

POST-SCRIPTUM¹

Writing in mid-2012 we concluded that “despite a modest recent increase in the output-to-capital ratio, domestic savings are too low to allow for growth rates higher than the 4% recorded in the last few years”. The experience since then showed this assertion to have been too optimistic.

Without bothering the readers with the details of the construction of the new figures that are still of a preliminary nature (with those for 2014 being only educated guesses), we may synthesize the reasons for been less optimist about the near future as follows. First, the rise in the output-to-capital ratio observed up to 2010 reversed itself and this coefficient is now back to values similar to those prevailing before the commodity boom starting in 2004. Second, the labor force growth rate decelerated much faster than we anticipated. Consequently, we now believe that Brazil's potential GDP growth rate (Y') for the next ten years is around 3.3% per year.

To see why, let's start with the labor force. During the whole 1948-2011 period, employment grew by a sizable 2.7% per year. In the last period we considered in the paper, 2000-2011, according to our revised estimates employment growth was a respectable 2% per year. However, after 2011, employment growth decelerated substantially to 1.1% per year. Furthermore, new estimates from the 2010 Demographic Census produced by Brazil's Statistical Institute (IBGE) put the growth rate of Brazil's adult population (ages 15 to 65) at about 0.9% on average over the next ten years. Admitting that a partial reversal of the recent decline in the labor force participation rate may occur, we project employment growth (L') over the next ten years at 1% per year. To proceed, we need an estimate for the prospective GDP per worker growth rate, or the growth rate of labor productivity (y').

The growth rate of labor productivity over 2011-2014 was only 0.9% per year. In terms of the decomposition of this variable in Table 4, the entire reason for such a lackluster performance was a sharp decline in the growth rate of total factor productivity (TFP'). In fact, for only the second time in our recorded history (the

¹ Post-scriptum to Edmar Bacha and Regis Bonelli, “Accounting for the Rise and Fall of Post-WW-II Brazil's Growth”.

first one being during the so-called lost decade of the 1980s), total factor productivity actually declined by -0.46% per year in 2011-14². The contrast with the past couldn't be sharper: in the entire 1948-2011 period, the growth rate of TFP was 0.9% per year. In the more recent 2000-2011 period, the growth rate of TFP was a similar 1.0% per year. The pro-cyclical behavior of total productivity can be blamed for at least part of the fall. Other likely causes are the loss of impulse coming from abroad (illustrated by the decline in the external terms of trade) and economic policy distortions introduced during Dilma Rousseff's presidential period. In fact, we still don't know which were the reasons for the sharp decline in the growth rate of TFP in the more recent period. Whatever they are, though, it seems reasonable (if only a little optimistically) to ignore this recent dismal performance and bet that the growth rate of TFP in the historical past will reassert itself in the near future, thus generating a contribution to GDP's growth rate of 1% per year.

Finally, the contribution of the growth rate of capital deepening ($\alpha(u_k)'$ in Table 4) to labor productivity growth was 1.3% per year in the 2011-14 period, a value similar to its historical average (1.4% per year in 1948-2011). Hence, it seems reasonable to adopt the same figure for the period ahead of us.

In terms of the equation leading to Table 4, we have the following decomposition of our new estimate for Brazil's potential yearly GDP growth rate:

$$Y' = L' + y' = L' + TFP' + \alpha(u_k)' = 1\% + 1\% + 1.3\% = 3.3\%.$$

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² A decomposition of the growth rate of total factor productivity as a weighted sum of the growth rates of capital productivity and labor productivity shows that its decline was totally explained by a contraction in capital productivity (that is, in the output-to-capital-in-use ratio).