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

Chile country study

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**Abstract:** During the 2000s Chile achieved rapid economic growth and improved most labour market indicators: the unemployment rate fell; the mix of employment by occupational position and sector improved; the educational level of the employed population, the percentage of registered workers, and labour earnings increased; and all poverty and inequality indicators decreased. The economy suffered a recession during the international crisis of 2008, but recovered quickly. Some labour market indicators were negatively affected by the crisis. The unemployment rate was the only indicator that did not return to its pre-crisis level by the end of the period studied.

**Keywords:** Chile, 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 Chile 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 Chile 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 de Caracterización Socioeconómica Nacional (CASEN). The CASEN is a nationwide and regionally representative household survey conducted every three or four years. The information in this paper is derived from all the surveys conducted in the 2000s, that is, surveys from the years 2000, 2003, 2006, 2009, and 2011. 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 survey's sample size increased between 2000 and 2006 and decreased thereafter; it went from 64,998 households and 252,595 persons in 2000 to 59,084 households and 200,302 persons in 2011 (Table 1). Despite the smaller samples in 2009 and 2011, the CASEN surveys continued to be representative of the total population of the country.

For this study, we processed the microdata from Chile 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 (two months in the Chilean surveys of 2000 and 2003, and one month thereafter), 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:<sup>1</sup> management; professionals; technicians and associate professionals; clerical; service and sales workers; agricultural,

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

forestry and fishery workers; craft and related trades workers; plant and machine operators and assemblers; elementary and armed forces. Chile has made use of the International Standard Classification of Occupations of 1988 (ISCO-88) whose main groups match the classification systems endorsed by the authors. 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 in 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 levels 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 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. In Chile, incomes from the household survey are adjusted to match National Accounts figures. The data on labour earnings we present here are not adjusted. The poverty rate and inequality ratios, though, are based on the adjusted incomes.<sup>2</sup>

Poverty rates are estimated considering the national lines for moderate and extreme poverty. We compute the poverty headcount ratio for each. The national poverty lines in Chile measure absolute moderate and extreme poverty as gauged by the food price index (FPI) but not by the consumer price index (CPI), and by using the Engel coefficient to construct the moderate poverty line from the extreme poverty line. We also calculate the share of working poor households (those with at least

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<sup>2</sup> Microdata with unadjusted incomes have only been made available recently. Our estimates of the poverty rates and inequality indices using unadjusted incomes differ greatly from previous estimates based on incomes adjusted to match National Accounts. We chose to show statistics on poverty and inequality based on adjusted incomes because Chile had not provided official statistics of these indices using the new data at the moment of writing this paper.

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.

### 3 Empirical results

*Chile experienced rapid economic growth from 2000 to 2012. The economy underwent a recession as a consequence of the international crisis of 2008 but returned to pre-recession GDP and GDP per capita levels in 2010 (Figures 1 and 2).*

From 2000 to 2012, Chile experienced rapid economic growth by Latin American standards. GDP per capita increased by 44.2 per cent, while the average for the region's eighteen countries was 36.2 per cent during the period. GDP (measured at PPP dollars of 2005) grew by 62.9 per cent, and GDP per employed person rose by 17.4 per cent. Annual GDP per capita grew in real terms by an average of 3.1 per cent, ranging from a low of -2.0 per cent in 2009 to a high of 4.9 per cent in 2004 and 2011 (Table 2). Chile has adhered since the 1980s to a policy framework based on trade openness, inflation targeting, and achievement of a structural surplus in the accounts of the central government (IMF 2004). These policies were successful at fostering growth and macroeconomic stability despite the high exposure of Chile to external shocks. The vulnerability of Chile to external shocks is explained by the significant degree of trade openness and financial integration, and the large participation of commodities—mainly minerals—in its exports (De Gregorio and Labbé 2011; IMF 2012). From 2000 to 2002, Chile faced a weak domestic demand and an adverse external environment characterized by the Argentine crisis of 2001–02 and a fall in terms of trade. GDP and GDP per capita growth rates slowed down between 2000 and 2002 but were nonetheless positive. From 2003 to 2008, Chile's GDP grew at an annual rate of 4.7 per cent, while GDP per capita grew at a rate of 3.7 per cent. The international crisis of 2008 led to an important reduction in export prices, export volumes, and domestic aggregate demand (Contreras and French-Davis 2012). GDP and GDP per capita contracted by 1.0 per cent and 2.0 per cent respectively in 2009. Notwithstanding, the Chilean economy recovered rapidly and, by 2010, the 2008 levels of GDP and GDP per capita had been reached. The quick recovery of the Chilean economy to the international crisis was based on its strong policy frameworks such as a fiscal rule and inflation targeting, a sound banking system, and a strong policy response (IMF 2011). The policy response included the implementation of anticyclical measures by the Central Bank of Chile and a stimulus plan funded by a fiscal buffer (*Fondo de Estabilización Económico y Social*). From 2010 to 2012, the aggregate GDP grew at an annual rate of 5.7 per cent and GDP per capita at a rate of 4.8 per cent.

Between 2000 and 2012, the share of the industry sector in the economy increased, while the shares of the service sector and agriculture diminished (Table 2). The share of the industry sector increased from 32.2 per cent in 2000 to 44.2 per cent in 2006 due to a large increase in the price of copper, the main Chilean export product. It then decreased to 35.6 per cent in the year 2012. The share of the agricultural sector in GDP diminished gradually from 5.9 per cent in 2000 to 3.6 per cent in 2012, while the share of the service sector, the largest in the Chilean economy, fell slightly over the period, from 61.9 per cent in 2000 to 60.9 per cent in 2012. The more tradable sectors—mainly agriculture and industry—were the ones hit hardest by the international economic crisis. Between 2008 and 2009, the value added of agriculture fell by 2.5 per cent, while the value added of the industry sector diminished by 2.0 per cent. The service sector was also affected, though to a lesser extent, with a

drop in value added of just 0.3 per cent. By 2010, all sectors had returned to their pre-crisis value added levels.

*The unemployment rate fell between 2000 and 2011, overall and for all population groups. The downward trend was affected negatively by the international crisis of 2008, and the unemployment rate did not return in 2011 to its pre-crisis level in the aggregate and for any of the population groups (Figure 3).*

The unemployment rate (measured as the ratio of unemployment to labour force) fell from 10.4 per cent in 2000 (618,066 unemployed persons) to 7.7 per cent in 2011 (579,050 unemployed persons). This reduction was not monotonic. The unemployment rate decreased from 2000 to 2006 by 3.1 percentage points. It increased from 2006 to 2009, a period that included the Great Recession, when it reached 10.2 per cent (235,895 new unemployed persons). Both the number of people in the labour force and the number of employed persons increased over the same period by 294,451 and 58,556 respectively. These figures suggest that the increase in the unemployment rate in Chile between 2006 and 2009 was explained by the new entrants into the labour market that could not find a job. In 2011, it dropped once again to 7.7 per cent, though that does not represent a full recovery since that figure is higher than the pre-crisis level.

Between 2000 and 2011, the unemployment rate decreased for all population groups following the aggregate trend. The unemployment rate dropped from 21.7 per cent in 2000 to 19.9 per cent in 2011 for young workers, from 8.6 per cent to 5.8 per cent for adult workers, from 9.5 per cent to 6.4 per cent for men, and from 11.8 per cent to 9.6 per cent for women. The downward trend in the unemployment rate from 2000 to 2006 was greater for young than for adult workers (drop of 4.1 and 3.0 percentage points respectively). The increase in the unemployment rate during the international crisis affected young workers more than adults. The youth unemployment rate grew by 7.2 percentage points, while the adult unemployment rate increased by 2.2 percentage points between 2006 and 2009. Finally, the last reduction in the unemployment rate benefited young workers more than adult workers (drop of 5.0 and 2.0 percentage points respectively). Men were the main beneficiaries of the initial reduction in the unemployment rate in comparison to women. The unemployment rate fell by 3.1 percentage points for men and by 2.2 percentage points for women. The increase in the unemployment rate during the Great Recession and the following reduction impacted equally on both gender groups (rise of 2.9 percentage points and drop of around 2.5 percentage points). Despite the reduction in the unemployment rate for all population groups at the end of the period, none of them returned to its pre-crisis level by 2011.

*The composition of employment by occupational group exhibited a slight worsening between 2000 and 2011. This trend held for adult workers and women, while young workers experienced an improvement in their employment structure by occupational group and men exhibited little changes. The international crisis of 2008 did not have an effect on the occupational composition of the employed population overall, and for young and adult workers, but led to a worsening for men and an improvement for women (Figure 4).*

The share of the following occupations shrank between 2000 and 2011: agricultural, forestry and fishery occupations (drop of 1.9 percentage points); management (drop of 1.6 percentage points); clerical (drop of 0.8 percentage points); and plant and machine operators (drop of 0.8 percentage points). The share of the following occupations grew: professionals (increase of 2.3 percentage points); elementary (increase of 1.7 percentage points); and services and sales workers (increase of 1.5 percentage points). The share of the other occupational groups remained largely unchanged. These changes in the occupational composition of employment can be interpreted as a slight



worsening since low-earning occupations (elementary, agricultural, forestry and fishery occupations, and services and sales occupations) increased their share in total employment by 1.3 percentage points between 2000 and 2011, while high-earning occupations (professionals, management, and armed forces) exhibited a smaller increase (increase of 0.4 percentage points). As a consequence, mid-earning occupations reduced their share in total employment (Tables 3 and 6).

Disaggregating, between 2000 and 2011 the composition of employment by occupational group improved for young workers, exhibited a slight worsening for adult workers and women, and remained essentially unchanged for men. For young workers, the share of employment in low-earning occupations fell from 55.7 per cent in 2000 to 52.3 per cent in 2011, while the share of employment in high-earning occupations increased from 4.3 per cent in 2000 to 8.8 per cent in 2011. Adult workers experienced a slight worsening in their employment structure by occupational group due to an increase in the share of low-earning occupations in total employment (from 40.7 per cent in 2000 to 42.6 per cent in 2011) and an unchanged share of employment in high-earning occupations. When broken down by gender, the employment composition by occupational group exhibited little changes for men and a slight worsening for women. The shares of low- and high-earning occupations in total employment remained largely unchanged for men (drops of 0.3 and 0.2 percentage points respectively). For women, the share of employment in low-earning occupations grew more than the share of employment in high-earning occupations (2.3 and 1.0 percentage points respectively).

The international crisis of 2008 did not affect the pre-crisis trends in the employment structure by occupational group overall and for young and adult workers, but led to a worsening for men and an improvement for women. Between 2006 and 2009, the share of low- and high-earning occupations in total employment continued their upward trend in the aggregate and for adult workers. For youth, the share of low-earning occupations kept on falling and the share of high-earning occupation in total employment continued with the upward trend. Men were negatively affected by the crisis. For men, between 2006 and 2009, the share of low-earning occupations in total employment increased, while the share of high-earning occupations decreased. By 2011, men recovered the pre-crisis share of low-earning occupations. For women, the changes in the composition of employment by occupational group were beneficial. The share of low-earning occupations fell, while the rate of women employed in high-earning occupations continued with the upward trend. This improving trend continued in 2011 for women.

*The employment structure by occupational position improved overall and for young, adult workers, and men between 2000 and 2011, while it remained unchanged for women. The international crisis of 2008 did not affect the improving trend in the aggregate and for young workers, adults, and men, and led to a reduction in the share of low-earning positions in total employment for women (Figure 5).*

The share of wage/salaried employees—the largest category in Chile—increased from 74.4 per cent in 2000 to 77.4 per cent in 2011. The share of employers, on the other hand, fell from 4.1 per cent to 1.9 per cent over the same period, and the share of unpaid workers decreased from 1.5 per cent to 0.4 per cent. The share of self-employment barely changed over the period (increase of 0.3 percentage points). These changes in the structure of employment by occupational position can be interpreted as an improvement due to the fall in the share of low-earning categories (self-employment and unpaid workers) and the increase in the share of high-earning categories (employers and wage/salaried employees) (Tables 4 and 6).

The composition of employment by occupational position improved for youth, adults, and men, while it remained unchanged for women between 2000 and 2011. From 2000 to 2011, low-earning categories (unpaid workers and the self-employed) shrank in percentage terms for young and adult workers (3.6 and 0.6 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 men, the employment composition over the period from 2000 to 2011 also improved: the share of low-earning categories in total employment fell by 1.2 percentage points. For women, the employment structure by occupational position remained unchanged (the share of low-earning positions in total employment increased by just 0.1 percentage points).

The international crisis of 2008 did not affect the previously improving trend in the employment structure by occupational position overall and for youth, adults, and men, and led to an improvement for women. Despite the increase in the unemployment rate during the Great Recession, the share of low-earning positions in total employment kept on decreasing in the aggregate and for young, adult workers, and men between 2006 and 2009. Economic necessity may compel workers to take up free-entry self-employment activities in a context of increasing unemployment. However, the unemployment insurance in Chile allowed unemployed workers to look for a new job avoiding low remunerated activities.<sup>3</sup> For women, the share of low-earning categories fell from 2006 and 2009 by 1.0 percentage points and continued with that trend in 2011.

*The employment composition by economic sector improved slightly over the period studied. All population groups benefited from the improvement in the employment structure by economic sector, and young workers and women benefited more than adults and men. The international crisis did not have an adverse effect on the composition of employment by economic sector in the aggregate or for any of the population groups (Figure 6).*

The period from 2000 to 2011 witnessed an increase (from 25.3 per cent to 27.3 per cent) in the share of workers in high-earning sectors (skilled services, public administration, education and health). There was, during the same period, an increase (from 35.2 per cent to 36.2 per cent) in the share of low-earning sectors in total employment (domestic workers, commerce, low-tech industry). Consequently, the share of mid-earning occupations (primary activities, construction, high-tech industry, utilities and transportation) in total employment decreased. Workers employed in the mining subsector are included in the primary activities sector in our classification. An increase in the employment share of the mining subsector over the period in Chile was counteracted by the reduction in the employment share of the agricultural and fishing subsectors. These changes in the employment structure by economic sector can be interpreted as a slight improvement since the increase in the share of high-earning sectors over the period was larger than the increase in the share of low-earning sectors in total employment (Tables 5 and 6).

The employment composition by economic sector improved between 2000 and 2011 for young workers and women, and exhibited a slight improvement for adults and men. For young workers, the share in low-earning sectors dropped from 42.1 per cent in 2000 to 40.3 per cent in 2011, while the share of high-earning sectors among employed young workers increased from 18.9 per cent in

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<sup>3</sup> The unemployment insurance is part of the contributory schemes of the social security system in Chile which covered around 65.0 per cent of the employed population during the period studied. Employees and employers contribute on a monthly basis to an individual account which activates if the event of unemployment occurs (Robles 2011).

2000 to 23.0 per cent in 2011. Adult workers experienced an increase in the share of both low- and high-earning sectors in total employment. The increase in share of high-earning sectors was larger than the rise in the share of low-earning sectors in total employment (1.9 and 1.3 percentage points respectively). The same trends held for men. Their share of low- and high-earning sectors in total employment increased, and the rise in the share of high-earning sectors was larger than the increase for low-earning sectors (1.3 and 1.2 percentage points respectively). For women, there was an improvement in their employment structure by economic sector as the share of low-earning sectors in total employment fell over the period (from 50.8 per cent in 2000 to 48.9 per cent in 2011) and the share of high-earning sectors increased (from 35.7 per cent in 2000 to 37.3 per cent in 2011).

The international crisis of 2008 did not negatively affect the structure of employment by economic sector overall or for all population groups. Between 2006 and 2009, the share of high-earning sectors in total employment kept on increasing, while the shares of low- and mid-earning sectors exhibited a decrease. The sectors that led to the reduction in the shares of low- and mid-earning sectors were the low-tech industry sector, and the primary activities and high-tech industry sectors respectively. This result is in accord with our previous evidence showing that the agricultural and industry sectors were hit hardest by the international crisis compared to the service sector. For young workers and men, the share of low- and high-earning sectors increased during the international crisis, but the increase in the rate of working in high-earning sectors was larger than the increase in low-earning sectors. For women and adults, the share of high-earning sectors in total employment increased during the international crisis, while the share of workers employed in low-earning sectors fell.

*The educational level of the Chilean employed population improved steadily over the period for all population groups, and especially among young workers. The improving trend was not impacted adversely by the international crisis of 2008 (Figure 7).*

The share of employed workers with low educational levels (eight years of schooling or less) dropped from 31.3 per cent in 2000 to 23.6 per cent in 2011, while the share of employed workers with medium and high educational levels (nine to thirteen years of schooling and over thirteen years of schooling) grew from 48.0 per cent in 2000 to 52.3 per cent in 2011 and from 20.7 per cent to 24.1 per cent respectively.<sup>4</sup> 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.<sup>5</sup> The improvement in the educational level of the employed population in Chile is associated with the reform to the education system implemented in 1994. The reform led to an increase in the basic and medium education enrolment rates and a reduction in drop-out rates, and it was accompanied by an improvement in the education infrastructure (Robles 2011).

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<sup>4</sup> The most frequent value of years of education for employed workers in Chile was 9 over the entire period (around 31.9 per cent of employed workers had nine years of education).

<sup>5</sup> 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 group and the unemployment rate of each educational level. We introduce a discussion about the role of these factors in Chile in the paragraph on labour earnings.

The educational level of the employed population improved between 2000 and 2011 for all groups and especially for young workers. For the youth population, the share of employed persons with low educational levels dropped from 22.5 per cent in 2000 to 8.5 per cent in 2011 (drop of 13.9 percentage points). The share of employed youth with medium and high educational levels grew by 6.1 and 7.8 percentage points respectively. The reduction in the share of adult employed workers with low educational levels was smaller compared to young workers—only 7.2 percentage points. There was, over the period, an increase in the shares of adult employed persons with medium and high educational levels of 4.1 percentage points and 3.1 percentage points respectively. The reduction in the share of employed workers with low educational levels over the period was larger for men compared to women (8.3 and 6.0 percentage points respectively). The shares of workers with medium and high levels of education climbed by 5.7 and 2.7 percentage points respectively for men and by 2.1 and 3.9 percentage points for women.

The pattern of improvement in the level of education of the employed population in Chile continued even during the international crisis of 2008, overall and for all population groups.

*The share of employed workers registered with the social security system increased between 2000 and 2011 overall and for all population groups. While the rate diminished during the international crisis, the pre-crisis level had been exceeded by 2011 (Figure 8).*

The Chilean pension system was reformed in 2008. Up to 2008, the system had a contributory scheme and a non-contributory scheme. The contributory scheme was financed by workers who contributed to individual accounts, while the government funded the pensions of those who were affiliated to the old public pay-as-you-go pension system.<sup>6</sup> The non-contributory scheme comprised two programmes which aimed to assure a minimum pension (*Pensión Mínima Garantizada* and *Programa de Pensiones Asistenciales*). The reform of 2008 established three components of the pension system: a contributory component which is mandatory, a voluntary component, and a non-contributory component. The non-contributory component is the *Sistema de Pensiones Sociales* which replaced the previous two non-contributory programmes (*Pensión Mínima Garantizada* and *Programa de Pensiones Asistenciales*). The health system in Chile comprises three components: 1) the public system (FONASA), which covers the majority of Chilean workers; 2) the private system (ISAPRE); and 3) the Armed Forces system. Wage/salaried workers and self-employed are obligated to contribute to the health system, which also receives funding from the government. Finally, the unemployment insurance works as a contributory scheme in the Chilean social security system. Dependent workers and their employers contribute on a monthly basis to individual accounts which activate if the event of unemployment occurs (Robles 2011).

Social security records show an increase between 2000 and 2011 in the percentage of registered workers with the contributory scheme of the system. The share of workers registered grew from 62.8 per cent (3,411,843 registered workers) in 2000 to 68.8 per cent in 2011 (5,068,291 registered workers). Before the onset of the international crisis, the percentage of workers registered with the social security system had increased, reaching 66.7 per cent in 2006. During the crisis the rate dropped slightly to 66.0 per cent in 2009. Interestingly, between 2006 and 2009, both the number of registered and unregistered workers increased by 114,941 and 352,821 respectively. The upward

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<sup>6</sup> The Chilean public pension system was replaced in 1981 by a private capitalization accounts system.

trend resumed as registered employment increased by 2.7 percentage points from 2009 to 2011, surpassing the pre-crisis level. This upward trend in the share of registered workers over the period was related to several policies designed to improve working conditions. Those measures included the simplification of procedures to register workers with the social security system; the replacement of labour inspection fines with information and education about labour regulations (*Multas por capacitación*); the improving access to formal financial services for micro and small firms with a resulting increase in their ability to comply with labour regulations; the passing of the Law of Subcontracting which obligates all the companies in the subcontracting chain to meet labour regulations (ILO 2014).

The aggregate pattern of increased enrolment in the social security system over the period held for all population groups. While young workers were the least likely to be registered with the social security system, they were the group that experienced the largest increase in the registration rate. In the year 2000, 54.3 per cent of young workers were registered with the social security system. By 2011 that figure had increased by 12.2 percentage points reaching 66.5 per cent. For adult workers, the percentage registered with the social security system increased from 65.3 per cent in 2000 to 70.5 per cent in 2011, an increase of 5.2 percentage points. Male workers were more likely to be registered with the social security system than women, and they benefited more than women from the upward trend. The rate of registered employment increased from 63.8 per cent in 2000 to 70.6 per cent in 2011 for men and from 61.0 per cent to 66.0 per cent for women.

The international crisis led to a small reduction in the percentage of registered workers overall and for all population groups. Between 2006 and 2009, the percentage of workers registered with the social security system fell by 0.6 percentage points in the aggregate, 0.6 percentage points for youth, 1.0 percentage points for adults, 0.7 percentage points for men, and 0.5 percentage points for women. By 2011, the share of registered workers surpassed the pre-crisis level overall and for all population groups.

*Labour earnings increased between 2000 and 2011. Within the period, labour earnings fell from 2000 to 2006, grew from 2006 to 2009, and decreased once again in 2011. Workers were not affected negatively by the 2008 crisis. Disaggregating, the increase in labour earnings between 2000 and 2011 held for young and adult workers, and for men and women. The evidence of earning changes for different employment categories over the period indicates that labour earnings tended to increase more for low-earning categories compared to high-earning categories (Figure 9).*

Average monthly earnings, expressed in dollars at 2005 PPP, increased by 7.7 per cent, from US\$703 in 2000 to US\$757 in 2012 (Table 6). The increase in labour earnings was far below the increase in GDP per capita over the period which was 44.2 per cent (Table 2). Labour earnings fell at the beginning of the period—between 2000 and 2006—while GDP was growing, rose between 2006 and 2009—a period that included the Great Recession and during which GDP fell—and increased once again in 2011. The rise in labour earnings over the period was due mostly to the increase of 27.7 per cent in real hourly wages between 2000 and 2011 (Table 7). The increase in hourly wages over the period was related to Chile's wage policy, which included regular adjustments in the minimum wage (Castex and Sepulveda 2014).

Disaggregating, we find that men, women, and young and adult workers all increased their labour earnings between 2000 and 2011. Labour earnings grew for men and women between 2000 and 2011 by 6.8 per cent and 14.7 per cent respectively. The trend in their labour earnings followed the erratic path for the aggregate, with reductions in 2000–06, gains from 2006 to 2009, and a decrease

in 2011. Labour earnings growth over the period 2000–11 was larger for young workers compared to adult workers. The gain was 27.9 per cent for youth and 6.8 per cent for adults. Both age groups suffered an income reduction between 2000 and 2006. Young workers exhibited an upward trend in their labour earnings from 2006 to 2011, while adult workers enjoyed a labour income increase from 2006 to 2009 and suffered a reduction in 2011.

Mean earnings rose between 2000 and 2011 for workers employed in low-earning categories and their earnings gains tended to be larger than labour income increases for workers employed in high-earning categories. Among occupational groups, elementary occupations, agricultural, forestry and fishery workers, and workers in services and sales jobs had an average increase in their labour earnings of 29.6 per cent over the period. Professionals, and workers in management and armed forces experienced an earnings increase of 11.4 per cent on average. When the working population is broken down by occupational position, the self-employed experienced an increase in labour earnings of 33.1 per cent, while employers and paid employees decreased slightly their labour earnings over the period by 0.6 per cent on average. Domestic workers, and workers from commerce and low-tech industries increased their labour earnings over the period by only 1.1 per cent on average. Workers in skilled services, public administration, and education and health exhibited an earnings increase of 13.1 per cent on average over the period 2000–11. Finally, labour earnings of workers with high educational levels fell by 8.4 per cent, while workers with low and medium levels of education experienced an increase in their labour earnings of 21.6 per cent and 7.3 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 educational levels of the Chilean employed population, slight worsening in the employment structure by occupational group, and slight improvement in the employment structure by economic sector over the period. The slight improvement in the composition of employment by economic sector implied an increase in the share of sectors that can be expected to employ workers with high and medium educational levels, such as skilled services, public administration, and education and health, and a smaller increase in the share of sectors that employ workers with low educational levels, such as commerce. On the other hand, the slight worsening in the employment structure by occupational group implied an increase in the share of occupations that are expected to employ workers with low educational levels, such as elementary, and services and sales occupations, and a smaller increase in the share of occupations that are expected to employ workers with high and medium educational levels, such as professional jobs. This evidence indicates that the direction of the change in the demand for workers with high and medium educational levels relative to those with low educational levels was ambiguous between 2000 and 2011. On the labour supply side, the educational level of people in the labour force improved over the same period, indicating an increase in the relative supply of workers with high and medium educational levels (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/decrease in the relative demand versus increase in the relative supply). In the Chilean labour market the relative wages of workers with high and medium educational levels fell over the period relative to the wages of workers with low educational levels, 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 rates of workers with medium and low educational levels and no change for workers with high educational levels (Table 9).

The international crisis of 2008 did not have a negative effect on labour earnings in the aggregate or for any of the population groups and employment categories. Between 2006 and 2009, labour earnings increased overall, for young and adult workers, men, and women, and for all employment categories. The period from 2006 to 2009 is the only one in which labour incomes increased in Chile.

*The poverty rates, regardless of the poverty lines used and the rate of working poor households, decreased substantially between 2000 and 2011. The moderate and extreme poverty rates based on official poverty lines increased during the international crisis and recovered their downward trend in 2011. The poverty rates based on international poverty lines and the rate of working poor households diminished even during the Great Recession (Figure 10).*

The moderate poverty rate (measured by the country's official poverty line) fell from 19.0 per cent in 2000 to 13.5 per cent in 2011; the extreme poverty rate decreased from 4.7 per cent to 2.4 per cent; the percentage of working poor (defined as the proportion of persons in the population living in poor households where at least one member works) decreased from 11.3 per cent to 7.1 per cent over the same period. The moderate poverty rate fell by 6.2 percentage points from 2000 to 2006, increased by 1.3 percentage points from 2006 to 2009 (328,158 new poor persons), a period that included the international crisis, and declined again, by 0.5 percentage points, during the post-crisis period. By 2011, moderate poverty remained above its 2006 level. The pattern for the extreme poverty rate was similar. Part of the increase in the moderate and extreme poverty rates between 2006 and 2009 can be explained by the rise in food prices (Contreras and French-Davis 2012). When the analysis is based on the 2.5 and 4 dollars-a-day PPP international poverty lines, the trends show that the poverty rates decreased steadily over the period. The same pattern of steadily decreasing trend held for the percentage of working poor households. These differing patterns of poverty indicators between 2006 and 2009 can be explained by the different procedure applied to adjust the poverty lines over time. International lines are constant in real terms using the CPI. Official poverty lines are constant in real terms using the FPI. In Chile, inflation began to accelerate in 2007 due to increases in international food and energy prices, and also due to domestic supply shocks of these products (IMF 2008). The increase in food prices determined a more rapid increase in the official poverty lines compared to the international lines in current pesos. Consequently, poverty rates measured by the official poverty lines increased between 2006 and 2009, while poverty indicators based on international poverty lines decreased.

The poverty patterns reported in the last paragraph can be interpreted by examining incomes from various sources. The analysis of sources of household total income indicates that labour income and government transfers increased between 2000 and 2011 (Figure 11). On the contrary, income from pensions decreased over the period. The largest increase in labour earnings occurred between 2003 and 2006, when all poverty indicators exhibited the largest reductions. Government transfers surged between 2006 and 2009, a period that included the Great Recession. The government of Chile implemented an extraordinary cash transfer in 2009 as a consequence of the international crisis (*Bono de Apoyo a la Familia*) (Robles 2011).

*The inequality of household per capita income fell over the period studied, as did the inequality of labour earnings. The inequality of household per capita income stopped decreasing during the international crisis, but recovered its downward trend by the end of the period. The downward trend of the inequality of labour earnings was not affected by the international crisis (Figure 12).*

The Gini coefficient of household per capita income fell from 0.552 in 2000 to 0.508 in 2011. Between 2006 and 2009, it stopped decreasing, but recovered the falling trend in 2011. Throughout the period, the Gini coefficient of labour earnings among employed workers was slightly higher than that of per capita household income. The Gini coefficient of labour earnings decreased from 0.560 in 2000 to 0.510 in 2011. This reduction in labour earnings inequality is in keeping with the fact that earnings tended to increase more for low-earning employment categories compared to high-earning categories. However, it is interesting to notice that earnings declined for some high-earning groups. Consequently, the reduction of labour earning inequality in Chile occurred at the expense of income losses for some categories.

Changes in household per capita income inequality in Chile have been related mainly to changes in labour income. Azevedo et al. (2013b) decomposed the change in the Gini coefficient of household per capita income for the period 2003–09 and found that changes in labour incomes contributed the most to the inequality reduction over this period (the Gini coefficient of household per capita income decreased from 0.547 to 0.519 between 2003 and 2009). On the other hand, changes in non-labour incomes, such as government transfers, and demographic changes, such as the share of adults per household, were also inequality reducing. Larrañaga and Herrera (2008) and, more recently, Contreras and French-Davis (2012) have found that the decrease in inequality of household per capita income is a consequence of less inequality in labour earnings, which represent nearly 80 per cent of total family incomes. Other studies have analysed the factors behind the evolution of labour income inequality. Azevedo et al. (2013a) used a decomposition approach and found that changes in the education wage premium (or the ‘price effect’) and in the distribution of the stock of education (the ‘quantity effect’) were inequality reducing in Chile between 2000 and 2009. Gasparini et al. (2011) found a reduction in the gap between the wages of skilled workers (those with complete or incomplete college education) and unskilled workers (those who have completed secondary education or less) in Chile between 2000 and 2011. The shrinking educational earnings gap can be explained by factors related to supply and demand: the relative supply of skilled workers increased steadily while the relative demand for those workers fell according to the authors.

#### **4 Conclusions**

From 2000 to 2012, Chile experienced rapid economic growth by Latin American standards. The economy suffered a recession as a consequence of the international crisis of 2008, but Chile returned to the pre-recession GDP and GDP per capita levels in 2010.

Most labour market indicators improved between 2000 and 2011. The unemployment rate fell. The employment structure by occupational position 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. The employment composition by economic sector also improved as the share of higher-paying sectors like skilled services, public administration, and education and health in total employment increased by more than the share of lower-paying sectors like domestic workers, commerce, and low-tech industry. The educational level of the Chilean employed population and the percentage of workers registered with the social security system in total employment improved over the period. Labour earnings increased between 2000 and 2011, and the evidence of earning changes by employment categories over the period indicated that labour income tended to increase more for low-earning categories compared to high-earning categories. The only labour market indicator that did not improve over the period was the employment structure by occupational group, which



suffered a slight worsening. All poverty indicators fell between 2000 and 2011, and the Gini coefficient of per capita household income and labour earnings also decreased.

The labour market indicators that were affected negatively by the international crisis of 2008 were the unemployment rate, the percentage of workers registered with the social security system, the poverty rates based on official poverty lines, and the Gini coefficient of household income. The unemployment rate increased during the crisis and did not return to its pre-recession level by 2011. The share of registered workers fell during the crisis, but exceeded its pre-recession level in 2011. The moderate and extreme poverty rates based on official poverty lines increased in 2009, but resumed the downward trend in 2011. Finally, the inequality of per capita household income measured by the Gini coefficient stopped decreasing during the international crisis, but resumed its falling trend in 2011.

Young workers and women had worse labour market outcomes over the period compared to adults and men respectively, but they have not been more vulnerable to the international crisis. 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 when compared to adults. Despite the generally inferior situation of young workers in the labour market in comparison to adult workers, both age groups were equally affected by the international crisis of 2008. The increases in the unemployment rate and in the share of workers in low-earning sectors were larger for young workers, while the increases in the shares of unregistered workers and workers employed in low-earning occupational groups were larger for adults. Disaggregating by gender, we found that men were better than women in most labour market indicators, e.g. the male unemployment rate was lower, the share of male workers in low-earning occupational groups and sectors were lower compared to women, the share of unregistered workers was lower for men compared to women, and labour earnings of men were higher than labour earnings of women. However, the negative impacts of the crisis affected men more than women.

In summary, notwithstanding the international crisis of 2008, Chilean labour market conditions were in general in a better state in 2011 than they were at the start of the millennium.

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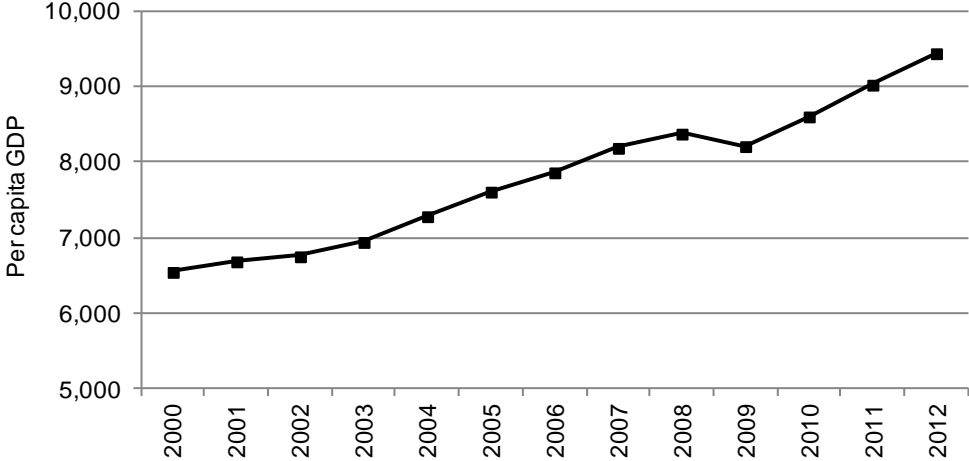
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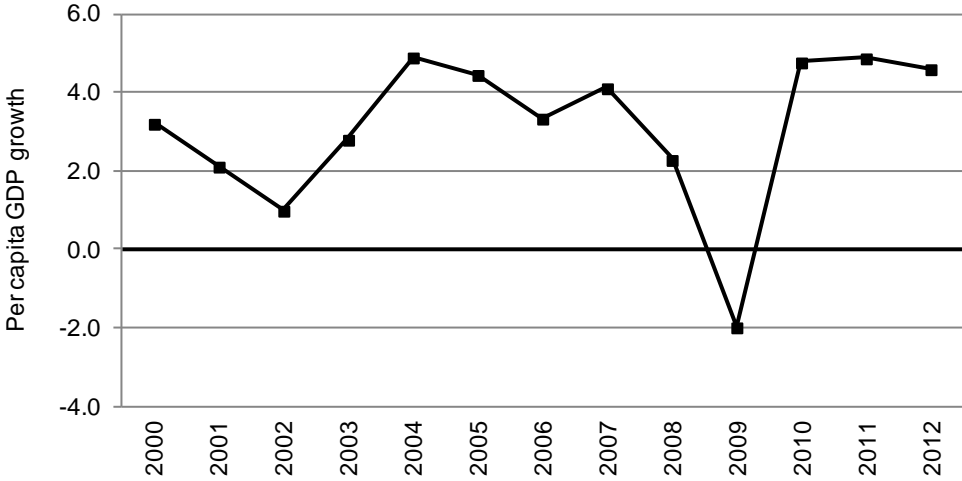
**Figures**

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



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

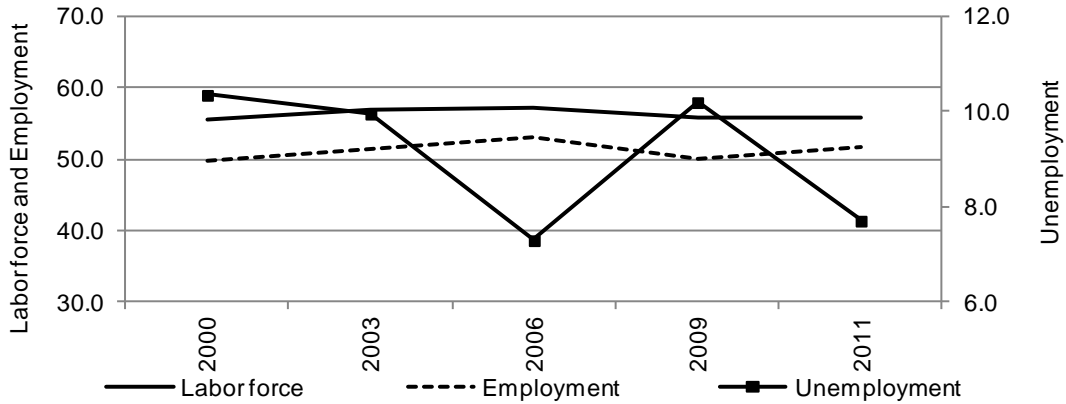
Figure 2: Annual growth of GDP per capita at PPP dollars of 2005, 2000–12



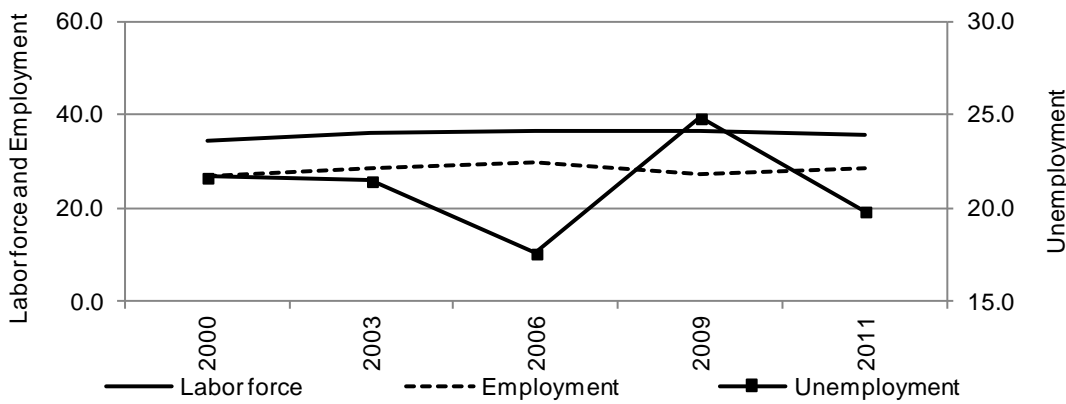
Source: World Development Indicators (the World Bank 2014).

Figure 3: Labour force rate, employment-to-population rate and unemployment rate: population 15 years old or more, 2000, 2003, 2006, 2009, and 2011

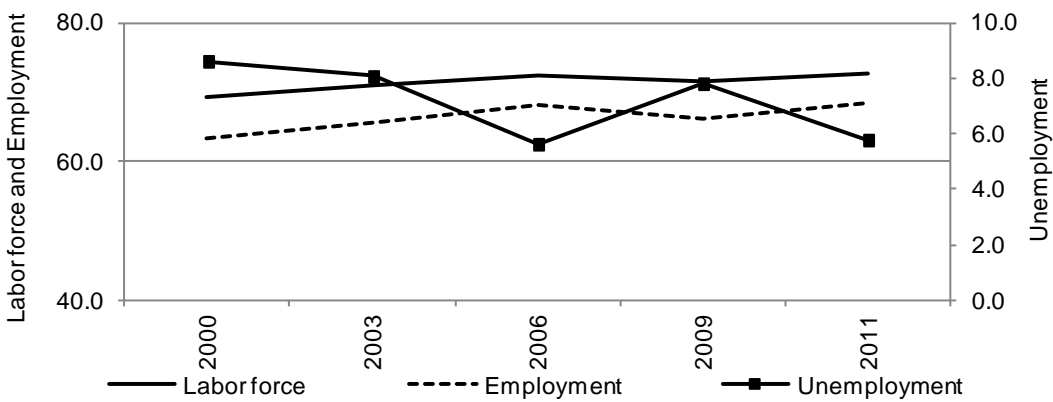
(a) All



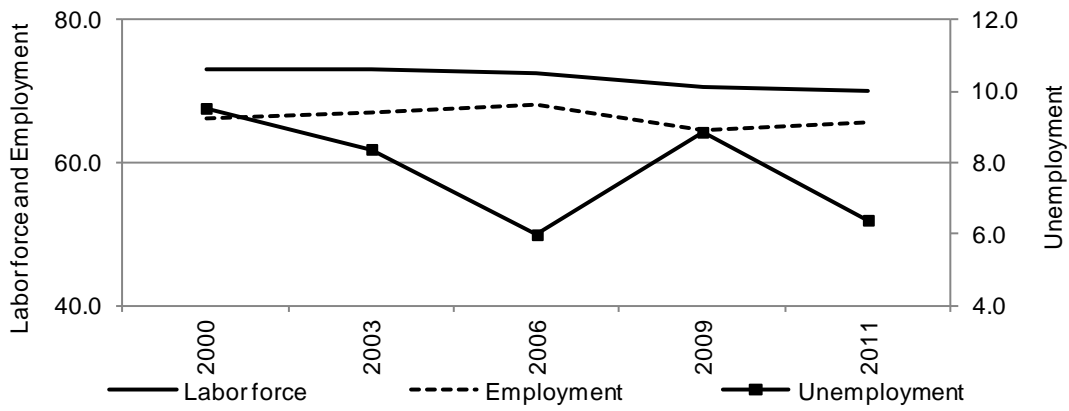
(b) Youth (15 to 24 years old)



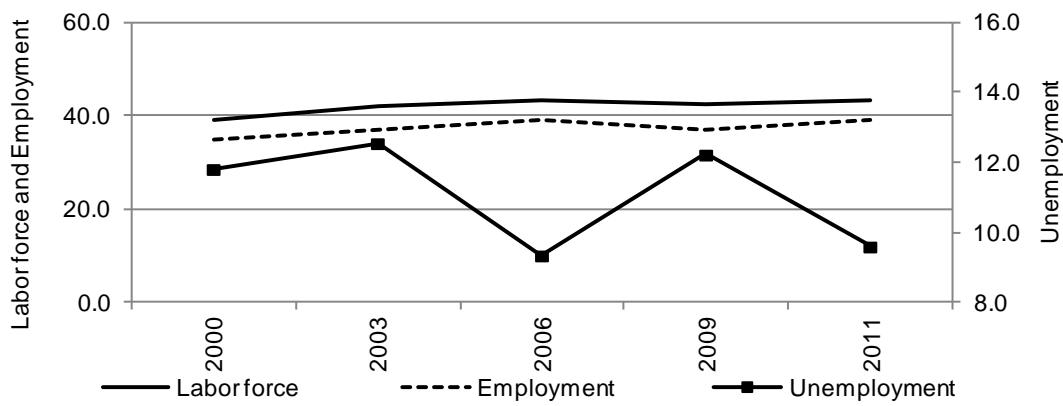
(c) Adults (25 to 64 years old)



(d) Men

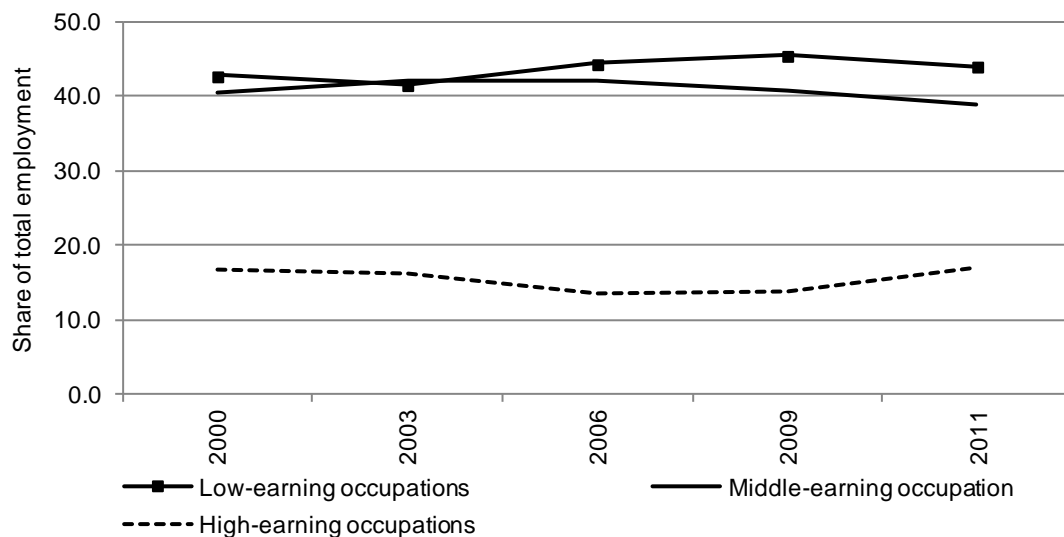


(e) Women



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

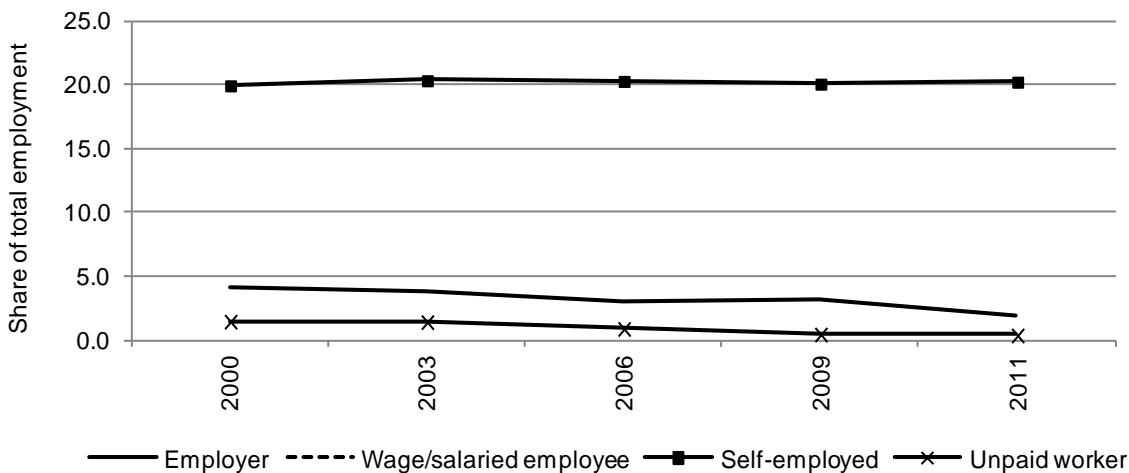
Figure 4: Share of employment by occupational group (categories grouped by earning levels): all employed workers, 15 years old or more. 2000, 2003, 2006, 2009, and 2011



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

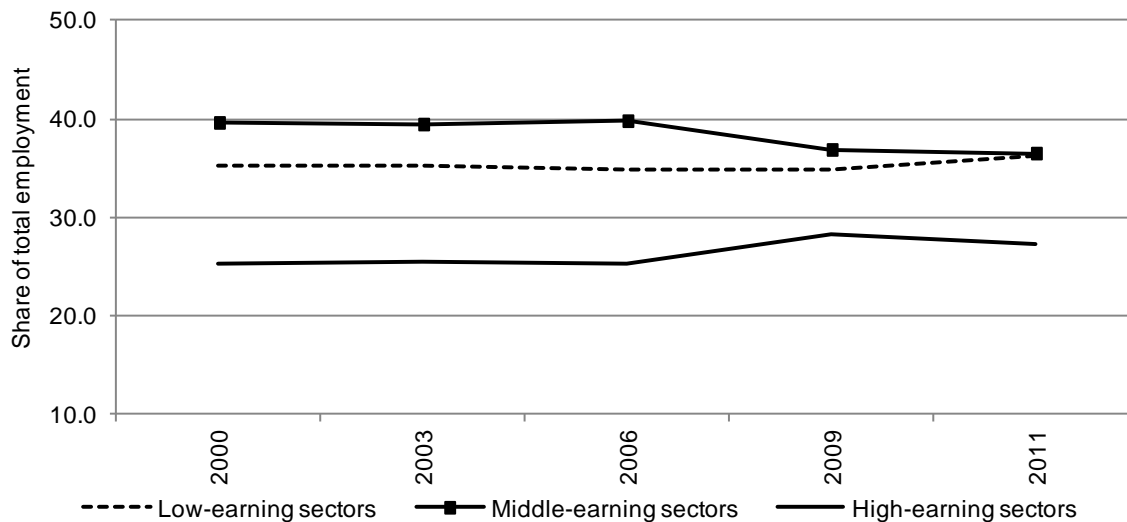
Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Figure 5: Share of employment by occupational position: all employed workers, 15 years old or more, 2000, 2003, 2006, 2009, and 2011



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, 2000, 2003, 2006, 2009, and 2011



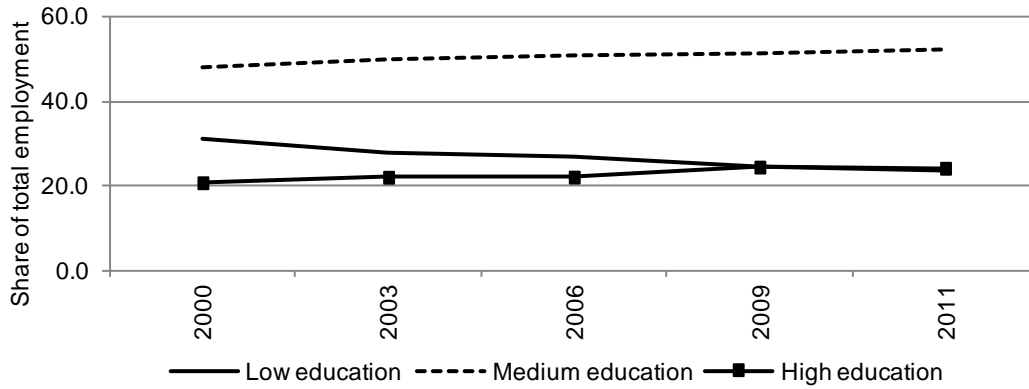
Note: Low-earning sectors: domestic workers, commerce, low-tech industry. Middle-earning sectors: primary activities, construction, high-tech industry, utilities and transportation. High-earning sectors: skilled services, public administration, education and health.

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

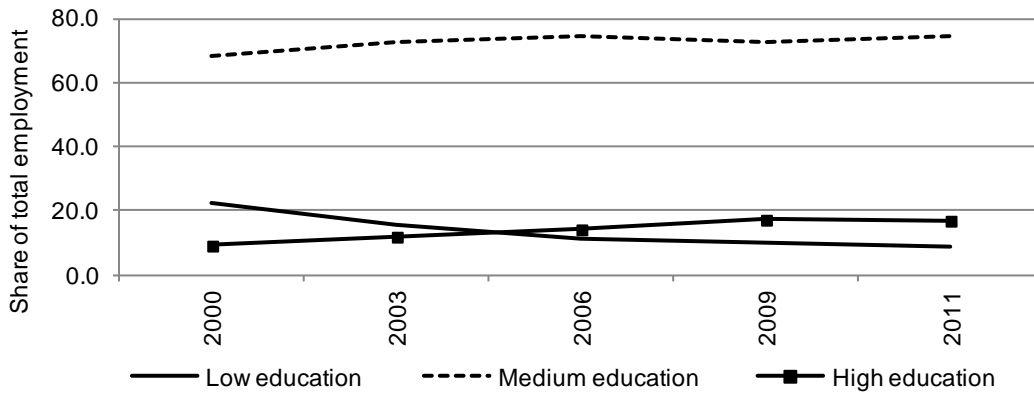


Figure 7: Share of employment by educational level: employed workers, 15 years old or more, 2000, 2003, 2006, 2009, and 2011

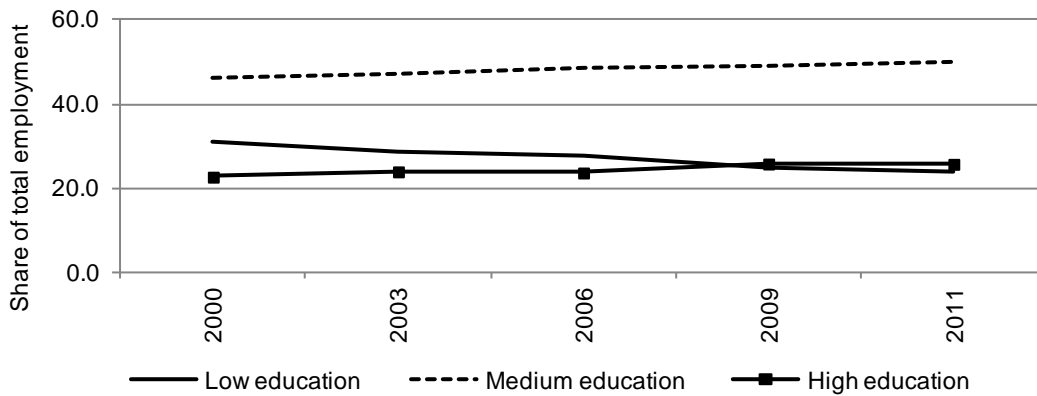
(a) All employed workers



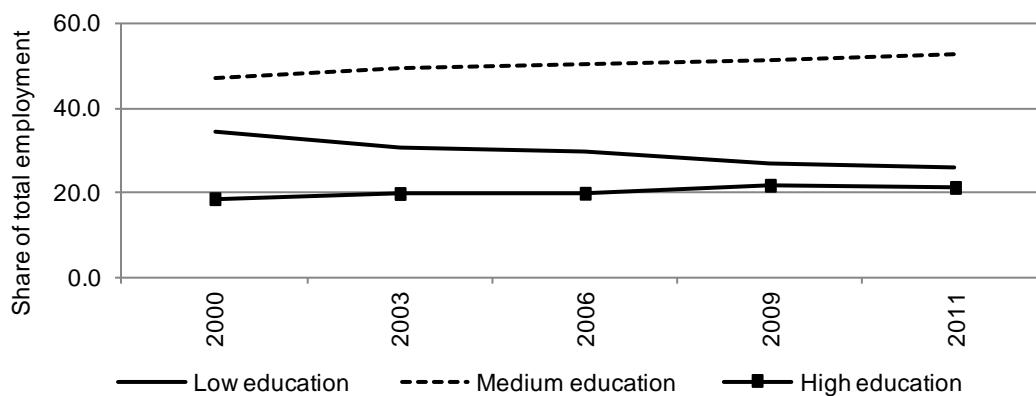
(b) Youth (15 to 24 years old)



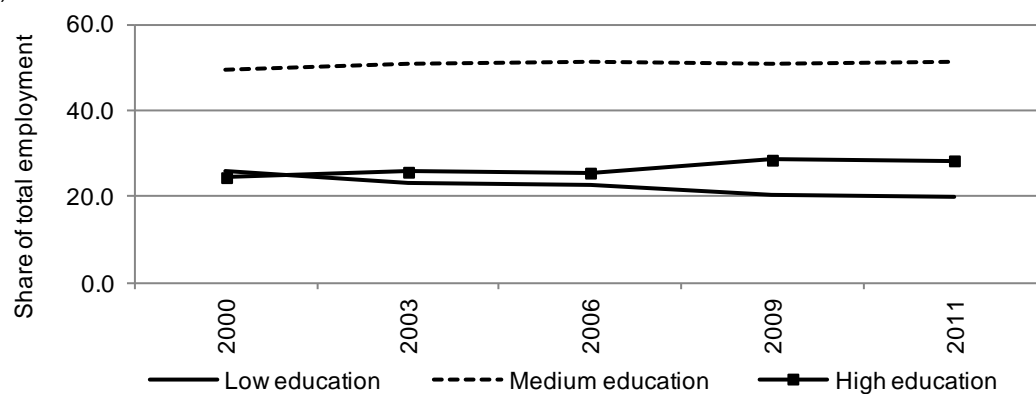
(c) Adults (25 to 64 years old)



(d) Men



(e) Women

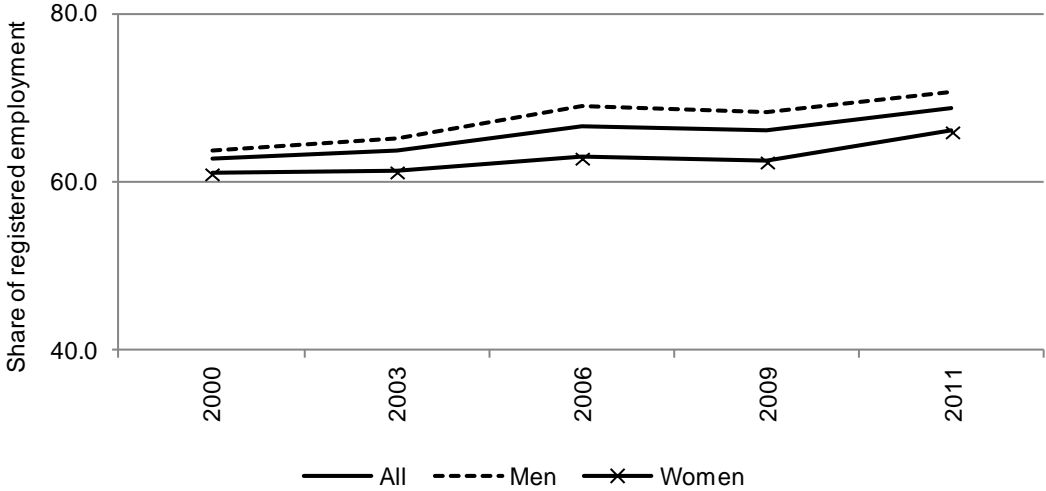


Note: Low: eight years of schooling or less. Medium: from nine to thirteen years of schooling. High: Over thirteen years of schooling.

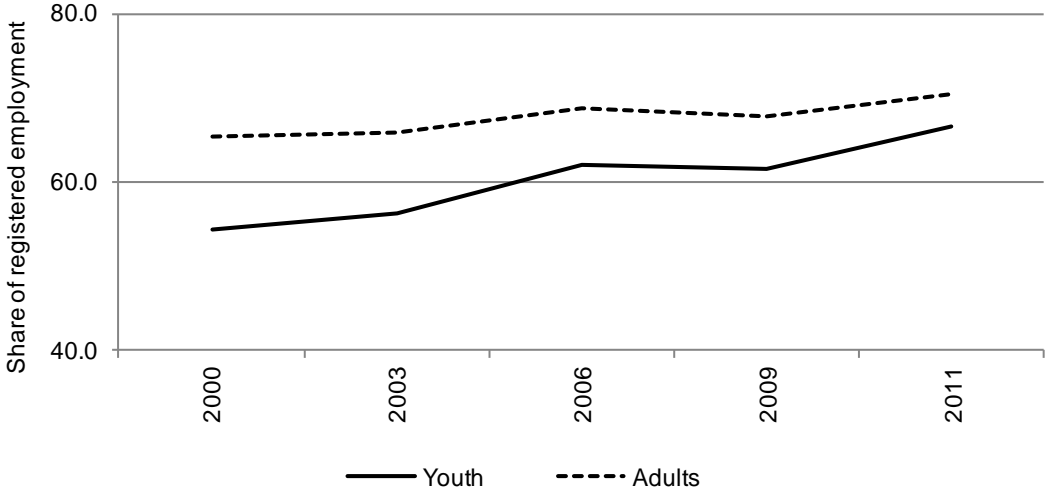
Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Figure 8: Share of employment registered with the national social security system: employed workers, 15 years old or more, 2000, 2003, 2006, 2009, and 2011

(a) By gender



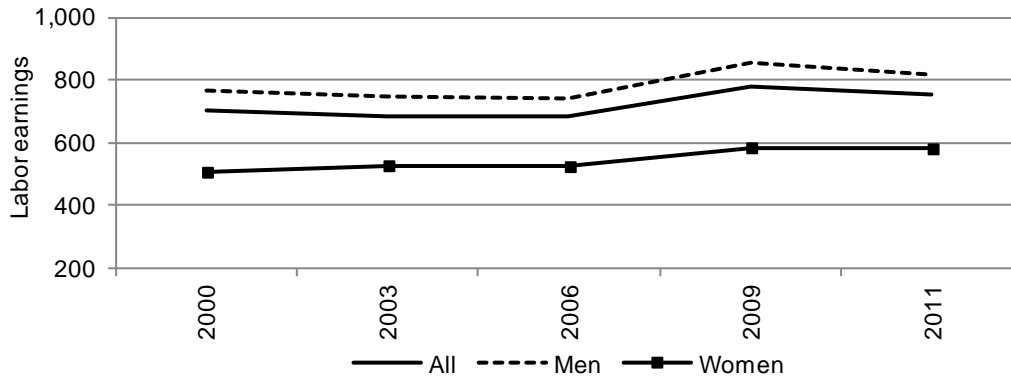
(b) By age groups



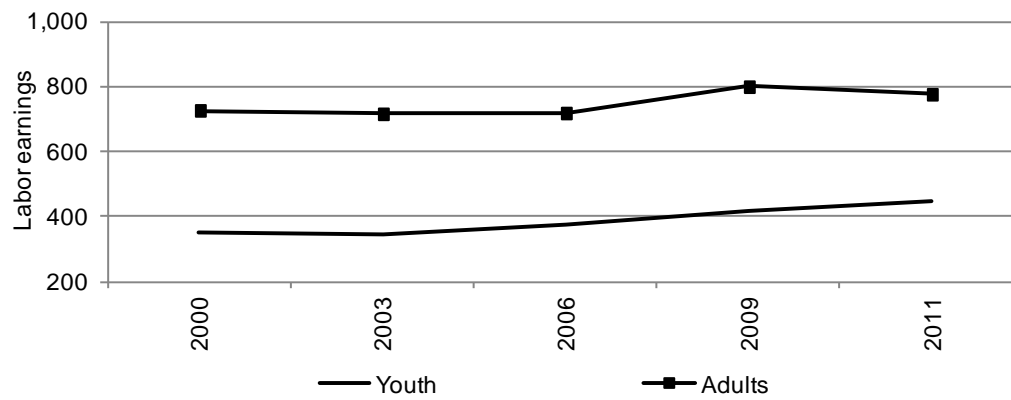
Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Figure 9: Monthly labour earnings at PPP dollars of 2005. 2000, 2003, 2006, 2009, and 2011

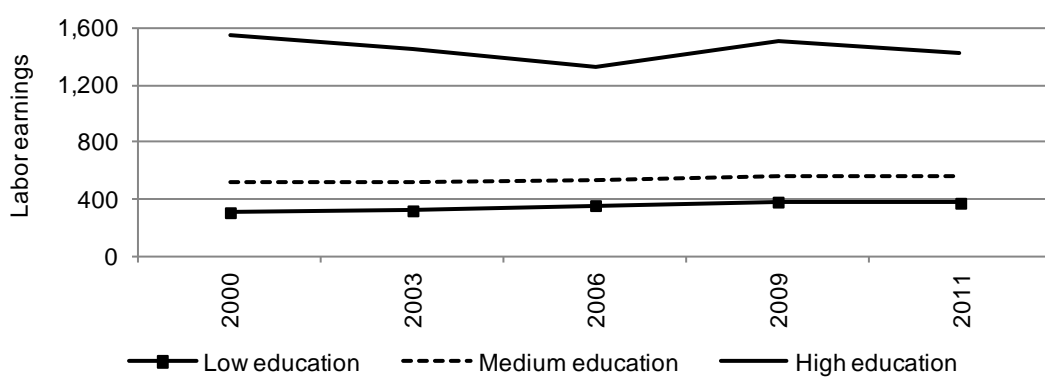
(a) By gender



(b) By age



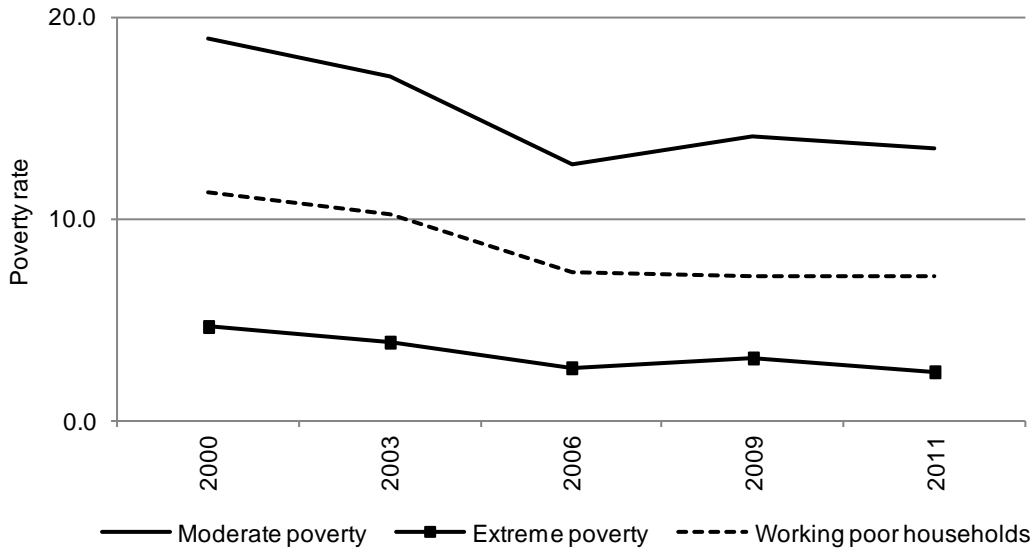
(c) By educational level



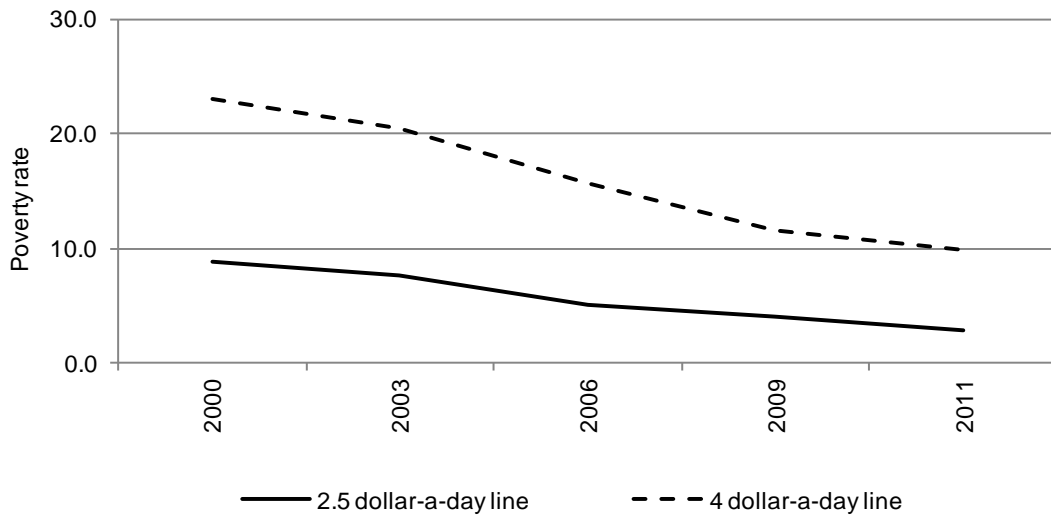
Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Figure 10: Poverty rates and working poor households, 2000, 2003, 2006, 2009, and 2011

(a) Official lines

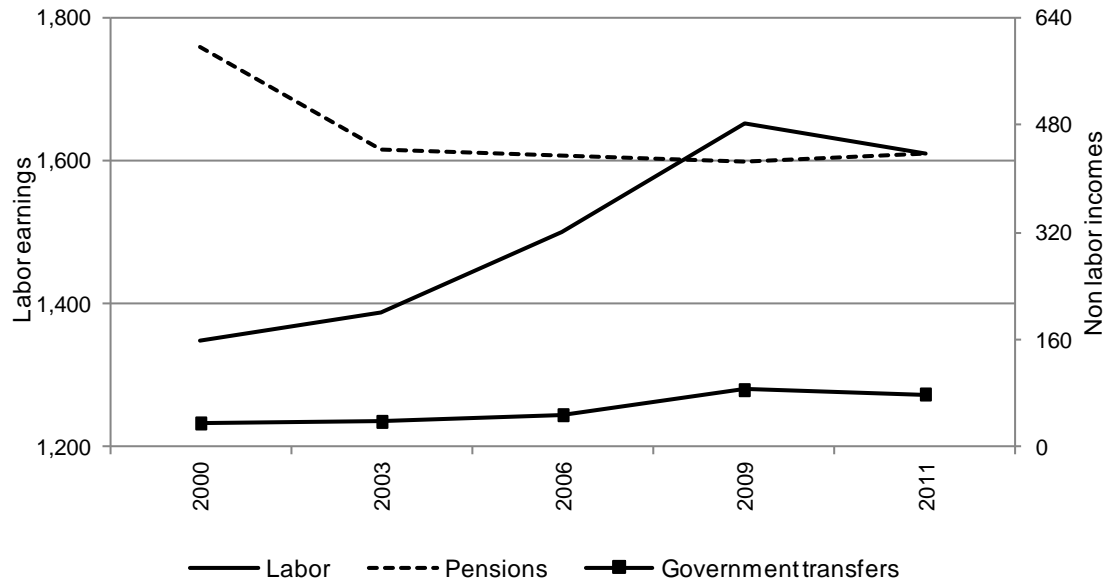


(b) International lines



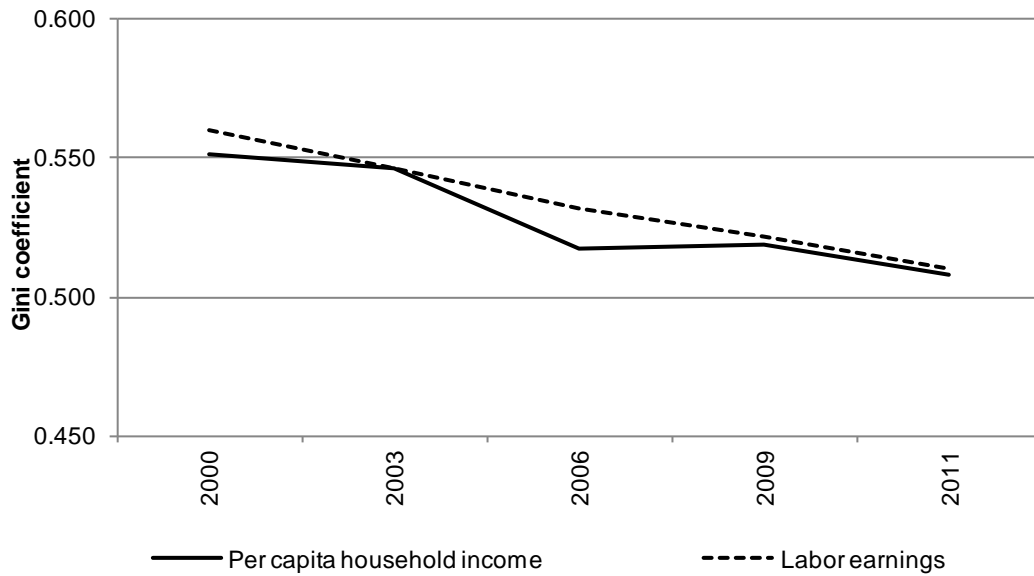
Source: Authors' calculations from SEDLAC (CEDLAS and the World Bank 2014).

Figure 11: Sources of monthly household total income at PPP dollars of 2005. 2000, 2003, 2006, 2009, and 2011



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

Figure 12: Gini coefficient of per capita household per capita income and labour earnings, 2000, 2003, 2006, 2009, and 2011



Note: 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
2000	64,998	252,595
2003	68,146	257,055
2006	73,658	268,659
2009	71,460	246,924
2011	59,084	200,302

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 <sup>1,2</sup>	169,849	175,536	179,339	186,435	197,698	208,689	217,882	229,126	236,670	234,217	247,715	262,208	276,775
GDP per capita <sup>1</sup>	10,990	11,224	11,337	11,655	12,228	12,773	13,201	13,746	14,061	13,784	14,443	15,149	15,848
GDP per person employed <sup>1</sup>	42,976	42,428	42,570	42,982	45,088	46,223	45,000	47,043	47,179	47,037	46,141	48,407	50,457
GDP growth	4.5	3.3	2.2	4.0	6.0	5.6	4.4	5.2	3.3	-1.0	5.8	5.9	5.6
GDP per capita growth	3.2	2.1	1.0	2.8	4.9	4.5	3.3	4.1	2.3	-2.0	4.8	4.9	4.6
Exports of goods and services <sup>1,2</sup>	34,830	37,349	37,948	40,400	45,773	47,749	52,292	56,051	55,659	53,126	54,361	57,171	57,720
Agriculture, value added (% of GDP)	5.9	5.2	5.5	5.3	4.7	4.6	4.1	3.9	3.6	3.5	3.4	3.7	3.6
Industry, value added (% of GDP)	32.2	32.8	33.1	32.7	35.3	36.9	44.2	43.0	38.0	37.6	39.1	38.0	35.5
Services, value added (% of GDP)	61.9	62.1	61.4	62.0	60.0	58.5	51.7	53.2	58.4	58.8	57.5	58.3	60.9
Agriculture, value added <sup>1,2</sup>	5,969	5,399	5,900	5,860	5,564	5,714	5,269	5,262	5,053	4,927	5,052	5,771	5,925
Industry, value added <sup>1,2</sup>	32,572	34,273	35,385	36,363	41,597	45,867	57,455	58,715	53,593	52,540	57,683	59,378	58,650
Services, etc., value added <sup>1,2</sup>	62,710	64,969	65,623	68,915	70,691	72,824	67,160	72,610	82,438	82,154	84,934	91,159	100,417
Total population <sup>2</sup>	15.45	15.64	15.82	16.00	16.17	16.34	16.50	16.67	16.83	16.99	17.15	17.31	17.46
Working age population (15-64) <sup>2</sup>	10.04	10.22	10.41	10.59	10.78	10.96	11.14	11.31	11.48	11.63	11.78	11.91	12.04

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, 2000, 2003, 2006, 2009, and 2011

(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
2000	6.75	9.36	7.76	8.90	13.97	6.87	10.53	13.34	21.98	0.54
2003	6.23	9.50	8.23	9.03	13.75	6.70	11.46	13.48	21.18	0.43
2006	4.48	8.57	7.78	8.70	15.38	5.38	10.79	14.86	23.69	0.37
2009	2.66	10.77	9.72	7.76	17.65	3.97	10.15	13.06	23.95	0.32
2011	5.14	11.61	7.55	8.09	15.45	4.97	10.57	12.58	23.70	0.32

(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
2000	1.25	2.62	6.31	12.80	21.46	6.52	7.06	13.84	27.71	0.43
2003	1.98	2.98	7.78	13.08	23.29	5.82	7.58	12.71	24.45	0.34
2006	0.94	3.56	7.21	12.73	23.69	4.12	6.56	15.82	25.05	0.32
2009	0.77	4.89	10.33	11.04	24.40	2.61	6.36	13.68	25.62	0.30
2011	2.27	5.77	7.40	11.79	23.01	4.27	6.50	13.18	25.07	0.76

(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
2000	7.11	10.52	8.08	8.60	12.97	6.58	11.05	13.38	21.13	0.58
2003	6.41	10.67	8.47	8.63	12.42	6.41	12.01	13.77	20.74	0.46
2006	4.73	9.53	8.05	8.33	14.19	5.22	11.38	14.86	23.30	0.40
2009	2.85	11.85	9.92	7.45	16.53	3.86	10.46	13.06	23.68	0.34
2011	5.22	12.75	7.80	7.76	14.57	4.74	11.08	12.50	23.32	0.26



(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
2000	7.02	7.52	7.39	5.28	9.22	9.49	13.46	19.70	20.10	0.83
2003	5.70	8.02	7.34	5.73	9.45	9.48	14.63	20.39	18.62	0.64
2006	4.35	7.43	6.45	5.63	9.85	7.50	13.57	22.73	21.92	0.56
2009	2.91	8.66	8.61	4.56	13.48	5.73	13.30	20.36	21.86	0.51
2011	4.61	10.05	6.80	4.97	9.56	6.68	14.39	20.10	22.38	0.47

(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
2000	6.28	12.61	8.41	15.30	22.36	2.24	5.36	2.13	25.29	0.03
2003	7.12	12.01	9.72	14.60	20.99	2.04	6.10	1.84	25.50	0.08
2006	4.67	10.38	9.90	13.61	24.21	2.00	6.36	2.30	26.50	0.07
2009	2.26	14.05	11.45	12.72	24.11	1.24	5.24	1.72	27.20	0.03
2011	5.93	13.91	8.66	12.66	24.09	2.47	4.98	1.56	25.65	0.10

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, 2000, 2003, 2006, 2009, and 2011

(a) All employed workers

	Employer	Wage/salaried employee	Self-employed	Unpaid worker
2000	4.13	74.39	20.00	1.48
2003	3.88	74.28	20.40	1.45
2006	3.07	75.67	20.34	0.91
2009	3.11	76.28	20.13	0.47
2011	1.90	77.42	20.29	0.40

(b) Youth (15 to 24 years old)

	Employer	Wage/salaried employee	Self-employed	Unpaid worker
2000	0.46	85.84	10.41	3.29
2003	0.41	85.10	11.02	3.47
2006	0.38	88.36	9.34	1.92
2009	1.32	87.96	9.67	1.05
2011	0.72	89.22	9.29	0.77

(d) Men

	Employer	Wage/salaried employee	Self-employed	Unpaid worker
2000	5.06	72.48	21.52	0.93
2003	4.45	72.46	22.27	0.82
2006	3.58	74.91	20.96	0.55
2009	3.62	75.29	20.72	0.37
2011	2.09	76.67	20.96	0.28

(c) Adults (25 to 64 years old)

	Employer	Wage/salaried employee	Self-employed	Unpaid worker
2000	4.33	74.14	20.38	1.15
2003	4.11	74.10	20.71	1.07
2006	3.35	75.27	20.71	0.68
2009	3.16	76.24	20.23	0.37
2011	1.90	77.13	20.66	0.31

(e) Women

	Employer	Wage/salaried employee	Self-employed	Unpaid worker
2000	2.47	77.77	17.31	2.45
2003	2.92	77.34	17.24	2.49
2006	2.26	76.88	19.36	1.50
2009	2.33	77.82	19.21	0.64
2011	1.62	78.52	19.30	0.56

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, 2000, 2003, 2006, 2009, and 2011

(a) All

	Primary activities	Low-tech industry	High-tech industry	Construction	Commerce	Utilities & transportation	Skilled services	Public administration	Education & Health	Domestic workers
2000	16.11	6.55	7.14	8.09	21.19	8.25	7.33	4.02	13.90	7.42
2003	14.91	5.77	7.68	8.55	21.73	8.30	6.90	3.88	14.64	7.65
2006	14.35	6.01	7.68	9.44	21.42	8.30	7.35	3.62	14.33	7.49
2009	13.86	4.72	5.38	8.82	23.65	8.79	8.22	4.44	15.72	6.41
2011	12.40	3.96	6.15	9.44	25.49	8.48	8.63	4.17	14.55	6.72

(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
2000	18.06	6.85	7.11	7.60	28.22	6.23	7.31	2.90	8.74	6.98
2003	15.33	5.90	7.60	7.16	33.19	6.83	6.19	2.11	10.45	5.23
2006	13.99	6.99	8.30	8.64	30.38	6.26	7.33	2.25	11.75	4.10
2009	13.79	4.77	5.05	7.64	34.46	7.51	8.04	2.97	12.98	2.81
2011	12.30	3.44	7.04	9.53	34.72	7.89	8.38	2.63	11.96	2.11

(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
2000	15.46	6.60	7.14	8.25	19.87	8.66	7.45	4.27	14.82	7.47
2003	14.56	5.70	7.73	8.85	19.73	8.64	7.09	4.17	15.52	8.01
2006	14.14	5.88	7.67	9.64	19.82	8.72	7.47	3.92	14.84	7.89
2009	13.63	4.70	5.45	9.04	21.85	9.01	8.33	4.72	16.36	6.91
2011	12.28	4.09	6.01	9.45	23.99	8.64	8.74	4.45	15.21	7.14

(d) Men

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	Primary activities	Low-tech industry	High-tech industry	Construction	Commerce	Utilities & transportation	Skilled services	Public administration	Education & Health	Domestic workers
2000	21.61	5.92	9.42	12.10	19.10	11.24	6.91	4.39	8.01	1.30
2003	19.85	5.02	10.50	13.00	19.41	10.99	6.80	4.27	8.64	1.52
2006	18.90	4.98	10.54	14.57	18.24	11.20	7.65	3.86	8.45	1.61
2009	18.35	4.19	7.63	13.77	20.72	12.02	8.76	4.29	9.03	1.23
2011	16.46	3.51	8.57	15.16	22.48	11.67	8.53	4.13	7.95	1.54

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(e) Women

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	Primary activities	Low-tech industry	High-tech industry	Construction	Commerce	Utilities & transportation	Skilled services	Public administration	Education & Health	Domestic workers
2000	6.41	7.66	3.11	1.01	24.88	2.95	8.07	3.37	24.30	18.24
2003	6.58	7.05	2.93	1.07	25.63	3.76	7.07	3.21	24.73	17.97
2006	7.09	7.66	3.10	1.22	26.51	3.67	6.89	3.24	23.73	16.91
2009	6.90	5.55	1.89	1.16	28.18	3.78	7.38	4.66	26.09	14.42
2011	6.44	4.63	2.59	1.05	29.93	3.80	8.77	4.22	24.26	14.32

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

Table 6: Monthly labour earnings at PPP dollars of 2005. 2000, 2003, 2006, 2009, and 2011

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

	Gender		Age		Occupational position			Educational level			
	All	Men	Women	Youth	Adults	Employer	Wage/salaried employee	Self-employed	Low	Medium	High
2000	702.6	766.0	508.0	348.5	727.1	2181.6	692.6	436.6	623.8	701.9	771.7
2003	686.6	745.7	528.7	345.7	716.4	2136.5	681.6	448.6	534.2	552.9	776.3
2006	685.0	744.5	525.7	375.4	719.0	1731.5	690.6	505.8	581.7	530.4	743.0
2009	780.0	853.4	585.9	419.0	799.9	2138.5	774.9	610.0	664.4	569.3	825.0
2011	756.8	818.4	582.6	445.7	776.7	1889.1	776.4	581.1	719.9	560.6	778.8

(b) By economic sector

	Primary activities	Low-tech industry	High-tech industry	Construction	Commerce	Utilities & transportation	Skilled services	Public administration	Education & Health	Domestic workers
2000	623.8	701.9	771.7	607.2	559.6	717.2	1223.0	880.7	899.1	280.3
2003	534.2	552.9	776.3	656.4	574.3	745.9	1176.5	1032.5	868.9	291.1
2006	581.7	530.4	743.0	663.6	559.9	784.8	1089.0	1015.1	854.2	292.1
2009	664.4	569.3	825.0	718.3	630.0	857.9	1217.5	1235.8	986.1	324.8
2011	719.9	560.6	778.8	698.5	569.4	806.2	1308.1	1129.0	935.8	340.8

(c) By occupational group

	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
2000	1554.9	1986.4	1003.9	611.8	426.9	340.2	459.4	514.3	310.9	800.3
2003	1641.5	1734.7	1020.6	613.0	426.5	380.7	472.5	536.0	319.5	1152.3
2006	1464.9	1732.5	1016.4	644.1	472.0	446.1	541.6	611.4	348.6	1152.0
2009	2219.2	1960.0	1015.8	681.0	530.3	527.0	623.0	658.4	398.7	1240.3
2011	1282.5	1910.1	999.5	651.6	507.0	470.5	611.0	645.3	409.1	1244.7

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

Table 7: Hourly wage in main occupation at PPP dollars of 2005. 2000, 2003, 2006, 2009, and 2011

(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
2000	3.80	4.10	3.27	2.16	4.03	11.43	3.65	2.78	3.00	3.70	4.10
2003	4.03	4.30	3.55	2.41	4.23	11.25	3.91	3.14	3.08	3.18	4.30
2006	4.03	4.26	3.65	2.61	4.25	10.28	3.87	3.66	3.26	3.05	4.54
2009	4.88	5.29	4.22	3.08	5.06	12.17	4.71	4.50	4.09	3.78	4.82
2011	4.86	5.18	4.37	3.31	5.08	12.80	4.75	4.56	4.48	3.57	4.94

(b) By economic sector

	Primary activities	Low-tech industry	High-tech industry	Construction	Commerce	Utilities & transportation	Skilled services	Public administration	Education & Health	Domestic workers
2000	3.00	3.70	4.10	3.15	3.12	3.68	6.73	4.55	5.24	1.81
2003	3.08	3.18	4.30	3.76	3.21	4.05	7.01	5.68	5.65	2.01
2006	3.26	3.05	4.54	3.61	3.38	4.09	6.33	5.57	5.36	2.15
2009	4.09	3.78	4.82	4.27	3.94	4.89	7.68	7.15	6.48	2.49
2011	4.48	3.57	4.94	4.25	3.80	4.93	8.33	6.73	6.15	2.71

(c) By occupational group

	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
2000	8.07	10.43	5.69	3.30	2.44	1.85	2.37	2.74	1.84	3.90
2003	8.55	10.48	6.19	3.54	2.53	2.46	2.63	3.07	1.97	6.11
2006	8.49	9.99	6.31	3.78	2.89	2.69	2.95	3.37	2.18	6.12
2009	13.12	12.14	6.26	4.22	3.30	3.43	3.96	3.87	2.70	8.28
2011	8.20	11.96	6.22	4.03	3.60	3.14	3.81	3.90	2.79	7.00

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, 2000, 2003, 2006, 2009, and 2011

	Low	Medium	High
2000	31.45	48.79	19.76
2003	27.78	50.89	21.33
2006	26.70	51.65	21.66
2009	24.10	52.10	23.79
2011	23.14	53.15	23.71

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

Table 9: Unemployment rate by educational levels: population 15 years old or more, 2000, 2003, 2006, 2009, and 2011

	Low	Medium	High
2000	10.83	11.86	6.12
2003	9.19	11.67	7.15
2006	6.19	8.52	5.70
2009	8.87	11.92	7.95
2011	6.14	9.17	6.15

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