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ESTIMATING THE GENUINE PROGRESS INDICATOR (GPI) FOR BRAZIL FROM 1970 TO 2010

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Abstract:

This paper estimates the Genuine Progress Indicator (GPI) for Brazil from 1970 to 2010. The intense fluctuation in the Brazilian per capita GDP over this period is also reflected in the dynamic movement of per capita GPI. After a growing disparity between these two indicators in the 1980s, when Brazil's per capita GPI featured a 35% decline, there was a relative catch-up in per capita GPI, but not one sufficiently strong enough to reduce the historical GPI-GDP gap. The recent trend of rapidly increasing environmental and social costs, along with the decline in unpaid labour and infrastructure services, poses concerns about the sustainability of an increasing GPI for Brazil into the future. Based on our results, our general conclusion is that policies aimed at reducing environmental costs are necessary if Brazil is to enjoy a sustainable pattern of non-declining economic welfare.

Keywords: sustainable economic welfare, uneconomic growth, environmental and social costs, GPI.

The GPI is intended to embrace the challenge of a better understanding of the side-effects of the physical expansion of economic systems. In Latin America, the GPI has only been estimated for Chile (Castaneda, 1999). Within the BRICS countries, only the Chinese and Indian economies have been assessed using GPI estimates (Lawn, 2008; Wen et al., 2008). In order to foster the application of GPI in the developing world, this paper is aimed at estimating the GPI for Brazil from 1970 to 2010.

The GPI calculated in this study for Brazil comprised 17 items distributed into the three main domains (economic, social, and environmental). The study ranges from 1970 to 2010 and all items are valued in Reais (R\$) at 2010 prices. The use of interpolation and average annual growth rates were used wherever there were data shortages. The approach used to calculate the Brazilian GPI closely followed the methodological procedures conducted in other GPI studies (Lawn and Clark, 2008). Furthermore, wherever possible, we have tried to use the items typically used in the calculation of the GPI.

The results show that Brazil's real GDP increased from R\$783.5 billion to R\$3.77 trillion over the study period (an increase of 381.2% over the entire period or an average annual rate of increase of 4%). The GPI in Brazil increased from R\$413 billion to R\$1.68 trillion over the same period, equating to a rise of 305.8% or an average annual growth rate of 3.6%. These figures indicate that, accompanying the economic and social benefits of a growing Brazilian economy, there were inevitable negative side-effects in the form of social and environmental costs. Although when taken over the entire study period, the increase in benefits exceeded the increase in costs, the difference between the benefits and costs (net benefits) did not grow at the same rate as real GDP.

The intense fluctuation in the Brazilian GDP over the study period is also reflected in the GPI estimates. In the 1970s, real GDP increased every year, as did the GPI, except for a slight

decline in 1975. Overall, the Brazilian GPI in the 1970s rose by 55% (against a rise of 106.4% in real GDP), which is equivalent to an average annual growth rate of 5.0% (compared to an average rise in real GDP of 8.4% per annum).

The relatively low growth in the Brazil's real GDP during the 1980s (a rise of only 21.8%) was accompanied by an overall decrease in the GPI during the same decade. In 1989, the Brazilian GPI was 21.5% lower than its value in 1980, which is equivalent to an average annual growth rate of -2.7%. These figures show that the 1980s in Brazil was a period in which the majority of the Brazilian population experienced a significant reduction in their economic welfare. With real GDP increasing at a slower pace than in the 1970s (an average annual increase of 2.2%), it was not sufficient to increase the economic welfare of the average Brazilian citizen. It is worth mentioning that Brazil experienced considerable economic turmoil during this period – a time when high inflation rates had a negative influence on the welfare generated by household consumption. In six individual years between 1980 and 1989, the GPI decreased, and in the 1987-1989 triennium, the GPI fell in each year. This result suggests that Brazil experienced a period of uneconomic growth in the 1980s – one where the benefits of a lower rate of GDP growth were less than in the 1970s, yet one where the costs of growth remained high. Given the economic turmoil in Brazil during the 1980s, it could be argued that the uneconomic growth experienced in this decade was due more to socio-political factors than the high cost of growth itself.

Overall, our study reveals that genuine progress has been achieved in Brazil, although the rate of progress was nowhere near as marked as it could have been, and many Brazilians continue to live in abject poverty. Furthermore, it would appear that, by the end of the study period, the marginal cost of GDP growth in Brazil was very high – so much so, it threatens to undermine Brazil's capacity to boost per capita economic welfare in coming decades.

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