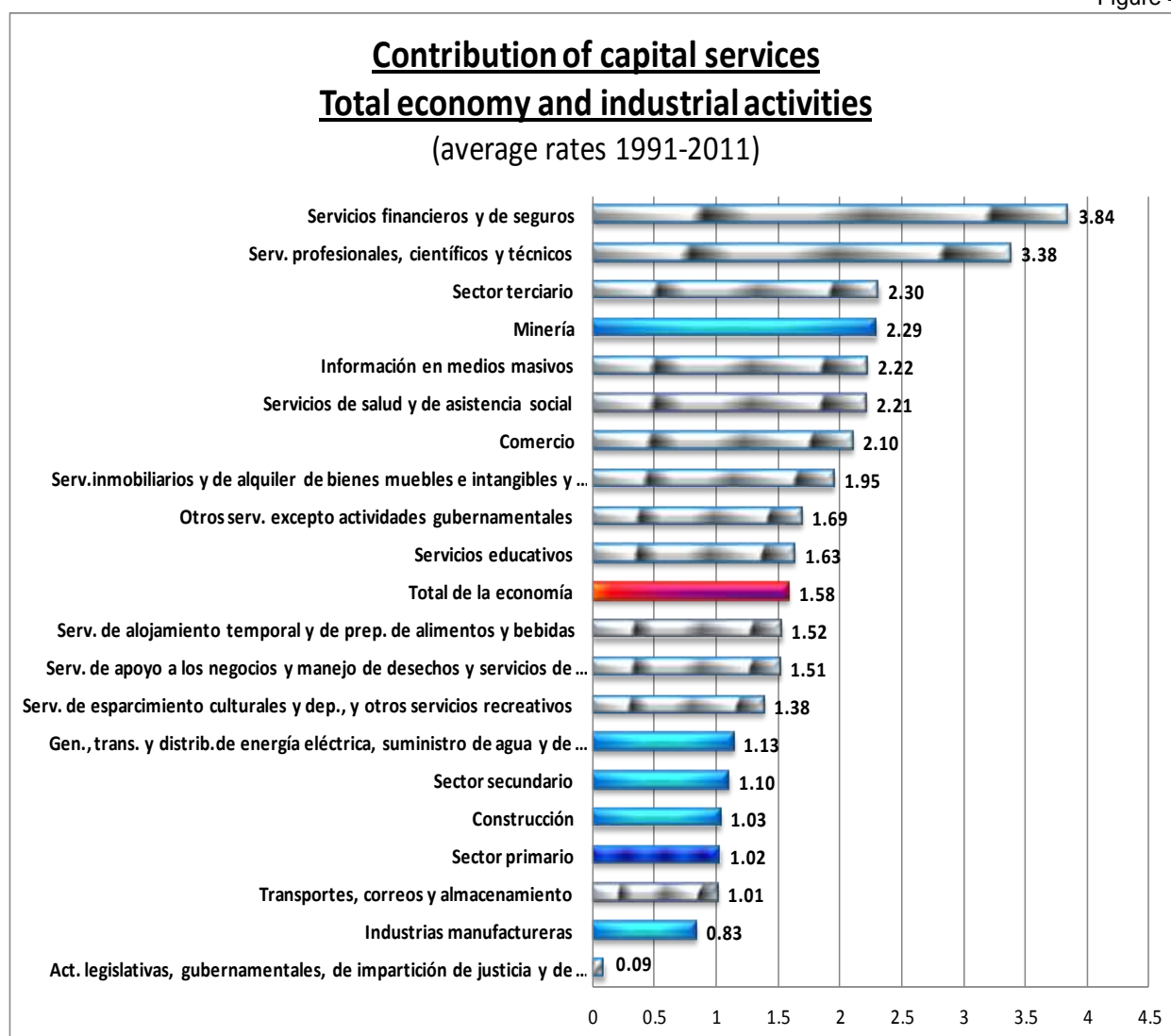


Source: INEGI

## 1.5. Contribution of capital and labor services to economic growth

The contribution of these basic factors, capital and labor, looks determined at some extent by capital intensity and the degree of technical specialization within economic activities. Thus in the "Financial and insurance services" the contribution of capital services and labor services is of 3.84% and 0.52%, respectively, which can be an indicator of lesser use of hours worked as a consequence of higher use of investment represented by high capital service and an efficient use of both factors. On the other hand in the "Business support services, waste management and remediation services" activity, an opposite scenario is observed since the contribution of labor services is of 2.31%, growing at the same rate as production exceeding capital services contribution of 1.51%, causing a loss in TFP. (Figures 4 and 5).

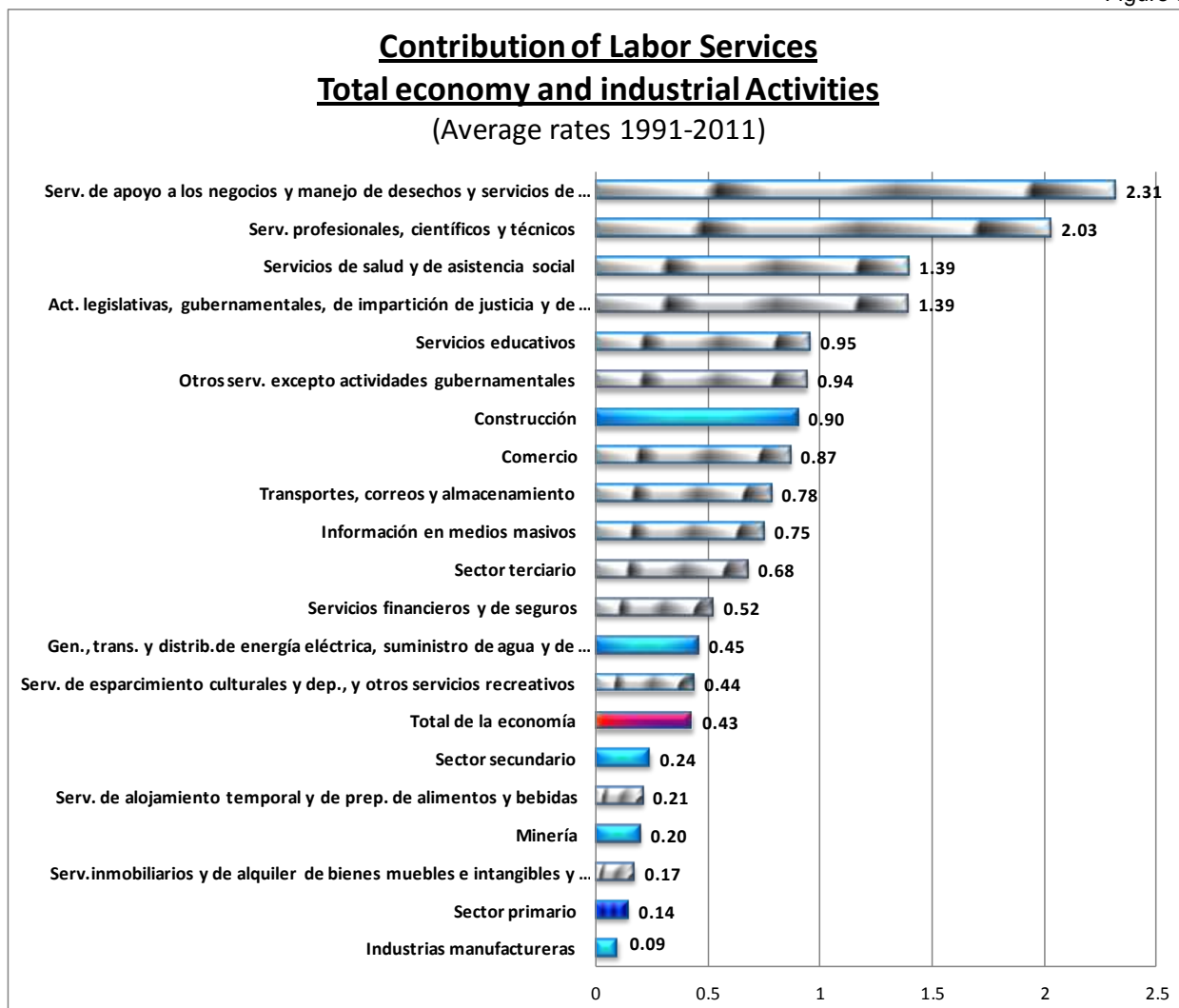
Figure 4



Source: INEGI



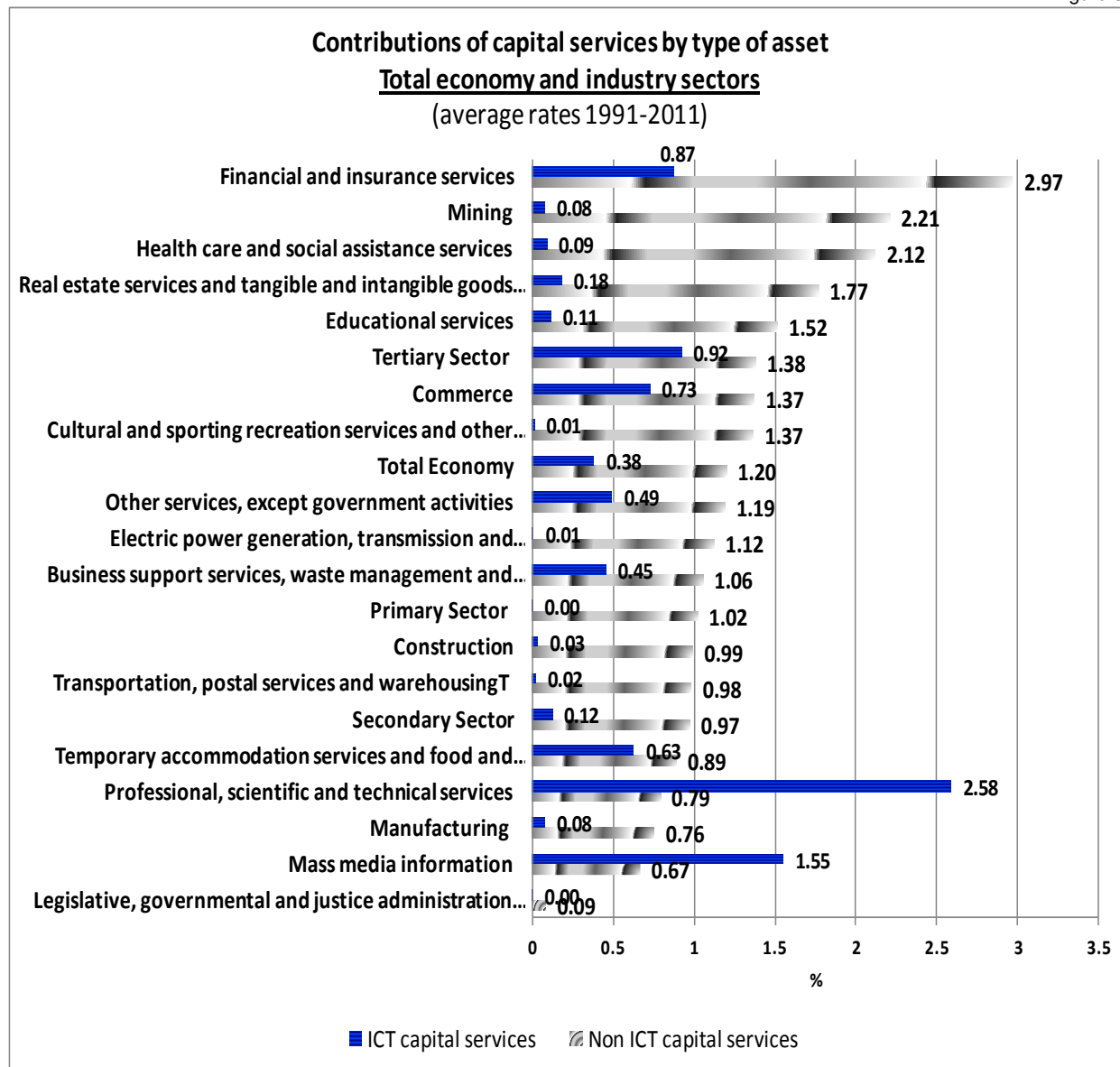
Figure 5



Source: INEGI

Analyzing the average contribution rate of capital services by economic activity broken down in ICT and Non ICT assets along the period, it is observed that in most activities the contribution of Non-ICT capital assets services exceeds the one of ICT assets, except in economic activity, "Professional, scientific and technical services " where ICT capital service contributes with 2.58% against a 0.79% of Non ICT capital services. On the opposite, we can see that in "Mining" Non-ICT capital services contribute with 2.21% against 0.08% of ICT, trend also observed in activity "Financial and insurance services" where the contribution of ICT is 0.87% against a 2.97% of Non-ICT. (See Figure 6).

Figure 6.



Source: INEGI

When analyzing the average contribution of labor services along the period (0.43%), but by age group the ones contributing more to that growth are identified: the age group of 30 to 49 years contributed with a 0.30%, the group of 15 to 29 years with a 0.03% and the group of 50 and plus with just a 0.01%. If this analysis is done by level of schooling it is identified that the contribution of 0.07 corresponds to the high level of schooling (College and post graduate), the 0.35% to medium levels of schooling (secondary and high school) and 0.01% for low levels of schooling (basic education to elementary). This is to say that medium or secondary education represents 81.4% of the 0.43% total contribution of labor services. See Table 3.

**Labor Service Contribution to Economic Growth by level of Schooling and age groups**

Table 3

**Total Economy**

(Percentage annual growth rates)

Periodo	Age Groups				Level of Schooling			
	15 to 29 years	30 to 49 years	Plus 50 years	Total	High	Medium	Low	Total
1991	0.13	0.54	0.01	0.68	0.16	0.43	0.09	0.68
1992	0.03	0.66	0.04	0.73	0.16	0.52	0.05	0.73
1993	-0.13	0.54	-0.03	0.39	-0.07	0.52	-0.06	0.39
1994	0.24	0.58	0.13	0.95	0.29	0.59	0.08	0.95
1995	-0.44	-0.21	0.25	-0.39	-0.20	-0.01	-0.19	-0.39
1996	-0.01	0.57	0.14	0.70	0.03	0.54	0.14	0.70
1997	0.30	0.96	0.19	1.45	0.48	0.90	0.07	1.45
1998	0.19	0.11	0.07	0.36	-0.04	0.29	0.11	0.36
1999	0.32	0.60	0.08	1.00	0.31	0.48	0.21	1.00
2000	0.10	-0.27	0.25	0.08	-0.02	0.07	0.02	0.08
2001	-0.29	0.69	-0.01	0.39	0.01	0.56	-0.18	0.39
2002	-0.29	0.19	0.10	0.00	-0.02	0.10	-0.07	0.00
2003	-0.18	0.26	0.13	0.22	-0.01	0.29	-0.07	0.22
2004	0.09	0.40	0.15	0.64	0.20	0.50	-0.06	0.64
2005	0.10	-0.09	0.20	0.21	-0.22	0.41	0.02	0.21
2006	0.21	0.23	0.19	0.64	0.11	0.52	0.01	0.64
2007	0.17	0.24	0.07	0.48	0.17	0.31	0.00	0.48
2008	-0.04	0.27	0.15	0.38	0.01	0.42	-0.06	0.38
2009	-0.15	-0.32	-0.10	-0.57	-0.03	-0.49	-0.05	-0.57
2010	0.03	0.14	0.04	0.20	0.01	0.19	0.00	0.20
2011	0.12	0.23	0.06	0.41	0.12	0.24	0.05	0.41
<b>Promedio 1990-2011</b>	0.03	0.30	0.10	0.43	0.07	0.35	0.01	0.43

Note: High Level of Schooling refers to college and post graduate, medium level refers to secondary and medium education and Low level refers to elementary and basic education.

Source: INEGI

Finally, these Total Factor Productivity indicators (TFP), growth contributions estimated accordingly to the KLEMS model and the related data base were the statistical infrastructure used to construct in the Program to Democratize Productivity (PDP), chapter IV Goals and Indicators of the Program to Democratize Productivity (PDP), the sixth indicator named “*Total Factor Productivity Index*”, as part of one of the transversal axes of the 2013-2018 Federal Government’s National Development Plan (NDP); also of the instruments establishing the strategy on TFP’s growth of Mexican economy, under the objectives and goals of the NDP.

## **2. National Development Plan 2013-2018**

For economic growth the federal government established the National Development Plan (NDP) 2013-2018, approved by decree and published on May 20<sup>th</sup> 2013 in the Official Gazette, establishing five national goals and three transversal strategies to take Mexico into its full potential.

National goals:

- Mexico in peace
- Inclusive Mexico
- Mexico with Quality Education,
- Prosperous Mexico and
- Mexico with global responsibility.

Simultaneously actions will be based in three transversal strategies:

- Democratize Productivity
- Closer and Modern Government and
- Gender perspective.

Each one of these transversal strategies will be executed through a special program.

In this sense and regarding the document's objective the first transversal strategy "Democratize Productivity" is recovered, which corresponds to the Program to Democratize Productivity" (PDP).

### **2.1. Program to Democratize Productivity**

This program will coordinate the government's actions leading to create public policies aimed to eliminate obstacles limiting the productive potential of citizens and enterprises; to promote the efficient use of productive resources between all economic activities actors and to analyze integrally the public policies of income and outlays so the strategies and programs may lead to formality.

#### **2.1.1. Objectives and Strategies of the program**

On this section the objectives, strategies and courses of action that will guide the government's program of the 2013-2018 administration are described, in order to promote productivity and rise the economic growth of the Mexican economy, with a particular emphasis on spreading to all regions, sectors and groups of population the benefits derived from them. These actions will guide the agency's programs and entities within the Public Federal Administration, in a way that Productivity democratization reflects transversally in public policies, as established by the National Development Plan.

## Objectives of the (PDP)

1.-	Promoting the use and efficient allocation of economy's productive factors
2.-	Rising labor productivity, enterprises and country's producers
3.-	Strengthening the business environment where companies and producers operate
4.-	Establish specific policies that raise productivity in regions and sectors of the economy.
5.-	Strengthen the process of design, implementation and evaluation of public policies to guide them to raise and democratize productivity .

Source: National Development Plan 2013. Government of the Republic. Program to Democratize Productivity.

## PDP: Strategies

1.-	Strengthening the proper functionality of labor markets to promote formal and well paid job creation
2.-	Promoting capital flows and project financing and activities with a potential productive growth
3.-	Promoting the efficient use of the National territory, both in cities and in rural areas
4.-	Promoting the efficient and sustainable management of natural capital and reinforce the environmental protection of the country
5.-	Rising Investments in human capital of the population
6.-	Strengthening labor training and formation for the job that rises labor productivity
7.-	Promote entrepreneurship and productive and technological upgrading of enterprises, with focus on micro, small and medium enterprises (MSMEs)
8.-	Establishing comprehensive programs aimed at raising the productivity of rural producers, especially small producers
9.-	Increase public investment and promote private investment in Science, Technology and Innovation (STI)
10.-	Maintain macroeconomic and financial stability in order to generate a framework of certainty for operators
11.-	Encourage government actions consolidate a business environment conducive to the creation and growth of formal firms
12.-	Providing greater legal certainty for operators and reduce the impact of insecurity in the productive sector
13.-	Increase the efficiency in sectors producing key inputs to reduce costs faced by firms and producers
14.-	Promote investments in physical and logistical infrastructure to reduce the operating costs of businesses
15.-	Harnessing the integration of Mexico into the world economy as a means to increase the productivity of the economy
16.-	Promote balanced regional development that exploits the comparative advantages of each region
17.-	Promote an orderly structural change to enable the growth of higher productivity activities and the transformation of traditional sectors
18.-	Strengthen the institutional framework to promote public policies to raise and democratize productivity
19.-	Target programs and public expenditure towards the objective of increasing and democratize productivity

Source: National Development Plan 2013. Government of the Republic. Program to Democratize Productivity

TFP results are used to assess and monitor the objectives and strategies of the PDP, as shown in the above tables, are intended to improve productivity.

## 2.2. Growth Diagnostic

The elaboration of this part was supported by the document published by the PDP of the NDP, due to the fact mentioned in the introduction that INEGI coordinates the National Statistical and geographical information System and generates as a exclusive task the information of Economic and Population Census, National Accounts and Prices, as data of National Interest, among others, like TFP statistics, therefore are not functions of the Institute the interpretation of this results neither to evaluate the progress of the federal policies on the subject, thus this section only describes the objectives and strategies of the PDP to promote economic growth in Mexico, the previous has the end of allowing researchers and academics and other interested parties to do so. The PDP can be viewed in the next link: [http://dof.gob.mx/nota\\_detalle.php?codigo=5312422&fecha=30/08/2013](http://dof.gob.mx/nota_detalle.php?codigo=5312422&fecha=30/08/2013).

### 2.2.1. Mexican Economic Growth

Economic Growth is one of the challenges to attend to improve life conditions among the population. Therefore using the next fragment of the PDP that says: *“Growing is not an objective by itself: it is a way to raise population’s life conditions. This suggest that population of Mexicans in extreme poverty has been relatively constant —around 45% of total population<sup>1</sup>— during the last 20 years largely due to the low growth. However, growing faster is a necessary condition but not a sufficient one to eliminate socioeconomic inequalities found in the country. The challenge ahead is understanding how to growth in an inclusive manner, so growth could reach all Mexicans”<sup>2</sup>.*

### 2.2.2. How growth is explained?

The PDP says that *“All this suggests that the main reason behind the modest expansion of the economy is low productivity. Productivity in Mexico expanded rapidly between 1950 and 1970, at an annual rate of 4.1% - during the period known as the Stabilizing Development. It is no coincidence that this period coincided with rapid migration from the countryside to the city, which led a good number of workers formerly involved in low-productivity agricultural activities to occupy spots in the fledgling manufacturing industry --as a result of a policy of industrialization through import substitutions- and to a services sector which benefited from agglomeration associated with urbanization.*

*This stage is followed by a period of stagnation where productivity grew by only 0.4% annually between 1970 and 1980, because the gains from import substitutions were exhausted and the beginning of a period of financial and macroeconomic instability, affected by recurrent external*

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<sup>1</sup> INEGI. Encuesta Nacional de Ingresos y Gastos de los Hogares (ENIGH) 2012. México, 2013.

<sup>2</sup> Several studies analyze the relation between economic growth and poverty reduction. It is estimated that a one percentage point increase in the middle income of a country translates into a two point percentage decrease in the population under the poverty line. However there is great heterogeneity in the results observed among countries. One variable that could explain such diversity is the income’s distribution: at lower inequality greater the impact of growth in poverty reduction. See: Bourguignon, F. (2003), “The growth elasticity of poverty reduction: Explaining heterogeneity across countries and time periods,” en Eicher, T. S. y S. J. Turnovsky (Eds.), *Inequality and Growth: Theory and Policy Implications* (págs. 3-26). Cambridge, MA: MIT Press; Ravallion, M. (2001), “Growth, Inequality and Poverty: Looking Beyond Averages,” *World Development*, 29(11), 1803-1815; Fosu, A. (2010), “Growth, Inequality and Poverty Reduction in Developing Countries: Recent Global Evidence”, OECD Development Centre.

*shocks. Then a sharp contraction came in productivity: between 1980 and 1995, it shrank at an annual rate of 2.4%. The debt crisis and the nationalization of the banking sector led to a deep financial crisis that struck the economy activity and productivity”.*<sup>3</sup>

### **2.2.3. What factors affect productivity in México?**

According to the PDP, there are four points:

#### **2.2.3.1. Use and inefficient allocation of production’s factors**

According to the arguments in the PDP *“an inadequate allocation of factors of production is the main obstacle for productivity. In Mexico there are several barriers to the proper use and allocation of the scarce resources we have. Consider in the first instance the labor factor. In Mexico, six out of 10 workers are informal.”*<sup>4</sup> This situation arises from different causes. On the one hand, the low level of education and lack of skills compared to those required by the formal labor market.”

*“Consider now the capital factor. A well-functioning financial system is critical to achieving an efficient allocation of resources, mobilizing capital to economic activities, enterprises and production units more profitable.*

#### **2.2.3.2. Factors that inhibit the productivity of individuals and companies**

Also the PDP mentions that *“Inadequate job training inhibits worker productivity because presents difficulties to the use of goods and work tools that require more technical skills,”*<sup>5</sup> slows the process of adopting new technologies and prevents individuals from engaging in high-productivity sectors”.

*“With respect to companies, serious obstacles remain to the emergence of productive enterprises and business growth.”*<sup>6</sup> As we have seen, high levels of informality<sup>7</sup> and barriers to access funding hamper business growth. In addition, insufficient human capital formation, low effort in innovation and development, inadequate use of information technologies and communication (ICT) and constraints in management capacity affect their efficiency.<sup>8</sup> The creation of the National Institute of Entrepreneurship and the deep restructuring of policies supporting and promoting entrepreneurs and MSMEs, materialized in the redesign of the SME Fund.”

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<sup>3</sup> A recall of the economic history during that period can be found in: Solís, L., 1994. *Medio siglo en la vida económica de México: 1943-1993*, México, El Colegio Nacional.

<sup>4</sup> INEGI. Labor Informality Indicators. Available at: <http://goo.gl/89H7Pg>

<sup>5</sup> World Bank (2012). Labor Markets for Inclusive Growth. Mexico Policy Note 4.

<sup>6</sup> Unlike the USA where companies 40 years old have in average 8 more employees than companies 5 years old or less in Mexico, this relation between both types of companies is just two to one. Moreover, between years 25 and 40 Mexican companies seem to stagnate and stop growing. Hsieh, C., y P. Klenow (2012), “The Life Cycle of Plants in India and Mexico”, unpublished manuscript.

<sup>7</sup> Using Economic Census, Busso, Fazio y Levy (2012) estimate that around 95% of companies employing up to 5 workers are informal.

<sup>8</sup> From data of the Module of Education Training and Employment of ENOE it is estimated that in average the Mexican micro companies finance 12% of their worker’s training, which is opposite to what medium companies (53%) and big companies (64%) spend financing training.

#### **2.2.3.3. Weaknesses in the business and investment environment**

The PDP mentions that *“being an entrepreneur or rural producer in Mexico involves great challenges. Since the establishment of a company up to bring products to the market, obtaining basic supplies at competitive prices and by the compliance with regulatory provisions, employers and Mexican producers must overcome a myriad of obstacles.”*

#### **2.2.3.4. Sector Gaps**

Gaps in income levels and welfare are much accentuated, in the country is possible to identify industries such automobile and auto parts with important growths in productivity and also ones like the apparel industry with an opposite situation. According to the PDP gaps *“have their counterparts in the disparate behavior of productivity of states and industries.”*

#### **2.2.4. Public policies to improve and democratize productivity**

The PDP states that *“The installation of the National Committee for Productivity and the Business Advisory Council for Economic Growth in Mexico as well as the creation and implementation of Productivity State Commissions in the federal states, are concrete steps in the construction of spaces for dialogue and reflection that will enrich the analysis of the obstacles that affect productivity and the development of relevant solutions and detection of specific projects that promote growth and democratization of productivity. The involvement of social actors will also allow building long-term visions that help improve the efficiency of the economy steadily. Based on these developments, the institutional framework to boost productivity agenda should be strengthened to promote productivity-oriented policies at the federal, state and municipal levels.”*

### **3. Conclusions**

The TFP Indicator under the KLEMS TFP model and its database are articulated directly to the objectives and strategies to Program to Democratize Productivity, which is part of the transverse axis of the National Development Plan 2013-2018, as indicators to measure and monitor progress in productivity and economic growth, are also considered in the design of economic policy of the country, showing an opening 67 subsectors of economic activity.

A concrete example of this is that the indicator along with its database is being used by The Ministry of Economy to estimate a Total Factor Productivity Index specifically for manufacturing.

Finally we can argue that obtaining indicators of TFP and indicators of the total contribution of the factors to economic growth represents a statistical tool that will enable decision makers a more appropriate policy design of the country's economic and industrial policies, in which it is possible to identify what factors: Labor by level of schooling, gender and age; Capital ICT or Non-ICT; or energy, materials and/or services and on which economic activities are having a favorably and



unfavorably impact on the result of productivity, at the same time, it allows when the economic activity is already identified to observe the factors that are defining the TFP results.