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THE IMPACT OF MINIMUM WAGES ON EMPLOYMENT AND INCOME INEQUALITIES – THE LATIN AMERICAN EXPERIENCE

WPŁYW PŁACY MINIMALNEJ NA ZATRUDNIENIE I NIERÓWNOŚCI DOCHODU – DOŚWIADCZENIA KRAJÓW AMERYKI ŁACIŃSKIEJ

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Summary: The minimum wage is one of the most basic policy tools to provide workers with an adequate income and reduce excessive income inequalities. Traditional models of the labour market predict, however, that setting the minimum wage above the market-clearing level will lead to lower employment, especially for the least efficient workers. Recent experience in Latin American countries is in this context quite confusing – in some of them the minimum wage rose significantly, reducing wage disproportions, but at the same time employment increased and the informal sector shrank considerably. The trends were not stable, with a marked reversal visible in the last few years. The aim of the paper is to identify mechanisms through which the minimum wage affects labour market aggregates and to assess its impact on employment and income inequalities. Empirical data is analyzed for the region's biggest economies.

Keywords: minimum wage, employment, income inequalities.

Streszczenie: Płaca minimalna jest jednym z podstawowych narzędzi zapewnienia pracownikom godnego dochodu oraz redukowania jego nadmiernych nierówności. Jednak tradycyjne modele rynku pracy przewidują, że ustalenie płacy minimalnej powyżej poziomu oczyszczającego rynek doprowadzi do spadku zatrudnienia, zwłaszcza w przypadku najmniej wydajnych pracowników. W tym kontekście niedawne doświadczenia krajów Ameryki Łacińskiej są zastanawiające – w niektórych z nich płace minimalne znacznie wzrosły, co doprowadziło do zmniejszenia dysproporcji wynagrodzeń, ale jednocześnie wzrosło także zatrudnienie, a sektor nieformalny istotnie się skurczył. Trendy te nie okazały się jednak stabilne i po kilku latach wyraźnie się odwróciły. Celem artykułu jest identyfikacja mechanizmów, poprzez które płaca minimalna oddziałuje na zmienne rynku pracy, oraz ocena jej wpływu na zatrudnienie i nierówności dochodu. Do analizy wykorzystano dane głównych gospodarek regionu.

Słowa kluczowe: płaca minimalna, zatrudnienie, nierówności dochodu.

1. Introduction

The minimum wage is one of the tools commonly used to provide workers with an adequate living and reduce earnings dispersion. The aim is to insure that workers and their families receive an income allowing them to satisfy at least their basic needs or, more ambitiously, to reduce income inequalities and promote social inclusion. Traditional models of the labour market, however, predict serious externalities: the least efficient workers are pushed out of their jobs, especially in the formal sector. The resulting rise in unemployment and the expansion of the informal sector undermine the crucial facet of the minimum wage – income disparities can in fact increase, and the situation of the most vulnerable groups deteriorates. On the other hand, if the assumptions of a perfectly competitive labour market are not satisfied (which for real-world labour markets is practically a certainty), the minimum wage does not have to affect employment. Additionally, it provides an important incentive to increase productivity and enhance the effectiveness of resource use.

The recent experience of some Latin American countries seems to confirm that the impact of the minimum wage on the labour market is more complex than the standard theory suggests. Although the minimum wage was raised significantly in some countries, the region noted increases in global employment rates as well as in formal employment, and labour income inequalities diminished. In the last few years, however, the trends seem to have been reversed. The aim of the paper is, firstly, the identification of the mechanisms through which the minimum wage affects employment and wage distribution. Secondly, an analysis and assessment of the current minimum-wage policies in Latin America.

The second part of the paper presents some theoretical aspects of the minimum wage – its impact on employment, unemployment and wage distribution in different models of the labor market. The third part describes the changes that recently took place in the labour market in selected Latin American economies, looking for correlations between the minimum wage and employment and income distribution. The last part concludes.

2. Theory of the minimum wage

The term *minimum wage* describes a complex set of regulations, which vary significantly between countries employing this policy tool. The minimum wage can be applicable in the whole country or in regions; it can be different for different branches of production or for workers of different ages; the minimum wage is usually set by the government, but it can also be negotiated collectively; the level of the minimum wage can be intentionally fixed or conversely, indexed to inflation or the average wage [Cahuc, Zylberberg 2004]. Empirical analyses tend to disregard these ‘institutional details’, possibly distorting the results.

The consequences of the minimum wage in a theoretical model depend crucially on assumptions concerning (a) agent homo or heterogeneity on both sides of the market; (b) competition between employers and employees; (c) existence and importance of labor market imperfections (e.g. limited mobility); (d) existence and costs of outside options for workers (e.g. unemployment benefits, migration) and employers (e.g. possibility to move production abroad).

2.1. The impact of the minimum wage on employment and unemployment

In models of competitive labour markets the worker's wage equals her marginal product; setting a wage above this level lowers labour demand until the marginal product rises to the higher wage. Consequently the minimum wage removes the least productive workers from employment, causing simultaneously a fall in employment and a rise in unemployment (especially if higher wages encourage activity). This effect does not have to appear, however, if producers have some degree of monopolistic power in the product market; then, instead of reducing employment, they can (a) lower their markup, (b) transfer some part of the additional labour cost to consumers, (c) undertake actions to improve organization and raise productivity [Draca et al. 2011].

Some models assume a monopsonic influence of employers on wages[1] which causes the wage to be set below workers' marginal productivity, equal instead to the value of the workers' outside option [Engbom, Moser 2018]. In this setting, the introduction of the minimum wage does not cause a fall in employment but a change in the division of the producer's rent – firms' profits decrease and the labour share in national income rises [Draca et al. 2011]. It does not exclude shifting at least a part of the costs to consumers.

Some of the search and matching models [Mortensen, Pissarides 1999; Nickell, Layard 1999] lead to similar conclusions: if generous benefits discourage job search and increase unemployment by raising the reservation wage, then higher minimum wages counterbalance this effect and can in fact lead to lower unemployment[2]. Possibly important is also the indirect positive impact of higher wages on labour productivity [Manning 2003] as well as consumption, aggregate demand, output and employment [Maurizio 2015].

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[1] According to Maurizio [2014], a monopsonic impact on wages does not require the firm to have monopolistic power in the product market; the monopson can stem from labour market frictions, e.g. costs of mobility or improving/changing qualifications. Similarly Junankar [2014] points out that workers' diversity, asymmetric information and heterogeneous preferences severely limit the competition in the labour market, giving employers a degree of *de facto* monopolistic advantage.

[2] However, if the minimum wage is set above the reservation wage of some of the workers, it will exclude a certain proportion of job offers that would have been accepted. Consequently it will extend the average unemployment duration and increase the unemployment rate.

If the impact of the minimum wage on employment and unemployment is difficult to determine *ex ante*, there is no doubt that minimum wages modifiy the structure of employment: they let the firms choose the most productive workers, at the same time reducing the employment opportunities of the least efficient ones. This affects mostly women, the young, the elderly, the low-skilled, minorities – they usually receive lower wages than prime-age males, which makes the minimum wage binding for those groups [Nickell 1992].

2.2. The impact of the minimum wage on earnings distribution

The very nature of the minimum wage means that it should limit workers' income disproportions by cutting off the lowest end of wage distribution (wages below the minimum). The impact of the minimum wage on earnings and total income distribution, however, is more complicated. First of all, an increase in wages does not translate directly into a household's income[3]. Secondly, a binding minimum wage in low-paying jobs strengthens the bargaining position of better remunerated workers [Teulings 2002], thus transforming the whole wage distribution. There are other reasons for this phenomenon: firms try to prevent changes in relative wages over their wage bill; a fall in relative wages in the higher end of the firm's wage distribution may cause more productive workers to withhold effort[4] or quit. They also try to replace the least productive employees, which raises demand for better remunerated workers (as well as capital and technology). Additionally, high minimum wages reduce frictional wage dispersion (identical workers earning different wages in different firms) [Engbom, Moser 2018].

Maurizio and Vázquez [2016] point out that minimum wages affect wage distribution through two main channels: the already mentioned truncation effect – removing the least productive jobs – and the censoring effect: increasing wages of workers whose earnings were below the current minimum. Both effects flatten the wage distribution and raise the average wage[5]. In the case of truncation, however, the improvement in wage distribution is accompanied by the deterioration in total income distribution, especially between workers and the unemployed[6]. A similar mechanism

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[3] In his classic article Gramlich [1976, p. 444] wrote: 'Even casual reflection suggests many reasons why the correlation between an individual's wages and family income would not be perfect: irregular hours, low-wage secondary workers in high-income families, varying family sizes and numbers of earners per family, varying amounts of unearned income, and so forth'.

[4] Experiments conducted by Brandts and Charness [2004] confirm that introducing the minimum wage causes workers to offer less effort at a given wage level.

[5] The rise of the average wage is lower than the increase in the minimum wage because the loss of some jobs restricts the workers' outside options.

[6] There is also a possibility of increasing disproportions between the formal and informal sector if the minimum wage is not binding in the latter – which does not have to be true; the problem will be discussed in more detail below.

works through reservation wages: the minimum wage influences what is considered a 'fair' wage, at least at the bottom end of the distribution[7].

Introducing/increasing the minimum wage is usually justified by the need to provide workers with an income allowing them to finance at least basic consumption. However, the effectiveness of the minimum wage as a poverty-reducing tool remains debatable, especially in developing countries [World Bank 1995]. Taking into account a big share of the informal sector, the final impact of the minimum wage on poverty and income distribution depends on whether (and to what extent) the minimum wage is binding in unregistered employment. In models of a segmented labor market, workers who lose employment in the formal sector move to the informal one, where the increase in labour supply pushes wages downwards. Consequently some of the least-earning workers will receive even lower remuneration. In reality, however, the wage change in the informal sector depends on the existence of outside options for workers (perceived chances of vacancies appearing in the formal sector, unemployment insurance, social benefits) – they can significantly limit the wage decrease [Gramlich 1976]. Additionally, Maloney and Nuñez [2001] believe that the minimum wage will be binding in the informal sector, even if it is not enforced: it is an important indicator of a 'fair wage', what they call a 'lighthouse effect'.

The analysis above allows to point out several conditions under which an adequately high minimum wage can improve income distribution: (a) the minimum wage is binding in the informal sector as well as in the formal sector; (b) it is set above the poverty threshold; (c) the number of households profiting from the minimum wage is higher than the number of households that suffered losses because of it (e.g. losing a job).

3. Minimum wages in Latin American countries

In Latin America minimum wages are used commonly, although the design of the instrument differs in its details. According to law 16.459 from 1964, in Argentina the minimum wage should provide workers with adequate nourishment and clothing, a proper dwelling with sanitation, access to education, transportation and vacation [Maurizio 2014]. In Brazil the labour code, adopted as early as 1943, included the minimum wage, confirmed later in Brazil's Constitution in 1986. The universal minimum wage is set at federal level, calculated every year according to a formula involving last year's inflation rate and GDP growth in the previous two years.

[7] Falk et al. [2005] discuss a spillover effect stemming from equity considerations that pushes the effects of the minimum wage further up the wage bill: 'For example, paying a wage of x may reveal a fair intention before the introduction of the minimum wage because the firm may have the opportunity of paying even less; after the introduction of the minimum wage of $y \approx x$, however, the same wage x may be considered less generous because the firm has to pay y anyway' [p. 4]. Consequently, if the firm increases wages at the low tail of the distribution, a lack of wage increases higher up the wage ladder would be considered unfair.

In practice, however, negotiations between social partners are binding [Engbom, Moser 2018]. In Chile a minimum wage for public sector employees was introduced in 1937 and extended to cover all workers in the 1970s [Maurizio 2014]. Article 123 of the Mexican Constitution defines the minimum wage as an 'adequate remuneration to meet the normal material, social and cultural requirements of a head of household, and to provide for the compulsory education of their children' [Moreno-Brid et al. 2016, p. 115].

3.1. The impact of the minimum wage on employment, unemployment and formality

After a series of crises at the turn of the centuries, Latin America was hit again by the GFC, reflecting on the labor markets. Figure 1 shows a marked increase in unemployment around 2009, coupled with a more moderate fall in employment, suggesting an increase in economic activity (an influx of secondary workers). The situation stabilized relatively quickly – by 2011 the effects of the crisis are no longer visible. Since 2015 the labour market outcomes have deteriorated significantly in Brazil and, to a lesser degree, in Argentina. Only in Mexico the positive trend continued, with almost no changes in Chile. Apparently changes in the labour markets can be mostly explained by GDP dynamics.

Another factor possibly affecting employment and unemployment in the region is the minimum wage. Its levels in the last two decades of the 20th century were quite volatile (Figure 2). In Mexico, an ambitiously set minimum wage fell steadily from 1981 to 2001, later remaining practically unchanged; its level was kept intentionally low as an anti-inflationary tool. In Brazil after a marked decline in the 1980s, recovery started around 1990; after the global crisis the government decided to keep up the increase to support private consumption. Chile followed a very similar, if slightly flatter, trajectory. In Argentina no clear trend is visible until a sharp increase starting after the debt crisis (2001-2003); data for the last few years are missing.

Interestingly, in both Argentina and Brazil the significant increase in the minimal wage coincided with the increase in formal employment. Between 2004 and 2014 the share of the formal sector in employment rose by almost 15 and 12 percentage points, respectively (Table 1). In Chile the change is smaller, albeit starting from a much higher level. Mexico lags behind with more than half of employment still informal and no clear improvement in recent years, even though the minimum wage is low and stable.

As reported by Maurizio [2015, p. 1055], the increase in formality of employment in Brazil was caused in 54% by the formalization of pre-existent jobs (in situ formalization), in 10% by moving workers from an informal job (unregistered wage employment or non-wage employment) to a formal one, and in the remaining 36% by formally employing a person previously unemployed or inactive. That means that more than half of the increase in formal employment concerns workers already holding the very same jobs which were not formally registered (the rest reflects favorable economic conditions and the creation of new jobs).

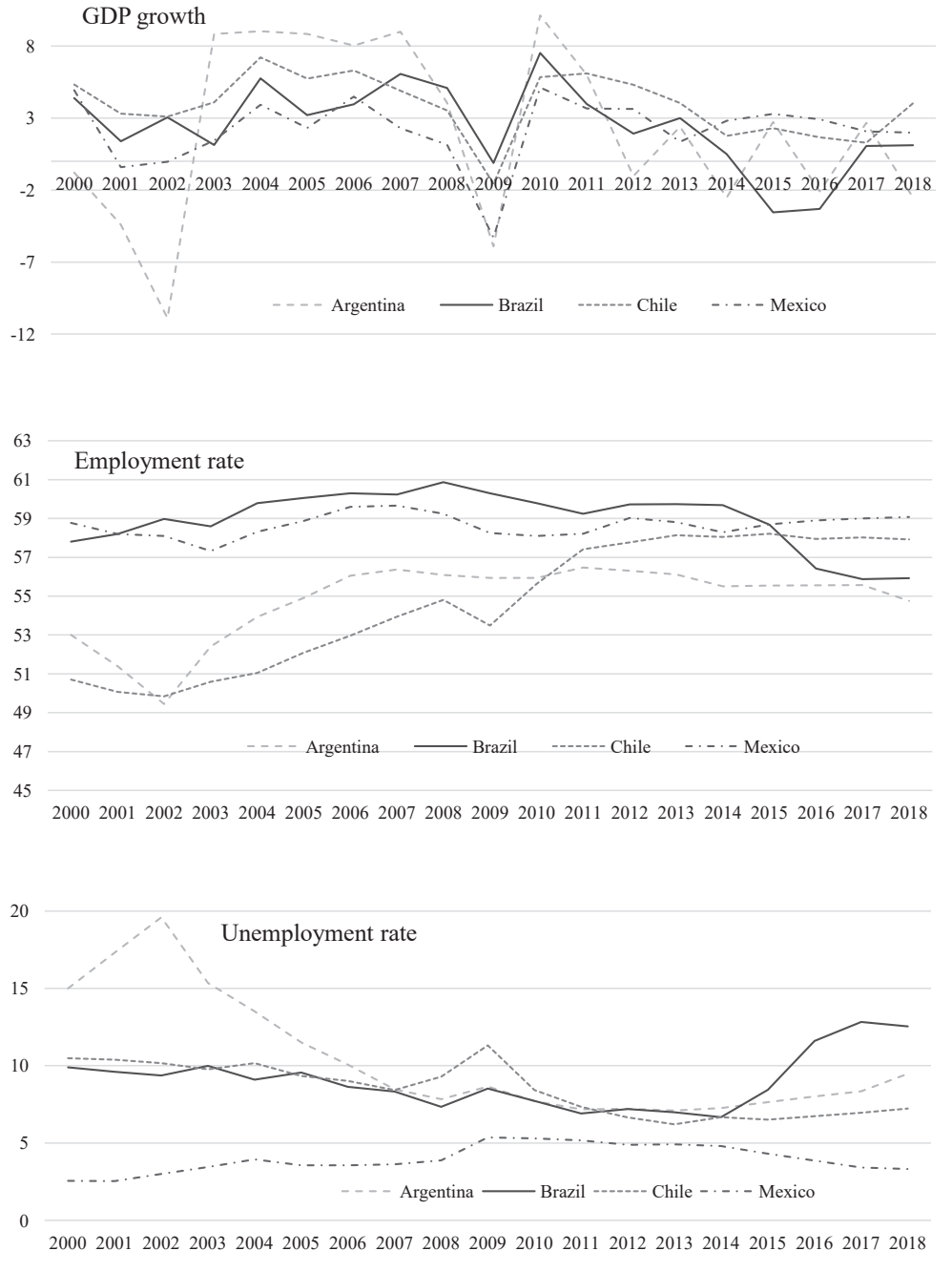


Fig. 1. Changes in GDP growth (%), employment rates (% of population 15+) and unemployment rates (% of economically active population), 2000-2018

Source: author's own elaboration based on the World Bank's World Development Indicators.

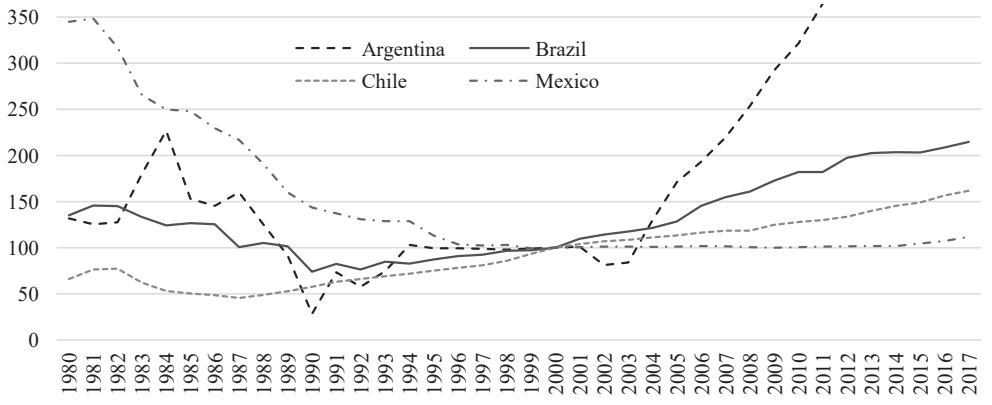


Fig. 2. Real minimum wages in Latin America, 1980-2017 (2000 = 100)

Source: author's own elaboration based on ECLAC-CEPALSTAT data.

Table 1. The share of formal employment (covered by social insurance) in wage employment (%), 2004-2014

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Argentina	52	53.7	56.8	59.7	63	64.1	65.1	65.8	65.7	66.6	66.8
Brazil	65.7	66.9	67.5	69.5	70.8	71.7	n.a.	75.9	76.2	77.4	77.7
Chile	77.1	n.a.	78.7	n.a.	n.a.	74.9	n.a.	82.2	n.a.	82.8	n.a.
Mexico	39.2	38.5	40.2	n.a.	44.2	n.a.	41.6	n.a.	40.0	n.a.	42.7

Source: [http://interwp.cepal.org/sisgen/ConsultaIntegrada.asp?idIndicador=3137&idioma=i].

Maurizio [2015] emphasizes that the probability of transition into the formal sector is not uniform. Males, qualified workers, full-time employees, employed in bigger firms, workers with longer tenure have better chances – not surprisingly, because they already hold a stronger position in the labour market. Formal jobs are also much easier to reach for the unemployed (or formerly inactive) than for the informal workers, which puts in doubt the usual assumption that any employment, even informal, allows for human capital accumulation and the forming of social networks that give access to information about vacancies, consequently increasing the worker's chances to find a better job. On the contrary, Maurizio [2015, p. 1058] finds that 'informality produces a greater scarring effect than unemployment', possibly indefinitely excluding a worker from the formal sector.

3.2. The impact of the minimum wage on wages and income distribution

The effects of the minimum wage are felt not only at the bottom end, but throughout the wage distribution – Engbom and Moser [2018] estimate that the impact reaches up to 80th percentile. As Fairris and co-authors [2006, p. 1] point out, the minimum wage

often serves as a starting point for wage negotiations: 'wages are commonly set at multiples of the minimum wage', even in the informal sector. Figure 3 shows the slow (with the exception of Argentina, for which data are incomplete) but steady increase of real average wages over the whole period 2000-2017, with slopes closely following minimum wage increases, although the rise is stronger in Chile than in Brazil.

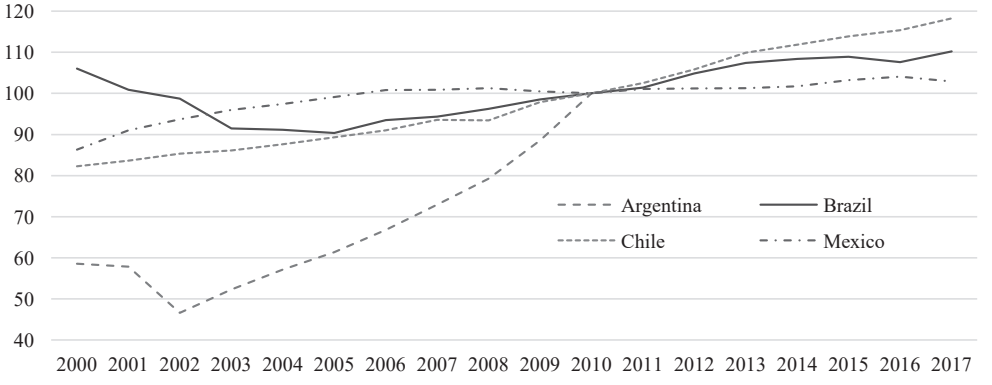


Fig. 3. Real average wages in Latin America, 2000-2017 (2010 = 100)

Source: author's own elaboration based on ECLAC-CEPALSTAT data.

Importantly, in most countries in the region the minimum wage seems to be binding in the informal sector. In Argentina around 8% of all workers receive a wage below the legal minimum (although with a huge difference between 2% in formal employment and 27% in the informal sector), while in Brazil only 1.3% and 3% in Chile [Maurizio 2014, p. 29]. This suggests that minimum wage increases have a real potential to reduce poverty and flatten income disproportions.

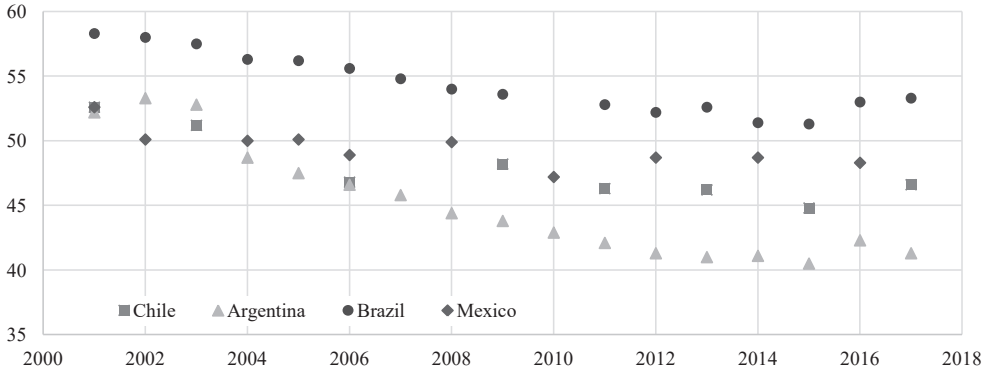
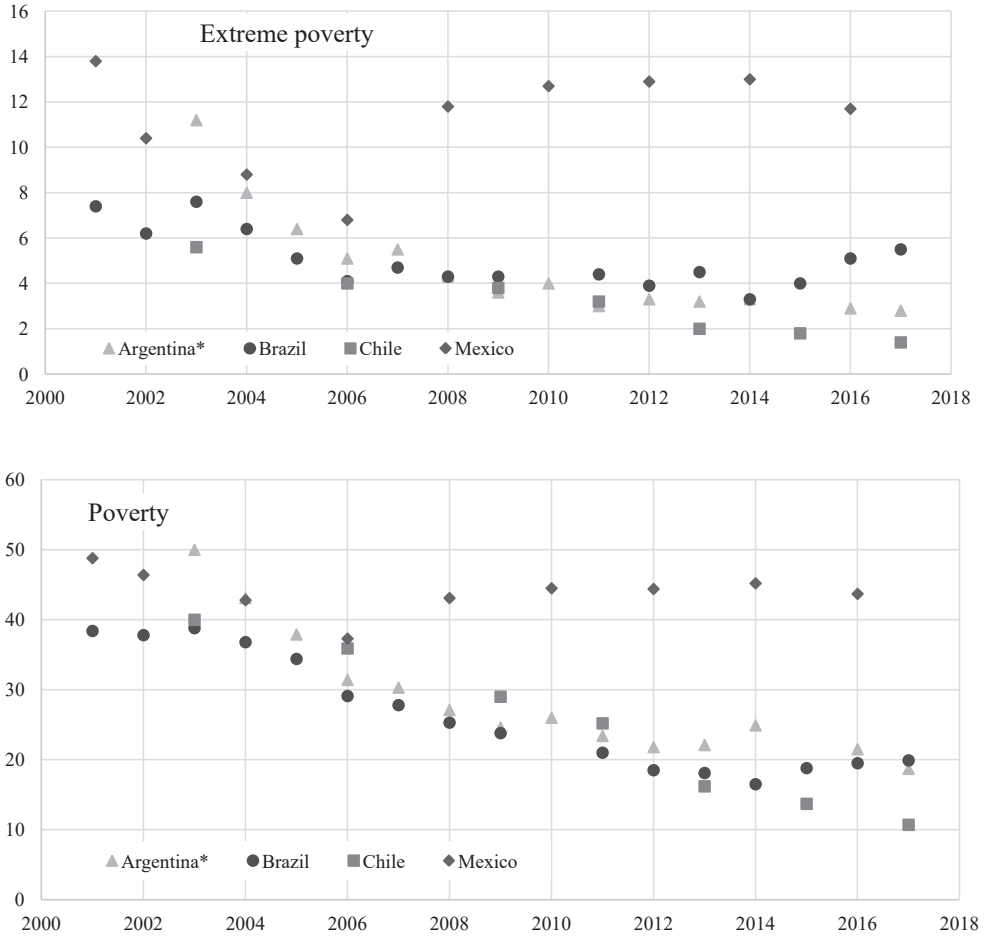


Fig. 4. Changes in the Gini coefficient in Latin America, 2001-2017

Source: author's own elaboration based on ECLAC-CEPALSTAT data.

Changes in households' income are for the most part determined by employment and wage dynamics [Maurizio 2015]. As already mentioned, employment has been on the rise since the beginning of the new century, at the same time the minimum wages have been rising in real terms, followed by average wages. As a consequence, high values of the Gini coefficient, typical for the region, fell in all countries until 2014 (Figure 4). After 2015, however, the trend seems to have been reversed (with the possible exception of Mexico, for which data are unfortunately fragmented) – this again follows changes in the labour market: slower growth or even a decline in employment rates.



* Urban areas.

Fig. 5. Changes in poverty rates in Latin America, 2001-2017

Source: author's own elaboration based on ECLAC-CEPALSTAT data.

Assessing the impact of minimum wages on poverty is difficult due to lack of comparable data – those in Figure 5 show the percentage of population living below the extreme poverty and poverty thresholds, but the thresholds themselves are defied at the national level. In Argentina and Brazil the poverty indicators mirror the Gini coefficient: they fell significantly between 2000 and 2013, then again started to rise. Chile managed to keep the downward trend during the whole period and practically eliminated extreme poverty (1.4% of the population), reducing the poverty rate to 10.7% in 2017. The situation is much worse in Mexico, with more than 40% of the population living below the poverty line and almost 12% extremely poor. Moreover, after a significant fall of both indicators between 2000 and 2006, the rates grew again afterwards. The latest available data (2016) show a slight improvement, possibly indicating another change of the trend, if so it would have been caused by an increase in employment rather than in wages.

The fall in poverty is at least partly due to increases in wages and in employment rates, but other factors have contributed. Some countries use conditional cash transfers targeted at families with children (Plan Familias in Argentina, Bolsa Familia in Brazil, Progresa/Oportunidades in Mexico), most actively seek to improve access to social security, especially old-age pensions (publicly funded 'solidarity pension' in Chile) [López-Calva, Lustig 2010]. There is also a marked improvement in the coverage and quality of education [Campos-Vázquez 2013; Alvarez et al. 2017]. Demographic change is important as well, with lower dependency ratios and lower fertility enabling even poorer families to increase human capital accumulation [the World Bank 2012].

4. Conclusion

As Gramlich [1976, p. 410] pointed out long ago, minimum wages disturb relative prices and therefore limit economic efficiency, however the same can be said for all forms of income redistribution. The question is whether the benefits (i.e. lower income inequalities) justify the efficiency loss. Recent experience in Latin America suggests that minimum wages per se do not need to worsen the labour market results. In the first decade of the 21st century real wages grew along with formal employment, and income inequalities measured by the Gini coefficient fell significantly in most of the region; the situation deteriorated after 2014 due mostly to the worsening economic conditions.

More convincing is the positive impact of the minimum wage on income distribution and poverty reduction, although it was only one of the tools used by the governments. A case in point is Mexico: relatively high employment and by far the lowest unemployment rate are not enough to bring down poverty, significant wage increases are necessary. Other countries' experience suggests, however, that simply raising the minimum wage works only in the short term – something all politicians should keep in mind.

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