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Patterns of TFP growth in Mexico: 1991–2011

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ABSTRACT

We review the behavior total factor productivity (TFP) growth in the Mexican economy during the period 1991–2011 using a new data set recently published by INEGI. Our analysis shows that TFP has had a negative contribution to output growth, although its traditional positive link with output growth is still present. The data also indicate that TFP growth in Mexico is highly concentrated and unstable, as there is just a handful of industrial branches that at any given moment account for most of the TFP growth observed, but that rarely remain at the top over time. The patterns identified here – low growth, concentration, and unsteadiness of TFP – are in accordance with what has been found using other data sets for the Mexican economy, and also with those that have been reported for other economies at different levels of aggregation.

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1. Introduction

In a recent paper, Jorgenson and Vu (2012) sustain that the world economy will experience a massive reconfiguration that will translate into a New Economic Order by 2020. In this new order, the authors claim, "China will displace the U.S. as the world's leading economy and India will overtake Japan. This will shift the balance of the G20 from the leading industrialized economies of the G7 to the emerging economies, especially China and India (Jorgenson & Vu, 2012)." Interestingly, in that description of the future international configuration, Mexico receives very little attention, something that perhaps may be understood in terms of the low growth that the authors estimate for the Mexican

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economy for the current decade in their baseline scenario, and which results in Mexico being excluded out of the eight biggest economies of the world in 2020.

Such forecast invites one to ponder about what has been happening with the Mexican economy's growth fundamentals. Attempting to answer these questions is without a doubt a difficult task, since the study of the economic growth process continues to be as complex as controversial as ever, both from a theoretical as well as from an empirical point of view (Hulten, 2000). Considering the above, the current paper is modest in its scope as it only seeks to identify patterns in the Mexican growth process which may help to better understand its nature. In particular, we take advantage of a new growth accounting data set at the subsector level for the period 1991–2001 recently published by INEGI (the Spanish acronym for the National Institute of Statistics and Geography), where the relevance of these estimates arise from the fact that they come from the most recent and comprehensive effort in terms of data sources used so far in our country, and also because they are obtained through the KLEMS framework, a methodology that today is being adopted by renowned institutions to study the growth process in both developed and developing economies.

Our work reviews, first, the behavior of output and total factor productivity (TFP) growth in the Mexican economy during the period covered by this new data set (1991–2011), where it is shown that despite the fact that TFP has had a negative contribution to output growth, the traditional positive link between the two variables still holds. Then, we proceed to analyze how concentrated or dispersed productivity growth has been, and report that such growth has been highly concentrated and unstable, as there is just a handful of industrial branches that at any given moment account for most of the productivity growth, but that rarely remain at the top over time. The patterns identified here – low growth, concentration, and unsteadiness of TFP – are in accordance with what has been found using other data sets for the Mexican economy, and also with those that have been reported for other economies at different levels of aggregation.

The main implication of this poor, highly concentrated and unsteady performance of TFP in Mexico is that there is no "magic bullet" to solve our problem of anemic economic growth. The strategy, instead, will have to be wide-ranging and sustained.

The paper is organized as follows. In Section 2 we review briefly the Mexican KLEMS data; in Section 3 we look first at the link between output and productivity growth, and then we look at the concentration and resilience patterns of TFP growth; final comments are presented in Section 4.

2. The KLEMS project for Mexico

Today is well established that economic growth stems from the increase in the use of inputs, as well as from increases in total factor productivity. Such statement has been traditionally summarized in the following growth equation:

$$\Delta Y = w\Delta L + \rho\Delta K + R \tag{1}$$

with "Y" representing real gross output,[1] "L" the employed labor force, "K" the real net capital stock, "w" the average real wage, and "ρ" the average real gross rate of return to capital.[2] This equation imputes to incremental labor the average real wage of existing labor, and to incremental capital the average real return of the existing capital stock. The last component, "R", was initially thought of as a coefficient of technical advance, but it was quickly recognized to be a composite of many different elements, such as economies of scale, unused capacity, improved ways of combining resources to produce goods and services, not just at the level of new machines or processes, but also by minor adjustments at the level of the factory, among others.

[1] There is disagreement about whether to use gross or net value added in these calculations. Growth theorists, for example, sustain that it is more adequate to exclude depreciation of fixed capital because "this is an intermediate cost that, like the consumption of raw materials and semi-finished goods, is excluded from the measure of final output. However, others, particularly those looking at the issue from the standpoint of production theory, prefer the gross measure because for them depreciation is part of the measure of the services of the primary factor-capital." (In Baumol & McLennan, 1985, p. 30). See also Pilat and Schreyer (2001). INEGI uses gross value added, and this is why we employ this concept in this paper.

[2] If Y is net real output, "r" should be the net-of-depreciation rate of return to capital.

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