

The Company Newsletter for Supply Chain Finance.

E FACTOR NETWORK NEWSLETTER

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Company News and Highlights

Supply Chain Finance Solutions for Cash Requirement.



Fintech products and market development based on Fundamentals of Economic Theory and Financial Risk.



THE DETERIORATION OF PRODUCTIVITY IN MEXICO: A REFLECTION OF LONG-TERM GROWTH.

Written by Edgardo A. Ayala G.

Synthesis.

We estimated Total Productivity Factor (PTF) in Mexico, and we find that:

- Depending on the methodology, PTF decreases between 0.4% and 0.7% per year in Mexico
- In the last 57 years, Mexico's PTF has contracted 31%, while the country middle (at the center of global distribution) grew 27% and that of the United States 44%
- The deterioration of the PTF makes it very expensive to grow, to increase by 4%, we require at least to raise more than 6 points of GDP on the investment rate.

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Análisis.

In most of the contributions of this Newsletter, we address issues of conjuncture. However, it is advisable to pause to reflect on the main problem that Mexico has, and that has been affecting the last 50 years, and that is the country's decreasing productivity.

Total Productivity Factor (TFP) is used to measure a country's productivity, and it corresponds to each unit factor of GDP, where the factor is a gathering of all production factors, mainly human capital.

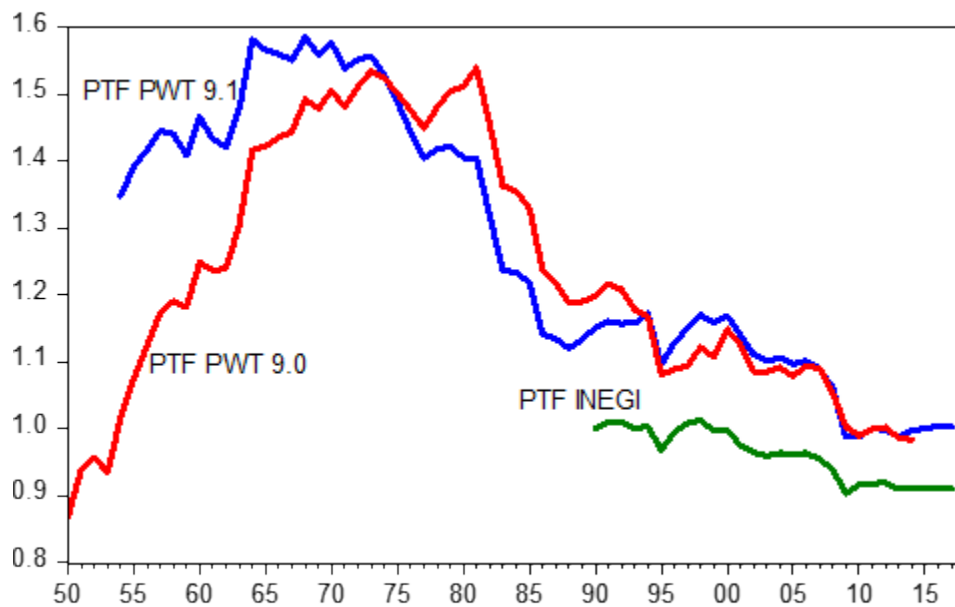
Which is the number of hours worked adjusted for the quality of life of the people (e.g., education) and physical capital, which is integrated by structures, machinery and equipment, and technologies and information. For Mexico, we have several estimates, the Penn World Tables versions 9 and 9.1 (PWT 9 and PWT 9.1), and the KLEMS method issued by the INEGI.

Chart 1 shows the three estimates of the PTF in Mexico for the period 1950 to 2017. Note that PWT 9 provides PTF for the period 1950-2014, PWT 9.1 does so for the period 1955-2017 and INEGI for the years 1990 to 2017. The PWT series allows a longer-term outlook and based on them that Mexico enjoyed a period of rapid expansion of the PTF in the 1950s and 1960s, coming to an end in the late 1970s (depending on the version of the PWT) to start descending rapidly during the 80s. It highlights the fact that all three series reproduce the same descending pattern from 1990 to 2017. The average annual decline over the last 27 years is 0.4% in the INEGI series, 0.5% in PWT 9.1, and 0.7% in PWT 9.

Is it the decline of the NFP particular of Mexico, or is this a global phenomenon?

To answer this question, we estimate the distribution of average annual PTF growth rates for all PWT-based countries with information. Table 1 presents the distribution of countries according to the average yearly growth of the TFP for each decade from 1960 to 2017. There is minimal growth, the 25% percentile, 50% (median), and 75%, as well as the mean. We add the average annual growth of the United States and Mexico.

Graph 1
Total Productivity of Factors in Mexico.



Source: Penn World Tables 9, 9.1 and INEGI

The 1960s was the golden age in PTF distribution, the world PTF grew 1.7%, and even 25% of the least-growing countries enjoyed the growth of around 0.8% per year. In the 1970s, the distribution shifted to the left, practically the median and mean went to zero or slightly negative until 2000, and in this century, they grew about half a point percentage a year.

Mexico's performance has been poor; it has always been among the 50% of the countries with the lowest growth, and in 4 of the six decades analyzed, we are among the 25% of the countries with the lowest growth.

In the 57 years studied, the average annual rate of Mexico's PTF is in the order of -0.7%, while the PTF from the country to the center of the distribution is 0.4%, and that of the United States is 0.6%. Although the differences seem small, they are not, taking the whole period, the average country's PTF grew 27%, the US PTF grew 44%, while Mexico's contracted 31%. The number of countries in the 75th percentile, many of them Asian, grew 124% in the 57 years considered.

What are the consequences of the decline in productivity? The fall in the country's TFP means wasted economic growth, and implies that to grow at 4% as is intended at the end of the six-year term, we should increase the investment rate by just over 6 points of GDP which means increasing investment in approximately \$75 billion a year. In short, growth depends on accumulating as many assets to compensate the drop-in productivity.

Table 1
Distribution of average annual growth rates of Total Global Factor Productivity

Decade	Country	Minimum	25%	50%	Median	75%	Maximum	United States	México
1960 - 1970	58	-0.040	0.008	0.017	0.017	0.030	0.057	0.009	0.007
1970 - 1980	74	-0.087	-0.010	0.000	-0.001	0.010	0.048	0.000	-0.011
1980 - 1990	102	-0.049	-0.015	0.000	-0.004	0.009	0.030	0.009	-0.020
1990 - 2000	102	-0.080	-0.009	0.001	-0.001	0.010	0.030	0.008	0.001
2000 - 2010	117	-0.065	-0.002	0.004	0.007	0.015	0.082	0.007	-0.017
2010 - 2017	117	-0.083	-0.005	0.004	0.003	0.010	0.041	0.004	0.002

Source: Penn World Tables 9.1

Implications for the Fintech Sector. While we do not know for sure why the deterioration of the TFP in Mexico, several researchers believe that it is partly because the country's financial sector fails in the selection of the winners, that is, it channels little credit and not necessarily to the more rentable projects. This is where the Fintech sector can help improve the country's productivity, reducing transaction costs in obtaining funds, information asymmetries, and capital costs for companies.

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