

Linkages Between Pro-Poor Growth, Social Programs and Labor Market: The Recent Brazilian Experience

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Summary. — This paper analyzes the relationship between growth patterns, poverty, and inequality in Brazil during its globalization process, focusing on the role played by the labor market and social programs. Methodologically, the paper makes two contributions to the literature. One is the proposal of a new measure of pro-poor growth, which links growth rates in mean income and in income inequality. The other contribution is a decomposition methodology that explores linkages between three dimensions: growth patterns, labor market performances, and social policies. The proposed methodologies are then applied to the Brazilian National Household Survey covering the period 1995–2004.

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1. INTRODUCTION

Globalization bears both optimistic and pessimistic views about its effects on the economy. According to a trade model in economics, lower tariffs and transportation costs should push each country to specialize in producing the goods that the country has a comparative advantage in. In principle, globalization should hence lead to an increase in the relative demand for skilled labor in rich industrialized countries, and an increase in the demand for the unskilled labor in poor developing countries. In contrast, a pessimistic view about the effects of globalization stems from that it could be a source of increased inequality. While integration with world markets can make a significant contribution to the productivity increase and thus economic growth, it may be detrimental to equity. Low wages and restricted workers' rights could be important factors to attract foreign investment and gain greater access to the world market, which overall tend to benefit capital owners. At the same time, globalization could engender more inequality among workers. This can occur if only a small proportion of the people who have skills benefit from increased economic integration and the rest are left behind. From empirical perspectives on the effects of globalization, the available evidence is mixed. The Asian experience over the past two decades suggests that globalization has a positive and dramatic impact on both growth and poverty reduction. Yet there has been an increase in inequality as observed in China and India. Moreover, several studies also suggest that Latin American countries have experienced an increase in wage inequality after their economic liberalization. This warrants a closer look at the merits of the relationship between globalization, growth, poverty, and inequality.

The Brazilian experience has been quite peculiar in the sense that structural reforms, and in particular trade liberalization,

started comparatively late, only a few years ago. Whereas other countries in Latin America started opening their economies in the early or mid-1980s, the same process started in Brazil only in the early 1990s. As is generally claimed, there is a strong association between growth and poverty reduction in Brazil. Whether growth translates into significant poverty reduction depends upon numerous factors such as education, unemployment, minimum wages, social programs, *etc.* One of the most important factors influenced by all others is the degree of inequality in the country. High inequality in the country would have prevented the economy from growing faster. It is imperative to emphasize that a combination of economic growth and income distribution would lead to a more rapid and effective solution to poverty reduction. Studies have found that poverty is more responsive to growth when the distribution of income and assets is more equal. In this context, a more equal society will grow faster. Brazil has been notoriously known as one of the countries with the highest income inequality in the world (Li, Squire, & Zou, 1998; Psacharopoulos, 1991). After its steep rise in the 1960s, Brazilian income inequality has been high and stable between 1970 and 2000 (Bacha & Taylor, 1978; Barros & Mendonça, 1992; Barros, Henriques, & Mendonça, 2000; Bonelli & Sedlacek, 1989; Hoffman, 1989; Langoni, 1973; Ramos, 1993). In recent years, however, inequality has been on the decline with a pace comparable to the rise observed in the 1960s. This change reflects a combination of labor market improvements seen by low skilled workers, including increases in educational attainment

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and the adoption of increasingly targeted official income policies. But what are the share of these factors on the observed trends?

This paper analyzes the relationship between growth patterns, poverty and inequality in Brazil during its globalization process, focusing on the role played by the labor market and social programs. From a methodological point of view, the paper makes two contributions to the literature. One contribution is the proposal of a new measure of pro-poor growth, which links growth rates in mean income and in income inequality. The other contribution is a decomposition methodology that explores linkages between three dimensions: growth patterns, labor market performances, and social policies. The proposed methodologies are then applied to the Brazilian National Household Survey (PNAD) covering the period 1995–2004.

This paper is organized in the following manner. Section 2 is devoted to the derivation of pro-poor growth rate that adjusts for inequality. Section 3 outlines empirical aspects of calculating the pro-poor growth rate using household surveys. Section 4 develops a decomposition methodology to link pro-poor growth with labor market characteristics, while Section 5 describes trends in growth, inequality, and poverty in Brazil. Sections 6 and 7 present the empirical results for pro-poor growth rates and the decomposition method applied to labor market ingredients, respectively. Based on a Shapley decomposition, Section 8 looks at the contribution of main components to growth patterns. Similarly, Section 9 investigates the contributions of different non-labor income sources to growth. Section 10 concludes the study.

2. PRO-POOR GROWTH RATE

Suppose x is the real income of an individual, which is a random variable with density function $f(x)$, then the real mean income of the population is defined as¹

$$\mu = \int_0^{\infty} xf(x)dx. \quad (1)$$

A country's performance in average standard of living can be measured by the growth rate γ given by

$$\gamma = \Delta \ln(\mu). \quad (2)$$

Economic growth has an impact on each individual in a different manner. Following [Kakwani and Pernia \(2000\)](#), growth is defined as pro-poor (or anti-poor) if the poor benefit proportionally more (or less) than the non-poor, that is, growth results in a redistribution of income in favor of the poor. When there is a negative growth rate, growth is defined as pro-poor (anti-poor) if the loss from growth is proportionally less (more) for the poor than for the non-poor. This is a relative concept of pro-poor (anti-poor) growth because growth leads to a reduction (or increase) in relative inequality.²

The pattern of growth can be described by two factors: (i) the growth rate in mean income defined by γ and (ii) how inequality changes over time. To measure the pattern of growth, we need to specify a social welfare function, which gives a greater weight to utility enjoyed by the poor compared to utility enjoyed by the non-poor.³ Suppose $u(x)$ is the utility function, which is increasing in x and concave, then we can define a general class of social welfare function as

$$W = \int_0^{\infty} u(x)w(x)f(x)dx, \quad (3)$$

where $w(x)$ is the weight given to the utility of the individual with income x . The main problem with this social welfare function is that it is not invariant to the positive linear transformation of the utility function. Following [Atkinson's \(1970\)](#) idea of equally distributed equivalent level of income, we can get a money-metric social welfare function denoted by x^* from (3) as

$$W = u(x^*) = \int_0^{\infty} u(x)w(x)f(x)dx, \quad (4)$$

where x^* is the equally distributed equivalent level of income which, if given to every individual in the society, results in the same social welfare level as the actual distribution of income. Note that if $w(x) = 1$ for all x , then x^* in (4) is identical to the money-metric social welfare proposed by [Atkinson \(1970\)](#).

To make pro-poor growth operational, we need to specify $u(x)$ and $w(x)$. The most popular form of the utility function is the logarithmic utility function which, given by $u(x) = \log(x)$, is increasing and concave in x . In this study, we adopt the logarithmic utility function not only because of its popularity, but also because of its attractive features such as the decomposability of growth rate in terms of some labor force characteristics (see next section). [Atkinson \(1970\)](#) specified $u(x)$ by an entire class of homothetic functions, which provide flexibility to choose any value of inequality aversion parameter. By choosing a logarithmic function, we have chosen the inequality aversion parameter to be equal to 1.

The inequality aversion parameter determines how much weight should be given to the poor relative to the non-poor; the higher the inequality aversion parameter, the greater is the weight given to the poor relative to the non-poor. Since Brazil has persistently suffered high degree of inequality, it is our opinion that we should choose the inequality aversion parameter to be higher than what is implied by the logarithmic utility function. We can achieve this objective by choosing $w(x)$, which is a decreasing function of x so that the total weight given to all individuals add up to unity, which implies

$$\int_0^{\infty} w(x)f(x)dx = 1. \quad (5)$$

According to [Sen \(1974\)](#), the weighting function $w(x)$ can capture the relative deprivation suffered by the poor relative to the non-poor in society. Following him, a simple way to capture relative deprivation is to assume that an individual's deprivation depends on the number of persons who are better off than him/her in society. Such a weighting scheme is given by

$$w(x) = 2[1 - F(x)], \quad (6)$$

where $F(x)$ is the distribution function. This function implies that the relative deprivation suffered by an individual with income x is proportional to the proportion of individuals who are richer than this individual. It can be verified that $w(x)$ in (6) is a decreasing function of x and satisfies Eqn. (5).⁴

Substituting $u(x) = \log(x)$ and $w(x)$ from (6) in (4) gives the social welfare function

$$\log(x^*) = 2 \int_0^{\infty} [1 - F(x)] \log(x)f(x)dx, \quad (7)$$

which provides the basis for the empirical analysis presented in this paper. If we substitute $u(x) = x$ in (7), we would obtain a social welfare function developed by [Sen \(1974\)](#)

$$W = \mu(1 - G), \quad (8)$$

where G is the Gini index. This social welfare function has been criticized on the ground that it is not strictly quasi-con-

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