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The growth-employment-poverty nexus in Latin America in the 2000s: Peru country study

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The growth-employment-poverty nexus in Latin America in the 2000s

Peru country study

Guillermo Cruces,¹ Gary Fields,² David Jaume,³ and Mariana Viollaz⁴

September 2015

Abstract: The Peruvian economy performed exceptionally well between 2000 and 2012, with a growth performance that placed the country well above the regional average and an improvement in all labour market indicators. The economy suffered a slowdown as a consequence of the international crisis of 2008, but Peru sustained positive GDP growth rates during that episode and had only a small reduction in GDP per capita. The only labour market indicators impacted by the international crisis were the employment structure by educational level and the percentage of registered workers which suffered a slowdown in their improving trends.

Keywords: Peru, Latin America, inclusive growth, labour market, poverty

JEL classification: O15, J01, J30

Figures and tables: Provided at the end of the paper.

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1 Introduction

Latin America in the 2000s witnessed an unprecedented period of growth with poverty and inequality reduction. The region also suffered from the economic crises in Europe and the United States from 2007/08 onwards.

Economic development has been defined as a widespread improvement in the material standards of living of a country's individuals. Economic growth is defined as an increase in the total amount of goods and services produced in an economy.

This paper on labour markets and growth in Peru since 2000 is one of sixteen studies of Latin American countries, each of which aims to answer the following broad questions: Has economic growth resulted in economic development via improved labour market conditions in Latin America in the 2000s, and have these improvements halted or been reversed since the Great Recession? How do the rate and character of economic growth, changes in the various labour market indicators, and changes in poverty relate to each other?

More specifically:

- What was the country's economic growth experience?
 - Characteristics of economic growth: breakdown by sector (agriculture, industry, services).
- How have the following indicators of labour market conditions changed in the course of each country's economic growth?
 - 1. Employment and unemployment:
 - a. Unemployment rate, using International Labour Organization definition.
 - b. Employment-to-population ratio.
 - c. Labour force participation rate.
 - 2. Employment composition:
 - a. Occupational group—professional, managerial, and clerical, etc.
 - b. Occupational position—wage/salaried employee, self-employed, unpaid family worker, etc.
 - c. Sector of employment—agriculture, manufacturing, services, etc.
 - d. Education level—low, medium, high.

- e. Registered/unregistered with the nation's social security system.
- 3. Labour market earnings, real:
 - a. Overall.
 - b. Disaggregated by gender.
 - c. Disaggregated by age (youth/non-youth).
 - d. Disaggregated by occupational group.
 - e. Disaggregated by occupational position.
 - f. Disaggregated by sector (agriculture etc.).
 - g. Disaggregated by education level (low, middle, high).

The answers to the preceding questions are by no means obvious. Claims have been made that economic growth in Latin America has been jobless, that productivity has grown at the expense of employment, and that Latin America, having even greater economic inequality than the United States, may have been following the US's course of rising incomes for those at the very top of the income distribution and stagnating or even falling incomes for the great majority, especially the poor. It has also been claimed that Latin America is caught in a middle-income bind, squeezed between the advanced economies on the one hand and emerging economies, especially China, on the other.

Recent evidence has shown that economic growth generally leads to an improvement in labour market conditions and reductions in poverty within developing countries (Fields 2012). The relatively scarce evidence for Latin America, however, indicates some heterogeneity at the country level. In the case of Argentina, the strong growth that followed the economic meltdown of 2001–02 was accompanied by large employment gains and increases in labour earnings, with higher gains (in relative terms) for less skilled workers. This process led to a large reduction in poverty in the 2003–06 period (Gasparini and Cruces 2010). In Brazil, economic growth during the period 1996–2004 was relatively low. In this context, unemployment remained high and labour earnings low, while poverty increased (Fields and Raju 2007). Nicaragua also experienced economic growth during the period 2001–06, and although there were increases in employment levels, overall poverty did not fall significantly (Gutierrez et al. 2008). The 2000–06 period of economic growth in Mexico was accompanied by improvements in employment composition, rising real labour earnings, and falling poverty, although the country also experienced rising unemployment levels in those years (Rangel 2009). The relatively long period of economic growth in Costa Rica (1976–2000) took place with increases in labour income, a reduction of employment in agriculture, and improvements in education, with a reduction in poverty levels (Fields and Bagg 2003). Finally, the period of economic growth in Colombia between 2002 and 2011 led to a reduction in unemployment and poverty levels (Ham 2013). This mixed evidence indicates that the growth-employment-poverty nexus is fairly complex and the experiences of Latin American countries are far from homogeneous.

Limited evidence is available on the mechanisms underlying the growth-labour markets-poverty nexus in Latin America. For instance, a World Bank (2011) study finds that the increase in men's labour income was higher than that of women's in the 2000s, and that this was the most important factor in lifting households out of poverty, even though World Bank (2013) shows that the increase in the labour force over this period was mainly led by women. Inchauste (2012) reports that job-related events were the main escape route from poverty for Latin American households over the same period, and these events included household heads getting a new job, other family members starting to work, and those employed achieving higher labour earnings than before.

Overall, previous studies generally show a positive association between economic growth, improvement in labour market indicators, and reduction in poverty in Latin American countries. However, the tightness of these relationships is not always clear from these studies. Moreover, these regional aggregates mask the heterogeneity at the country level, which implies that little can be said about the underlying mechanisms at play. This paper on Peru is one of sixteen case studies which, taken together, will allow us to separate and identify country-specific from region-wide factors in the relationship between the economy's overall performance and labour market outcomes in the decade of 2000s.

2 Data and methodology

All the statistics in this paper are obtained using microdata from the Encuesta Nacional de Hogares (ENAHO), from 2003 to 2012. The nationwide surveys were incorporated into the SEDLAC—Socio Economic Database for Latin American and the Caribbean (CEDLAS and the World Bank 2014); three of the authors of this paper were involved in this project at CEDLAS (Center for Distributive, Labor, and Social Studies), Universidad Nacional de La Plata in Argentina. The ENAHO has national coverage. The survey's sample size has increased over time; it went from 12,580 households and 56,944 persons in 2003 to 25,091 households and 101,548 persons in 2012 (Table 1). Despite changes in the sample size, the ENAHO have always been representative of the total population of the country. Two important changes were implemented in the Peru household surveys in 2003. First, the weighting scheme was changed. Second, an imputation procedure was implemented for income variables with missing values. These changes prevent us from making comparisons with years previous to 2003. As a consequence, we restrict our analysis to the period 2003–12.

For this study, we processed the microdata from Peru to construct time series of comparable data for a wide range of labour market and income distribution indicators. The resulting indicators are compiled into a large number of tables and figures, provided at the end of this paper, which form the basis for the text that follows.

Several definitions and classifications are used in order to assess whether the labour market has improved or deteriorated. Unemployment is defined as usual, i.e. the share of unemployed persons over the economically active population. A person is unemployed if s/he is 15 years old or more and during the reference period (one week in the Peruvian survey), s/he was without work, available for work and seeking work. Youths are those between 15 and 24 years old, while adults are those between 25 and 65 years old.

Occupational groups are defined according to the following classification:¹ management; professionals; technicians and associate professionals; clerical; service and sales workers; agricultural, forestry and fishery workers; craft and related trades workers; plant and machine operators and assemblers; elementary and armed forces. Peru has made use of its own classification to define occupations. Some adjustments were made to the classification system used in Peru's household surveys to construct the categories listed above. An improvement in the labour market would be implied by a decrease in the share of low-earning occupations and an increase in the share of high-earning occupations.

The occupational position is classified into four categories: employer, wage/salaried employee, self-employed, and unpaid worker. Given the nature of labour markets in Latin America, the analysis of the employment structure according to occupational position will identify a decrease of self-employment and an increase in wage/salaried employees as an improvement in the labour market.

The sector of employment was divided into: primary activities; low-tech industry; high-tech industry; construction; commerce; utilities and transportation; skilled services; public administration; education and health; and domestic workers. When looking at the sectoral distribution of employment, an improvement in the labour market is implied by an increase in the share of the sectors with higher earnings.

Turning now to the educational level of employed workers, we define three categories for the analysis: low (eight years of schooling or less); medium (from nine to thirteen years of schooling); and high (more than thirteen years of schooling). An increase in the education level of the employed population is considered as an improvement in the labour market as the share of workers that are expected to receive high levels of earnings increases and the share of workers with low earnings' levels decreases.

We also classify employed workers according to whether they are registered with the social security system or not. We assume that it is better for employed workers to be registered, so an increase in this indicator will be interpreted as an improvement in the labour market.

Labour earnings are expressed on a monthly basis in 2005 purchasing power parity (PPP) dollars, and higher earnings represent an improvement in the labour market. We use the per capita household income to compute poverty and inequality statistics. Household income is the sum of labour income plus non-labour income; included in non-labour incomes are capital income, pensions, public and private transfers, and the imputed rent from own-housing.

Poverty rates are estimated considering the national lines for moderate and extreme poverty. We compute the poverty headcount ratio for each. We also calculate the share of working poor households (those with at least one member employed and a per capita family income below the moderate poverty line), and the poverty rate according to the international poverty lines of 4 dollars-a-day and 2.5 dollars-a-day. Income inequality is calculated using the Gini coefficient of per capita household income and labour earnings.

¹ This is the International Standard Classification of Occupations of 2008 (ISCO-08) at one digit level.

3 Empirical results

The Peruvian economy performed exceptionally well between 2000 and 2012 with a growth performance that placed the country well above the regional average. The economy proved highly resilient in response to the global economic crisis of 2008. The country suffered a slowdown in 2009 and recovered quickly in 2010 (Figures 1 and 2).

During the period 2000 to 2012, the Peruvian economy had one of the highest growth rates in Latin America and experienced rapid economic growth by the region's standards. GDP per capita increased by 71.1 per cent, placing Peru's growth performance at twice the average of 32.6 per cent for the eighteen Latin American countries during the same period. GDP (measured at PPP dollars of 2005) grew by 97.3 per cent, and GDP per employed person rose by 45.5 per cent. The annual growth rate of GDP per capita was 4.4 per cent, and it varied from a minimum of -1.2 per cent in 2001 to a maximum of 8.6 per cent in 2008 (Table 2). Peru suffered an episode of slow growth at the beginning of the period analysed, between 2000 and 2001, as a consequence of the Russian crisis, which led to a strong reduction in capital inflows to the country, and declining terms of trade (Mendoza Bellido 2013). Two factors form the basis for Peru's economic expansion from 2002 to 2012. First, growing investment, a higher rate of private consumption, and returning capital inflows fuelled the economy. Second, a favourable international environment, characterized by growing foreign demand for Peruvian products and a prolonged period of improvements in its terms of trade, lay the grounds for considerable export growth. Between 2002 and 2009, Peruvian exports grew at an average annual rate of 18.3 per cent. This was driven by an increase in both traditional and non-traditional exports (Guerra 2012). But, while the volume of Peru's traditional exports—minerals, hydrocarbon, and raw materials—increased mostly due to a price boom, exports of a few non-traditional agro-industrial products more than tripled between 2002 and 2008. According to Guerra (2012), Peru did not take advantage of the favourable international climate to further diversify its export base. Consequently, with an economic structure characterized by undiversified exports, and imports that comprised mainly of complementary goods, the country was highly vulnerable to movements in its terms of trade (Mendoza Bellido 2013). The increasing prices for Peru's products also had a pronounced effect on tax revenues through the income tax paid by the export sector. The increased revenues enabled the Peruvian government to improve public finances. Indeed, following the establishment of the Fiscal Responsibility and Transparency Law in 2001, the government achieved a significant reduction in the fiscal deficit and in the debt-to-GDP ratio (IMF 2013). The Peruvian economy proved highly resilient in response to the global economic crisis. A deceleration was observed in 2009 when the GDP growth rate was only 0.9 per cent and GDP per capita growth -0.15 per cent. This slowdown was due to a fall in foreign demand for Peruvian products, a dramatic drop in the international prices of Peruvian exports, a reduction in remittances from abroad, and falling investment and external credit (Moron et al. 2009; Rozenberg 2009). However, the economy bounced back the following year, surpassing pre-crisis GDP and GDP per capita levels. Peru's resilience in the face of the global crisis can be explained by earlier prudent policies like the creation of fiscal and international reserve buffers and the implementation of a timely countercyclical policy response (IMF 2010; Mendoza Bellido 2013). These policies included the injection of liquidity into the system, the reduction in the interest rate by means of central bank policies, and a fiscal stimulus plan.

The share of the industry sector in the economy increased, while the shares of the service sector and agriculture diminished between 2000 and 2012. The share of the industry sector increased from 29.9

per cent in 2000 to 34.6 per cent in 2012 led by the increase in the international price of traditional Peruvian exports, such as minerals and hydrocarbons (Table 2). The share of the service sector—the largest in the Peruvian economy—diminished during the period from 61.6 per cent in 2000 to 51.4 per cent in 2012, while the agricultural sector’s share fell from 8.5 per cent in 2000 to 7.0 per cent in 2012. Both the agricultural and industrial sectors—the ones most closely tied to foreign demand—were affected adversely by the international crisis of 2008. They lost 3.1 and 2.2 per cent of their value added respectively, though they returned to pre-crisis value added levels quickly. The growth of the service sector slowed down in 2009, though it quickly resumed the previous trend.

The 2003–12 period witnessed a drop in the unemployment rate in the aggregate and for all population groups. The international crisis of 2008 did not affect the downward trend in the unemployment rate in the aggregate and for women, but led to a slight increase in the unemployment rate of men and young workers, while the adult unemployment rate remained unchanged (Figure 3).

The unemployment rate (measured as the ratio of the unemployed to the labour force) fell over the period, from 5.1 per cent in 2003 (656,181 unemployed people) to 3.5 per cent in 2012 (573,560 unemployed people). The evolution of the unemployment rate can be divided into two stages. It initially kept stable at around 5.1 per cent from 2003 to 2005. The unemployment rate then dropped significantly from 2005 to 2012, falling from 5.2 to 3.5 per cent while GDP was growing. The downward trend of the unemployment rate continued even during the Great Recession.

Despite the growth performance over the period, the unemployment rate did not experience a major decline in Peru. Osorio Amezaga (2014) finds a negative and modest association between GDP growth and the unemployment rate (which was -0.12) through the estimation of Okun’s coefficient from 2001 to 2012. This fact cannot be explained by standard arguments that revolve around workers leaving the labour market as soon as they are faced with limited prospects for employment since the participation rate increased over the period analysed. On the other hand, the widespread failure to comply with laws mandating employment benefits and labour protection should encourage employers to hire more workers during periods of expansion. The author concludes that the low output elasticity of unemployment can be attributed to particularities of the Peruvian labour market.

The unemployment rate fell for young and adult workers, men, and women between 2003 and 2012. The youth unemployment rate decreased from 10.2 per cent in 2003 to 9.0 per cent in 2012. The adult unemployment rate fell over the period, from 3.6 per cent in 2003 to 2.2 per cent in 2012. The unemployment rates of men dropped from 5.1 per cent to 3.0 per cent between 2003 and 2012, while the unemployment rate for women fell from 5.1 per cent to 4.0 per cent. The unemployment rates of all population groups were essentially unchanged from 2003 to 2005, and began a downward trend from 2005 to 2012. The declining pattern was not interrupted by the international crisis for women, but the unemployment rate of young workers and men suffered a slight increase. By 2010, men had recovered the pre-crisis level of unemployment. Young workers returned to their pre-recession unemployment rate in 2012. The unemployment rate of adult workers stopped decreasing during the international crisis but recovered the downward trend immediately. The World Bank (2010) claims that the small effect of the international crisis on the unemployment rate in Peru could be explained by an increase in the share of unregistered or informal labour relationships in total employment, which eased the adjustment process in the presence of wage rigidities and employment protection legislation.

The composition of employment by occupational group improved between 2003 and 2012 as workers moved from agricultural, forestry and fishery occupations, and elementary jobs to better paying occupations like professional and technical jobs. All demographic groups—young and adult workers, men, and women—benefited from the improvement in the occupational composition of employment over the period. The international crisis of 2008 did not affect the improving trend in the composition of employment by occupational group (Figure 4).

The share of the following occupations shrank between 2003 and 2012: elementary occupations (drop of 7.8 percentage points); and agricultural, forestry and fishery jobs (drop of 2.5 percentage points). The share of the following occupations grew: clerical (increase of 2.5 percentage points); services and sales workers (increase of 2.7 percentage points); plant and machine operators (increase of 1.9 percentage points); and technicians and associate professionals (increase of 1.2 percentage points). The share of the other occupational groups remained largely unchanged. These changes in the occupational composition of employment can be interpreted as an improvement since low-earning occupations (agricultural, elementary, and crafts and trades occupations) reduced their share in total employment by 9.2 percentage points between 2003 and 2012, while high-earning occupations (management, professionals, and technicians and associate professionals) gained share in total employment (increase of 2.0 percentage points) (Tables 3 and 6). These changes resulted in an increase in the share of mid-earning occupations (services and sales occupations, plant and machine operators, clerical jobs, and armed forces) in total employment over the period (increase of 7.1 percentage points).

The improvements in the occupational composition of employment between 2003 and 2012 were observed for young and adult workers and for men and women. The decrease in the rate of working in low-earning occupations in total employment was larger among youth compared to adult workers (drop of 11.9 percentage points for youth versus 8.7 for adults) as was the increase in the rate of working in high-earning occupations (2.7 and 1.9 percentage points respectively for youth and adults). When the analysis is broken down by gender, women experienced a larger reduction in the share of employment in low-earning occupations compared to men (9.6 and 8.8 percentage points respectively). The increase in share of high-earning occupations in total employment was also larger for men in comparison to women (2.4 and 1.7 percentage points respectively).

The international crisis of 2008 did not affect adversely the improvement in the composition of employment by occupational group. Between 2008 and 2009 the share of low-earning occupations continued to fall in the aggregate and for all population groups, while the share of high-earning occupations increased overall and for adult workers, men, and women. For young workers, though, a slight reduction in the share of high-earning occupations resulted in an increase in the share of mid-earning occupations. The share of high-earning occupations in total employment reached and surpassed the pre-crisis level by 2010 for young workers.

The employment structure by occupational position improved from 2003 to 2012 as the share of paid employees and employers in total employment increased and the share of self-employed and unpaid workers decreased. The improving trend in the composition of employment by occupational position was experienced by young and adult workers, men, and women. The international crisis of 2008 did not affect adversely the improvement in the structure of employment by occupational position for the employed population overall, for young workers, adults, and men, but led to a standstill for women (Figure 5).

Between 2003 and 2012, the share of paid employees in total employment—the largest category—grew from 39.8 to 46.6 per cent. The share of employers also increased, but slightly, from 5.3 to 5.6 per cent. The shares of the self-employed and unpaid workers decreased over the period. The reduction was from 37.3 per cent in 2003 to 36.4 per cent in 2012 for the self-employed, and from 17.6 to 11.4 per cent for unpaid workers. These changes can be characterized as an improvement of the employment structure by occupational position, as the share of low-earning categories (self-employment and unpaid employment) dropped by a total of 7.2 percentage points and the share of high-earning categories (paid employees and employers) increased (Table 4).

The employment structure by occupational position improved between 2003 and 2012 for all population groups (young and adult workers, men, and women). From 2003 to 2012, low-earning categories (unpaid workers and the self-employed) shrank in percentage terms for young and adult workers (12.5 and 7.3 percentage points respectively) while the percentages of youth and adults in high-earning categories (employer and paid employees) increased, indicating an improvement in the employment structure by occupational position over time. For both men and women, the employment composition over the period also improved: the change in the share of low-earning categories (unpaid workers and the self-employed) was negative for both men and women (6.8 percentage points for men and 7.9 for women).

The international crisis of 2008 did not reverse the improvements that had been taking place for the employed population overall and for young workers, adults, and men, while there was a worsening for women. The share of paid employees and employers increased between 2008 and 2009 while the share of the self-employed fell. Only one occupational position indicator—the share of unpaid workers in total employment—moved in the worsening direction in 2009, but it immediately began to fall again. When we disaggregate, we find that the improving trend in the structure of employment by occupational position continued without pause in 2009 for young workers, adults, and men. For women, though, the improving trend stalled between 2008 and 2009, but the share of low-earning positions recovered the previous downward trend in 2010.

The employment composition by economic sector improved over the course of the period studied overall and for all population groups. The international crisis of 2008 did not interrupt the improving trend in the structure of employment by economic sector (Figure 6).

The period from 2003 to 2012 witnessed a reduction (from 44.4 per cent to 35.8 per cent) in the share of workers in low-earning sectors (primary activities, domestic workers, and low-tech industry). There was, during the same period, an increase (from 10.9 per cent to 13.8 per cent) in the share of high-earning sectors (skilled services, public administration, and high-tech industry) in the total (Tables 5 and 6). These changes resulted in an increase in the share of mid-earning sectors in total employment over the period. Despite the improvement in the employment structure by economic sector, a large portion of workers remained employed in sectors like primary activities (26.8 per cent in 2012) and commerce (26.2 per cent in 2012); these sectors tend to have a low degree of formalization and pay low wages (Guerra 2012).

The employment composition by economic sector improved between 2003 and 2012 for young and adult workers, men, and women, as they moved from low-earning sectors to high-earnings sectors. For young workers, the share in low-earning sectors dropped from 47.9 per cent in 2003 to 35.3 per

cent in 2012. For adult workers, the share in low-earnings sectors fell from 41.2 per cent in 2003 to 33.4 per cent in 2012. At the other end of the scale, the share of young and adult workers in high-earning sectors increased from 8.6 per cent in 2003 to 13.5 per cent in 2012 and from 12.2 per cent to 14.8 per cent respectively. For both genders, the share working in low-earning sectors fell: from 44.0 per cent in 2003 to 35.7 per cent in 2012 for men, and from 45.0 per cent to 36.0 per cent for women. The share of high-earning sectors in total employment grew from 14.4 per cent to 17.5 per cent for men and from 6.5 per cent to 9.3 per cent for women.

The international crisis of 2008 did not halt the improving trend in the employment composition by economic sector overall and for all population groups. Between 2008 and 2009 the share of low-earning sectors continued to decrease, while the share of high-earning sectors in total employment kept on increasing in the aggregate and for young, adult workers, men, and women. The continued improvement in the structure of employment by economic sector, despite the international crisis in the aggregate and for all population groups, can be explained by the reduction in the share of workers in the primary activities sector, which includes the mining sub-sector in our classification, and by the reduction in the share of workers in the low-tech industry sector in total employment between 2008 and 2009. That occurred as a consequence of the drop in the exports of minerals, hydrocarbons, and agro-industrial products. As the primary activities and low-tech industry sectors are low-earning sectors in Peru, the reduction in their share in total employment implied an improvement in the labour market.

The educational level of the Peruvian employed population improved steadily over the period for all population groups, and especially among young workers. The international crisis of 2008 led to a slowdown in the falling trend of the share of employed workers with low educational levels in the aggregate and for all population groups (Figure 7).

The share of employed workers with low educational levels (eight years of schooling or less) dropped from 45.3 per cent in 2003 to 36.1 per cent in 2012, while the share of workers with medium and high educational levels (nine to thirteen years of schooling and over thirteen years of schooling) grew from 37.0 per cent in 2003 to 40.9 per cent in 2012 and from 17.7 per cent to 23.0 per cent respectively.² We interpret this result as an improvement for the employed population as the level of education is an important predictor of labour earnings. Consequently, the changes in the employment structure by educational level implied an increase in the share of workers that tend to have high levels of earnings and a decline in the share of workers with low earnings' levels.³

The educational level of the employed population improved between 2003 and 2012 for all groups and especially for young workers. For the youth population, the share of employed persons with low educational levels dropped from 35.4 per cent in 2003 to 21.0 per cent in 2012 (a drop of 14.4 percentage points). The share of employed youth with medium and high educational levels grew by

² The most frequent value of years of education for employed workers in Peru was 11 during the entire period (around 24.6 per cent of employed workers had eleven years of education).

³ The improvement in the employment structure by educational level is related to changes in the relative demand and supply of workers with high educational levels with corresponding implications for the wage gap by educational groups and the unemployment rate of each educational level. We introduce a discussion about the role of these factors in Peru in the paragraph on labour earnings.

8.7 and 5.7 percentage points respectively. The reduction in the share of adult employed workers with low educational levels was smaller compared to young workers, only 9.8 percentage points over the period. There was, over the period, an increase in the share of adult employed persons with medium and high educational levels of 4.4 percentage points and 5.4 percentage points respectively. The improvement in the educational level of the employed population was larger for women compared to men. The reduction in the share of employed workers with low educational levels was 8.9 percentage points for men and 10.1 for women, while the share of workers with medium and high levels of education climbed by 4.0 and 4.7 percentage points respectively for men and by 3.9 and 6.2 percentage points for women.

The international crisis of 2008 led to a slowdown in the improving trend in the structure of employment by educational level overall and for all population groups. Between 2008 and 2009, the share of employed workers with low levels of education continued to fall, but at a slower pace. From 2003 to 2008, the share of employed workers with low educational levels fell by 1.3 percentage points annually, while the decrease was of 0.8 percentage points a year from 2009 to 2012. Along similar lines, the share of workers with medium levels of education grew by 0.6 percentage points a year from 2003 to 2008, and by 0.2 percentage points annually from 2009 to 2012. The pattern of slowdown in the improving trend in the structure of employment by educational level took place for young and adult workers, men, and women.

The overall share of workers registered with the social security system increased over the period analysed. Nonetheless, the share of unregistered workers in Peru is still very high, despite sustained economic growth. The international crisis of 2008 led to a slowdown in the upward trend of the registration rate (Figure 8).

The Peruvian social security system comprises contributory schemes and non-contributory schemes (Lavigne 2013). The contributory scheme of the pension system is composed of four regimes: 1) the *Sistema Nacional de Pensiones*, which covers both private and public sector employees; 2) the *Cédula Viva*, which is a special regime that covers teachers that started working before 1980, workers at state companies and magistrates; 3) the *Sistema Privado de Pensiones*, which is an individual capitalization system; and 4) the *Fondo de Pensiones Sociales*, which is a voluntary pension system for workers who are not covered by any of the other regimes. The public contributory regimes are funded by employers, employees, and the government, while the private regime is funded by worker contributions. The Peruvian social security system also offers two non-contributory pensions for the vulnerable elderly who did not contribute to a pension fund or whose contributions do not allow them to receive a decent pension: the *Pensión Mínima de Vejez* and the *Pensión Nacional de Asistencia Solidaria*. The contributory scheme of the health insurance system is composed of two regimes, *EsSalud* and the *Sanidades de las Fuerzas Armadas y de la Policía Nacional*, which are compulsory for wage earners and members of cooperatives from both the private and public sectors and for independent workers that decide to affiliate, and for the personnel from the army and police forces respectively. Finally, the *Seguro Integral de Salud* is the non-contributory scheme of the health insurance system and covers the non-insured population, with a specific focus on undernourished children and elderly living in poverty and extreme poverty.

The share of workers registered with the contributory schemes of the social security system (public and private) increased by 17.5 percentage points during the 2000s, climbing from 14.9 per cent in 2003 to 32.4 per cent in 2012. The government of Peru instituted a set of policies designed to

improve working conditions over the period. Those measures included a special regime for small enterprises which provides tax incentives and reduces labour obligations, such as payment for unjustified dismissal. In addition, the *Fondo de Pensiones Sociales* (FPS) was created. Small enterprises were not obliged to contribute to any social protection system before the creation of the FPS. Since its creation in 2008, small enterprise workers can voluntarily access the FPS which includes a government co-payment. In terms of health insurance, the obligation to contribute to *Essalud* for small enterprises workers was eliminated and government-worker co-financing was established for affiliating workers to the *Seguro Integral de Salud* (ILO 2014). Available evidence indicates that these policies did not have an important effect on the formalization of workers (Diaz 2014). On the contrary, they may have contributed to the deterioration in working conditions. Vidal Bermúdez et al. (2012) point out that the increase in the registration of workers with the social security system during the 2000s occurred through the setup of the *Seguro Integral de Salud*, which offers a minimum coverage with standards that are below those of the contributory health insurance scheme, and through temporary contracts. A further institutional change was the implementation of an electronic system through which employers with three or more workers must send monthly reports to the National Tax Authority indicating the number of workers, service providers, personnel in training, and outsourced workers. This administrative change increased the Ministry of Labour's capacity to supervise and monitor compliance with labour obligations. It is estimated that the introduction of the electronic system contributed to the registration of jobs (ILO 2014).

The tendency towards formalization was slightly affected by the economic crisis of 2008. The growth in the share of registered workers slowed down after the Great Recession, though not immediately. In 2009 alone, the share of registered workers rose by 2.4 percentage points, whereas the increases in 2010 and 2011 were only 0.9 and 0.8 percentage points respectively. The World Bank (2010) claims that unregistered employment in Peru may have eased the adjustment process during the Great Recession in a labour market characterized by wage rigidities and rigid labour market regulations. Despite sustained economic growth in Peru, the share of registered workers continues to be very low (32.4 per cent in 2012). Questions remain, then, about the ability of the country to turn growth in employment into an increase in employed workforce formalization (Guerra 2012). Chacaltana and Yamada (2009) also point out that the pronounced growth in employment has meant an increase in both formal and informal employment. Indeed, between 2003 and 2012, the number of registered workers increased from 2,371,403 to 6,531,140 (4,159,737 new registered workers), while the number of unregistered workers also rose from 15,612,469 to 16,231,855 (619,386 new unregistered workers).

Failure to register with the social security system is a long-standing problem in Peru. First, a demographic change at the beginning of the twenty-first century meant an increase in the economically active working age population that could not be absorbed into the wage/salaried employment sector. As a result, there was an increase in low-productivity self-employment (Garavito 2010). Self-employed workers account for the majority of unregistered workers in the country. For this occupational position, the rate of unregistered workers fell from 96.1 per cent in 2003 to 84.1 per cent in 2012. For wage/salaried employees the rate of unregistered workers dropped from 68.7 per cent in 2003 to 47.7 per cent in 2012. Second, the Peruvian labour market has restrictive labour market regulations, which have contributed to the increase in unregistered employment (Toyama et al. 2009; World Bank 2010).

The rate of registration with the social security system increased for all population groups (young and adult workers, men, and women). Young workers are the least likely to be registered with the social security system and, while the share of young workers enrolled increased over the period, adult workers were at the forefront of the trend towards registration: 5.4 per cent of young workers were registered in 2003 and 16.3 per cent in 2012 (increase of 10.9 percentage points), whereas 18.2 per cent of adult workers were registered in 2003 and 37.4 per cent in 2012 (increase of 19.2 percentage points). Men were more likely to be registered in the system than women, and the rate of registration increased more dramatically for them compared to women. The rate of registered employment for men increased from 18.1 per cent in 2003 to 38.9 per cent in 2012 (increase of 20.8 percentage points), while for women that rate increased from 10.8 per cent to 24.6 per cent during the same period (increase of 13.7 percentage points).

The overall percentage of workers registered with social security continued to grow during the international crisis of 2008, although a slowdown of the growth in the share of registered workers took place in 2010 and 2011. Disaggregating, the rate of registration with the social security system also continued to increase for young workers, adults, men, and women.

Labour earnings increased between 2003 and 2012. Within the period, there was a reduction between 2003 and 2005 and a steady increase in the following years. Labour earnings increased overall, for young and adult workers, men, and women. The evidence of earning changes by employment category over the period indicates that low-earning categories increased their earnings, while high-earning categories tended to suffer earnings reductions. Workers were not affected negatively by the 2008 crisis in the aggregate, but some employment categories suffered earnings losses (Figure 9).

Average monthly earnings, expressed in dollars at 2005 purchasing power parity (PPP), increased by 19.1 per cent, from US\$408 in 2003 to US\$486 in 2012 (Table 6). Labour earnings decreased at the beginning of the period—between 2003 and 2005—and grew steadily in the following years. From 2003 to 2008, GDP per capita grew by 5.8 per cent a year, but the annual increase in real labour earnings and hourly wages was just 0.7 and 0.9 per cent respectively. Two reasons have been presented to explain the real wages stagnation in Peru despite rapid economic growth. First, the increase in labour supply may have compensated for the increase in labour demand; or a highly elastic labour supply may have allowed for an increase in the employment level without increases in hourly wages (World Bank 2010). Second, the predominant type of contract in Peru is the temporal contract which limits the access of workers to trade unions, which are the main tool they have to increase their wages (Vidal et al. 2012). Real labour earnings were not affected negatively by the Great Recession. In fact, in 2009 real earnings exhibited the largest annual growth rate of the period. The increase in real labour earnings during the international crisis can be explained by the reduction in the inflation rate (World Bank 2010).

Men, women, and young and adult workers all increased their labour earnings between 2003 and 2012. Labour earnings grew for men and women between 2003 and 2012 by 20.9 per cent and 19.3 per cent respectively. The trend in their labour earnings reflected the overall time path, with reductions from 2003 to 2005 for men and from 2003 to 2004 for women, and increases for both groups thereafter. Labour earnings growth over the period 2003–12 was larger for young workers compared to adult workers. The gain was 36.1 per cent for youth and 18.2 per cent for adults. Both

age groups experienced an earnings reduction from 2003 to 2005 and a steady increase in the following years.

Average earnings rose between 2003 and 2012 for workers employed in low-earning employment categories and tended to fall for workers in high-earning categories. Among occupational groups, agricultural, forestry and fishery workers, workers in elementary occupations, and crafts and trades workers had an average increase in their labour earnings of 41.2 per cent over the period. Workers in management, professionals and technicians had an average earnings reduction of 19.2 per cent between 2003 and 2012. When the employed population is broken down by occupational position, the self-employed had an increase in labour earnings of 28.9 per cent, while employers and paid employees had an average increase in their labour earnings of 17.5 per cent over the period. Among economic sectors, workers in primary activities, domestic workers, and workers in low-tech industries increased their labour earnings over the period by 31.9 per cent on average. Workers in high-earning sectors like skilled services, public administration, and high-tech industries suffered an earnings loss of 6.0 per cent on average. Finally, labour earnings of workers with high educational levels fell by 15.1 per cent, while workers with medium and low levels of education had an increase in their labour earnings of 31.2 and 42.7 per cent respectively.

The evidence of falling labour earnings for workers with high educational levels and labour earnings increases for workers with medium and low levels of education can be interpreted in light of previous findings of improving employment structure by occupational group and economic sector over the period. The improving employment structure by occupational group and economic sector implied an increase in the share of occupations and sectors that can be expected to use workers with high and medium levels of education, like professional and technical occupations, public administration, skilled services, and high-tech industry sectors, and a reduction in the share of occupations and sectors that employ workers with low educational levels, like elementary and agricultural occupations, and domestic workers and primary activities sectors. This evidence indicates that the demand for workers with high and medium educational levels relative to those with low educational levels increased between 2003 and 2012. On the other hand, the educational levels of persons in the labour force improved over the same period, indicating an increase in the relative supply of workers with high and medium levels of education (Table 8). The prediction of a supply and demand analysis is that the relative wages of workers with high and medium educational levels relative to those with low educational levels will rise or fall depending on which effect dominates (increase in the relative demand versus increase in the relative supply). In the Peruvian labour market the relative wages of workers with high and medium educational levels relative to those with low educational levels fell over the period, and the relative wages of workers with high educational levels relative to those with medium educational levels also decreased (Table 7). The adjustment process also led to a reduction in the unemployment rate of all educational groups with a larger reduction for workers with medium levels of education (Table 9).

Even during the international crisis of 2008, labour earnings continued to grow, overall and for all demographic groups. However, some employment categories were impacted adversely by the 2008 crisis. Among occupational groups, workers in the armed forces and technicians were affected negatively by the international crisis of 2008 (drop in labour earnings of 2.4 and 4.9 per cent respectively between 2008 and 2009). Workers in both occupations recovered their pre-crisis level of earnings in 2012. Among occupational positions, employers were the only group impacted negatively

by the international crisis of 2008 (drop in labour earnings of 1.8 per cent between 2008 and 2009). Employers returned to their pre-recession level of labour income in 2010. Among economic sectors, workers in the utilities and transportation sector were affected negatively by the international crisis of 2008 (drop in labour earnings of 2.0 per cent) but returned in 2010 to their pre-crisis level of earnings.

Poverty fell between 2003 and 2012 for all poverty lines used. The rate of working poor households also exhibited a decreasing trend. The pattern of poverty reduction over time was not interrupted by the international crisis of 2008 (Figure 10).

The moderate poverty rate (measured by the country's official poverty line) fell from 51.6 per cent in 2003 to 24.9 per cent in 2012; the extreme poverty rate dropped from 26.2 per cent to 9.1 per cent; the percentage of the working poor (defined as the proportion of persons in the population living in poor households where at least one member works) decreased from 42.7 per cent to 20.1 per cent over the same period. These indicators decreased consistently every year but 2005, when they had an increase. Thus, in Peru there was a negative correlation between economic growth and poverty. Garcia Carpio and Cespedes Reynaga (2011) computed growth-poverty elasticities for the period 2001–10 using Kakwani's (1990) methodology. They found that growth-poverty elasticities increased in absolute terms over the period and changed from being positive in 2001 (0.9) to negative in 2010 (-1.7). The authors also found that economic growth was pro-poor in Peru between 2001 and 2010 using the measures proposed by Kakwani and Pernia (2000) and Kakwani and Son (2002). An analysis based on the 2.5 and 4 dollars-a-day PPP international poverty lines also shows a drop in the poverty rate from 2003 to 2012 and a negative association between the poverty rate and the growth of the economy. The poverty rate based on those measures fell between 2003 and 2004, increased from 2004 to 2005, and began a downward trend up to the end of the period. The international crisis of 2008 did not affect the pattern of poverty reduction. However, the growth-poverty elasticity was largely unchanged between 2008 and 2009 while it had shown an increasing pattern in absolute value in the previous years, and the pro-poor growth index indicates that the growth was not pro-poor during the international crisis (Garcia Carpio and Cespedes Reynaga 2011).

The poverty patterns reported in the last paragraph can be understood by examining incomes from various sources. The analysis of sources of household total income indicates that labour income and income from transfers (public and private) increased between 2003 and 2012, while income from capital and pensions suffered a slight reduction over the same period (Figure 11). The increase in labour earnings (30.7 per cent between 2003 and 2012) was the most important factor to explain the increase in household total income over the period.

Household per capita income and labour earnings inequality decreased between 2003 and 2012. The international crisis of 2008 did not affect the downward trend in the inequality indices (Figure 12).

Household per capita income and labour earnings inequality decreased while GDP increased over the period. The Gini coefficient of household per capita income fell from 0.538 in 2003 to 0.453 in 2012. This indicator fell at the beginning of the period from 0.538 in 2003 to 0.487 in 2004, a level it maintained until 2007. The downward trend continued in 2007 until 2011, when a new increase set in. Throughout the period, the Gini coefficient of labour earnings among employed workers was higher than that of household per capita income, and fell from 0.559 in 2003 to 0.489 in 2012; this

reduction in labour earnings inequality is in accord with the evidence presented above showing earnings increases for workers employed in low-earning categories and earnings reduction for workers in high-earning categories. Consequently, the reduction in labour earnings inequality in Peru occurred at the expense of income losses for some categories. The evolution of the Gini coefficient of labour earnings over time was similar to the trend shown by the Gini coefficient of per capita household income.

Several studies have found that the reduction in both labour and non-labour income inequality contributed to the reduction in household income inequality. Urrutia (2014) and Jaramillo and Saavedra (2011) presented evidence of the reduction in labour income inequality. They found that the relative wage of workers with high and medium levels of education decreased during the 2000s mainly as a result of the increase in their labour supply. The importance of non-labour income to explain the reduction in household income inequality in Peru was analysed by Yamada et al. (2012) and Jaramillo and Saavedra (2011). Yamada et al. (2012) found that 25 per cent of the reduction in the Gini coefficient of household per capita income between 2006 and 2010 can be accounted for by government transfers, like *Programa JUNTOS*. Jaramillo and Saavedra (2011) claimed that the pro-poor orientation of social spending in Peru and the improvement in access to public services were the main factors to explain the reduction in income inequality during the 2000–06 period.

4 Conclusions

From 2000 to 2012, the Peruvian economy performed exceptionally well with a growth performance that placed the country well above the regional average. The economy suffered a slowdown as a consequence of the international crisis of 2008, but Peru continued to grow during that episode.

All labour market indicators improved between 2003 and 2012. The unemployment rate was always low and fell moderately. The composition of the employed population by occupational group improved over the period as workers moved from agricultural, forestry and fishery occupations and elementary jobs to better paying occupations like professional and technical jobs. The employment structure by occupational position also improved through the reduction in the share of self-employed and unpaid workers in total employment and the increase in the share of paid employees and employers. Workers moved from low-earning economic sectors like primary activities and domestic workers, and low-tech industry to high-earning sectors such as skilled services, public administration, and high-tech industry. Moreover, the educational level of the Peruvian employed population, the overall share of workers registered with the social security system, and labour earnings all increased between 2003 and 2012. The evidence of labour income changes by employment categories indicates that low-earning categories increased their earnings, while high-earning categories tended to suffer earnings reductions. The moderate and extreme poverty rates and the rate of working poor households showed important reductions between 2003 and 2012, as did the Gini coefficient of per capita household income and labour earnings.

Looking specifically at the international crisis of 2008, the only labour market indicators that were affected by the crisis were the employment structure by educational level and the share of employment registered with the social security system which suffered a slowdown in their upward trends. The comparison between the effects of the international crisis of 2008 on labour market

indicators and the effects generated by the recession at the beginning of the decade (2000–01) reveals that the crisis at the beginning of the 2000s impacted Peru more strongly. The crisis of 2000–01 generated a larger reduction in GDP per capita, increases in the unemployment rate and in the shares of workers in low-earning occupational groups and economic sectors, while the unemployment rate and the shares of workers in low-earnings occupational groups and sectors continued to decrease during the Great Recession. Other labour market indicators improved during both crises. The smaller negative impacts of the international crisis compared to the recession at the beginning of the decade can be explained by the prudent policies the government implemented after the 2000–01 crisis, like the creation of fiscal and international reserve buffers, and the implementation of timely countercyclical policy responses that were not available in the first recessionary episode.

Young workers and women had worse labour market outcomes over the period compared to adults and men respectively, and while women seem to be more vulnerable to macroeconomic crises compared to men, young workers and adults were slightly and equally affected by the crises. The unemployment rate was higher for young compared to adult workers, the shares of young employed workers in low-earning occupational groups and economic sectors were larger than the shares of adult workers, the percentage of young workers registered with the social security system was lower when compared to adults, and labour earnings of young workers were below those of adults. On the other hand, the share of young workers in low-earning occupational positions was lower compared to adults. Despite the generally inferior situation of young workers in the labour market compared to adults, youth were slightly affected by the episodes of crises and the same was true for adult workers. Disaggregating by gender, we found that men had better labour market outcomes than women, with the only exception being the share of workers in low-earning occupations that was larger among men. Both men and women were slightly affected by the macroeconomic crises. The negative impacts were larger for women compared to men, as they suffered a larger increase in the unemployment rate and in the shares of workers in low-earning positions and economic sectors.

In summary, all population groups were quite resilient to macroeconomic crises and labour market conditions were in a better state in 2012 than they were at the start of the millennium.

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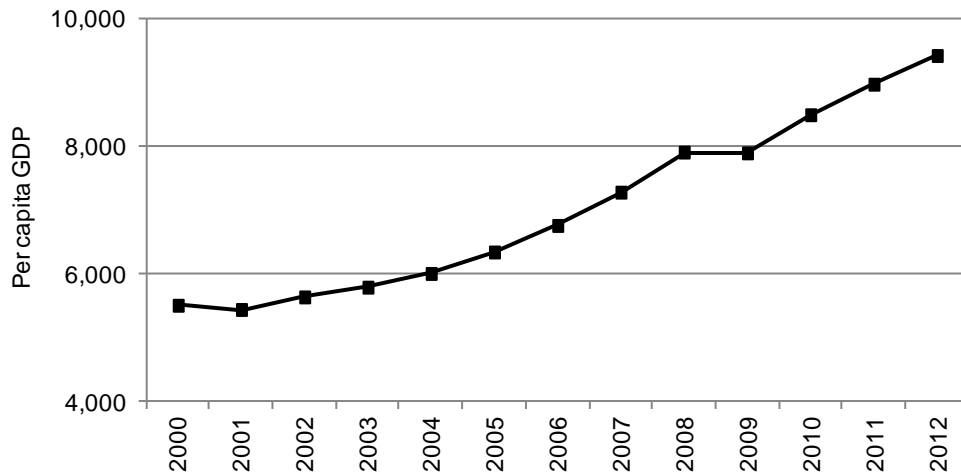
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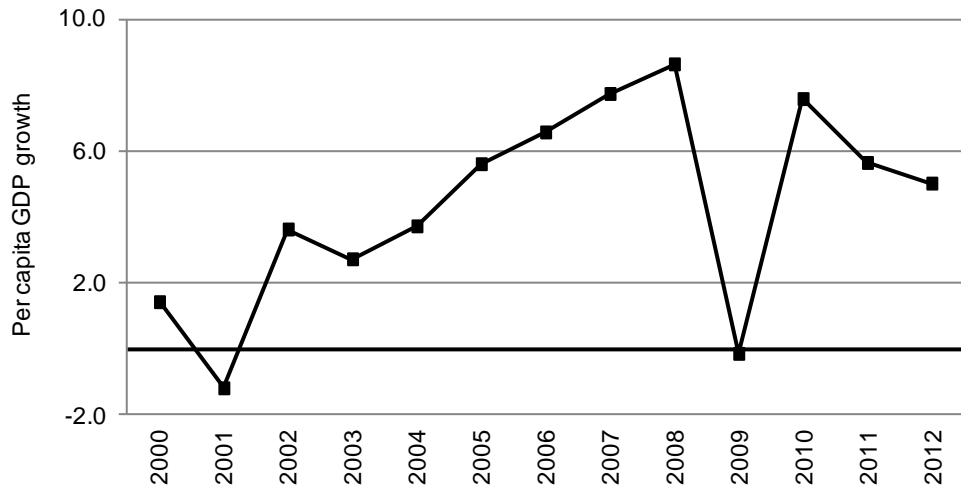
Figures

Figure 1: GDP per capita at PPP dollars of 2005, 2000–12



Source: World Development Indicators (the World Bank 2014).

Figure 2: Annual growth of GDP per capita at PPP dollars of 2005, 2000–12



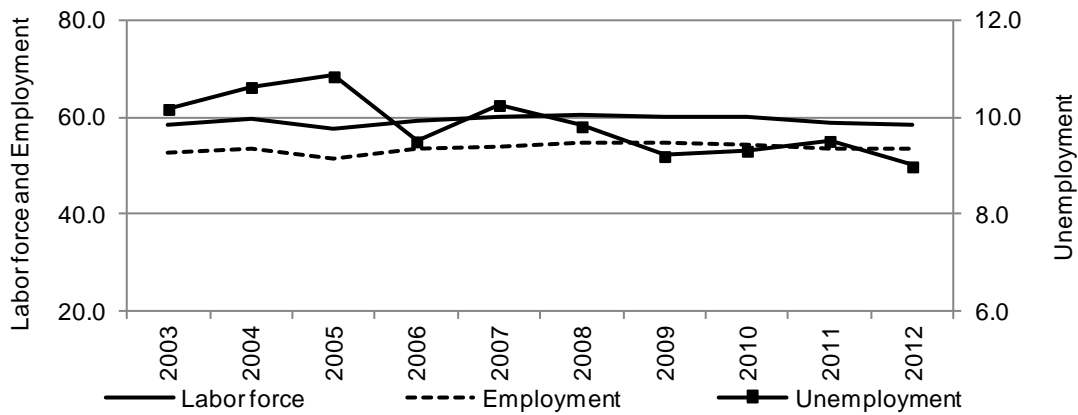
Source: World Development Indicators (the World Bank 2014).

Figure 3: Labour force rate, employment-to-population rate and unemployment rate: population 15 years old or more, 2003–12

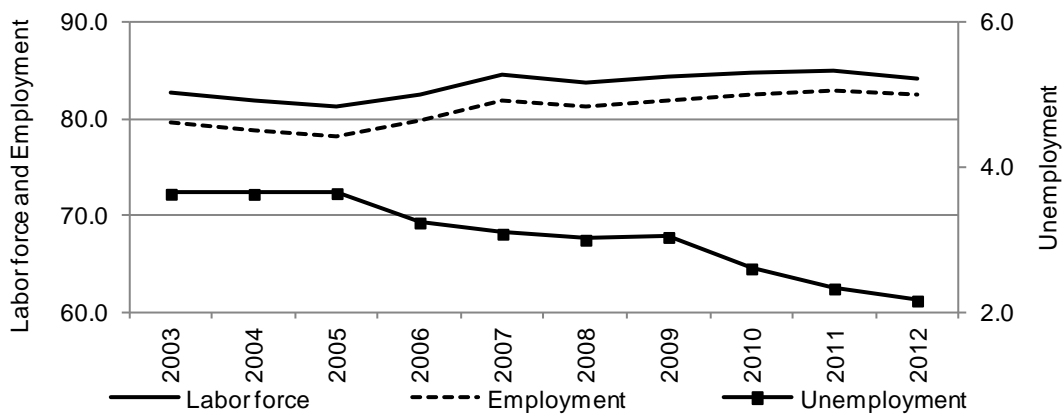
(a) All



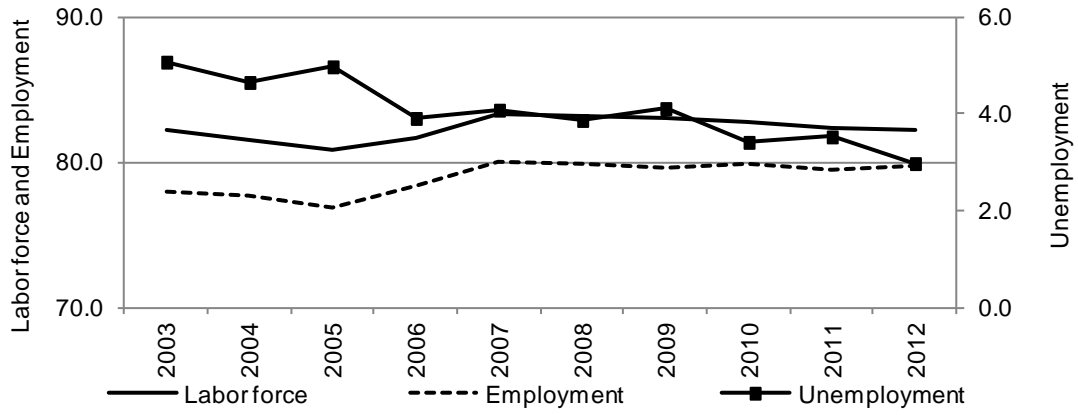
(b) Youth (15 to 24 years old)



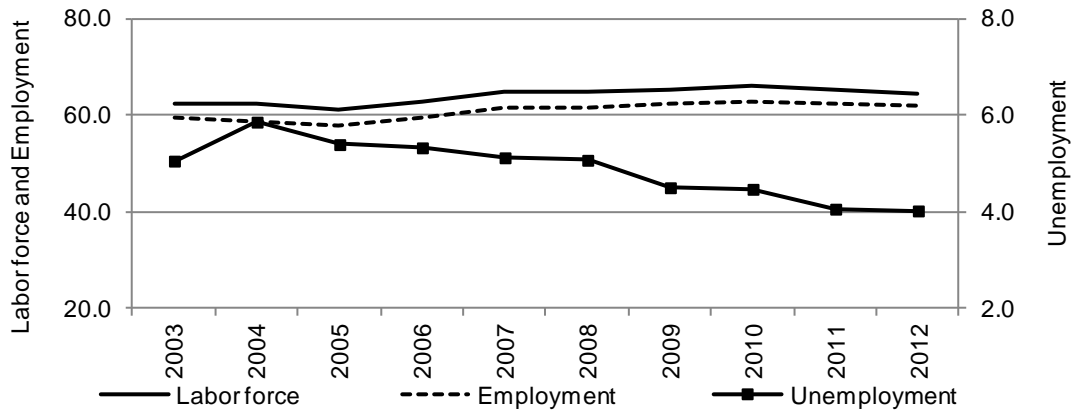
(c) Adults (25 to 64 years old)



(d) Men

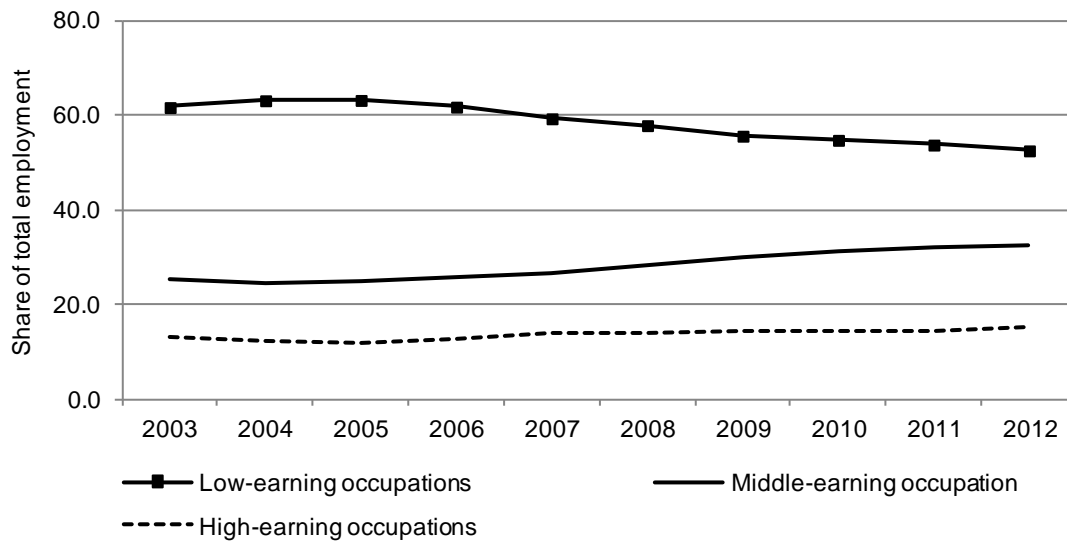


(e) Women



Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

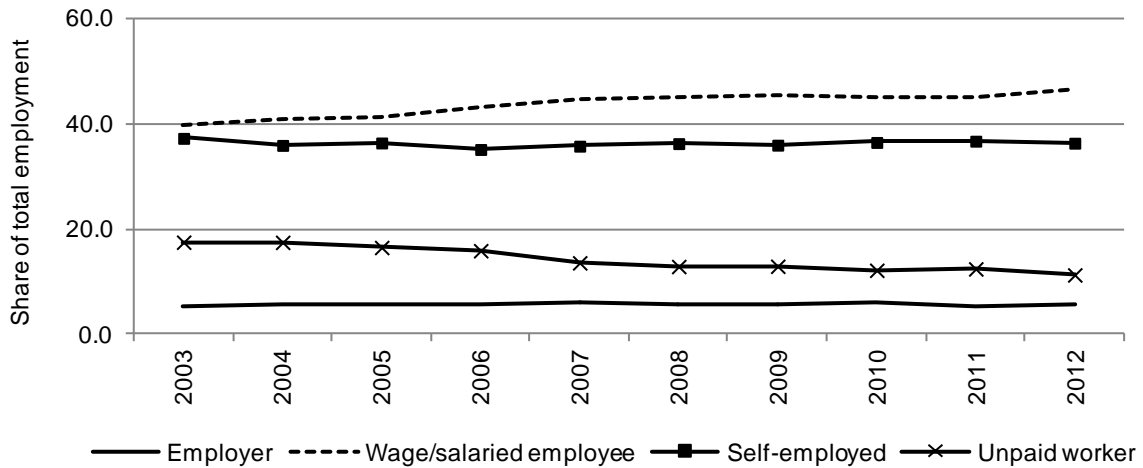
Figure 4: Share of employment by occupational group (categories grouped by earning levels): all employed workers, 15 years old or more, 2003–12



Note: Low-earning occupations: agricultural, forestry and fishery occupations, elementary, craft and trades jobs. Medium-earning occupations: services and sales, plant and machine operators and assemblers, clerical, armed forces. High-earning occupations: management, professionals, technicians and associate professionals.

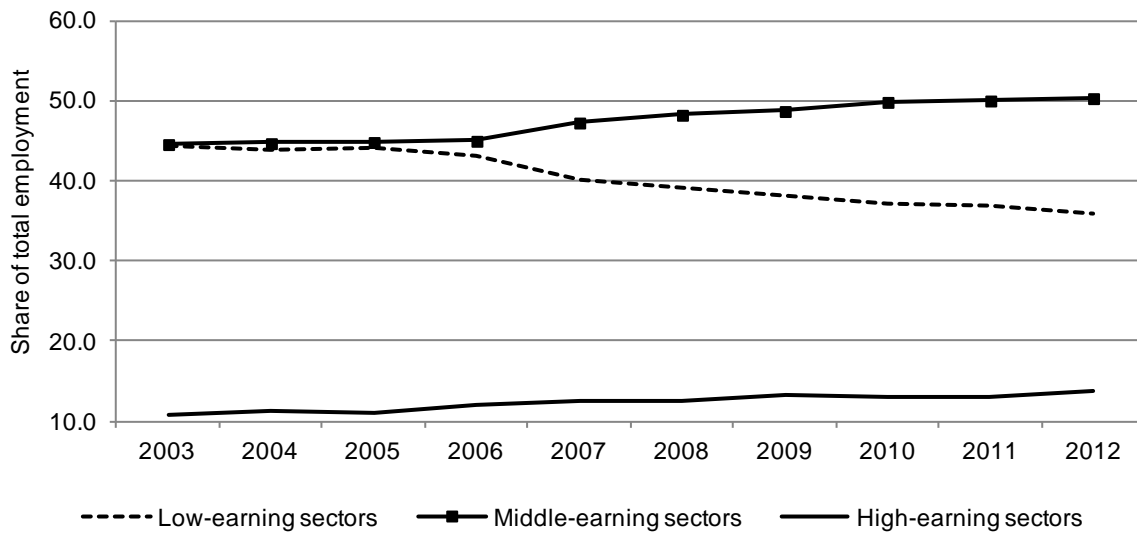
Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Figure 5: Share of employment by occupational position: all employed workers, 15 years old or more, 2003–12



Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Figure 6: Share of employment by economic sector (categories grouped by earning levels): all employed workers, 15 years old or more, 2003–12

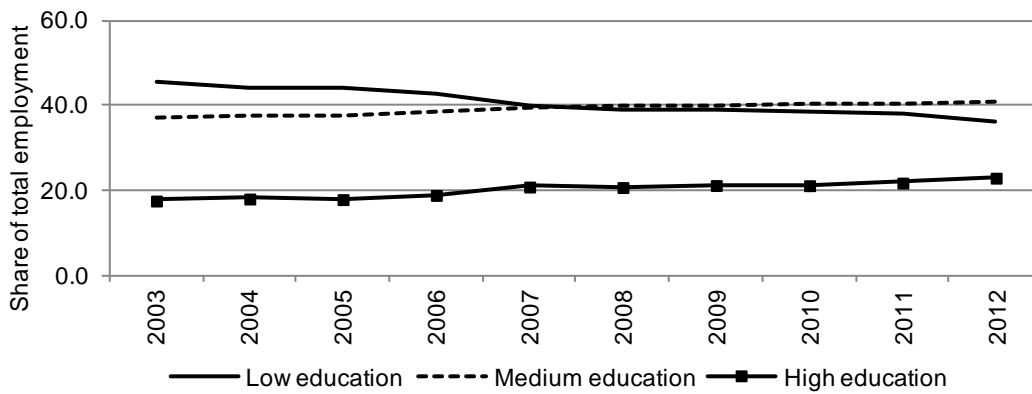


Note: Low-earning sectors: primary activities, domestic workers, low-tech industry. Middle-earning sectors: commerce, education and health, utilities and transportation, construction. High-earning sectors: skilled services, public administration, high-tech industry.

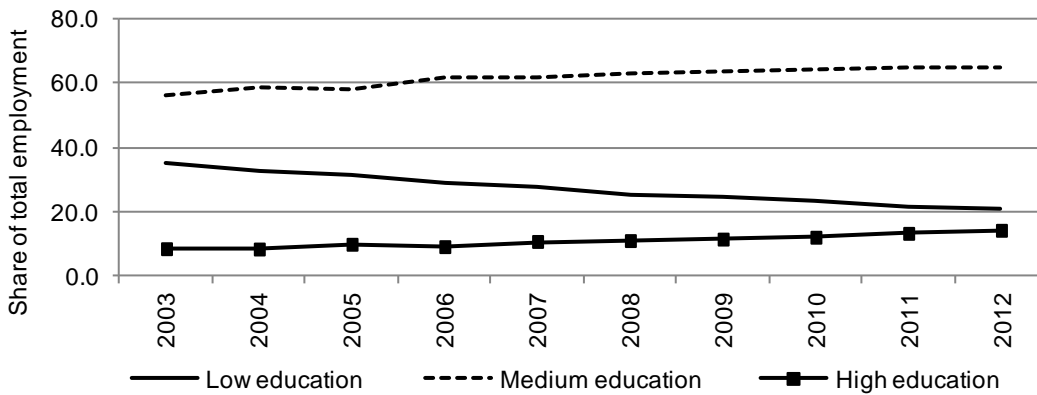
Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Figure 7: Share of employment by educational level: employed workers, 15 years old or more, 2003–12

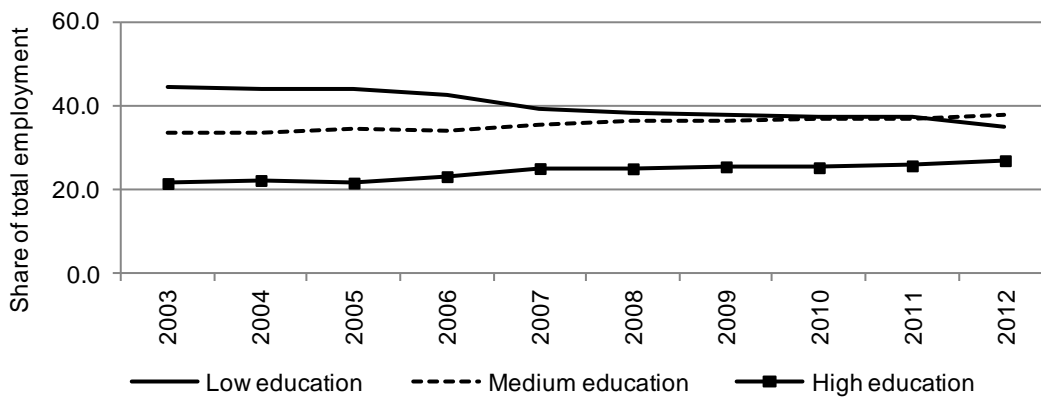
(a) All employed workers



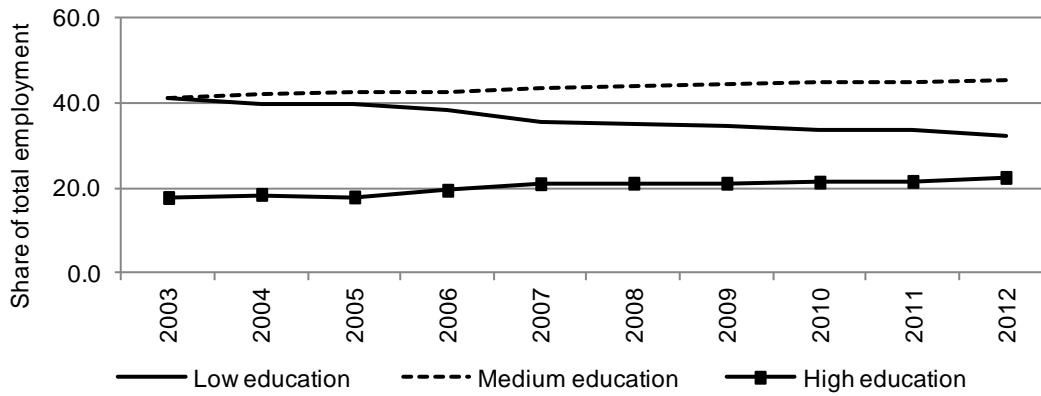
(b) Youth (15 to 24 years old)



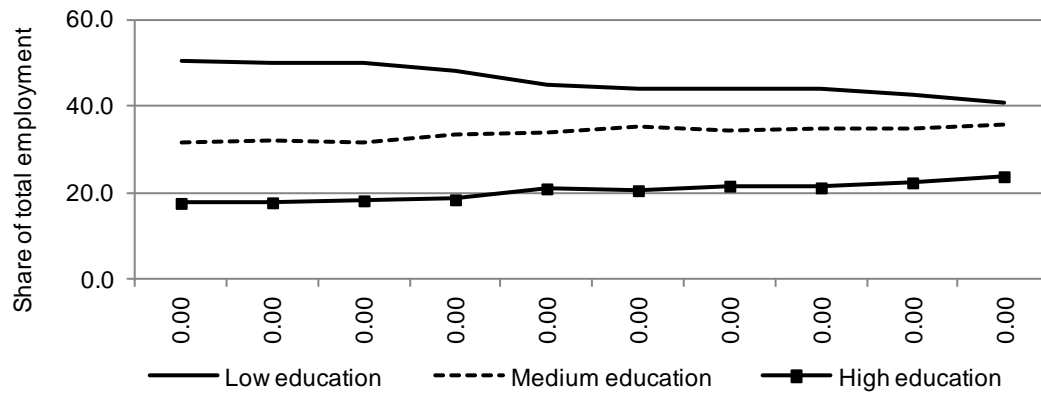
(c) Adults (25 to 64 years old)



(d) Men



(e) Women

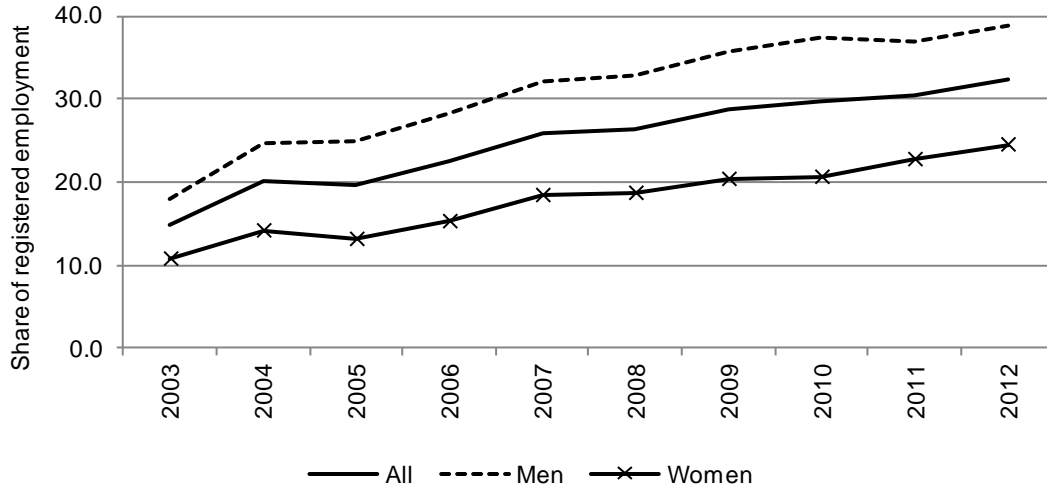


Note: Low: eight years of schooling or less. Medium: from nine to thirteen years of schooling. High: Over thirteen years of schooling.

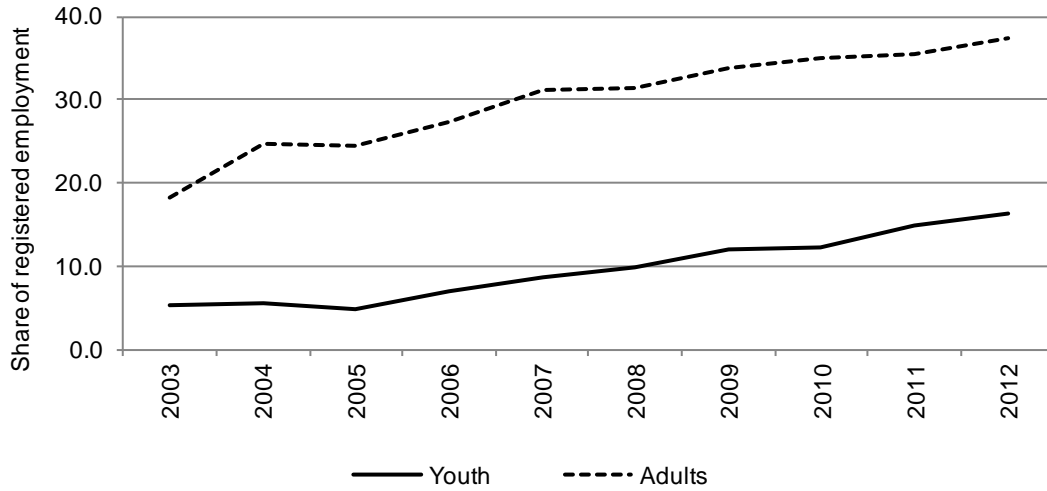
Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Figure 8: Share of employment registered with the national social security system: employed workers, 15 years old or more, 2003–12

(a) Overall and by gender



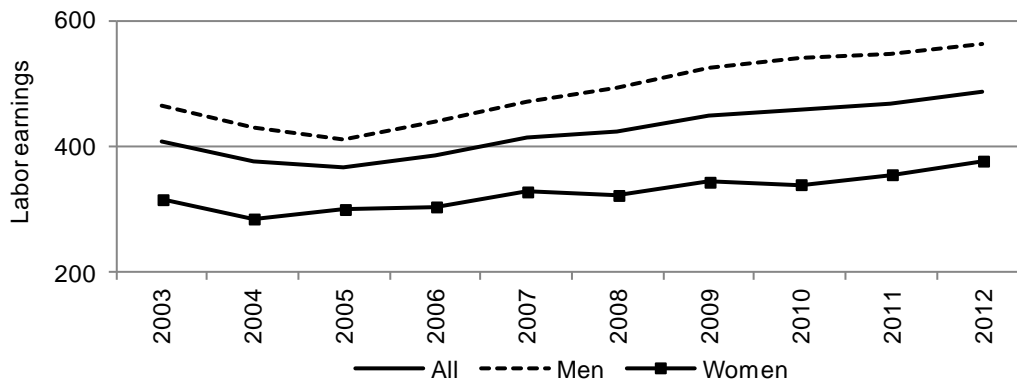
(b) By age group



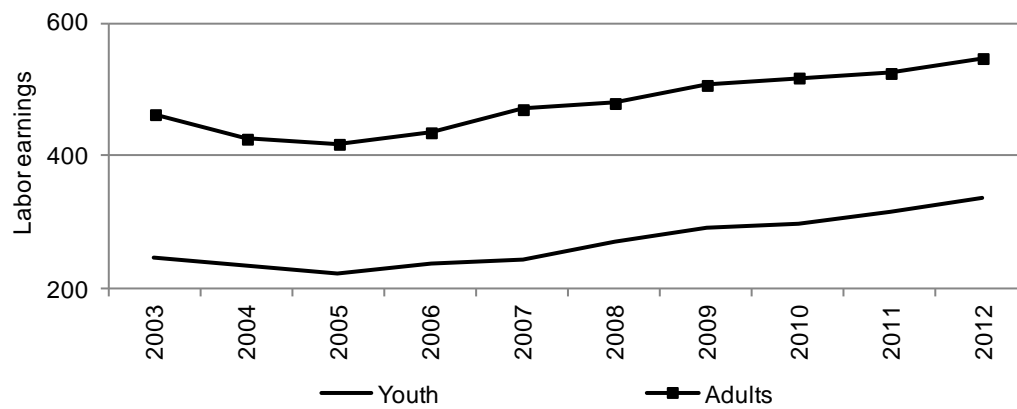
Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Figure 9: Monthly labour earnings at PPP dollars of 2005, 2003–12

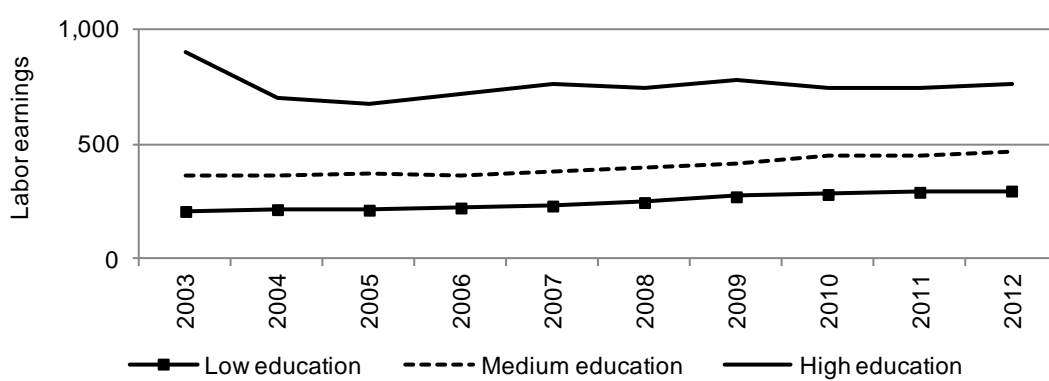
(a) Overall and by gender



(b) By age



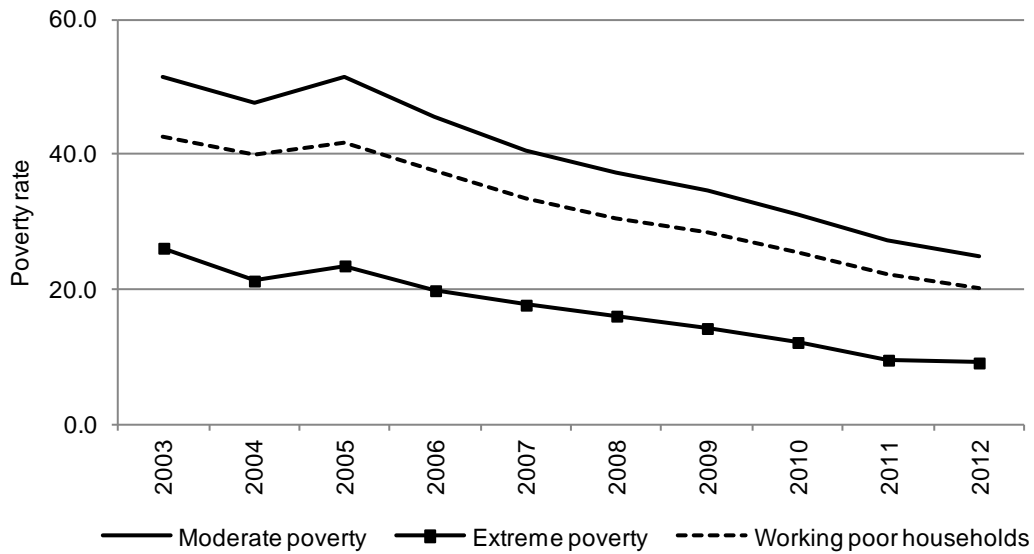
(c) By educational level



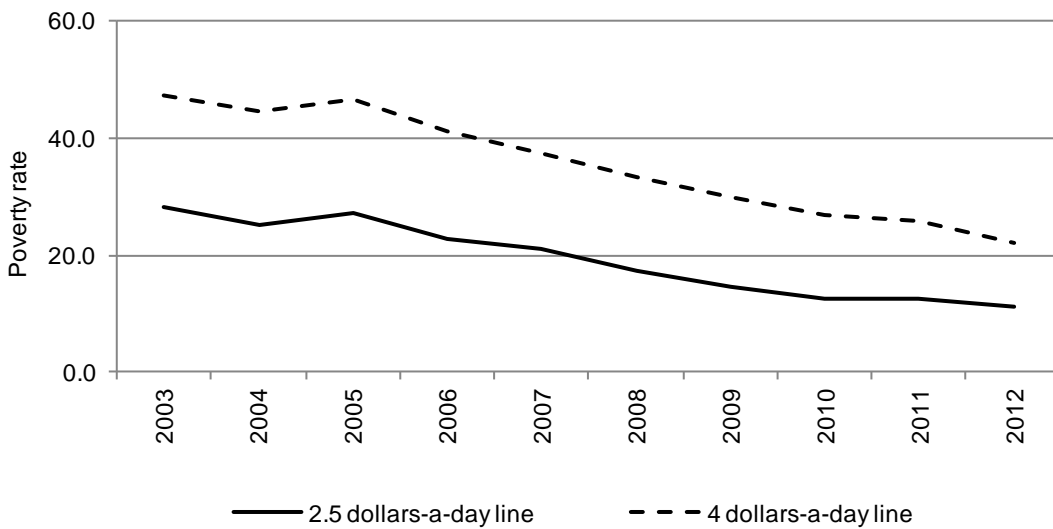
Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Figure 10: Poverty rates and working poor households, 2003–12

(a) Official lines

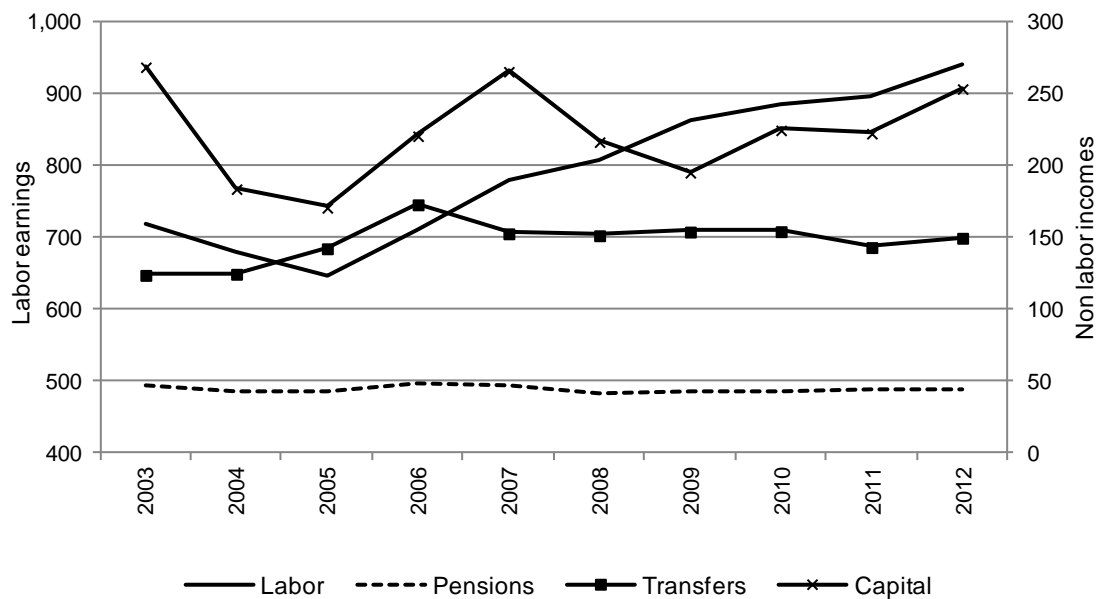


(b) International lines



Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

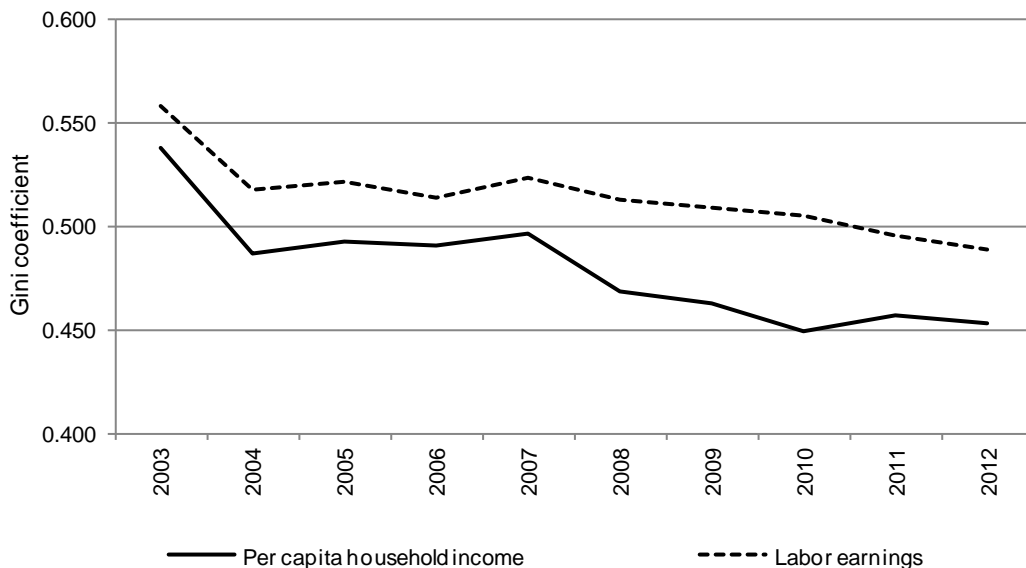
Figure 11: Sources of monthly household total income at PPP dollars of 2005, 2003–12



Note: Transfers include public and private transfers.

Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Figure 12: Gini coefficient of household per capita income and labour earnings, 2003–12



Notes: Gini coefficients of household per capita income and labour earnings are calculated among persons with positive household per capita income and positive labour earnings respectively.

Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Tables

Table 1: Household surveys' description

	Number of households	Number of persons
2003	12,580	56,944
2004	19,502	88,062
2005	19,895	88,205
2006	20,577	90,783
2007	22,204	95,469
2008	21,502	91,900
2009	21,753	95,199
2010	21,496	94,218
2011	24,809	102,644
2012	25,091	101,548

Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Table 2: Macroeconomic variables, 2000–12

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
GDP ^{1,2}	143,353	143,661	150,873	156,957	164,768	176,017	189,641	206,460	226,614	228,705	248,810	265,988	282,825
GDP per capita ¹	5,514	5,447	5,644	5,797	6,013	6,349	6,765	7,288	7,916	7,904	8,503	8,982	9,431
GDP per person employed ¹	17,334	17,482	18,207	18,897	19,432	19,937	19,685	19,821	21,330	22,090	22,939	24,136	25,212
GDP growth	2.95	0.21	5.02	4.03	4.98	6.83	7.74	8.87	9.76	0.92	8.79	6.90	6.33
GDP per capita growth	1.41	-1.20	3.62	2.71	3.71	5.60	6.56	7.72	8.62	-0.15	7.57	5.63	5.01
Exports of goods and services ^{1,2}	12,301	13,206	14,116	15,010	17,289	19,917	20,076	21,311	23,424	22,749	23,839	26,955	28,178
Agriculture, value added (% of GDP)	8.50	8.25	7.85	7.63	7.29	7.21	6.95	6.99	7.22	7.30	6.77	7.05	7.00
Industry, value added (% of GDP)	29.89	29.58	30.39	30.83	32.98	34.32	37.02	36.96	36.57	34.24	36.07	36.57	34.57
Services, value added (% of GDP)	61.61	62.17	61.77	61.54	59.73	58.47	56.03	56.05	56.21	58.46	57.16	56.38	58.43
Agriculture, value added ^{1,2}	4,561	4,183	4,304	4,634	4,832	5,257	5,852	6,344	6,295	6,097	6,249	6,426	6,811
Industry, value added ^{1,2}	19,162	19,400	20,857	21,687	23,049	24,821	26,632	29,324	32,291	31,571	35,141	36,681	38,494
Services, etc., value added ^{1,2}	35,140	35,096	36,404	37,993	39,768	42,280	45,754	50,125	54,948	56,552	60,897	65,917	70,595
Total population ²	26.00	26.37	26.73	27.07	27.40	27.72	28.03	28.33	28.63	28.93	29.26	29.61	29.99
Working age population (15-64) ²	15.88	16.19	16.49	16.78	17.07	17.35	17.63	17.89	18.16	18.44	18.73	19.04	19.36

1: Purchasing power parity dollars of 2005.

2: In millions.

Source: World Development Indicators (the World Bank 2014).

Table 3: Share of employment by occupational group: all employed workers, 15 years old or more, 2003–12

(a) All employed workers

	Management	Professionals	Technicians & associate professionals	Clerical	Service & sales workers	Agricultural, forestry & fishery workers	Craft & related trades workers	Plant & machine operators, and assemblers	Elementary	Armed forces
2003	0.46	6.90	5.59	3.69	13.83	16.19	7.31	7.00	38.24	0.79
2004	0.43	6.48	5.48	3.90	12.55	15.24	7.85	7.19	40.09	0.78
2005	0.53	5.94	5.37	3.88	13.18	15.62	8.26	7.02	39.37	0.82
2006	0.37	6.27	5.96	4.05	13.40	14.83	8.40	7.36	38.61	0.75
2007	0.39	6.84	6.88	4.27	13.58	13.85	8.95	7.79	36.57	0.88
2008	0.54	6.93	6.48	5.02	13.79	13.94	8.99	8.59	34.99	0.73
2009	0.63	7.42	6.43	5.05	15.37	13.63	8.31	8.67	33.76	0.75
2010	0.59	6.90	6.68	5.16	16.22	13.38	8.37	8.91	33.07	0.72
2011	0.56	7.14	6.53	5.67	16.08	13.82	8.30	9.40	31.70	0.79
2012	0.58	7.60	6.81	6.18	16.55	13.66	8.45	8.93	30.48	0.76

(b) Youth (15 to 24 years old)

	Management	Professionals	Technicians & associate professionals	Clerical	Service & sales workers	Agricultural, forestry & fishery workers	Craft & related trades workers	Plant & machine operators, and assemblers	Elementary	Armed forces
2003	0.00	2.94	3.72	4.19	13.97	4.48	7.49	5.91	57.19	0.11
2004	0.02	1.78	4.80	3.46	11.45	2.92	7.54	5.70	62.11	0.23
2005	0.03	2.13	4.15	4.00	13.04	3.27	8.48	4.81	59.97	0.13
2006	0.00	2.07	4.63	3.84	13.89	2.86	7.89	5.31	59.36	0.14
2007	0.02	1.92	5.16	4.55	14.83	3.65	9.48	5.88	54.33	0.17
2008	0.00	2.63	5.79	5.57	14.70	2.87	10.18	7.01	51.03	0.22
2009	0.05	2.58	5.63	5.69	15.97	2.69	8.89	7.34	50.81	0.35
2010	0.00	2.65	6.28	5.90	16.39	2.68	8.41	7.72	49.45	0.50
2011	0.06	3.11	6.51	7.26	16.72	2.33	8.71	7.74	47.23	0.33
2012	0.08	2.18	7.13	8.13	17.55	2.58	8.87	7.34	45.84	0.30

(c) Adults (25 to 64 years old)

	Management	Professionals	Technicians & associate professionals	Clerical	Service & sales workers	Agricultural, forestry & fishery workers	Craft & related trades workers	Plant & machine operators, and assemblers	Elementary	Armed forces
2003	0.50	8.56	6.51	3.77	14.12	16.98	7.36	7.69	33.45	1.06
2004	0.59	8.33	5.98	4.35	13.09	16.16	8.14	8.05	34.28	1.03
2005	0.68	7.57	5.98	4.13	13.45	16.23	8.50	8.11	34.24	1.11
2006	0.50	7.94	6.71	4.47	13.41	15.30	8.72	8.44	33.50	1.01
2007	0.53	8.61	7.78	4.51	13.43	13.83	8.99	8.73	32.43	1.16
2008	0.72	8.60	7.08	5.29	13.62	14.27	8.91	9.54	31.02	0.95
2009	0.81	9.34	7.10	5.29	15.38	13.69	8.38	9.34	29.72	0.94
2010	0.77	8.54	7.34	5.43	16.50	13.14	8.55	9.64	29.22	0.86
2011	0.72	8.78	7.04	5.79	16.07	13.52	8.43	10.39	28.26	1.01
2012	0.72	9.54	7.21	6.20	16.35	13.41	8.43	9.91	27.26	0.97

(d) Men

	Management	Professionals	Technicians & associate professionals	Clerical	Service & sales workers	Agricultural, forestry & fishery workers	Craft & related trades workers	Plant & machine operators, and assemblers	Elementary	Armed forces
2003	0.60	5.94	6.45	3.08	7.67	23.27	9.27	12.09	30.31	1.33
2004	0.57	5.93	6.37	3.40	6.49	21.84	9.69	12.06	32.38	1.28
2005	0.70	4.95	6.29	3.34	6.98	22.27	9.86	11.98	32.26	1.38
2006	0.48	5.47	7.31	3.45	7.08	21.11	9.82	12.72	31.31	1.26
2007	0.51	5.65	7.93	3.67	7.24	19.65	10.48	13.44	29.88	1.55
2008	0.79	5.93	7.49	4.44	7.14	19.76	10.32	14.85	28.06	1.23
2009	0.74	6.42	7.54	4.43	8.39	18.91	9.78	14.99	27.53	1.27
2010	0.77	6.07	8.05	4.41	8.34	18.27	9.59	15.73	27.55	1.23
2011	0.64	6.05	7.60	4.74	8.36	19.00	9.57	16.41	26.32	1.30
2012	0.74	6.49	8.10	5.27	8.46	18.54	9.86	15.55	25.69	1.29

(e) Women

	Management	Professionals	Technicians & associate professionals	Clerical	Service & sales workers	Agricultural, forestry & fishery workers	Craft & related trades workers	Plant & machine operators, and assemblers	Elementary	Armed forces
2003	0.29	8.10	4.52	4.45	21.57	7.32	4.85	0.61	48.19	0.10
2004	0.25	7.17	4.36	4.55	20.28	6.83	5.50	0.98	49.92	0.15
2005	0.31	7.20	4.22	4.56	21.01	7.24	6.24	0.75	48.34	0.12
2006	0.23	7.29	4.26	4.81	21.31	6.96	6.62	0.64	47.76	0.12
2007	0.25	8.28	5.62	5.01	21.27	6.82	7.10	0.93	44.68	0.06
2008	0.24	8.14	5.26	5.72	21.83	6.91	7.39	1.03	43.36	0.13
2009	0.49	8.62	5.09	5.80	23.78	7.25	6.54	1.05	41.26	0.12
2010	0.37	7.89	5.06	6.04	25.58	7.56	6.92	0.81	39.63	0.12
2011	0.47	8.45	5.25	6.79	25.30	7.62	6.77	1.03	38.13	0.19
2012	0.39	8.94	5.25	7.27	26.33	7.77	6.75	0.93	36.26	0.11

Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Table 4: Share of employment by occupational position: all employed workers, 15 years old or more, 2003-2012

(a) All employed workers

	Employer	Wage/salaried employee	Self-employed	Unpaid worker
2003	5.31	39.78	37.34	17.57
2004	5.49	40.96	36.00	17.54
2005	5.64	41.33	36.46	16.57
2006	5.60	43.22	35.22	15.96
2007	5.92	44.58	35.85	13.65
2008	5.62	45.09	36.34	12.95
2009	5.65	45.31	36.04	13.00
2010	5.98	45.22	36.56	12.23
2011	5.44	45.26	36.81	12.49
2012	5.59	46.64	36.42	11.35

(b) Youth (15 to 24 years old)

	Employer	Wage/salaried employee	Self-employed	Unpaid worker
2003	1.16	48.80	17.15	32.89
2004	0.93	50.98	14.96	33.13
2005	1.01	51.51	15.12	32.36
2006	0.91	54.41	14.17	30.51
2007	1.01	56.44	16.40	26.15
2008	0.94	58.71	16.05	24.29
2009	1.22	58.59	16.45	23.74
2010	1.20	59.07	16.94	22.78
2011	0.97	59.18	16.19	23.66
2012	1.04	61.37	15.40	22.19

(c) Adults (25 to 64 years old)

	Employer	Wage/salaried employee	Self-employed	Unpaid worker
2003	6.01	39.68	41.35	12.96
2004	6.46	40.66	40.27	12.61
2005	6.54	41.20	40.49	11.77
2006	6.47	42.99	38.94	11.60
2007	6.81	44.48	38.74	9.97
2008	6.59	44.51	39.55	9.36
2009	6.58	44.98	38.80	9.64
2010	6.86	44.96	39.06	9.12
2011	6.28	45.34	39.10	9.28
2012	6.44	46.55	38.59	8.42

(d) Men

	Employer	Wage/salaried employee	Self-employed	Unpaid worker
2003	7.49	44.13	38.69	9.69
2004	7.62	45.73	36.90	9.76
2005	7.58	46.24	37.34	8.84
2006	7.52	48.33	35.59	8.57
2007	7.97	49.49	35.50	7.04
2008	7.75	49.73	35.59	6.93
2009	7.66	50.54	35.09	6.72
2010	8.10	50.15	35.47	6.28
2011	7.50	49.33	36.30	6.87
2012	7.51	50.86	35.70	5.93

(e) Women

	Employer	Wage/salaried employee	Self-employed	Unpaid worker
2003	2.57	34.33	35.64	27.46
2004	2.79	34.89	34.86	27.46
2005	3.19	35.14	35.34	26.33
2006	3.19	36.82	34.77	25.23
2007	3.44	38.61	36.28	21.67
2008	3.04	39.47	37.25	20.24
2009	3.23	39.01	37.20	20.56
2010	3.48	39.37	37.86	19.30
2011	2.99	40.38	37.41	19.22
2012	3.27	41.54	37.29	17.89

Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Table 5: Share of employment by economic sector: all employed workers, 15 years old or more, 2003-2012

(a) All

	Primary activities	Low-tech Industry	High-tech Industry	Construction	Commerce	Utilities & transportation	Skilled services	Public administration	Education & Health	Domestic workers
2003	35.50	5.02	3.64	4.07	25.11	6.02	4.08	3.17	9.46	3.93
2004	34.04	5.80	4.06	3.69	24.84	5.96	4.11	3.08	10.30	4.13
2005	34.26	6.05	3.73	3.47	24.96	6.25	3.72	3.55	10.25	3.76
2006	32.91	6.00	4.14	3.85	24.88	6.62	4.19	3.57	9.73	4.11
2007	29.16	7.00	4.15	4.24	24.94	7.16	4.43	3.89	11.02	4.00
2008	28.56	7.08	4.05	4.39	25.16	7.71	4.58	3.83	11.06	3.57
2009	28.21	6.49	4.20	4.89	25.07	7.54	4.76	4.19	11.30	3.34
2010	27.19	6.69	3.88	5.45	25.90	7.50	4.85	4.23	11.09	3.22
2011	27.77	6.25	3.89	5.47	25.61	7.62	5.04	4.14	11.41	2.81
2012	26.75	6.42	4.09	5.68	26.19	7.20	5.16	4.51	11.33	2.67

(b) Youth (15 to 24 years old)

	Primary activities	Low-tech Industry	High-tech Industry	Construction	Commerce	Utilities & transportation	Skilled services	Public administration	Education & Health	Domestic workers
2003	36.02	4.99	3.48	3.55	26.17	6.81	3.90	1.17	6.99	6.90
2004	34.26	6.10	4.23	3.38	25.76	6.38	3.66	1.31	6.77	8.15
2005	34.79	6.68	3.76	3.08	25.56	6.74	3.67	1.54	7.05	7.13
2006	32.87	6.75	3.77	3.28	26.11	7.32	3.76	1.69	6.83	7.63
2007	28.08	7.84	4.67	3.98	27.24	8.00	4.25	1.80	6.93	7.23
2008	26.64	8.21	4.91	4.57	26.47	8.60	4.51	1.98	7.66	6.47
2009	25.75	6.92	4.92	5.34	27.00	8.75	5.11	2.34	7.92	5.97
2010	24.61	6.77	4.39	6.15	27.61	8.85	5.56	2.51	8.14	5.41
2011	24.93	6.80	4.48	5.88	27.57	8.75	6.17	2.26	8.96	4.21
2012	24.18	6.82	4.64	6.11	29.17	8.37	6.15	2.74	7.54	4.29

(c) Adults (25 to 64 years old)

	Primary activities	Low-tech Industry	High-tech Industry	Construction	Commerce	Utilities & transportation	Skilled services	Public administration	Education & Health	Domestic workers
2003	32.87	5.11	3.81	4.43	25.38	6.10	4.35	3.99	10.71	3.26
2004	31.15	5.84	4.22	4.02	25.03	6.17	4.49	3.88	12.06	3.14
2005	31.17	6.10	3.87	3.76	25.26	6.55	4.06	4.43	11.74	3.05
2006	29.97	5.98	4.47	4.19	25.03	6.87	4.61	4.39	11.19	3.30
2007	26.74	6.92	4.22	4.54	24.61	7.34	4.70	4.78	12.78	3.36
2008	26.32	7.00	4.04	4.56	25.00	7.92	4.87	4.65	12.67	2.97
2009	25.90	6.56	4.20	5.04	24.94	7.54	4.97	5.03	12.96	2.85
2010	24.69	6.84	3.97	5.59	26.01	7.50	4.98	5.04	12.52	2.85
2011	25.34	6.32	3.87	5.73	25.40	7.78	5.17	4.96	12.75	2.68
2012	24.46	6.50	4.13	5.94	25.64	7.34	5.31	5.33	12.94	2.40

(d) Men

	Primary activities	Low-tech Industry	High-tech Industry	Construction	Commerce	Utilities & transportation	Skilled services	Public administration	Education & Health	Domestic workers
2003	39.18	4.44	5.42	7.06	17.23	9.83	4.78	4.19	7.52	0.35
2004	37.20	5.02	6.04	6.54	16.60	9.76	5.44	4.17	8.75	0.47
2005	37.50	5.08	5.54	6.08	17.84	9.98	4.60	4.76	8.21	0.41
2006	36.20	4.90	6.20	6.72	17.04	10.58	5.36	4.60	7.96	0.42
2007	32.72	6.05	5.89	7.57	16.55	11.54	5.37	5.18	8.74	0.38
2008	32.22	5.92	5.77	7.78	15.92	12.47	5.67	5.16	8.77	0.32
2009	31.19	5.36	6.06	8.61	16.71	11.97	5.73	5.60	8.50	0.28
2010	29.89	5.55	5.71	9.76	16.92	12.31	5.78	5.49	8.32	0.27
2011	30.99	5.21	5.51	9.62	16.46	12.33	5.75	5.17	8.74	0.23
2012	29.96	5.48	5.89	9.91	16.65	11.77	5.92	5.65	8.49	0.27

(e) Women

	Primary activities	Low-tech Industry	High-tech Industry	Construction	Commerce	Utilities & transportation	Skilled services	Public administration	Education & Health	Domestic workers
2003	30.88	5.73	1.41	0.34	35.00	1.24	3.19	1.88	11.90	8.43
2004	30.00	6.79	1.53	0.07	35.34	1.12	2.41	1.69	12.27	8.80
2005	30.17	7.28	1.45	0.18	33.94	1.53	2.60	2.02	12.83	8.00
2006	28.79	7.38	1.56	0.25	34.69	1.66	2.72	2.27	11.95	8.73
2007	24.85	8.16	2.03	0.20	35.12	1.84	3.30	2.32	13.79	8.39
2008	24.14	8.48	1.97	0.30	36.33	1.96	3.27	2.22	13.83	7.50
2009	24.63	7.86	1.97	0.40	35.13	2.22	3.60	2.50	14.68	7.02
2010	23.98	8.03	1.71	0.32	36.57	1.80	3.74	2.75	14.37	6.74
2011	23.92	7.49	1.95	0.50	36.56	1.99	4.19	2.90	14.60	5.89
2012	22.86	7.55	1.92	0.57	37.72	1.68	4.24	3.13	14.77	5.56

Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Table 6: Monthly labour earnings at PPP dollars of 2005, 2003–12

(a) All employed workers, by gender, age group, occupational position, and educational level

	All	Gender		Age		Occupational position			Educational level		
		Men	Women	Youth	Adults	Employer	Wage/salaried employee	Self-employed	Low	Medium	High
2003	408.3	466.8	316.7	246.7	462.5	845.6	499.2	249.7	208.6	358.9	899.2
2004	375.3	431.4	286.0	234.1	425.6	676.0	448.9	246.5	216.5	364.8	702.4
2005	368.9	412.2	301.0	223.7	417.9	696.7	435.1	243.5	214.2	369.6	672.0
2006	386.3	439.2	305.2	239.3	435.2	717.2	461.0	242.5	223.7	363.9	721.4
2007	413.7	472.6	329.0	243.7	470.0	889.7	479.7	253.5	232.2	379.3	759.7
2008	423.3	494.1	323.4	269.9	479.3	920.8	478.1	278.6	247.5	397.0	743.8
2009	449.9	524.4	344.4	291.6	506.5	904.5	519.4	291.6	272.5	416.0	777.1
2010	457.8	542.8	340.5	296.6	517.5	956.1	521.2	298.0	282.6	447.6	742.9
2011	467.3	547.8	356.3	315.7	524.4	1026.4	521.9	317.6	292.2	454.3	742.7
2012	486.3	564.5	377.9	335.8	546.8	1063.9	545.5	321.9	297.7	470.9	763.2

(b) By economic sector

	Primary activities	Low-tech Industry	High-tech Industry	Construction	Commerce	Utilities & transportation	Skilled services	Public administration	Education & Health	Domestic workers
2003	190.5	397.6	636.8	711.4	368.2	510.8	994.1	658.5	471.4	280.0
2004	219.3	447.8	555.9	449.1	349.2	461.2	613.9	643.0	460.8	244.7
2005	210.8	328.7	456.4	409.5	374.4	496.3	766.4	617.9	420.5	250.2
2006	222.7	314.5	545.9	555.1	356.0	477.0	728.0	691.4	456.2	278.7
2007	241.1	401.0	606.5	471.9	377.5	468.2	791.2	672.8	493.4	268.9
2008	269.1	388.0	561.1	546.9	379.0	497.5	797.7	671.4	471.0	274.0
2009	293.6	389.3	585.4	572.3	409.8	487.8	804.4	765.0	480.8	310.8
2010	300.3	377.3	645.8	601.8	423.9	534.0	653.8	753.5	503.1	316.1
2011	324.4	411.1	587.7	603.9	435.6	512.0	737.1	755.9	483.2	322.8
2012	316.3	409.0	601.9	630.0	460.4	567.5	779.8	718.0	515.8	355.5

(c) By occupational group

	Management	Professionals	Technicians & associate professional	Clerical	Service & sales workers	Agricultural, forestry & fishery workers	Craft & related trades	Plant & machine operators, and assemblers	Elementary	Armed forces
2003	2937.8	933.6	852.3	686.4	354.1	149.3	330.7	453.0	267.9	629.6
2004	2228.2	750.8	757.8	656.7	342.8	178.6	320.4	426.2	253.5	618.1
2005	1236.7	760.0	741.4	600.6	387.3	168.6	316.0	437.8	251.7	662.2
2006	1155.3	811.9	785.8	691.4	351.0	183.0	333.0	454.4	253.8	708.4
2007	1244.7	763.8	895.3	756.7	363.5	201.5	347.5	445.9	262.4	776.1
2008	1712.5	779.2	822.0	631.8	386.7	228.9	342.3	490.4	273.2	788.0
2009	1825.5	857.9	781.8	683.5	402.5	253.0	375.0	491.0	288.5	769.4
2010	2010.9	832.2	782.9	642.0	418.9	264.0	367.9	551.0	298.3	782.8
2011	1783.5	792.7	824.0	626.3	422.9	272.5	407.9	538.0	315.8	779.3
2012	1670.0	833.3	821.8	653.9	434.2	260.4	402.1	575.4	342.2	856.8

Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Table 7: Hourly wage in main occupation at PPP dollars of 2005, 2003–12

(a) All employed workers, by gender, by age group, by occupational position, and educational level

	All	Gender		Age		Occupational position			Educational level		
		Men	Women	Youth	Adults	Employer	Wage/salaried employee	Self-employed	Low	Medium	High
2003	2.54	2.76	2.20	1.67	2.80	5.23	2.80	1.89	1.43	2.19	5.47
2004	2.24	2.44	1.91	1.58	2.46	3.92	2.50	1.71	1.41	2.12	4.26
2005	2.22	2.36	1.99	1.66	2.41	4.45	2.42	1.67	1.42	2.07	4.28
2006	2.40	2.60	2.09	1.58	2.62	4.24	2.60	1.87	1.54	2.11	4.61
2007	2.66	2.84	2.40	1.72	2.93	5.75	2.71	2.10	1.62	2.30	5.02
2008	2.69	2.94	2.34	1.83	2.93	5.89	2.74	2.14	1.74	2.38	4.77
2009	2.90	3.16	2.54	2.10	3.17	5.70	3.05	2.29	1.85	2.67	4.96
2010	3.01	3.33	2.56	2.35	3.24	6.05	3.06	2.44	2.04	2.89	4.71
2011	3.09	3.42	2.65	2.28	3.33	7.26	3.07	2.51	2.18	2.91	4.76
2012	3.29	3.69	2.75	2.56	3.56	7.03	3.31	2.71	2.20	3.00	5.28

(b) By economic sector

	Primary activities	Low-tech Industry	High-tech Industry	Construction	Commerce	Utilities & transportation	Skilled services	Public administration	Education & Health	Domestic workers
2003	1.38	2.30	3.82	4.07	2.24	2.69	6.01	3.53	3.55	1.63
2004	1.56	2.44	3.06	2.38	1.97	2.24	3.76	3.37	3.38	1.48
2005	1.47	1.88	2.50	2.31	2.15	2.46	4.53	3.11	3.28	1.45
2006	1.58	1.88	2.97	3.62	2.07	2.45	4.05	3.58	3.88	1.59
2007	1.76	2.24	3.37	2.91	2.30	2.80	5.84	3.35	3.81	1.61
2008	2.02	2.12	3.32	3.19	2.49	2.48	5.02	3.47	3.53	1.58
2009	2.24	2.32	3.36	3.22	2.49	2.74	4.78	4.18	4.12	1.84
2010	2.29	2.25	3.75	3.64	2.74	3.00	4.51	4.04	4.00	1.82
2011	2.55	2.41	3.41	3.49	2.83	2.83	5.38	3.84	3.81	2.00
2012	2.68	2.47	3.52	4.06	2.95	3.15	5.00	3.96	4.42	2.16

(c) By occupational group

	Management	Professionals	Technicians & associate professional	Clerical	Service & sales workers	Agricultural, forestry & fishery workers	Craft & related trades	Plant & machine operators, and assemblers	Elementary	Armed forces
2003	16.50	6.25	5.24	3.86	1.95	1.21	2.13	2.34	1.80	2.79
2004	12.22	5.12	4.45	3.53	1.66	1.43	1.88	2.19	1.66	2.56
2005	7.12	5.27	4.52	3.29	2.07	1.36	1.85	2.19	1.60	2.84
2006	6.50	6.09	4.79	4.04	1.84	1.51	1.98	2.33	1.66	2.77
2007	7.24	5.65	5.99	3.96	1.99	1.68	2.19	2.35	1.87	3.16
2008	8.05	5.58	5.30	3.50	2.06	1.98	2.04	2.55	1.97	3.26
2009	11.50	6.01	5.42	3.71	2.17	2.19	2.20	2.71	2.06	3.30
2010	12.75	5.62	5.18	3.59	2.29	2.31	2.46	3.12	2.28	3.15
2011	8.71	5.80	5.78	3.67	2.48	2.47	2.53	2.87	2.29	3.26
2012	9.12	6.66	5.69	3.82	2.46	2.54	2.55	3.17	2.53	3.68

Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Table 8: Share of persons in the labour force by educational levels:
population 15 years old or more, 2003–12

	Low	Medium	High
2003	44.17	38.04	17.78
2004	42.97	38.55	18.48
2005	43.08	38.58	18.34
2006	41.56	39.28	19.16
2007	38.84	39.98	21.18
2008	38.07	40.88	21.05
2009	37.89	40.70	21.42
2010	37.55	40.94	21.51
2011	37.14	40.91	21.95
2012	35.39	41.50	23.11

Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Table 9: Unemployment rate by educational levels:
population 15 years old or more, 2003–12

	Low	Medium	High
2003	2.60	7.58	5.77
2004	2.47	7.34	6.99
2005	2.50	7.26	6.96
2006	2.15	6.62	5.46
2007	2.19	6.29	5.60
2008	1.91	6.22	5.44
2009	2.12	6.04	4.79
2010	1.63	5.39	5.01
2011	1.88	5.31	4.09
2012	1.60	4.86	3.76

Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).