Private Enterprise Development in Low-Income Countries

Firms and the Decline of Earnings Inequality in Brazil

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Brazil's great inequality decline over the past two decades was driven by a compression of pay differences between firms, rather than by changes in the distribution of firm productivity.

Introduction

Brazil has experienced growth and a large reduction in earnings inequality since the mid-1990s. While the decline of earnings inequality in Brazil resembles other Latin American economies' experienced during this period, it stands in stark contrast to that of many other developing and developed economies, which saw steady increases in inequality over the past two decades. To investigate the sources of this decline, we decompose Brazil's earnings inequality evolution into changes in firm and worker characteristics on the one hand, and the returns to such characteristics on the other. Contrary to often-articulated views, we find that neither increasing educational attainment nor demographic changes can explain a large fraction of this decline. Rather, our findings point to the importance of a shrinking dispersion in pay between firms that is accompanied by a shrinking dispersion in labor productivity.

Methodology

Guided by recent research, which suggests that firms are an important determinant of earnings dispersion in a number of high-income countries, we decompose the sources of Brazil's inequality decline by exploiting a large administrative linked employer-employee dataset containing information on over one billion job spells between 1988 and 2012. By linking individual workers to their employers and tracking both over time, we are able to separately identify the contributions of firm- and worker-specific factors towards workers' pay.

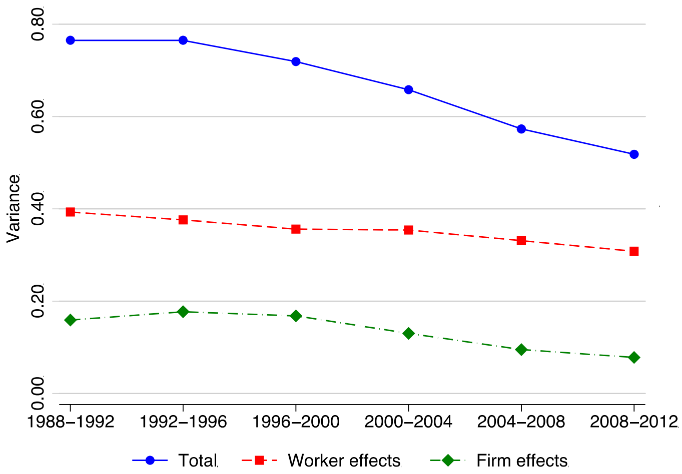

Figure 1: Variance of log earnings decomposition

Our methodology has two stages. The first decomposes the inequality decline into firm and worker components and concludes that the decline was driven by compression in pay between, as opposed to within, firms. The second examines whether both the dispersion of this component and its decline can be explained by firm productivity and other firm-level characteristics. To this end, we draw on a rich matched employer-employee dataset from the Brazilian Ministry of Labor and Employment (MTE-RAIS) that we link to detailed firm-level financial data from the Brazilian Institute of Geography and Statistics (IBGE-PIA) by use of the unique firm- and individual-identifiers in these data. The linked dataset spans 25 years from 1988-2012.

Main Results

- *The compression of pay between firms is the main factor behind the fall in earnings inequality in Brazil*

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Firms played an important role in the decline in earnings inequality in Brazil, explaining 45 percent of the fall in the variance of log earnings between 1996 and 2012. Compression in worker characteristics – for instance education, age or experience – explains an additional 24 percent of this decline. As illustrated in Figure 1, worker effects account for a larger portion of earnings dispersion at any given time, but, in terms of changes over time, it is the compression of firm-specific pay that contributed more than proportionately towards Brazil's earnings inequality decline. That is, worker effects explain most of the level of inequality while firm effects explain most of the decline in inequality. The next two results respectively address the causes of the compression in firm effects, and the causes of the compression in worker characteristics.

- *The link between firm productivity and firm pay has weakened*

What explains the compression in pay across firms? To some extent, we would expect firm earnings to reflect labour productivity, but we also show that changes in the link between firm performance and pay account for a significant fraction of the compression in the firm component of workers' earnings. That is, although more productive firms pay more, over time the difference in pay between high productivity and low productivity firms has fallen. First, a substantial share of the variation in the firm component of pay is explained by differences in observable firm characteristics, with more productive firms paying more (Figure 2). Moreover, more than half of the decline in the firm component is accounted for by observable firm characteristics. This entire decline is driven by a weakening pass-through from productivity to pay, and none is due to firms becoming more similar in productivity measures (Figure 3).

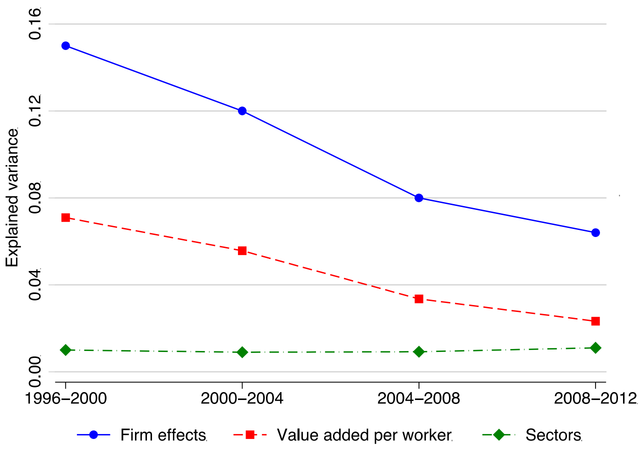

Figure 2: Variance explained by firm characteristics

- *The decline in the return to education or experience, rather than the compression in these characteristics, explains a sizable share of the fall in dispersion*

Looking at the worker component of the earnings inequality decline, we assess whether it is due to workers becoming fundamentally more alike along certain characteristics (such as education or other measures of ability) or to their pay becoming more similar, regardless of their various characteristics. We find that a decline in the return to measures of ability such as experience and education explains a sizable share of the fall in the variance of the worker component of pay. While the levels of age, education and occupation explain around 40 percent of the variance of the worker component of pay at any point in time, we observe no compression in the underlying distributions of these characteristics over time. Instead, the inequality decline is driven by a rapid fall in the returns to observable measures of worker ability, especially the returns to education – that is, the salary premium of education has fallen. We find that lower returns to education explain 13 percent and lower returns to age explain three percent of the overall fall in the variance of log earnings over this period.

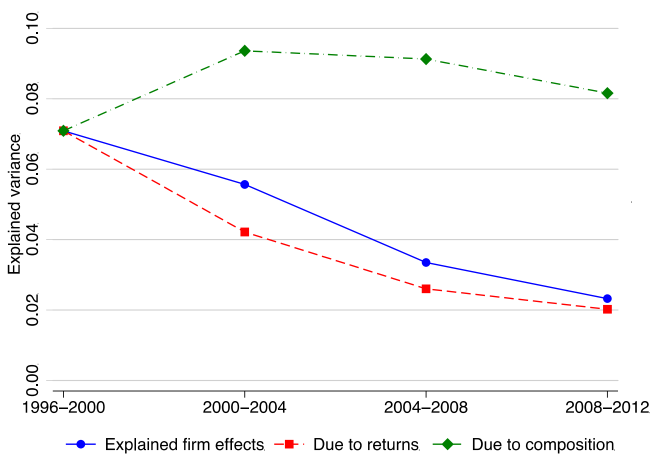

Figure 3: Variance explained by changes in composition versus returns of firm productivity

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Implications

This decomposition of the sources of Brazil's earnings inequality decline informs our understanding of various commonly proposed stories explaining the decline. On the worker side, our results do not support a widely-held belief that changes in educational attainment accounted for a significant share of Brazil's inequality evolution over the period. While educational attainment increased over this period, we find that all else equal this resulted in a small net increase in inequality. We reach similar conclusions regarding the implications of changes in the age structure of the workforce. On the firm side, a reading of the existing literature would suggest that trade dynamics and the productivity evolution during this period could have been important drivers behind changes to the earnings distribution. Yet, in line with U.S. trends, we find that the Brazilian productivity distribution grew more dispersed over this period.

Altogether, these findings point out that there is something about high-productivity firms that is associated with paying higher wages, but a compression in the distribution of firm productivity is not behind the Brazilian inequality decline. Instead, a compression of pay across firms of varying productivities – that is, a weaker pass-through from productivity to pay – is the main cause of the decline of earnings inequality in Brazil. This suggests that policies tackling inequality must not only focus on generating more productive firms, but on weakening the forces linking low firm productivity to low pay.

Moving Forward…

Our results suggest that a theory of the inequality decline needs to be consistent with the following three facts:

i. firm-level differences explain a significant share of initial inequality levels and an even larger share of its decline;

ii. a weaker pass-through from firm productivity to worker pay was a key driver behind the declining dispersion in the firm component of pay

iii. a lower return to worker ability explains a significant share of the decline in the worker component of pay.

We think that promising candidates behind the decline in inequality in Brazil are changes in the nature of wage setting. In follow-up work, we explore whether the rise in the minimum wage in Brazil during this period can explain a significant fraction of the decline in inequality, while being consistent with the stylized facts presented. Other institutional reforms, including changes in union bargaining structure and labor compensation laws, also represent interesting avenues for future research.