



Global Wage Debates

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MINIMUM WAGE IN BRAZIL

A useful policy tool to reduce wage inequality?

Alexandre de Freitas Barbosa, Maria Cristina Cacciamali, Gerry Rodgers and Fabio Tatei

With support from:



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BRAZIL



5.9

Unemployment Rate



52.7

GINI



66.4

Wage and salaried
workers, total (% of
total employed)



13557

GDP per person
employed
(constant 1990 PPP \$)

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Introduction

What role did a rising minimum wage play in reducing wage inequality in Brazil in the first decade of the 21st century? Is it reasonable to expect that the policy of tying minimum wage to economic growth will continue to act as a key driver of inequality reduction in the near future?

In order to answer these questions, this chapter is structured as follows: The first part presents the broad macroeconomic situation, with a focus on productivity and labor market outcomes, pointing out the main features of the Brazilian growth modelⁱ as well as its main challenges.

The second part looks at how the country's active minimum wage policy fueled the rise in the real value of Brazil's minimum wage over time. This section further discusses the importance of this policy for different types of wage workers –

registered and non-registered, urban and rural – and the changing relationship between minimum wage and average wages.ⁱⁱ

Third, the chapter shows how income inequality decreased across sectors, regions and social groups – including sex, race/color and levels of education. The authors use the Theil indexⁱⁱⁱ to look at the reduction in inequality across these different variables, while also examining how the average wage ratios between non-registered and registered wage earners changed.

Finally, the last section discusses how trends in wage inequality are likely to evolve in the near future, especially considering that Brazil has been confronting an economic downturn over the last two years.

i One could also use the term “growth regime.” This concept, borrowed from the French school of regulation theory, was developed for a comparative analysis between Brazil and India. See CEBRAP/IHD. 2015a. Growth regimes, labour markets and inequality in Brazil and India: parallel experiences in historical perspective, mimeo.

ii The ratio of minimum wage to average wage is known as the Kaitz index.

iii The Theil index measures inequality. Like the Gini coefficient, an index of 0 indicates perfect equality (everyone earns the exact same), while an index of 1 indicates perfect inequality (one person has all the income).

The Brazilian growth model, labor productivity and the labor market

In the 2000s, Brazil experienced a virtuous cycle of economic growth that involved a decline in poverty and the reduction of income inequality. These trends, unprecedented in Brazilian history, were the result of several factors, such as high levels of GDP growth, the expansion of formal employment, a steady increase in the real minimum wage, and the expansion of income transfer programs.

This virtuous cycle was interrupted by the 2008 global financial crisis. Brazil reacted fast with counter-cyclical policies – such rising public loans, fiscal incentives and public expenditures both in investments and social transfers.¹ As a result, Brazil managed to shield its economy from some of the most severe effects of the crisis, and GDP growth jumped to 7.6 percent in 2010. But in the years following, growth slowed to around 2 percent per year. In 2014 the economy was stagnant and the country is bracing for a recession in 2015 (**Figure 1**). Rising unemployment, destruction of formal jobs and falling wages plague Brazil's labor market today.

The investment rate has fluctuated much less. Even during the high-growth years it rose only from 16.8 percent in 2000 to 19.5 percent in 2010, and

it then declined due to the international financial crisis and the short-term effect of the counter-cyclical policies. This is key to understanding the low productivity growth of the past decade. Low investment meant that Brazil neither moved toward higher productivity sectors nor was able to create new productive capacity to go beyond domestic demand as a source of growth.

Some factors already present in the high-growth first decade of the 21st century have come to threaten the sustainability of growth in the current decade. The most important factor is the low rate of productivity growth in a period of relatively high GDP growth. This is partly related to the poor performance of the investment rate and partly to the fact that manufacturing goods from abroad flooded the domestic market, even before the financial crisis. Partly driven by Brazil's overvalued currency, imports from the United States, the EU and China rose, discouraging domestic production and its modernization.

Domestic and foreign demand boosted Brazilian economic growth in the 2000s. Growing demand for commodities, particularly from China, drove an increase in both the prices and volume of Brazil's exports of primary products. This generated a

Some factors already present in the high-growth first decade of the 21st century have come to threaten the sustainability of growth in the current decade.

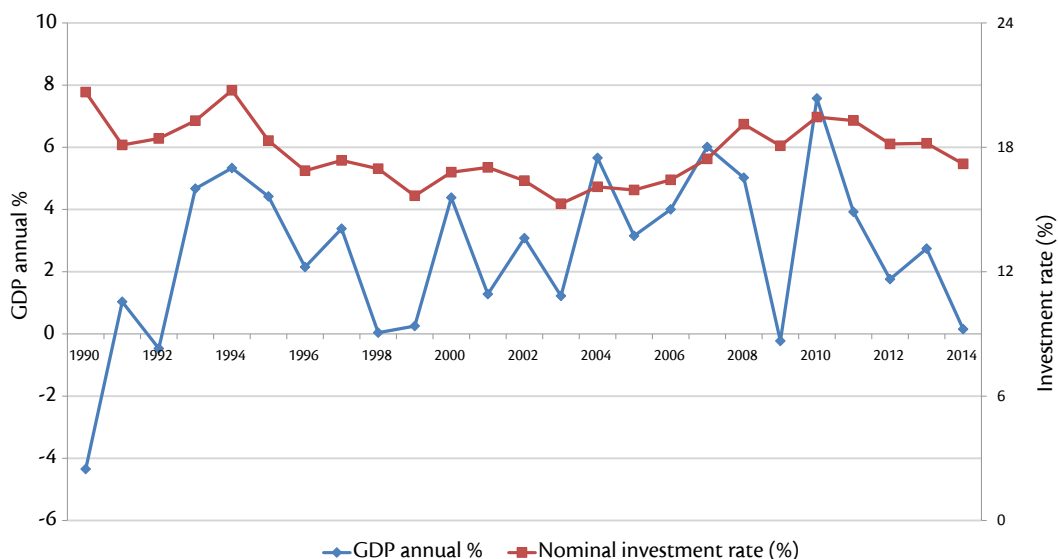
trade surplus and a growth in foreign exchange reserves, paving the way for lower interest rates and for key policies – such as the active minimum wage policy, social transfers, rising public bank loans and investments in infrastructure – that fueled an expansion of domestic demand.²

The 2000s saw a rise in the labor force participation rate and the formalization of employment and labor income, while the unemployment rate

continued to decline – from 12.4 percent in 2003 to 6.7 percent in 2010, considering major metropolitan areas. The growth of the Brazilian domestic market, the vigorous expansion of employment and wages, the real increase in the minimum wage – faster than average wages – and the expansion of cash transfer programs led to a decrease in inequality never before seen in Brazilian contemporary history.

Figure 1

**GDP growth and investment rate.
Brazil (1990-2014)**



Source: System of National Accounts ref.2000 / IBGE.

Breaking down the reduction in inequality by income source shows that the growth in labor income drove more than half of the fall in household income inequality in the 2000s. Growth in pensions contributed 21 percent to the fall in inequality, social benefits 6 percent,³ and cash transfer programs 12 percent. Along with labor income, both pensions and social benefits are linked to minimum wage; BPC, Brazil's social benefits program, is offered to elderly and disabled people who earn less than one quarter of the minimum wage. The percentage of the population living in extreme poverty fell from 17 percent in 1990 to 5 percent at the end of the 2000s.⁴

However, the growth cycle experienced in the 2000s was not accompanied by growing labor productivity.⁵ It is possible for output to grow even if productivity growth is low simply due to the increased deployment of labor, which can be driven by increasing employment and labor force participation rates as well as demographic growth of the working-age population. This is what happened in Brazil in the high-growth decade.

The growth of the Brazilian domestic market, the vigorous expansion of employment and wages, the real increase in the minimum wage and the expansion of cash transfer programs led to a decrease in inequality never before seen in Brazilian contemporary history.

In the 1990s, GDP per capita and labor productivity grew together, whereas from the year 2000 a divergence began (**Figure 2**). In the period up to 2000, more than 90 percent of output growth was driven by labor productivity growth. In the 2001-2009 period, however, little more than half per capita GDP growth was explained by productivity gains.⁶ GDP growth with low levels of productivity growth is unsustainable in the long run. Employment rates and the size of the working-age population eventually reach a peak, at which point productivity gains are needed to drive economic growth and higher wages.

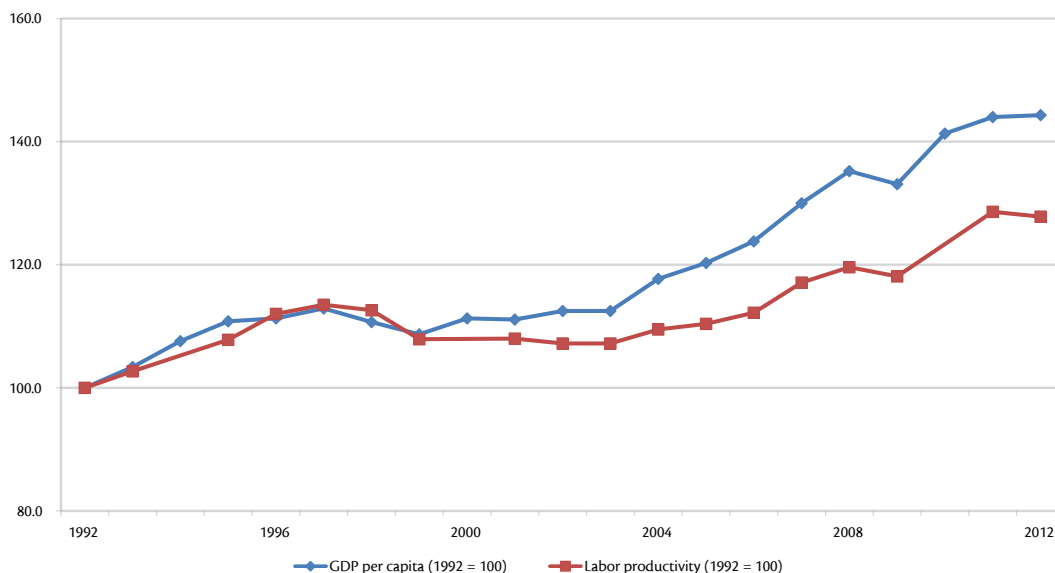
From 2001 to 2012 aggregate labor productivity grew by only 1.5 percent per year, but there were large variations between economic sectors. Productivity growth was high in agriculture, utilities and financial services, but it fell in manufacturing (**Figure 3**). The sectors with the highest increases in productivity growth saw less significant increases in employment. Moreover, their productivity gains had little influence on aggregate productivity growth. It was the sectors with sluggish growth in productivity –

especially construction and the services sector – that experienced the largest expansion of employment (**Figure 4**). This is a different picture compared with how industrialized countries developed.⁷

Therefore, once the economy experienced a downturn and investments were postponed,

labor market performance faltered. So did gains in minimum and average wages, which had underpinned the fall of inequality in the previous decade. However, since labor income and employment are generally lagging indicators, these trends remained positive until 2014, but since then Brazil has witnessed a reversal.

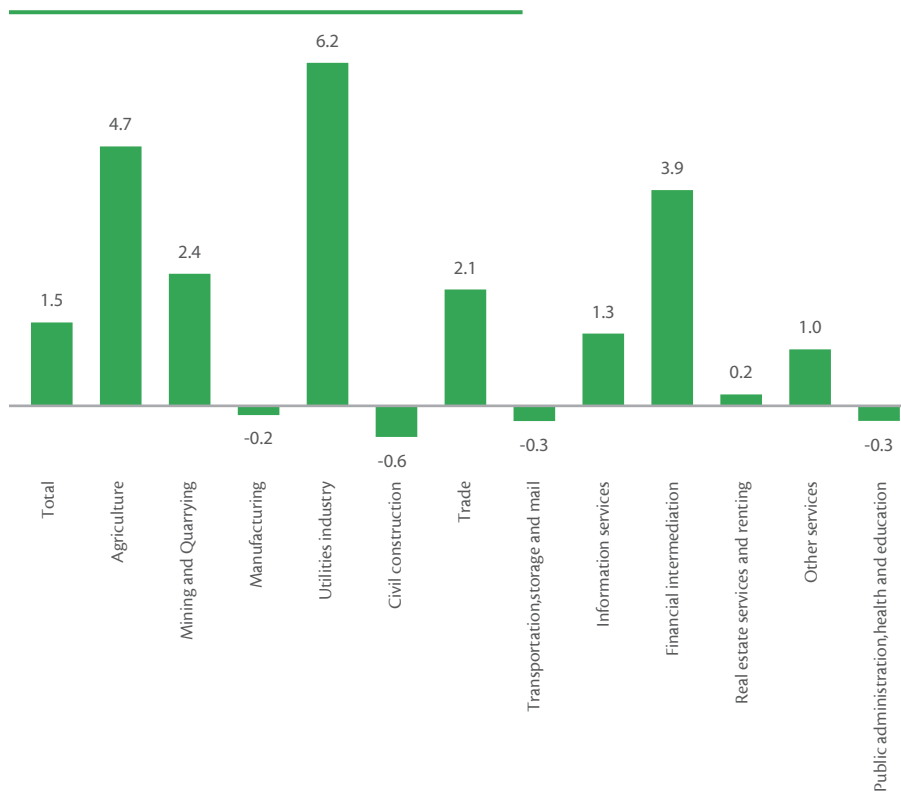
Figure 2
GDP per capita and labor productivity.
Brazil (1992-2012)



Source: IPEA, IBGE/SCN 2000 and IBGE/PNAD.

Figure 3

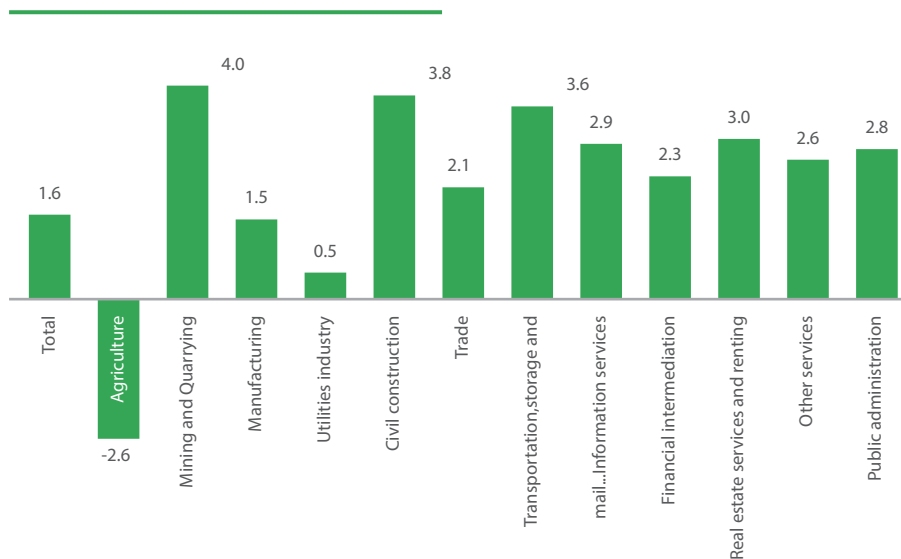
**Growth in labor productivity by industry (%).
Brazil (2001-2012)**



Source: G.C. Squeff and F. De Negri. 2014. Produtividade do trabalho e mudança estrutural no Brasil nos anos 2000.
In: De Negri, F.; Cavalcante, L. R. Produtividade no Brasil: desempenho e determinantes. (Brasília: ABDI / IPEA.)

Figure 4

Growth of occupied workers by sector (%). Brazil (2002-2012)



Source: G.C. Squeff and F. De Negri. 2014. Produtividade do trabalho e mudança estrutural no Brasil nos anos 2000. In: De Negri, F.; Cavalcante, L. R. Produtividade no Brasil: desempenho e determinantes. (Brasília: ABDI / IPEA.)

The role of the minimum wage in Brazil

Figure 5 depicts the long-term evolution of the real minimum wage. After an increase in its real value in the late 1950s, the country witnessed a downward trend between 1964 and 1994. A sharp recovery started in 1994 and was especially pronounced after 2005.

From 2005 to 2012 the minimum wage was one of the most crucial policies in ensuring a strong positive relationship between economic growth, income redistribution and social inclusion.⁸

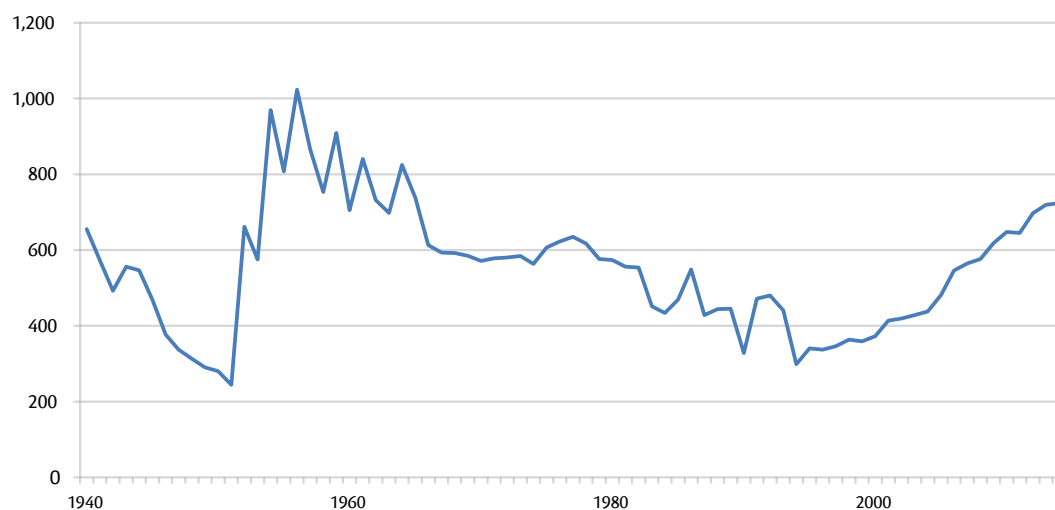
At present, the 1988 Federal Constitution guarantees a nationally unified minimum wage.

The current rules for setting the minimum wage were established in 2011.^{iv} The law stipulates that the percentage increase in minimum wage must equal the rate of inflation (National Consumer Price Index, or INPC) during the previous 12 months plus the real rate of GDP growth 2 years prior.^v For instance, with a GDP growth rate of just over one percent in 2012 and an inflation rate of just under six percent in 2013, minimum wage in 2014 rose 6.8 percent (GDP growth + inflation growth = minimum wage growth).

This formula establishes a predictable policy tool for the pro-cyclical increase of the minimum wage, which not only compensates for inflationary losses, but also reflects output growth. Prior to becoming law, it had been an official but non-legislated policy since 2005. Earlier this year, the National Congress approved its continuation for the next four years.

Due to the policy of tying the minimum wage to rising GDP in the 2000s, its value became closer

Figure 5
Trend in the National Minimum Wage, Brazil, 1940-2014 (in constant 2014 Brazilian Reals)



Source: IPEA

^{iv} Law No. 12,382, of February 25, 2011

^v The minimum wage regulation can be expressed in the following formula: $\Delta \text{minwage}_t = \Delta \text{INPC}_{t-1} + \Delta \text{GDPT}_{t-2}$, ($t=2012, 2013, 2014$)

to the average wage. The minimum wage was equivalent to 46 percent of the average wage in 2013, compared with 30 percent in 1999.

When we break down wages by type of employment – registered and non-registered^{vi} – the same pattern can be observed for both types of wage earners (**Figure 6**). However, for informal (i.e. non-registered) employees, the minimum wage is much closer to the average wage, especially in rural areas, since average wages for these workers are much lower than in formal employment. Given that the ratio of minimum wage to average wage is difficult to compare between employment groups, it is best to analyze how this ratio changes within each group over time.

Mirroring the formalization process that the Brazilian labor market underwent in the 2000s, the minimum wage became more important for informal employees. However, in 2013, 35 percent of unregistered wage workers still earned below

the minimum wage, with the figure reaching 44 percent among domestic workers (**Figure 7**). On the other hand, almost no registered workers in the private sector (only 1.4 percent) earned wages below the minimum as of 2013. And far more formal jobs were created in the 2000s as compared to informal jobs, due in part to more effective oversight by the Ministry of Labor and the growing power of unions.

From 2005 to 2012 the minimum wage was one of the most crucial policies in ensuring a strong positive relationship between economic growth, income redistribution and social inclusion.

Enforcement of the minimum wage in Brazil is actively promoted by the Labor Justice system, which reviews complaints filed for non-compliance with rules

set forth in the labor code, imposing fines on noncompliant employers and ordering payment of compensation to workers. In parallel, union leaders have played an important role in public administration and in shaping public opinion, increasing the influence of unions on decisions relating to labor rights.⁹

^{vi} In Brazil, registered wage earners have direct access to labor rights. The non-registered have access only indirectly in case they appeal to the Labor Courts, as the Constitution states these rights should be applied to all wage earners. Sometimes, in the literature, non-registered wage workers are referred to as informal workers.

Figure 6

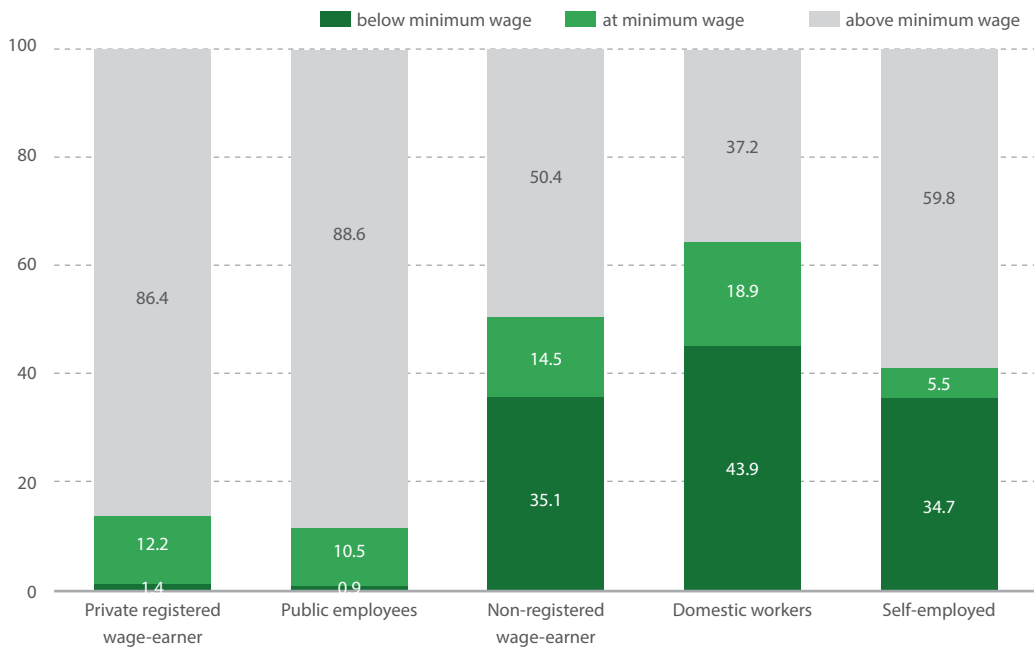
**Ratio of minimum to average wages.
Brazil, 1999-2013.**



Source: Prepared by the authors based on PNAD microdata.

Figure 7

**Occupied workers by minimum wage levels
and work status (in %). Brazil, 2013**



Source: Prepared by the authors based on PNAD microdata.

Wage inequality in Brazil

The rising minimum wage, in the context of job creation and increasing formalization of wage work, brought about a convergence of wage levels between and within economic sectors, regions and social groups.

The changes were most dramatic between 2001 and 2011, even though the trend can be traced back to 1995, when the purchasing power of the minimum wage started to increase.

To understand the role of characteristics like gender, race, region and education level, the researchers use a Theil index, enabling an analysis of the extent to which inequality is driven by these variables.^{vii} The analysis shows that during the first decade of the century in Brazil, social and geographic factors became less important as determinants of inequality.^{viii,ix} For example, wage inequality between men and women and between those with low and high levels of education became less important in explaining overall inequality.

Figure 8, which shows inequality trends for wages, labor incomes and per capita household income,

demonstrates that declining wage inequality was the main factor driving overall reductions in income inequality, as the fall in inequality was greater for wages than for labor income (which includes self-employed incomes) and per capita household income (which includes pensions, social assistance benefits and cash transfers).

This means that Brazil's minimum wage policy played a more central role in reducing inequality than the country's income transfer programs during the first decade of the century, even though this varies from region to region and from urban to rural areas.

Moreover, while the growth in registered jobs propelled the downward trend in wage inequality – as the minimum wage is almost fully enforced among registered workers – the minimum wage came to function as a standard for unregistered wage earners, too. This is demonstrated by the even faster decline of wage inequality among unregistered wage earners in the period 2005–2011 (**Figure 9**). In a booming labor market,

^{vii} A Theil index enables one to calculate the “within group inequality” as compared to “between group inequality.”

^{viii} CEBRAP/IHD. 2015b. *Patterns of income inequality in Brazil: recent evolution*, mimeo.

^{ix} CEBRAP/IHD. 2014a. *Labour market inequality in Brazil and India: concepts and methods*. Working Paper Series, N. 4. (Cebrap –IHD: São Paulo and New Delhi).

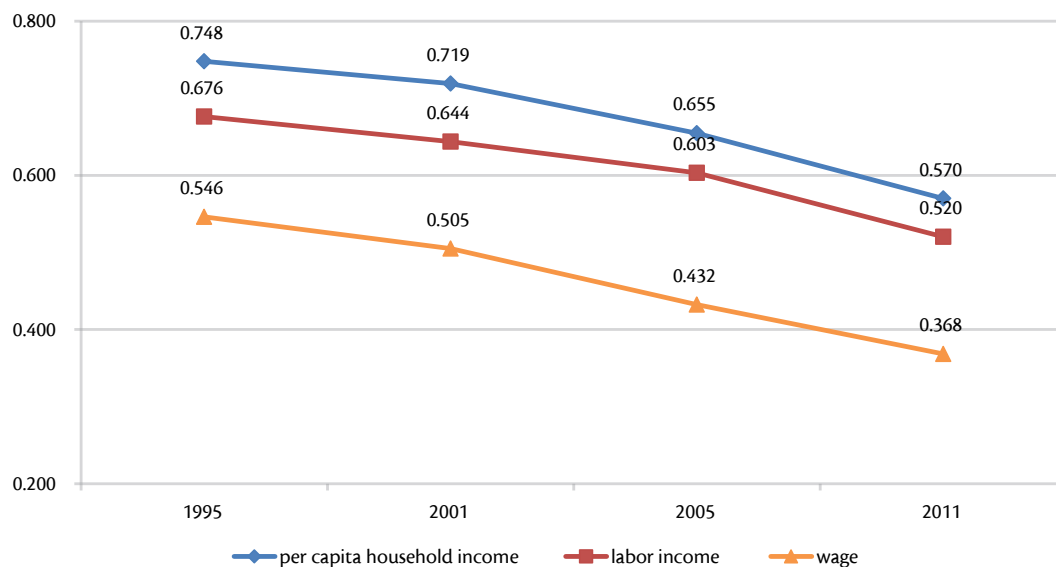
compounded by high turnover rates, paying the minimum wage has become almost a requirement in order to recruit less skilled but specialized workers, even when they are not registered.

but also with increasing wage levels. The active minimum wage policy is a key driver of this trend since it functions increasingly as a benchmark for employers, even in low-productivity sectors.

Contrary to the assumption that a higher minimum wage brings about a shrinking of the formal sector and an expansion of the low-wage informal sector, Brazil witnessed employment and wages rise in the formal economy. The informal economy saw much slower employment growth,

Another important feature of the wage pattern is increasing convergence between economic sectors and regions. Though the gap is still wide, this is remarkable in a country where heterogeneity across sectors and regions has been extreme throughout history, especially

Figure 8
Theil indexes for different types of income.
Brazil, 1995 to 2001



Source: Prepared by the authors based on PNAD microdata.

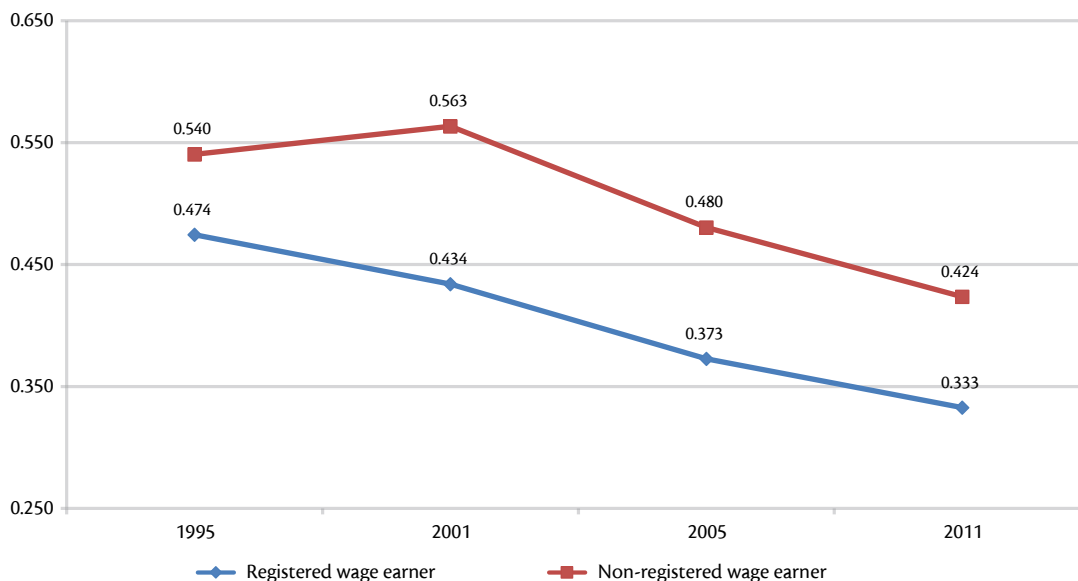
during the industrialization process from 1930 to 1980.¹⁰

Wage inequality has fallen in all sectors and most rapidly for construction and services, sectors that not only generated more jobs but also increased the share of registered wage earners in the years since 2000. In these sectors, average wages are not much above minimum wages, so a rise in the minimum tends to reduce sector-wise wage inequality.

In manufacturing, by contrast, most workers are paid far above the minimum wage, and the wage scale is much wider. The fall in wage inequality therefore was less. In agriculture, an altogether different trend can be observed: wage inequality is already low, and minimum wage is less often paid due to informality, so the rising minimum wage had little impact in terms of inequality reduction (Figure 10).

Figure 9

Theil indexes for registered and nonregistered wage earners. Brazil, 1995 to 2011



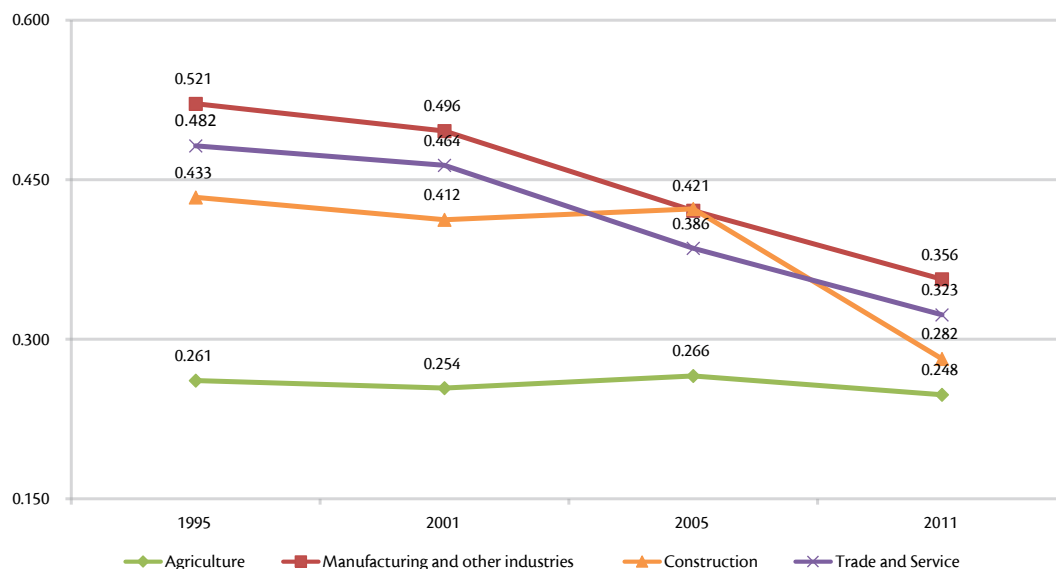
Source: Prepared by the authors based on PNAD microdata.

Another point, not shown in the figure, is that the gap between the wages of informal and formal employees (unregistered and registered) narrowed in all sectors. The same is true of the gap between average wages in lower-paying and lower-productivity sectors (agriculture, construction, trade and services) and average wages in manufacturing.

Wage inequality has fallen in all sectors and most rapidly for construction and services.

In terms of the regional differences, there was a remarkable shift. As **Figure 11** shows, the Northeast region, with the lowest GDP per capita in the country, saw the largest decline in inequality during the period 2001-2001. On the other hand, in the Southeast, the most developed region with a much higher GDP per capita, the reduction in inequality was less dramatic. While the Northeast was the most unequal region in

Figure 10
Theil indexes for wage earners by economic sectors. Brazil, 1995 to 2001



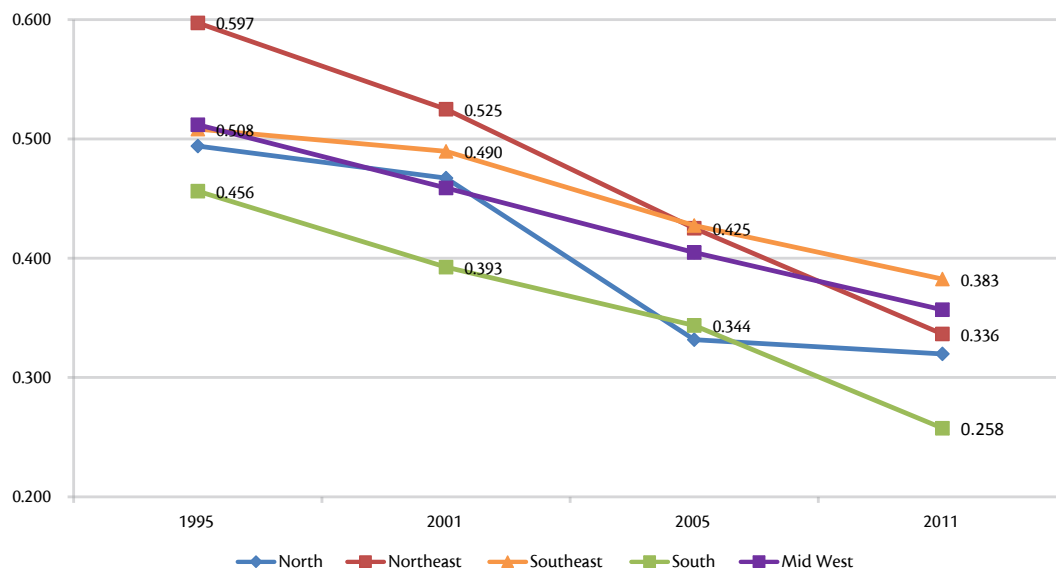
Source: Prepared by the authors based on PNAD microdata.

1995, the Southeast had taken over that spot by the end of the first decade of this century.

These data should be looked at with some caution. Self-employed workers are not considered, nor is the rural subsistence economy, both with a large percentage of the workforce in the poorest regions. The higher wage inequality for the most sophisticated regional economy of the country, the Southeast, reflects the concentration of higher

productivity activities (in manufacturing, services but also agriculture), which allows for a wider wage scale. Thus, the opposite trend – that is, a faster decrease of inequality for the richest region and a slower one for the poorest – is observed if we consider labor income (which includes all types of workers) or family per capita income^x. Furthermore, the gap between the wages in the Northeast and wages in the Southeast, even though narrowing, was still significant as of 2011,

Figure 11
Theil indexes for wage earners by regions. Brazil, 1995 to 2011



Source: Prepared by the authors based on PNAD microdata.

^x CEBRAP/IHD. 2014b. *Accumulation regimes, labour market and inequality: the Brazilian experience in the long-term*, mimeo.

with the average worker in the former earning only 60 percent of the average in the latter.

It is also worth mentioning that wage inequality fell most significantly among almost all disadvantaged groups – especially non-whites and the less educated – and also among women (**Table 1**). The minimum wage is responsible for this change as these groups have more wage earners receiving around the minimum wage. The growth of jobs was more concentrated at both ends of the wage scale for women as compared to men. At the same time, the female to male wage ratio, at over 0.8, was much higher than that between non-whites and whites, even

though the latter increased from 0.55 to 0.66 in the concerned period.

Considering education, wage premiums have fallen for all schooling levels, which is related both to the influence of the minimum wage and to an abundance of workers with secondary and tertiary education in a context in which productivity has remained stagnant. The wages of illiterate wage earners were 10 times lower than those for workers with college education in 2001, but fell to 4.2 times lower in 2011. The change is staggering even considering the fact that the size of the first group dropped sharply while the size of the second grew dramatically.

Table 1
“Within-Group” inequality, and ratio of average wages. Brazil (2001/2011)

	Theil Index 2001	Theil Index 2011	% ▲Theil Index 2001-2011	Wages Ratio 2001	Wages Ratio 2011	ratios
male	0.529	0.378	-28.6	0.855	0.834	female / male
female	0.451	0.388	-22.9			
whites	0.514	0.41	-20.3	0.552	0.659	non-whites / whites
non-whites	0.351	0.251	-28.5			
Without instruction	0.218	0.194	-10.8			
Incomplete Primary Ed	0.233	0.156	-32.9			
Complete Primary	0.258	0.166	-35.5	0.798	0.912	incomplete/ complete primary/ secondary
Secondary	0.337	0.229	-32	0.659	0.751	secondary / tertiary
Tertiary	0.403	0.404	0.1	0.329	0.387	

Source: Prepared by the authors based on PNAD microdata.

Conclusion and policy implications

Brazil, in the first decade of the 21st century, is a prime example of how an active minimum wage policy can lead to inequality reduction in the labor market. It is true that the gap between wages and productivity was high at the beginning of this period and that the macroeconomic conditions also aided the policy's success.

However, one of the main weaknesses of the growth regime was the stagnation of labor productivity. Job creation was concentrated in sectors with productivity that was low or not rising, impeding the sustainability of economic growth, job creation and inequality reduction.

This leads to the conclusion that for the downward trend in inequality to continue, an active minimum wage policy will not suffice. The same is true for an increase in social transfers.

These policy tools may prevent the emergence of a new growth model that fosters inequality – the type that characterized the Brazilian economy for most of the 20th century. But they need to be complemented with policies that address other economic and social woes. Resuming robust economic growth requires overcoming stagnant productivity – a pattern that may lead to a less positive performance in terms of job creation than was experienced in the last decade.

In this context, collective bargaining, higher investment in social policies – such as health, training, education, housing and basic infrastructure – and tax reform must become central elements of a new strategy to reduce inequality and improve the living conditions of the workers at the bottom of the social pyramid.

Endnotes

¹ L.F.Paula, J.L. Oreiro and F.A.C. Basílio. 2013. Estrutura do setor bancário e o ciclo recente de expansão do crédito: o papel dos bancos públicos federais. *Nova Economia* (BH) vol.23 no. 3.

² M.C. Cacciamali. 2011. Brasil un caso reciente de crecimiento económico con distribución de renta, *Revista de Estudios Empresariales*. Segunda época (Jaén), n. 1.

³ Instituto de Pesquisa Econômica Aplicada (IPEA). 2013. Duas décadas de desigualdade e pobreza no país medidas pela Pnad/IBGE. *Comunicados do Ipea*, n. 159.

⁴ S. Rocha. 2013. Indicadores de pobreza e de indigência. Accessed August 3, 2015. <http://www.iets.org.br/dados/>.

⁵ F. De Negri, L.R. Cavalcante. 2014. Os dilemas e os desafios da produtividade no Brasil. *In: De Negri, F.; Cavalcante, L. R. Produtividade no Brasil: desempenho e determinantes*. (Brasília: ABDI / IPEA).

⁶ L. R. Cavalcante, F. De Negri. 2014. Evolução recente dos indicadores de produtividade no Brasil. *In: De Negri, F.; Cavalcante, L. R. Produtividade no Brasil: desempenho e determinantes*. (Brasília: ABDI / IPEA).

⁷ M. Timmer. 2011. Structural change in advanced nations: a new set of stylised facts. *The Scandinavian Journal of Economics*, 113(1), p. 1-29; M. McMillan, D. Rodrik. 2011. Globalization, structural change and productivity growth. *NBER Working Paper*, n. 17143, Jun.

⁸ R.G. Osório, P.H.G.F. Souza, S.S.D. Soares, L.F.B. de Oliveira. 2011. Perfil da pobreza no Brasil e sua evolução no período 2004-2009. *Texto para Discussão*, n. 1647. (Brasília: IPEA); P. Baltar. 2015. Crescimento da economia e mercado de trabalho no Brasil. *Texto para Discussão*, n. 2036 (Brasília: IPEA); C.S. Dedecca. 2015. A redução da desigualdade e seus desafios. *Texto para Discussão*, n. 2031. (Brasília: IPEA).

⁹ A. Simão. 2009. Sistema de vigilância e fiscalização do trabalho no Brasil: efeitos sobre a expansão do emprego formal no período 1999-2007, *Boletim de Mercado de Trabalho* N. 59. (Brasília: IPEA)

¹⁰ A. Pinto. 1976. *Distribuição de Renda na América Latina e Desenvolvimento*. (Rio de Janeiro: Zahar, 2ª. Edição)

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