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Poverty, Inequality and Employment in Chile

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Poverty, Inequality and Employment in Chile

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Abstract

This paper explores the relationship between labour market institutions, social policy and inequality in Chile from the early 1990s to the late 2000s. The paper analyses levels and changes in poverty as well as wage and income inequality using household and employment survey data and draws some preliminary conclusions about the role of key labour market institutions and policies that have affected the distribution of primary and secondary income over time. Although poverty has fallen consistently over the period under study, wage and income inequality has risen. The countervailing forces that mitigate wage and income inequality have been largely concentrated in social policy and not labour market policy. We conclude that the profile of poverty and inequality has been consistently altered through targeted social spending, taxes and transfers and not through distribution secured in the labour market. Moreover, the returns to primary and secondary school education appear to have declined for the majority of those in the labour market while the returns to higher levels of education have risen—contributing to widening inequality in the wage distribution.

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1. Introduction

Clearly, measures of poverty and inequality provide an important indicator of wellbeing in an economy and highlight the result of the distribution of resources achieved through the market and redistribution through the public sector. This study attempts to link these changes over time to discrete and identifiable changes in the role of labour market institutions and policies in Chile.

One of the first studies to attempt to quantify poverty in Chile was undertaken by Ahumada (1958) who determined that 58.6 per cent of the population was poor in 1951 using a basic needs approach to poverty measurement. In the 1970s, a number of studies of unmet basic needs were conducted. The first study of extreme poverty used unmet basic needs to develop a map of extreme poverty and was undertaken jointly by the then Office of National Planning (ODEPLAN) and the Economic Institute of the Pontificia Universidad Católica. This study was based on the Census data from 1970 and considered housing, durable goods and education as key components of wellbeing, determining that 21 per cent of the population lived in conditions of extreme poverty. Subsequently, Mujica and Rojas (1986) used data from the 1982 Census to update this poverty map, concluding that extreme poverty had fallen to 14 per cent in that year.

In the intervening years various studies were undertaken using a Basket of Basic Goods approach to define a poverty line (CEPAL 2007; Contreras et al 2001; Mujica and Rojas 1986). Unfortunately, these studies identified different elements in the Basket of Basic Goods and as a result are not strictly comparable. Poverty rates rose and fell depending on the type of measure used determine insufficiency and the literature was not particularly illuminating from a policy perspective.

If we compare consistent measures over time, poverty rates have indeed fallen significantly in Chile since the re-installation of democracy in 1990 under the Aylwin government. The subsequent governments focused energetically on reducing poverty and increasing social spending with the explicit goal of raising incomes and improving wellbeing. Indeed, spending on social programs more than doubled in real terms between 1989 and 1997. In this time period, health and education investments increased by 179 per cent and 115 per cent, respectively (Weyland 1999). Much of the increase in public spending was financed by the 1990 tax reforms, as well as the increased government revenues from high levels of exports and robust economic growth. Weyland (1999) underscores the importance of social spending by estimating that each percentage point of economic growth contributed 50 per cent more towards reducing poverty under the *Concertación*, or centre-left, governments from 1990 to 1996 (with high levels of social expenditure), than under the previous military regime from 1987 to 1990. Moreover, as Glick and Menon (2008) observe, even when GDP growth fell from 6.6 per cent in 1997 to -1.1 per cent in 1999, poverty rates continued to decline. This was primarily because the yearly growth rate of social expenditures rose from 5.6 per cent to 7.8 per cent of GDP during this period auguring a strongly anti-cyclical social expenditure policy and the development of the structural balance in Chile.

In tandem with these developments, a burgeoning literature on the causes, consequences and dynamics of poverty in Chile bubbled-up through academic and policy research channels, reflecting and responding to the broader methodological debates on poverty measurement taking place in the World Bank, under the auspices of the United Nations, most notably through the UNDP, and throughout academia in the United States, Europe and Latin America.

Much of the recent literature in Chile focuses on the determinants of poverty as a means of identifying and justifying policy instruments to combat poverty. For example, Contreras and Larrañaga (2001) observe that insufficient income and poverty may be due to a lack of income-generating assets, as well as to a low return on the assets already owned. Their research focuses on human capital, broadly defined as the stock of productive capacities and knowledge held by an individual, which is typically the primary asset associated with income-earning potential for most individuals. Health and education investments clearly increase human capital and therefore have direct results on poverty reduction.

Neilson et al (2008) use the 1996–2001 CASEN panel databases to analyse poverty dynamics in Chile, drawing a distinction between chronic and transient poverty. These authors found that while 20 per cent of the population was living below the official poverty line both in 1996 and 2001, only 9 per cent of the population was poor at both dates. They also found that when the poverty line was raised, the amount of households which could be considered chronically poor also rose steadily, whereas the transitory component of poverty remained more or less stable. Analysis of the determinants of changes in household poverty status, lead these authors to conclude that labour market dynamics were of greater relevance than household demographic changes. Household heads who suffered health problems were also significantly less likely to leave poverty. Household human and physical capital were also relevant, as well as the sector in which the household head works. Simulating the same exercise using different poverty lines revealed that some of these variables were not robust to changes in the poverty line, while others which originally appeared to be insignificant become so. When they changed the poverty line the authors found that chronic poverty rose by 0.7 per cent for every 1000 pesos by which household income deteriorates, while transient poverty remained roughly the same. Variables such as age, health status, and some labour market and sectoral attachment variables became insignificant as determinants of poverty when the poverty line was raised.

Glick and Menon (2008) examine the effect of government health care and education programs on the poor in Chile from 2000 to 2006. Results are obtained from country-wide provincial level panel data using the CASEN. The authors calculate poverty and indigence head-count ratios, measures on the severity of poverty using FGT values and per capita public expenditures on health and education, as well as other variables that are thought to influence wellbeing. They use fixed-effects techniques to correct for time-invariant province-specific characteristics that may affect program placement. Glick and Menon demonstrate that per capita public health and education expenditures significantly reduce the incidence of poverty and indigence in Chile. In particular, these authors find that a 10,000 pesos (about US$23) increase in provincial per capita health and education spending, reduces the poverty head-count ratio by 0.48 per cent and 0.73 per cent, respectively. Per capita education expenditures are especially important for reducing the severity of poverty. Their results indicate that for a 10,000 pesos increase in education spending, the severity of poverty declines by as much as 1.53 per cent. Furthermore, they provide evidence that public spending in Chile is non-random. Government education expenditures appear to be allocated in keeping with compensatory motives—reducing imbalances in access to financial resources in poor areas.

Other studies depart from a narrow income based measure of poverty status and examine multidimensional poverty. Denis et al (2010) explore multidimensional poverty in Chile between 2000 and 2009. Appealing to Amartya Sen´s concept of capability poverty, and referencing Alkire and Foster (2007) and the innovations in Mexico with CONEVAL´s multidimensional measure of poverty, they construct a multidimensional measure of poverty for Chile. They consider various dimensions of poverty analysing deficits or "needs" in education, health, housing, employment and income, establishing bands of coverage and minimums for each dimension. They find that these deficits or

needs have declined in education, health, housing, and income over the period 1990 to 2009. The only dimension where they have seen a rise in deficits or needs is in employment. The employment dimension captures whether an individual is employed, holds a contract and receives social security contributions. The authors conclude that while most dimensions of wellbeing register a distinct improvement in Chile, there remains a need to examine the quality of employment generated and access to quality employment.

A number of prominent studies have also been undertaken that explore the link between gender and poverty in Chile. Hutchinson (2001) analysed the role of women in economic activities in the early-twentieth-century in urban Chile exploring the gendered character of the national discourse on work and poverty. Tinsman (2002) focused on gender and rural labour in the midst of the agrarian reform in the mid-twentieth-century. Both of these studies conclude that women played an active role in generating surplus and sustaining households in highly sex segmented labour markets. A pioneering study was conducted in the late 70`s by Franco, Llona and Arriagada (1978) focusing on women and their predisposition to extreme poverty which examined the multiple causes of women´s extreme poverty linking this predisposition to low wages, sex segmented labour markets, high demographic dependency, and limited economic autonomy. Barrientos (1993) examined the impact of the military dictatorship on poverty and the community responses to mitigate poverty in the face of declining investments in social policy and programs. She concludes that poverty had risen throughout the dictatorship and that women played a critical role in mitigating poverty both in the household and through community activities. She highlights the role of women in the community kitchens that grew up in urban areas in response to hunger and food insufficiency during the dictatorship. Raczynski and Serrano (1985) also focus on the role of women in response to the economic crisis in the mid 80's concluding that the household sector absorbed and redistributed many of the costs of economic crisis in Chile.

Buvinic and Gupta (1997) review studies that explore the relationship between female headship and poverty around the world and highlight a number of important social programs developed in Chile to respond to a growing concern about the feminization of poverty. SERNAM, the Women´s Ministry, which came into being in 1991, has conducted many studies of gender and poverty and evaluations of social programs from a gender perspective (Valenzuela et al 1996; SERNAM 1996; SERNAM 1999; Riquelme and Valenzuela 2001; chant and Craske 2003; Budowski 2011). The Economic Commission of Latin America and the Caribbean (ECLAC), whose headquarters are in Chile, has conducted a number of studies on gender and poverty and the limitations of an analysis of income poverty based solely on the sex of the household head.[1] These publications analyse a wide range of deficits and inequalities in different realms of the productive and reproductive economy. In the early 2000s, the ILO launched a regional project on gender, poverty and employment in Latin America and produced a series of studies on the effects of gendered employment patterns on women's poverty.

The debate about inequality in Chile has been equally compelling. The evidence presented in various academic articles seems to support the view of José Gabriel Palma (2011:40) that "improvements in inequality have tended to be temporal, while deteriorations have tended to have more permanent effects". Hojman (1996) analyses inequality between 1989 and 1992 and concludes that real income growth was greater for those households in the upper reaches of the income distribution than for those with below average household income. Contreras et al (2001) underscore that income inequality has

[1] See the publications list in the Women and Development Series: http://www.cepal.org/mujer.

declined marginally over the 1990s but that it remains high by international standards.[2] López and Miller (2008) also reflect this analysis concluding that despite persistent economic growth and a mostly pro-poor structure of public expenditures, inequality has not declined significantly since the return to democracy. These authors emphasize that a key constraint to altering the income distribution is the low level of fiscal expenditures dictated by low tax revenues that have not permitted enough investment in human capital. They argue that the low quality of education and the consequently low returns to education in the labour market explain much of the inequality in Chile. Given that private education expenditures in the richest 15 per cent of the population are four times higher than in the public sector they believe that the large gap between public and private education tends to perpetuate inequality. Palma´s polemical analysis of the distribution of income in Chile, over a longer period of time, emphasizes the role of growth and selective increases in the minimum wage in contributing to wage compression in the middle of the income distribution without significantly altering inequality. Palma stresses that as growth rates down tailed by the end of the 1990s, the combination of an unstable international economy and waning investment reduced any further distributional gains. He appeals to the "deadly triad of undervalued labour, overvalued exchange rates and ´sterilised´ governments" (Palma 2011:47) as an explanation of why the distributional gains were so limited.

This paper attempts to respond to these analyses using data from the national household survey the CASEN and the National Employment Survey (ENE/NENE) to revisit the co-evolution of poverty and inequality over the last two decades in Chile, while placing a particular emphasis on the role of labour market institutions and policies. The paper begins with an analysis of the macroeconomic context and subsequently explores the data on poverty and inequality over time which demonstrates that although poverty has fallen consistently over time, inequality has indeed risen. Since the growth in real incomes is generated largely in the labour market, we explore the returns to education over time and highlight that with the investment in expanding educational opportunities, the returns to lower levels of education have declined over time for the majority of workers while the returns to holding a university degree have risen substantially. These trends appear to have contributed to widening income inequality in Chile. Subsequently, the paper examines the countervailing forces that mitigate wage and income inequality focusing specifically on labour market institutions and social spending – concluding that social spending may have played a greater role in reducing poverty than existing labour market institutions. Finally, we analyse the quality of employment in terms of whether the individual and the employer is actively contributing to social security and earns different levels of remuneration. The findings underscore that despite fairly robust growth, and real wage growth, the proportion of workers defined as having high quality, secure employment has changed very little over the last two decades. Most of the changes in employment quality have occurred in what is defined as medium quality employment—where employment with wages less than the average income of salaried workers who actively contribute to social security has risen by over 5 per cent. The paper concludes that the number of good jobs created has changed little over two decades—despite record growth rates and declines in poverty during this period. Moreover, we find that the countervailing forces and institutions that typically mitigate inequality and ensure a more equal distribution of wages and profits are particularly weak in Chile, explaining much of the inability to reduce income inequality over time.

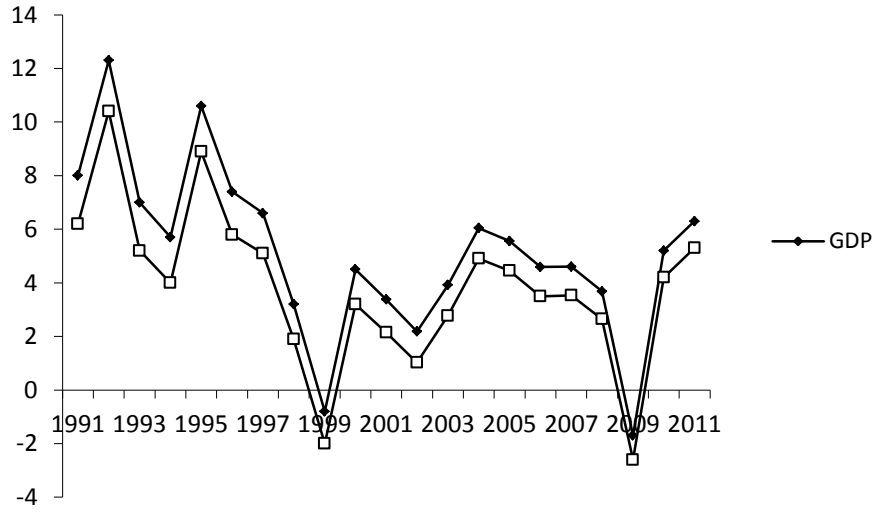
[2] The evidence on inequality also appears to suggest that the conclusions depend very much on the survey used and the income component analysed. Contrears and Morone (2002) explore wage inequality between 1967 and 1994 using a survey on employment and unemployment. These authors find that wage inequality rose consistently over the period of the military regime declining somewhat with the transition to democracy and subsequently rising again.

2. Macroeconomic context

Chile is a country that, like much of Latin America, has experienced different waves of neo-liberalism and post-Washington Consensus economic management. After a relatively long period of dictatorship, dating from the coup that overthrew Salvador Allende in 1973, democracy was installed again in 1990. From 1990 onwards Chile has experienced significant economic growth and seen a consistent reduction in poverty. Investment in transforming the fishing industry and in farmed salmon in the mid-1980s, the expansion of the wine industry, and the commodity boom in the decade of the millennium, have contributed to sustained GDP and export growth (Agosin and Bravo Ortega 2009).[3] Growth in the service sector and in services directly linked to mining, farming, fishing and forestry have also contributed to upward trending growth rates in the decade of the millennium (see Figure 1).

We can identify two distinct periods of growth in Chile: high and sustained growth rates during the 1990s that were briefly truncated by the Asian crisis, and more muted but positive growth rates in the decade of the millennium. The Chilean economy was affected by the Asian crisis in the late 1990s in the face of the worldwide economic slowdown and experienced three years of sequentially declining GDP growth that turned negative in 1999. Growth rates recovered fairly quickly, however, and were solid and sustained during the 2000s, with the exception of 2009 and the response to the global financial crisis (see Figure 1). During the 1990s Chile experienced a period of strong economic growth registering real GDP growth rates of almost 7 per cent. In the decade of the millennium real GDP grew at a slightly lower rate of approximately 4 per cent. 2009, however, saw a sharp decline in GDP in response to the global financial crisis and the contraction of external demand as both GDP and GDP per capita growth rates turned sharply negative recovering in 2010 and 2011.

Figure 1. Real GDP and GDP per capita growth rates (2000 prices)



Source: ECLAC Balance Preliminar 2011

[3] Although Chile was seen as emblematic of laissez-faire economics in Latin America in the 80s and early 90s, successive governments have consistently pursued industrial policy with the goal of supporting the expansion of certain sectors (Hausmann & Rodrik, 2003). In fact, most of Chile's dominant industries have received government support in some form (Agosin, Larraín, & Grau, 2009 and Agosin & Bravo-Ortega, 2009).

2.1 Pro-capital versus pro-labour distributional policies

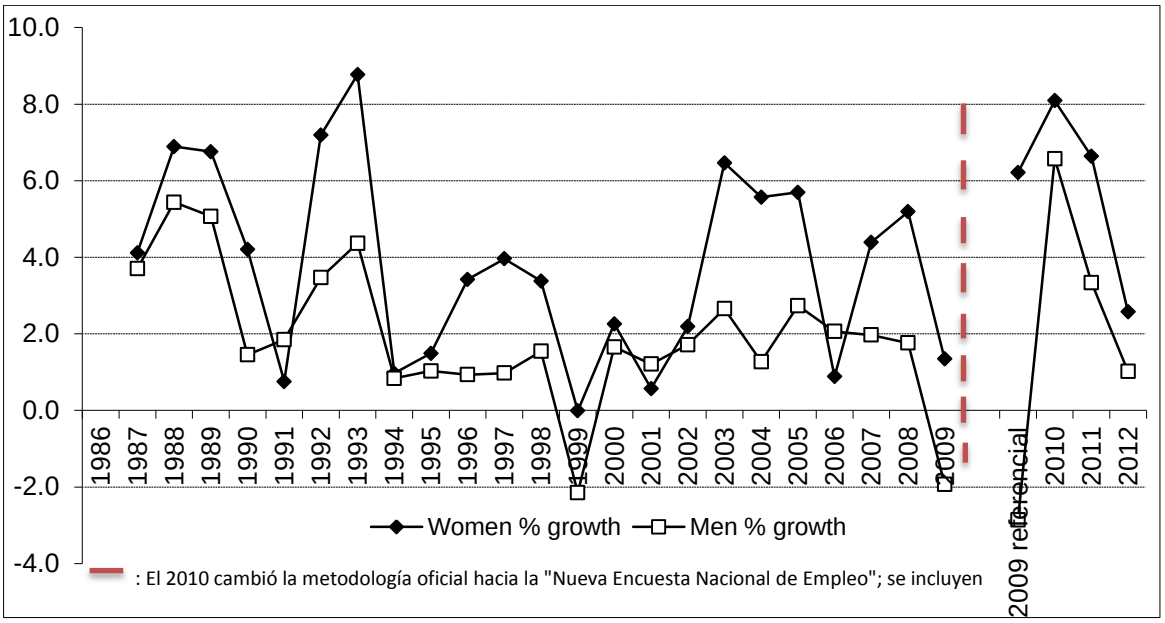
Yet Chile's growth can also be described as being largely "jobless" despite evidence of the labour market tightening at the end of the millennium. Employment growth has not kept up with population growth and there is evidence of a significant discouraged worker effect with many women, particularly those with less education and fewer skills, failing to re-enter the labour market once they have children. Unemployment has fluctuated over the two decades since the re-installation of democracy, reflecting trends in GDP growth and the impact of external shocks, such as the global financial crisis in 2009 (see Figure 2). What is noticeable throughout this period is that employment growth for women exceeds that for men in all but three years (see Figure 3).[4] Despite the rise in women´s participation rates and the growth of female employment, the labour market remains noticeably sex-segmented with the majority of women concentrated in services and wholesale and retail trade while men are distributed more equally across all sectors. Moreover, a higher proportion of men are salaried workers as compared with women. In 2011, 78 percent of the male labour force occupied salaried positions as compared with 66 per cent for women. Domestic service is almost exclusively female, absorbing 11.8 per cent of the female labour force in 2011 and only 0.6 per cent of the male labour force.

Figure 2. Open unemployment, 1990 – 2009 (percentage)

Source: CASEN, MIDEPLAN.

[4] There is a break in the series because employment rates have been recalculated in the New Employment Survey in line with international standards expanding the definition of both employment and unemployment. The employed include all of those who worked at least one hour in the reference period and received payment in monetary terms or in kind. Figure 7 reports both sets of figures for 2009.

Figure 3. Employment growth rates, 1987-2012 (year on year)

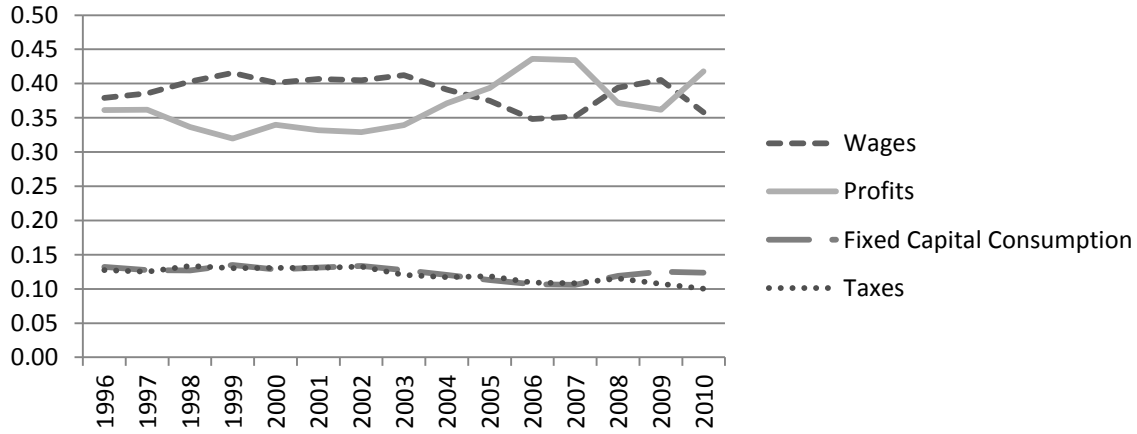


Source: INE. 1986-2008, Previous National employment Survey (ENE) and from 2009 onwards data from the New National Employment Survey (NENE)

Moreover, the participation rate in Chile is still far below that of other industrialized countries. And, as we note further on, serious questions may be raised about the ability of the "Chilean model" to produce employment and particularly to produce good quality jobs.

If we analyse the functional distribution of income over the period under study we observe that workers´ participation in GDP has been characterized by distinct periods of growth and decline—but that the broad trend appears to be downwards. Figure 4 graphs the functional distribution of income between 1996 and 2010. The trend for the wage share is downward and that for the profit share is upward. The share of wages and profits in an economy depends very much on the macroeconomic conditions as well as the economic structure and the presence of institutions that can affect redistribution. In general, boom times fuelled by greater investment (whether public or private) lead to greater employment and consumption and a greater share of wages in national income. During recessions the opposite occurs and the wage share falls. This can be clearly seen in Figure 4 as the wage share rose consistently between 2002 and 2006 and began to fall between 2007 and 2009. The share of profits in GDP mirrors these changes in the opposite direction.

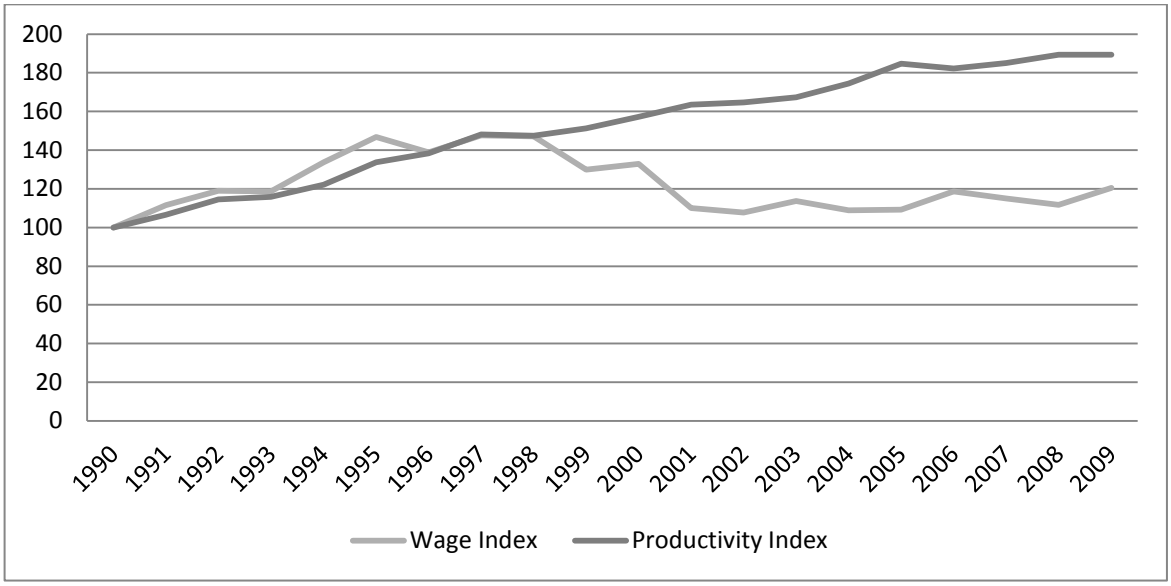
Figure 4. Functional distribution of income



Source: Authors analysis of National Income and Product Accounts, Banco Central de Chile.

Another means of exploring how the functional distribution of income may have changed is by looking at productivity and wage indicators. Figure 5 reveals that the wage and productivity index largely tracked each other from 1990 until 1998 thereafter the wage index for average wages has diverged from profits dipping and then stabilizing.

Figure 5. Productivity and wage indicators



Source: Central Bank data, national Accounts, Wage Series, National Statistical Institute

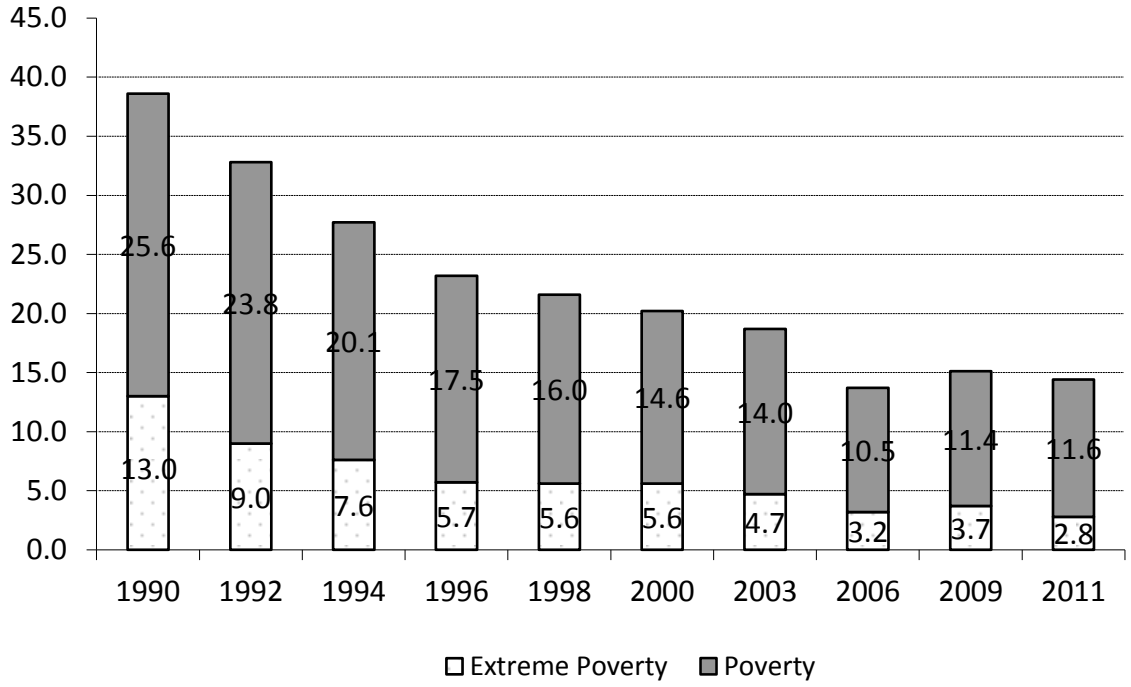
3. Poverty and inequality

Since the return to democracy in 1990, poverty has declined consistently in response to economic growth and in combination with increased social spending which targeted lower income households (see Figure 6). Between 1990 and 2011, poverty declined from 38.6 per cent to 14.4 per cent and extreme poverty from 13 per cent to 2.8 per cent.[5] This decline is thought to be associated with employment creation, rising real incomes from wages and salaries, a change in the minimum wage policy, and changes to the Labour Code, which contributed to strengthening worker rights. However, the role of labour markets and labour market institutions in securing the decline in poverty may be eclipsed by that of social policy. The development of a sophisticated system of transfers and subsidies, that was set in place and modified over the course of three democratic governments, successfully redistributed income to the lower end of the income distribution (Rau 2011). Indeed, around 40 per cent of the population depends on cash transfers and subsidies provided by the State to achieve incomes above poverty line (Sunkel and Infante, 2009). Moreover, when we calculate poverty rates using only autonomous income[6] ex ante taxes and transfers, we find that 21 per cent of the population are living in poverty, a fact which highlights the significant role that transfers have had in reducing poverty.

[5] There has been a polemic around the release of the 2011 CASEN household survey and the official calculation of poverty rates because of the inclusion of additional questions about other income sources which altered poverty rates slightly. The contention is that the decline in poverty between 2009 and 2011 is not statistically significant because the margin of error is sufficiently large and the income variables are not strictly comparable.

[6] Autonomous income includes income from earnings, rents and other private transfers – it does not include monetary transfers and subsidies from the state. This is take-home income which is reported net of taxes in the CASEN household survey.

Figure 6. Poverty and extreme poverty, 1990-2011



Source: CASEN, MIDEPLAN

Part of the success in mitigating poverty and raising incomes at the lower end of the income distribution can be attributed to increased investment in education and health care and the development of a complex system of transfers and welfare. Yet more recently, sound macroeconomic and fiscal policy has played a critical role in maintaining these social investments. Chile provides an interesting example of a fiscal balance commitment that focuses on the medium term instead of the short term and that therefore can be used to implement counter-cyclical fiscal policy (Ffrench Davis 2010). Since 2001, Chile's fiscal policy has embraced a commitment to a central government "structural balance". Unlike the "effective balance", which reports the current fiscal position, this balance reflects the medium-term fiscal outlook. Maintaining a structural balance involves estimating the fiscal revenue that would be obtained net of the impact of the economic cycle, and spending only the amount that would be compatible with this level of income. In practice, this means saving revenue during economic upturns and spending the revenues during downturns. A structural surplus equivalent to 1 per cent of GDP is saved over the peak of the cycle and is injected into the economy in a downturn.

In August 2006, the structural rule was formally institutionalized through the *The Fiscal Responsibility Law* enabling directed counter-cyclical fiscal policy to continue to be used to mitigate downturns[7]. As part of this commitment, in 2006 Chile created a Contingency Program to Combat Unemployment with the explicit goal of reinforcing countercyclical policy. As Velásquez (2010: 1) observes: "This initiative links employment and fiscal policy, formalizing the decision to implement anticyclical employment policies, financed with general revenues, when the national labour market deteriorates, but it also

[7] Nevertheless, it's worth noting that this decision was taken while Chile faced an export bonus from high copper prices –Chile's principal export and revenue source. Moreover, adopting this fiscal balance approach was undertaken at the expense of implementing a comprehensive tax reform which had been widely promoted by groups concerned with rising social inequality.

operates when certain geographic areas experience significant increments in unemployment."

The objective of this program is to finance activities that are labour intensive, and to provide incentives for hiring the unemployed, and for generating employment. Typically the program finances small infrastructure projects, road improvements, and municipal and state building repairs using locally hired workers who are unemployed at the time of hiring.[8] Additional funds are channelled to these programs when the quarterly national rate of unemployment exceeds the average for the previous 5 years or when the unemployment rate is equal to or greater than 10 per cent of the labour force. The combination of the structural balance rule and these targeted programs to improve labour market outcomes and reduce unemployment proved particularly useful in confronting the recent financial crisis (Ffrench Davis 2010, Velásquez 2011). It is widely agreed that poverty would have increased at a greater rate, reaching a higher level in 2009 and 2010, had these programs and commitments not been in operation (Ffrench Davis 2010; Velásquez 2010, GPS 2010).

Despite the success in reducing poverty, concerns remain about the distribution of income, as inequality by several measures has not declined. The broad trends in two different indicators of income inequality (D10/D1, D5/D1 and D9/D1) reveal that it has actually risen over the period 1990-2011. Excluding the peak and subsequent decline in income inequality associated with the impact of the financial crisis in 2009, the overall trend is upward using these two measures. In 2011, the richest decile´s autonomous income was 35,6 times the poorest one. This gap decreases somewhat when we consider the ratio of income earned in decile 9 to that of decile 1 which was to 14.2 times the income of the poor in 2011. The Gini coefficient, which is less sensitive to changes in income than the ratio of top to bottom deciles, does show some declines in inequality. For autonomous income, ex antes taxes and transfers, the Gini remained largely stable at about 0.57 throughout the 1990s and early 2000s declining to 0.54 in 2006, rising slightly in 2009 to 0.55 and falling again to 0.54 in 2011.[9] The Gini for labour income is 0.58, for autonomous income it is 0.54 and ex post transfers the Gini coefficient drops to 0.52 in 2011. If we consider the Gini ex ante direct taxes on labour earnings it rises to 0.63 in 2011, indicating that the net effect of taxes and transfers is to reduce the Gini by 0.011 or 17.4 per cent, 7.9 per cent of which is attributable to labour taxes and 9.5 per cent to transfers.

López, Figueroa y Gutiérrez (2013) also analysed the distribution of income in Chile but use the data base from the Internal Tax Service. These authors observe: "evidence exists that the measures of inequality that are actually available, which are based in household survey data, under-estimate the real concentration of income." This concern has set in motion waves of studies in other countries that use alternative information, generally from those agencies responsible for collecting taxes (Atkinson y Piketty 2007, 2010; Atkinson, Piketty y Saez 2011).

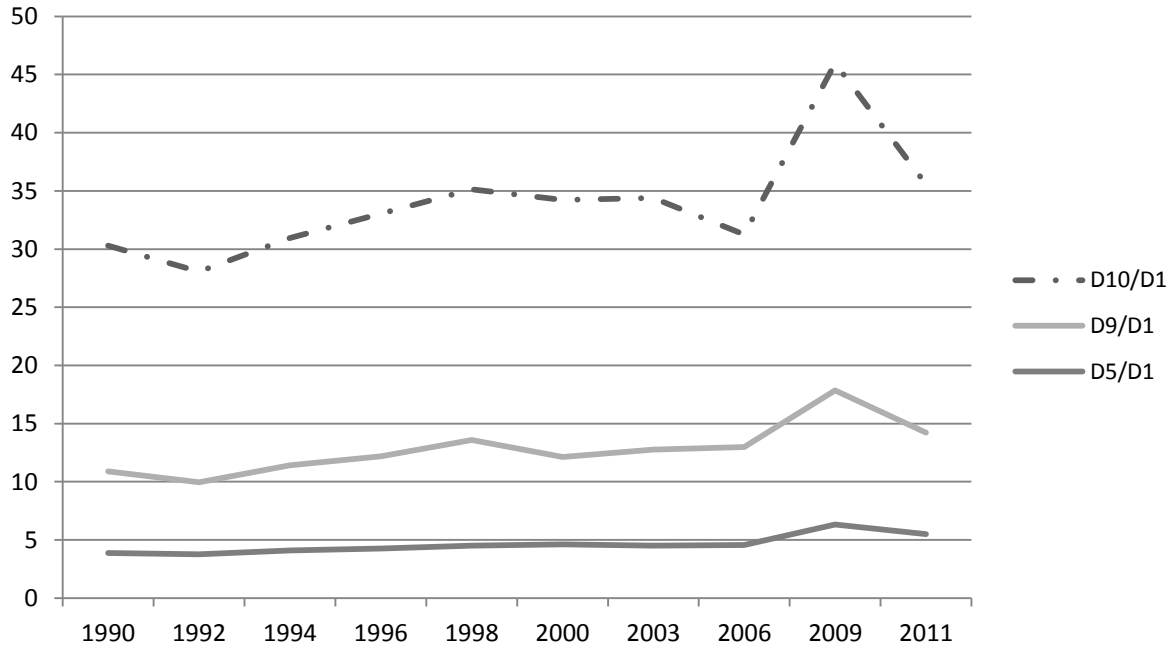
The study by de López, Figueroa y Gutiérrez (2013) confirms the analysis that the income distribution in Chile is greatly affected by the lack of information about the "super rich" in the CASEN household survey. The authors conclude that the richest 1 per cent of the income distribution is significantly underestimated using the CASEN. If the

[8] These public works programs are administered by the local municipality. In response to the February 2010 earthquake, however, this program was expanded to provide emergency employment and support for the reconstruction effort. The Army Corps assumed control of the reconstruction employment program and operated a quota system by region that included quotas for temporary employment for women.

[9] These Gini coefficients are calculated using the distribution of individual incomes excluding transfers. Ginis for individual incomes including transfers also reveal a decline in inequality from 0.58 in 2000 to 0.53 in 2006 (CASEN 2010). Most of this decline has been driven by changes in the middle of the income distribution.

distribution of income is analysed using tax data the Gini increases by a further 6 percentage points – a finding similar to our analysis of income inequality when we add back in taxes on labour income and own account work. Echoing these findings, Palma (2011) observes that Chiles 10th decile ranked as having 124th largest share of income out of a sample of 135 countries.

Figure 7. Income inequality over time



Note: Autonomous income ex ante transfers and taxes.
Source: Authors´ analysis of household survey data, CASEN 1990-2011

The analysis of income distribution by decile reveals that the increment in inequality between 2006 and 2009 was driven largely by increases in average household incomes in the top two deciles. This remains true when we consider the increase in inequality over the entire period. It is also interesting to note that between 2006 and 2011 even with high average growth, both inequality and poverty rise and the Kuznets curve assumptions are not met.

Deciles can be prone to greater income volatility over the business cycle particularly at the upper and lower ends of the distribution. An analysis of income quintiles may be more consistent over time. Average real income has grown for all income quintiles with the greatest income growth concentrated in the quintiles 1, 2 and 4 (see Table 1). The period 2003-2006 and 2009-2011 saw the greatest real income growth, particularly for the lower end of the income distribution. Between 2006 and 2009, in response to the economic and financial crisis, real income growth actually declined in the first two income quintiles by 11 per cent and 0.8 per cent respectively with a significant recovery in 2009-2011.

Table 1. Average autonomous household income by quintile, 2011 prices

Quintile	2000	2003	2006	2009	2011
1	133,763	136,355	154,117	137,225	157,303
2	287,513	289,093	324,360	321,905	343,151
3	437,005	417,979	468,048	485,753	507,282
4	663,501	654,624	733,175	757,068	773,068
5	2,088,931	1,980,312	2,021,680	2,152,340	2,134,047
Total	722,190	695,042	740,246	770,807	782,953

Source: Author´s analysis of household survey data, CASEN 2000-2011

Table 2. Average real income growth by quintile in 2011 prices

Quintile	2000-2003	2003-2006	2006-2009	2009-2011	2000-2011
1	1.9	13.0	- 11.0	14.6	17.6
2	0.5	12.2	- 0.8	6.6	19.4
3	- 4.4	12.0	3.8	4.4	16.1
4	- 1.3	12.0	3.3	2.1	16.5
5	- 5.2	2.1	6.5	- 0.8	2.2
Total	- 3.8	6.5	4.1	1.6	8.4

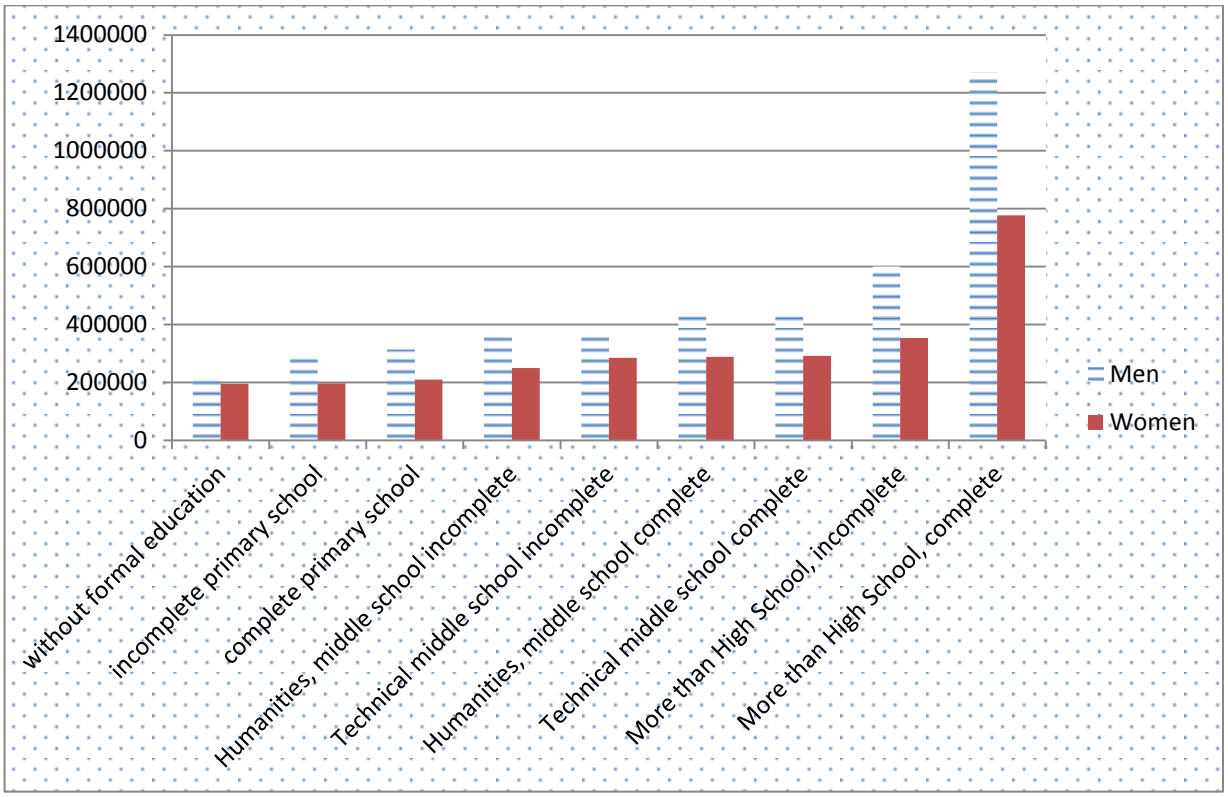
Note: Average household income ex ante transfers.

Source: Authors´ analysis of household survey data, CASEN 2000-2011

4. The returns to education

The returns to education in Chile appear to be surprisingly flat across the different levels of formal education and gender wage gaps prevail. Approximately 74 per cent of the labour force had less than a complete high school education in 2011 and earned a little over 400 thousand pesos (US$850) in labour income. The profile of the returns to education has not changed greatly over time and we may conclude that a significant portion of income inequality is related to wage inequality that reflects the low returns to employment for lower skilled workers. Gender gaps in earnings and the returns to education also persist, although they have reduced slightly over time.

Figure 8. Average labour income by formal education level, 2011



The tables in Annex 1 report the analysis of the returns to education using data from the CASEN from 2000 and 2011. We draw on Sapelli (2003, 2009) to explore the returns to education and, more specifically, the returns to concluding different educational stages and obtaining a degree or title using a "sheepskin" model. The sheepskin model explores the returns from the receipt of a title or diploma as being distinct from years of education invested in education at that level. We estimate the returns to education with and without Heckman corrections for sample selection bias, using a simple spline model and a more complex sheepskin spline model. The Heckman corrections are applied using Full Information Maximum Likelihood estimation procedures to increase the efficiency of the estimates.

Broadly, the returns to higher education are greater than the returns to primary and secondary school and the returns to having a title or diploma are distinct and typically larger than those from merely having studied the corresponding level of education – lending weight to a signalling and screening vision of the role of human capital in the labour market.

There are clear gender differences in the returns to education and in the determinants of participation which are reported in the selection regression in the Heckman corrections. In the simple Mincer specifications, applying a Heckman correction for participation, the returns to years of primary school or basic education are lower for women but the returns to middle school education are higher for women in both 2000 and 2011. The returns to age, a proxy for experience, are distinctly lower for women in both years—most likely reflecting time out of the labour force for having and caring-for children.[10] The sheepskin spline models reveal a slightly more complex set of results. In general, the returns to

[10] Age is a particularly poor proxy for women and for individuals with weak labour market attachment and frequent entry and exit from the labour market.

obtaining a title or a degree are roughly twice the returns to every year of education at that level—with the exception of women with complete middle school in 2011.[11] The returns to a higher level degree, particularly at the university level, outweigh the returns to the receipt of other degrees and titles for lower levels of education. The returns to age for women are also consistently lower than those for men in the sheepskin spline model.

The Heckman corrections reveal that it is important that we control for participation, since the returns to education increase for both men and women, but more consistently for women, indicating that a substantial number of those who are currently outside the labour market may have higher reservation wages and be able to command higher returns for each year of education. Many of these people may be waiting for the right job, again, lending greater weight to a signalling and screening interpretation of the labour market where inefficiencies mean that the matching process for workers and jobs does not occur seamlessly. Moreover, the participation regressions consistently reveal the role that being in a civil union (whether married or partnered) plays in increasing men´s participation and decreasing women´s participation and the role that young children plays in reducing women´s labour market participation. The latter finding highlights a clear role for policy in that women´s participation is likely to be significantly affected by the availability of quality child-care alternatives.

Analysing the simple Mincer regressions, with the Heckman corrections, the returns to education have declined over time for basic and middle school (from 6.1 per cent for basic and 11.4 per cent for middle school to 4.5 per cent and 8.1 per cent respectively) while the returns to higher education have declined for men (from 19.2 per cent to 18.2 per cent) and increased for women (from 18.4 per cent to 19 per cent). The returns to age have also declined over time using this model. The returns to education as reflected in the sheepskin spline model with Heckman corrections have similarly declined through middle school for both men and women. The returns to higher level education, however, have increased in terms of the receipt of a title or degree (from 35.9 per cent to 44.9 per cent)[12] while the returns to each year of education have largely decreased at the higher levels for both men and women. Interestingly, the returns to age or experience have also declined over time for women, but increased for men, indicating the rising relative importance of education in the signalling and screening process of obtaining a job and obtaining one that pays well for women.

The fact that the returns to lower levels of education have declined and that those for higher levels of education have risen over time, and particularly the returns to completing university degrees (and higher technical degrees for men), has most likely contributed to greater inequality in the wage distribution and more polarized outcomes in the labour market, with particularly flat returns across the labour market at lower levels of education (see figure 6). These findings are consonant with those of Manacorda el at (2005) who find that the dramatic expansion in secondary school education in many countries in Latin America, including Chile, have depressed the wages of workers with secondary school education relative to those with higher education.

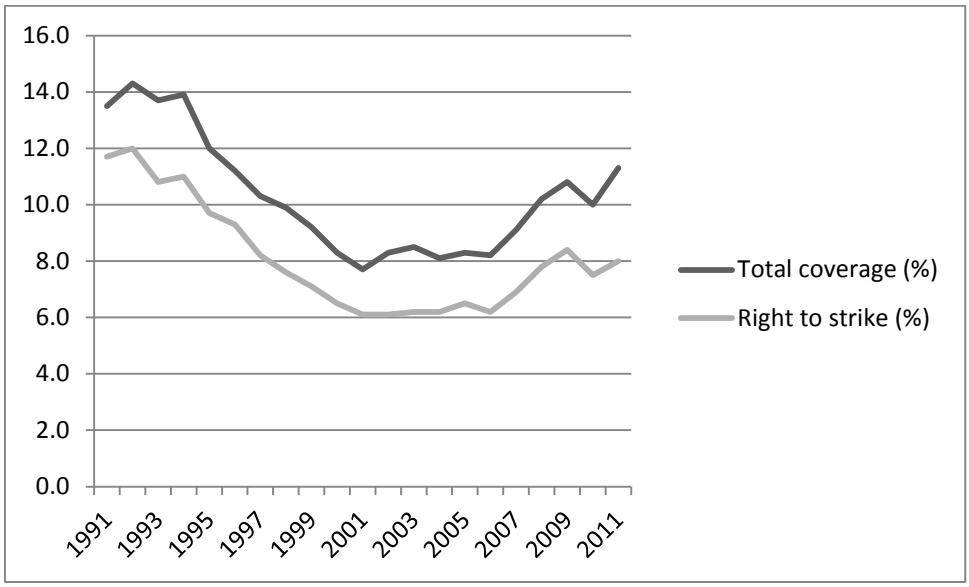
[11] This may be due to differences between individuals who have passed through the new and old systems who have a different number of years reported in completed primary and middle school education.

[12] When the regression includes dummy variables, such as for the completion of a degree, we can recover the percentage increase using 100[exp(Beta)-1].

5. Labour market institutions and social spending

The countervailing forces and labour market institutions that favour redistribution in Chile, principally unions, collective bargaining mechanisms and statutory minimum wages, exist but have a limited reach. Although the percentage of contracts that are negotiated through collective bargaining has risen since the trough in 2001, only 11 percent of all contracts were collectively bargained in 2011.

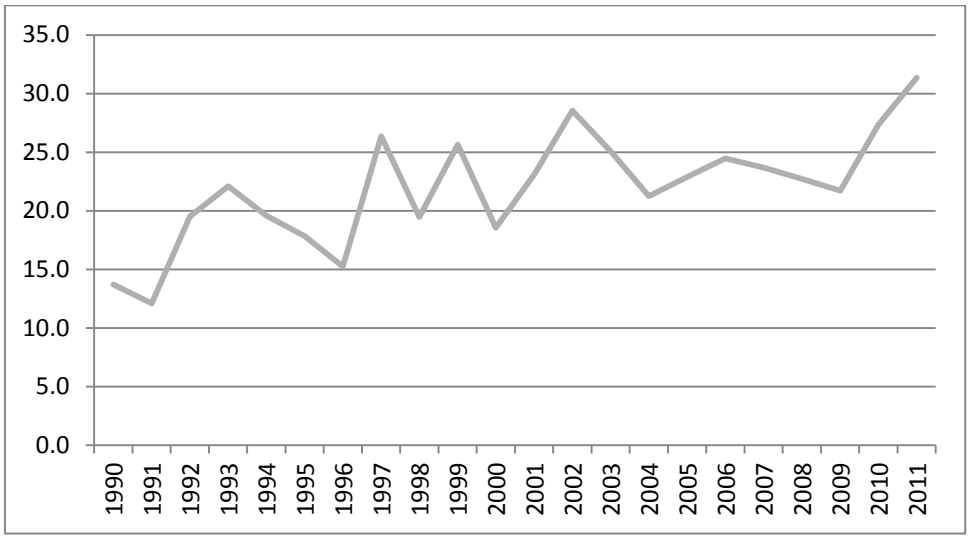
Figure 9. Collective bargaining in Chile, percentage of all contracts



Source: Statistical Yearbooks, Ministry of Labour and Social Security

Collective bargaining in Chile follows a distinctly Anglo-Saxon model, with significant levels of decentralization and fragmentation, where negotiation occurs at the level of the firm, but in contrast to similar cases such as in Japan for example, in Chile the coordination is particularly weak. Labour relations in Chile are governed by the Labour Code which has its origins in the 1979 reform under the military government. Although the Labour Code recognizes the rights of workers to organize, a number of restrictions were placed upon organizing. Collective bargaining occurs exclusively at the enterprise level. The right to strike was severely limited by procedural rules and a right to lock-out was granted to employers (Reinecke and Valenzuela 2011b; BCN 2012). Currently, two different types of collective bargaining co-exist: one with the right to strike, and the other without the right to strike. It is this last category that has grown during the last 20 years (to almost 31.4 per cent of the total of workers covered by collective bargaining). Furthermore, those who do have the right to strike can be replaced from the first day of the strike. As a result the power of unions and collective bargaining mechanisms has been greatly reduced.

Figure 10. Share of collective bargaining without a right to strike (percentage)

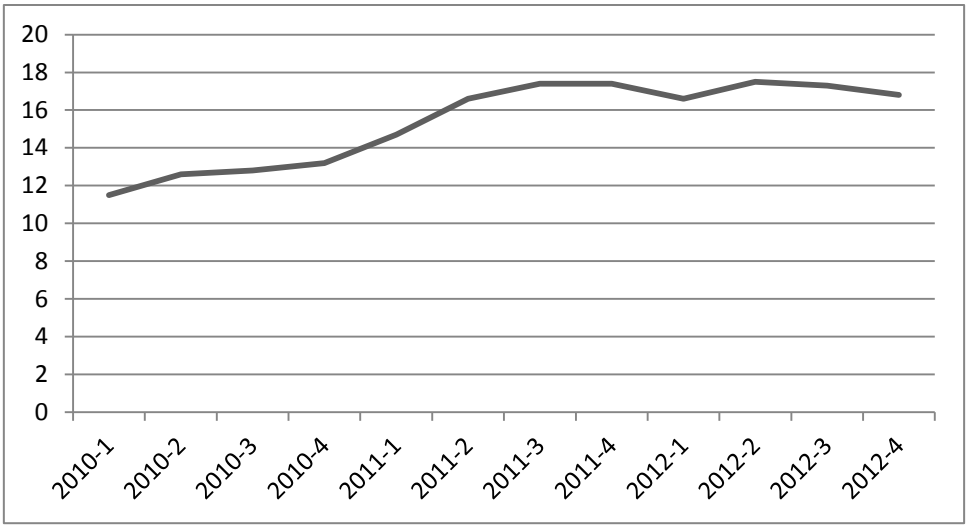


Source: Statistical Yearbooks, Ministry of Labour and Social Security

In this context, another phenomenon impedes organization: that of multiple tax identities for firms. Since collective bargaining occurs at the firm level and is not sector-wide, labour organizing can be particularly challenging. Some companies have multiple tax identification numbers and workers may rotate between these multiple tax identities which coincide with separate legal identities. As Reinecke and Valenzuela note (2011b: 197) "Many enterprises negotiate as one single enterprise with their providers and clients, but are fragmented into a multitude of different legal entities when dealing with their workers. This allows them to avoid bargaining at the level of the enterprise." As a result, although workers may work for the same holding company or firm, their payslips indicate otherwise and organizing would require that they do so within these distinct tax identifications. These practices have certainly contributed to the erosion of union power in Chile.

Another trend, contributing to the gradual erosion of union power and collective bargaining is that of increasingly triangular work relations. Since 2010 the ENCLA, or New Labour Force Survey, permits measurement of these types of non-standard work relationships and reveals that the percentage of workers in this category has risen from 11.7 per cent in 2010, to a total of 17.5 per cent in 2012. These types of triangular relationships are visible in different forms of subcontracting, and in the growth of temporary work agencies and other private sector intermediaries. Traditionally, these types of labour relations are associated with poorer working conditions when comparing equivalent workers in direct employment (Durán, Kremerman y Paéz, 2012). It is possible, that some of the rise may reflect pro-cyclical dynamics in the labour market where individuals subject to subcontracting are shed more easily from their positions during a recession and rehired more easily in the recovery. Yet a number of researchers point to this growing phenomenon in Chile (Echeverria Tortello, 2010; Sehnbruch 2013). Moreover, a recent report from the Secretariat of the Presidency highlighted that between the first quarter of 2010 and august 2013 of the 826 thousand jobs created, 45.5 per cent were subcontracted to external firms or individual own-account workers (La Tercera 2013).

Figure 11. Workers in subcontracting or recruited through a temporary agency or third party (percentage of all employees)

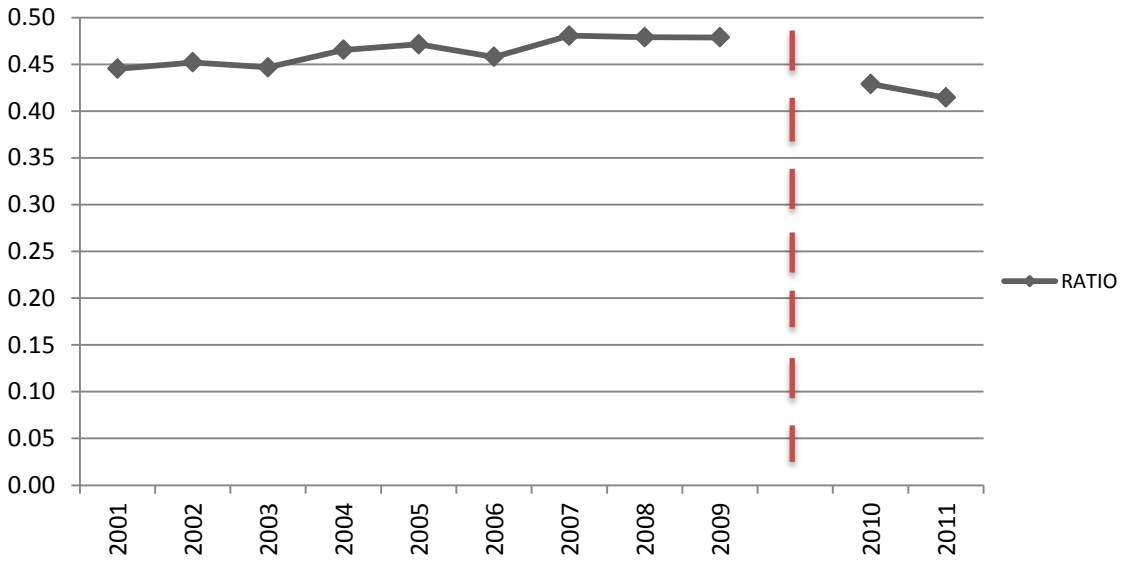


Source: New Labour Force Survey

The ratio of the minimum wage to average monthly wages has also risen slightly over the period 2001-2009 but subsequently appears to be turning downwards.[13] The recent years (2010 and 2011) reveal a distinct decline in this ratio. Like most countries in Latin America, Chile has had a minimum wage since the mid-1930s. Since 1973, however, the statutory minimum was applicable to all dependent workers in both the private and public sector. The role of the statutory minimum is potentially very important in Chile since sector-wide collective bargaining was prohibited during the military dictatorship. With the resumption of democracy the minimum wage has been subject to periodic adjustment, ensuring a real increment each year. In 1999, Chile ratified ILO Convention 131 that, among other aspects, determines how minimum wages are set and mandates consultation with various social actors, including employer and union representatives. Since the early 1990s, the minimum wage was adjusted according to a tri-annual rule that fixed the increments in line with forecast inflation and productivity growth. This was intended to prevent wage increments from replicating past inflation and to tie the increments explicitly to productivity growth. Although the minimum wage was adjusted according to the predetermined rates, the majority of workers did not experience wage increments—resulting in an increasing concentration of workers around the level of the minimum wage (Infante, Marinakis y Velasco 2003). Between 1998 and 2004 minimum wage increments were somewhat greater than observed productivity increments (Marinakis and Velasco 2006) but this tendency appears to have reverted after the recent financial crisis.

[13] Palma (2011) notes that the narrowing gap between the average and the minimum wage led to a concentration of workers around the minimum wage with no less than 60 percent of workers earning two minimum wages or less in 2003.

Figure 12. Ratio of the minimum wage to average wages



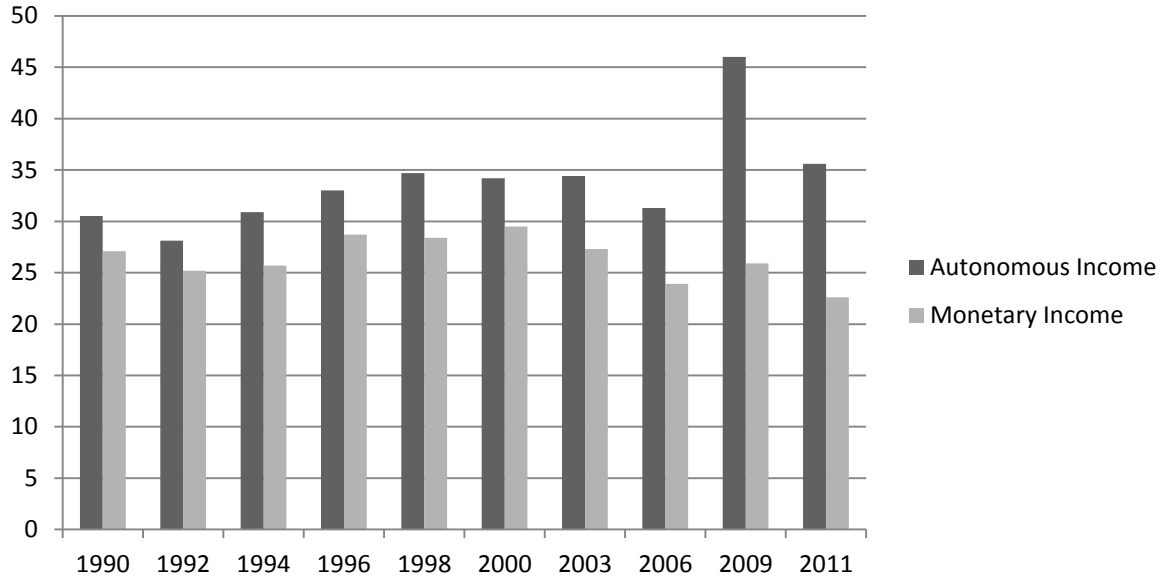
Source: Author´s calculations based on data from the ILO database on minimum wages and data from the National Statistical Institute (INE) using the employment survey. These wages refer to dependent workers in production units of 10 persons or more. The employment survey changed however in 2010 and the levels are not strictly comparable but the trends are meaningful.

Figure 13 shows the cumulative distribution of income from primary employment, which is the main job held by an individual. The graph reveals a significant concentration of workers around the minimum wage – signalling the importance of the minimum wage for many workers and highlighting the fact that it acts as a reference in wage setting/bargaining.

Figure 13. Cumulative distribution of income from primary employment, 2011

Without a doubt, the recent financial crisis did affect the Chilean labour market. The decline in real income between 2006 and 2009 for the lower two income quintiles, however, was mitigated partially by targeted social spending under the Bachelet government. Absent these transfers, the decline would have been more abrupt and severe. Interestingly, between 2009 and 2011 autonomous income rose in the first four income quintiles with the greatest increment being in the first quintile. Figure 14 reveals the critical role of transfers in the composition of household income, particularly between 2006 and 2009 as a consequence of compensatory social policies increasing household income at the lower end of the income distribution. The graph shows the gap between average household incomes in Decile 10 and Decile 1 ex ante and ex post social transfers.

Figure 14. The impact of social transfers on income inequality, D10/D1

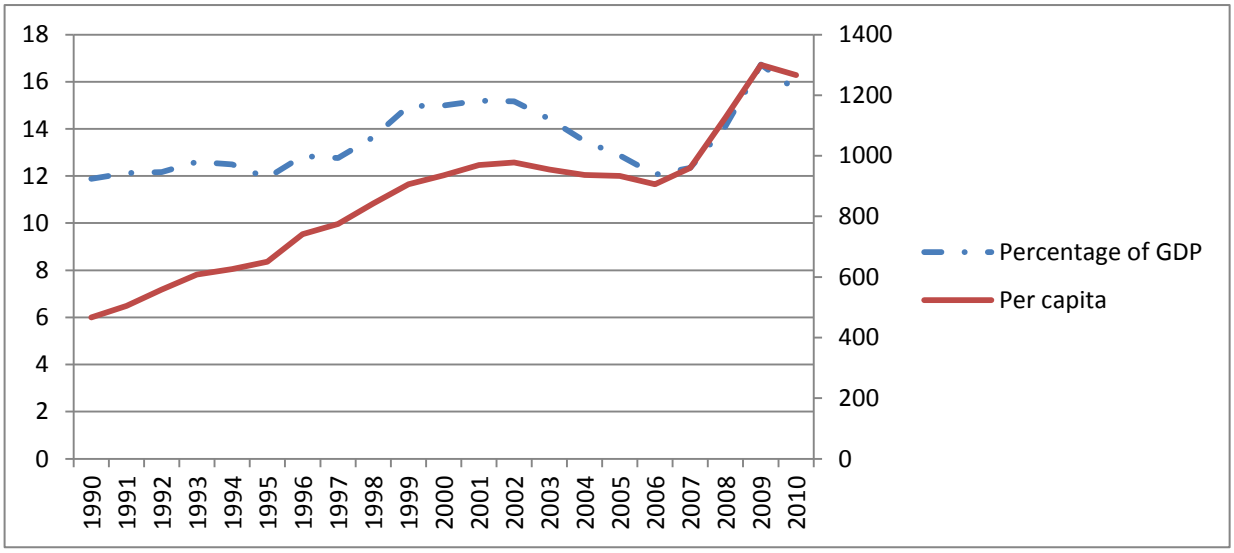


Source: CASEN, MIDEPLAN.

6. Quality of employment and social protection

Chile is among the top four countries in the region that spends the greatest amount in terms of GDP and per capita on social expenditures. Only Cuba, Uruguay and Costa Rica dedicate more in terms of GDP to social expenditures. Moreover, mimicking regional trends, social spending as a percent of GDP and in US$ per capita in Chile has risen since 1990, reaching a peak of a little over 16 per cent of GDP in 2009.

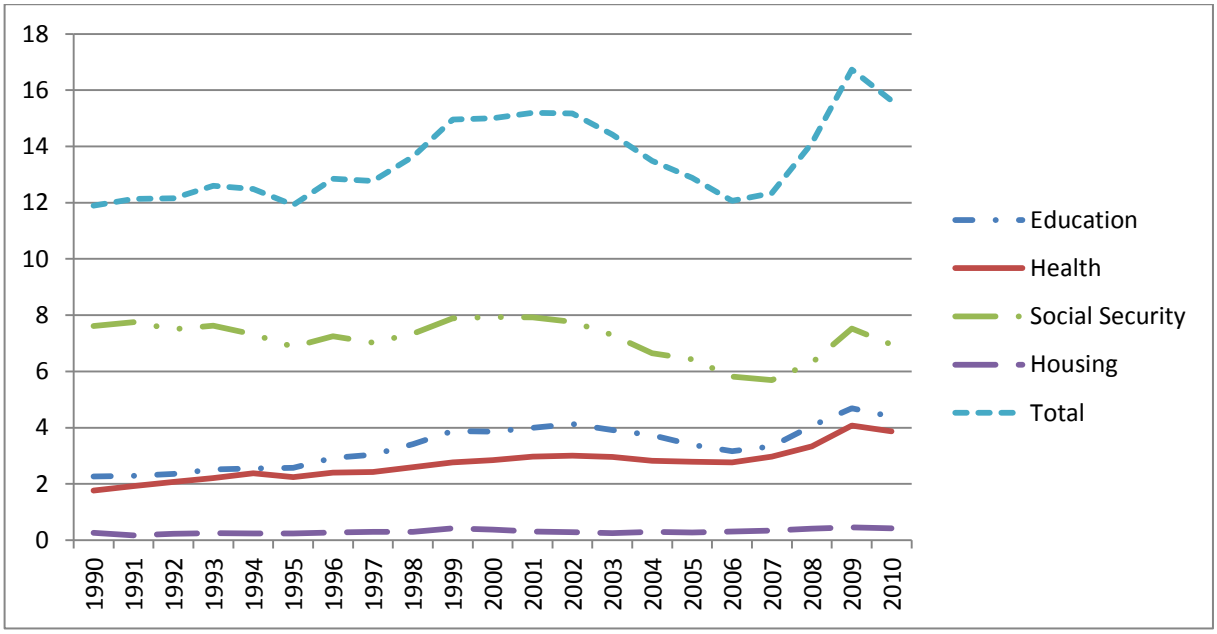
Figure 15. Social spending as a percentage of GDP and GDP per Capita



Note: US$ at constant 2005 prices.
Source: CEPALSTAT

This trend is also broadly true for the components of social spending with significant social spending being dedicated to education and social security which includes expenditures on social protection.

Figure 16. Social spending by category, per cent of GDP

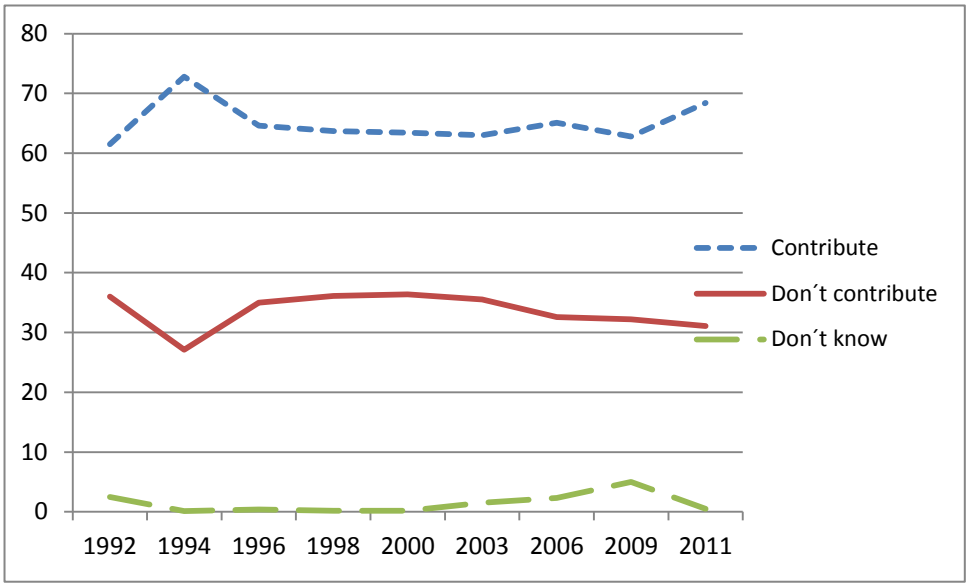


Source: CEPALSTAT

While part of social spending goes to benefits that are universal, a significant portion of social spending is targeted to the poorest and most vulnerable using a variety of instruments such as the social protection record. Individuals must seek assistance through their municipality and be interviewed and scored on a variety of dimensions that describe vulnerability to risks such as poverty, illness, incapacity and reflect their ownership of assets and receipt of income. Although there have been several attempts to undertake survey sweeps of the poorest municipalities or of particularly vulnerable groups (children, pregnant women, the aged) from 2007 through 2009, access to targeted welfare benefits is largely demand-driven: individuals must seek services out and be determined qualified to receive them.

The important role of social transfers that contribute to mitigating poverty and investing in human capital notwithstanding, concerns remain about the quality of employment generated over the period under study. The terms and conditions of employment vary greatly for different workers with different endowments of skills in different sectors and occupations. Despite a far-reaching social security reform, initiated in 2008 under the Bachelet government, that increased pension coverage and reinstated non-contributory pensions for workers and individuals who had not been able to access a pension under the existing private system, a significant proportion of workers still do not contribute to a pension (see Figure 17).

Figure 17. Percentage of employed who contribute to a pension



Source: Authors´ analysis of household survey data, CASEN 1992-2011

The history of social protection in Chile has to be seen through the lens of the dictatorship and subsequent return to democracy. Chile has experienced more than three decades of pension reform. In 1981, the military government introduced a system of mandatory individual accounts for workers employed in the formal sector. This initial reform was designed to respond to the problems generated by a multiplicity of defined benefit PAYG plans with variable benefits and arbitrary differences across plans. Departing from the standards established in Convention 102, this reform abolished employer contributions. Under the reform, workers were required to place 10 per cent of their earnings into these accounts and to make additional payments for mandatory disability and survivors insurance and administrative costs. Retiring workers had the right to collect their pensions as inflation-indexed annuities purchase from insurance companies or draw down their accumulation with phased withdrawals. In parallel, the government organized a regulated market in which fund management companies (AFPs) compete to

manage the funds. There were provisions for a subsidy for those who did not have sufficient contributions but who had contributed to the pension system for at least 20 years bringing their pension benefit up to a minimum guaranteed level. Additionally, there was a means-tested pension for the elderly poor financed from general revenue that came to about half the minimum pension guarantee. In both cases, benefits were low and the coverage incomplete (Barr and Diamond 2008). Moreover, the transition to this privatized system exacerbated existing gender inequalities in the receipt of benefits and did not resolve questions of coverage and adequacy of the benefits (Gillion and Bonilla 1992).

Chile set aside 5 per cent of GDP to cover the transition and pay existing pensions commitments under the old scheme. Yet despite having significant fiscal surpluses during the early years of the transition, the costs were high. Almost 23 years after the reform was implemented, direct government pension spending in 2004 was 5.5 per cent of GDP with official projections remaining at this level or higher (Barr and Diamond 2008:236). Furthermore, coverage was still inadequate with many workers coming to retirement age without the necessary contributions to ensure an individually funded pension or even the 240 months of contributions that would entitle them to a minimum guaranteed state pension. Those individuals at greatest risk were own account workers, agricultural workers, temporary workers and women.

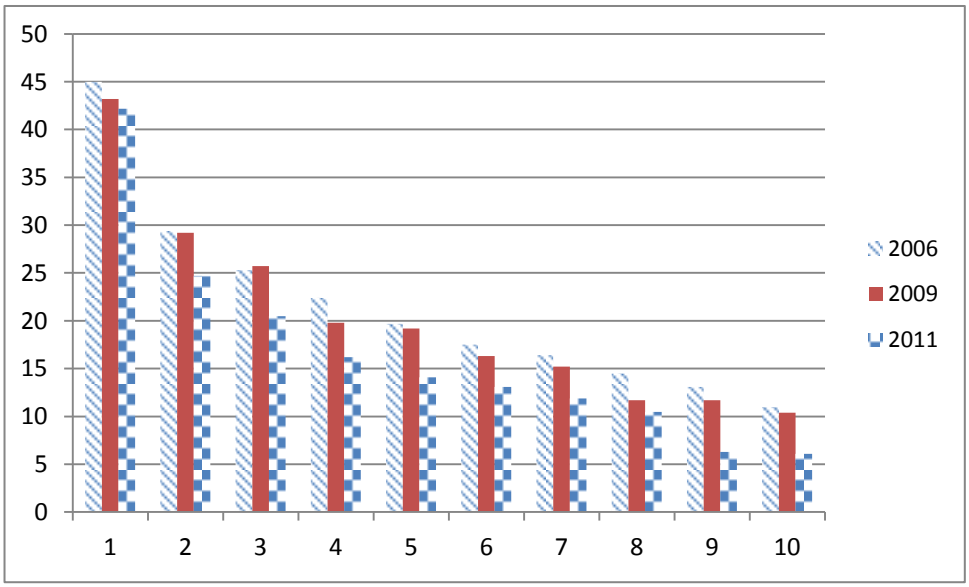
The ILO played an active role in providing technical cooperation and support for the subsequent pension reform that was undertaken in 2008. In April 2004, the ILO organized an international seminar on the pension system in Chile in conjunction with the Ministry of Labour and Social Security and Fundación Chile 21. The seminar contributed significantly to an on-going discussion of the need for further pension reform in Chile. Representatives of the private sector, workers, employers and academicians participated actively in the debate. Key areas of concern were gender equity, fiscal sustainability and the administrative costs of the existing system (ILO 2008). From 2006 through 2008 the Marcel Commission was set in place to propose a way forward and make refinements and amendments to the existing system. The ILO was active in providing technical support to this and other Commissions brought into being under the Bachelet government (2006-2010).

In January 2008 the Pension Reform law was enacted. This created a system of basic pensions that articulated with the existing system. There were three pillars to this new system: a solidarity pillar, a contributory pillar and a voluntary pillar. A separate set of reforms to the social protection system created a series of programs to address poverty and promote social inclusion under what is called Chile Solidario. One of the central features of the new system was the adoption of a basic pension of US$150 per month to be payable to all persons aged 65 and over regardless of their contributions. The basic pension is gradually withdrawn as the contributory pension income of the individual rises and as the total income from all sources of the household rises. Everyone is entitled to a basic pension if they are in the lower 60 per cent of the income distribution. There is also a basic pension for invalidity of about US$150 per month which was brought into being in July 2009. Additionally, there is a solidarity "top-up" pension that brings all pensions to approximately $560 per month for those whose total pension benefits are less than this amount. In recognition of the caring responsibilities of women and their contribution to the reproduction of the labour force, Chile instituted a pension bond for women for every child born that is paid into her individual account. Simultaneously, child care was made more easily available to facilitate women´s participation in the labour market. The voluntary and obligatory individual accounts were also made more flexible and legal minimum contributions were reduced while at the same time amendments were made to existing laws to reduce administrative costs and to enable pensions´ funds to exploit administrative economies of scale.

These reforms have undoubtedly improved coverage and reduced poverty. They have also addressed the need for greater intergenerational equity and gender equity. Moreover, they did not significantly change the total cost to the state of the existing system. The articulation of social protection and basic pensions has also proven to be essential for mitigating the costs of the economic and financial crisis and in order to respond to the demands of reconstruction in the wake of the recent earthquake in February 2010. Significant challenges remain, however, replacement rates are low, particularly for the middle class[14], and there is an ongoing need to enforce the obligatory nature of contributions for the self-employed and domestic workers and ensure they are adequately covered (Délano 2010). But despite this, the new system appears to function extremely well and to have garnered significant support from contributors and beneficiaries alike. Effective coverage rates have risen from around 24 per cent of all individuals over the age of 65 in 2008 to 61 per cent in 2011.

Despite the recent pension reform and a commitment to increasing pension coverage and awareness through formalization, many workers continue to be largely informal, labouring without contracts and benefits. This is particularly the case for workers in the lowest income deciles. Figure 18 reports those workers without contracts by decile for the period 2006-2011 using data from the CASEN. More than 40 per cent of workers in the first income decile are working without contracts. This figure drops to under 25 per cent for the second decile by 2011. Whereas a little over 6 per cent of salaried workers in the last two income deciles report working without contracts in 2011.

Figure 18. Salaried workers without contracts by decile, 2006-2011



Source: Authors´ analysis of household survey data, CASEN 2006-2011

Our analysis of quality of employment follows a similar typology of quality employment developed by Infante (2011) and modified for this paper, which is based on whether an individual is currently making social security contributions and earns higher than average wages. We denominate the categories, high secure and high insecure

[14] Estimates are that men may achieve replacement rates of approximately 60 per cent while women are more likely to have replacement rates that fall below 50 per cent. These figures have been disputed however and it appears that the benefits received may be significantly lower – even for those who have contributed to the pensions funds continually over a working life of more than 25 years.

depending on whether the individual receives more than average wages and is making social security contributions. We see that high quality employment remains stable over the period for both men and women (see Annex 2 for a breakdown by sex). Low quality employment, however, declined over this period for both men and women. Most of the changes in the labour market have occurred in what is defined as medium quality employment – where employment with wages less than average income of salaried workers but with social security contributions has increased by a little over 5 per cent. This clearly shows the effect of the pension reform process for the lower skilled and lower earning groups. When we analyse the profile of jobs by sex (see Annex 2) we see that these trends hold for both men and women where men typically have greater access to higher quality employment and that women are found in greater proportions in lower quality employment.

Table 3. Quality of employment, typology

High Secure	High Insecure	Low Secure	Low Insecure
Earns greater than or equal to average wages and is making social security contributions.	Earns greater than or equal to average wages and is not making social security contributions.	Earns less than or average wages and is making social security contributions.	Earns less than average wages and is not making social security contributions.

Adapted from Infante (2011)

Table 4. Quality of employment

	Quality of Employment				
Year	**High Secure**	**High Insecure**	**Low Secure**	**Low Insecure**	**Total**
1990	22,37	8,52	42,11	27,00	100
1992	21,85	11,22	39,72	27,21	100
1994	23,22	7,64	42,37	26,77	100
1996	24,35	9,42	40,82	25,41	100
1998	25,35	9,29	39,92	25,44	100
2000	23,64	7,75	42,48	26,14	100
2003	23,91	8,66	40,73	26,70	100
2006	22,99	8,88	43,75	24,38	100
2009	22,24	8,90	41,84	27,03	100
2011	22,37	8,11	47,19	22,33	100

Source: Authors´analysis of the CASEN household survey data

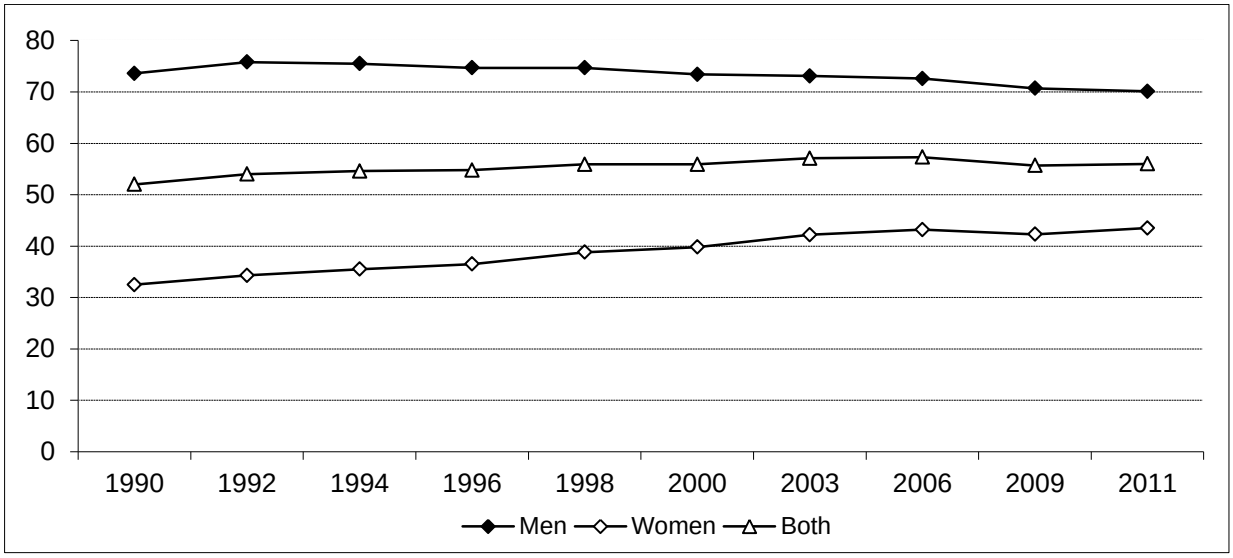
Alarcón and Santos (2011) agree that the labour market has not generated sufficient quality jobs and particularly so for women, despite their increased participation. Alarcón and Santos undertake a dynamic analysis of the labour market using a pseudo-panel from the CASEN survey. These authors observe that working women in the lower income deciles present comparatively greater income immobility than men whereas women in the higher income deciles present greater income mobility.

Ruíz Tagle and Sehnbruch (2009) also explore the quality of employment in Chile and question the absence of an explicit focus on the quality of employment as part of a development strategy. These authors use a capabilities framework to examine various dimensions of the quality and quantity of employment generated between 1996 and 2006 and find that "the link between having a job and the valued functionings that a job generates can be as uncorrelated as the link between income poverty and multidimensional

poverty". These authors advocate for including indicators of the quality of employment in addition to indicators of job quantity and wages to ensure that job quality features in the policy discourse and as a policy objective. They include among the dimensions of "quality employment" wages, type of occupation, whether the individual has a contract, and the stability of employment and labour protections that this contract confers, whether the individual has access to health care and pensions, the type of health and safety risks involved in their work, and whether they have union representation. In their analysis of the Chilean labour market, these authors find that only 36 per cent of workers (those with open-ended contracts or an employment duration exceeding one year) are protected by most of the stipulations in the Labour Code. Workers without formal written contracts and low income self-employed workers (24 per cent of the total of self-employed) are the least likely to have health insurance, pensions or access to any training benefits. Workers without contracts are the most likely to be poor and workers with short-term contracts are the most likely to become unemployed with longer and more frequent spells of unemployment—even when compared with workers without contracts. Using a point system that assigns higher points to more beneficial characteristics of employment (higher wages, contracts, social security, etc.) they also find that very low quality employment has risen between 2002 and 2006—even over the period that includes the uptick in growth. Ruíz Tagle and Sehnbruch also find that women are more likely to work without contracts, are less likely to be in a union, have lower quality employment and a higher probability of experiencing unemployment.

Women´s labour market participation rates are low in Chile and comparatively lower than other countries in South America evidencing what may be a significant discouraged worker effect – particularly for women of reproductive age with children from lower income households. Between 1990 and 2011, women´s participation rates rose from 32.5 per cent to 43.5 per cent (see Figure 19). There are, however, striking differences between income quintiles. Women from lower income quintiles have participation rates of about 33 per cent while women from higher income quintiles have participation rates of almost 73 per cent. These participation rates most likely reflect significant differences in education, availability and quality of employment, as well as demographic dependency rates by income quintile.

Figure 19. Participation rates by sex, 1990-2011 (percentage)

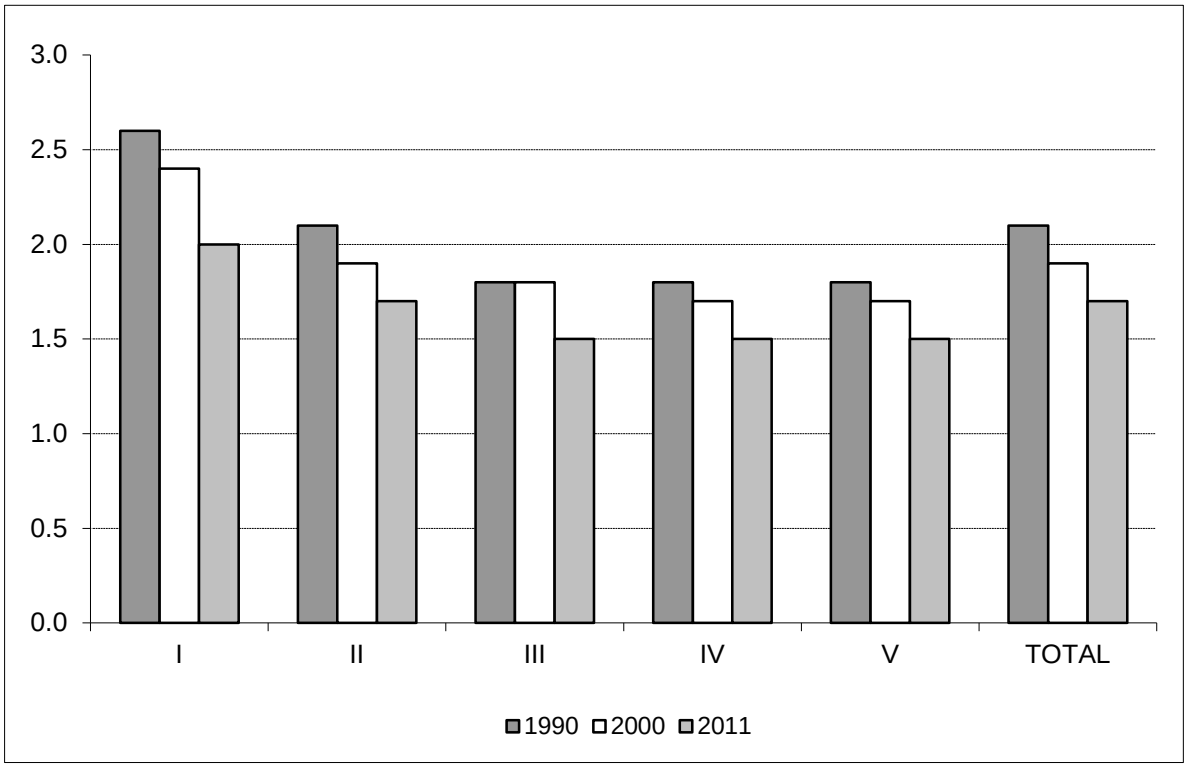


Source: CASEN, MIDEPLAN.

Figure 20, reveals that the average number of children per family is higher for lower income quintiles and remains so over time. In 1990 families in the lowest income quintile had an average of 2.6 children living with them. By 2011, this figure had fallen to 2. This

compares with figures of 2.1 and 1.7 respectively for the highest income quintile for the same two years. It is worthwhile noting here, that labour market outcomes for poor women are very different from those for wealthier women not only in terms of their participation rates but, also in terms of the quality of employment they have access to. Women from different income quintiles may also differ in their ability to commodify reproductive services.[15] Men and women from the wealthier segments of the income distribution are much more likely to use domestic services[16]. Analysing how reproductive services are commodified and to what extent this commodification may relieve time burdens of higher income men and women enabling them to participate more freely in the labour market can explain the vast difference in participation rates by quintile (Zacharias 2011; Zacharias et al 2012; Gammage 2013).

Figure 20. Average number of children by income quintile



Notes: For those households with children.

Source: CASEN, MIDEPLAN.

[15] For example, Medrano (2009) observes that almost 50 per cent of poor women who do not work mention the lack of child care as a primary reason.

[16] A survey conducted in Greater Santiago in 2008 showed that around 15 per cent of households hire domestic workers, on a monthly, daily or hourly basis. These data are consistent with data from the CASEN for Greater Santiago.

7. Conclusions

Despite success in consistently reducing poverty rates in Chile and in effecting social transfers to the lower end of the income distribution, the evidence presented here underscores that income inequality has risen over the course of the 1990s and 2000s. The returns in the labour market are particularly flat when we compare different levels of education and have declined over time for the majority of workers with completed middle school or less and basic education. The number of good jobs created has changed little over two decades—despite record growth rates and declines in poverty during this period. The countervailing forces and institutions that typically mitigate inequality and ensure a more equal distribution of wages and profits are particularly weak in Chile. Union density has fallen from earlier peaks in the 1970s and has also fallen consistently over the period under study. The role of the minimum wage is increasingly important in determining the wages of workers at the lower end of the income distribution and there is evidence of a significant lighthouse effect with a concentration of workers clustering around the minimum wage. Although there has been an effort to expand pension coverage and to promote formal employment, a substantial number of workers do not contribute to a pension or hold a contract. Moreover, the replacement rates are low for those who do receive a pension. The lack of pension contributions in combination with earnings data reveal that although job quality has improved somewhat over the period under study, only 22 per cent of workers hold what could be referred to as a high quality job.

For Chile to produce more good jobs and to reduce income inequality, there clearly needs to be an investment in strengthening labour market institutions and improving the returns on education. Investing in labour market intermediation and strengthening the municipal offices required to link job seekers with employment ensuring shared employment data and technological platforms could greatly improve job-matching. One important dimension of a good quality job is access to social protection. Although evasion and elusion of pension´s obligations are being reduced, there needs to be a greater effort to ensure that contributions are paid and paid in full for the correct amount of earnings. Ensuring that the Ministry of Labour has access to both tax records and social protection contributions records could minimize evasion and elusion on the part of employers and enterprises. Engaging in more vocational training may help raise the skills levels and returns to education for the vast majority of workers. Publicly funded or subsidized training programmes have been implemented but to date there is a widespread critique that the "wrong" firms and workers have benefitted disproportionately from these programmes. Wealthier workers with higher levels of education and more established firms in high earning sectors have appeared to benefit disproportionately from the training programmes currently available.[17] Offering modular education and vocational training, with open-access for re-entry at all ages may improve educational outcomes—particularly for those who have not completed secondary school education. Investing in social dialogue and in union capacity and reinstating the right to organize by sector could also greatly level the playing field, improving outcomes for workers. Finally, eliminating the multiple tax identities that many firms hold will improve tax returns and will reduce impediments to organizing at the firm level.

[17] See for example the Report from the Commission for the Revision of the System of Training and Labour Market Intermediation, Ministerio de Trabajo y Previsión Social (2011).

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Annex 1. The Returns to Education in Chile

Model Specification

Applying and adapting the specifications developed in Sapelli (2003) and Sapelli (2009), we develop two variants of the spline model to explore the returns to education in Chile. The first is a simple spline model that divides the sample in three levels of education -basic, middle and higher education- without any distinction made between those who completed or merely studied at that level of education. Moreover, it includes all individuals who studied in the previous system which operated prior to 1965 and had a shorter period in primary school, and all those who studied in the newer system which has a longer period in primary school. [18] The simple spline model explores the differential returns between years in primary or basic education, middle school—which include what is referred to as technical and humanities middle school and their equivalent in the previous system—and higher education which includes years in undergraduate and post-graduate study, as well as higher level technical qualifications.

The second model, the *"sheepskin spline",* differentiates between years in education at a specific level and the successful completion of that level of education with the receipt of a degree or title. In order to apply this model, the number of educational categories was expanded to include: basic, middle, higher level technical education, university and post-graduate education; with each level of education being divided into completed and uncompleted years. Subsequently, the last year of a completed degree is coded separately to enable us to develop a binary variable for the completion of a degree, where the sum of the incomplete and complete years is equal to the total time spent at each level of education.

Two additional adjustments were made in coding the education variables. For those individuals who report having been in the previous education system, and those who because of their age must have passed through this system, we attribute the total number of years spent in basic education as 6[19]. Similarly, due to changes in the questionnaire, there is no variable which allows us to identify individuals who have not completed their postgraduate degree in 2000. As a result, we code the number of years in undergraduate as the average time spent in undergraduate education and attribute any difference in years to post-graduate education for those who report having studied at that level and having obtained a degree. This may attribute more years in undergraduate study to a small portion of individuals who have embarked upon a postgraduate degree but not yet completed it, roughly 0.16 per cent of our sample.

[18] In 1965 the Chilean education system changed altering the number of years in primary and middle school. The number of years changed from 6 years in primary or basic education and 6 years in middle school to 8 years in basic education and 4 years in middle school. This change means that individuals can have undertaken and completed primary and middle school with different number of years of education, making it impossible to establish a unique criterion for completing education levels, something of particular relevance to the "sheepskin" model. However, the surveys used permit us to identify who studied in which system and assign the "correct" number of years to each stage of education – which allows us to control for this effect.

[19] Or less, if primary school is not completed.

Distribution of Education Levels, 15-65 years, Percentage

	2000		2011	
Level of Education	**Men**	**Women**	**Men**	**Women**
Without formal education	1.69	1.98	1.81	1.82
Basic incomplete	15.71	16.12	11.03	11.92
Basic complete	10.99	11.64	9.52	9.59
Middle incomplete	36.15	38.72	22.02	20.40
Middle complete	14.20	12.60	29.64	30.84
Higher level, technical track incomplete	3.31	2.46	3.25	3.05
Higher level, technical track complete	4.17	5.21	4.23	4.94
University incomplete	6.31	4.88	9.36	8.27
University complete	6.66	5.85	8.31	8.52
Postgraduate studies, incomplete	0.18	0.27	0.16	0.16
Postgraduate studies, complete	0.63	0.27	0.67	0.49
Total	**100**	**100**	**100**	**100**

Descriptive Statistics for the Regressions

1. Average age of those between 15 and 65 years by sex, 2000 y 2011

	ALL		MEN		WOMEN	
	2000	**2011**	**2000**	**2011**	**2000**	**2011**
Mean	35.87	37.30	35.59	36.72	36.12	37.84
Std. Dev.	13.65	14.60	13.65	14.62	13.64	14.57
N	9,936,105	11,650,139	4,822,464	5,538,983	5,113,641	6,111,156

2. In civil union, all individuals between 15 and 65 years by sex, 2000 y 2011

	ALL		MEN		WOMEN	
	2000	**2011**	**2000**	**2011**	**2000**	**2011**
In civil union	42.73	50.15	42.30	48.94	43.13	51.25
Not in civil union	57.27	49.85	57.70	51.06	56.87	48.75
Total	100	100	100	100	100	100

3. Average non labour income all individuals between 15 and 65 years by sex, 2000 y 2011

	ALL		MEN		WOMEN	
	2000	**2011**	**2000**	**2011**	**2000**	**2011**
Mean	27,282.97	36,297.54	31,838.93	37,276.20	19,512.22	34,938.85
Std. Dev.	131,734.30	125,794.50	154,197.50	134,699.60	79,391.57	112,252.30
N	5,389,743	6,880,329	3,397,689	3,999,492	1,992,054	2,880,837

4. Number of children in each age group, household heads between 15 y 65 years, 2000 y 2011[20]

4.1 Total

	0 - 3 years		4 - 6 years		7 - 12 years		13 - 18 years	
	2000	**2011**	**2000**	**2011**	**2000**	**2011**	**2000**	**2011**
1	715,782	722,023	632,135	542,123	970,883	893,663	799,185	912,227
2	90,994	86,158	59,462	36,325	289,899	184,270	194,443	149,222
3	5,999	6,463	2,927	735	38,452	14,037	20,179	14,010
4	1,099	1,889	146	10	4,396	308	2,144	1,598
5	5	10	0	0	585	103	54	128
6	0	0	0	0	23	0	0	0
Total	813,879	816,543	694,670	579,193	1,304,238	1,092,381	1,016,005	1,077,185

4.2 Percentage

	0 - 3 years		4 - 6 years		7 - 12 years		13 - 18 years	
	2000	**2011**	**2000**	**2011**	**2000**	**2011**	**2000**	**2011**
1	87.95	88.42	91.00	93.60	74.44	81.81	78.66	84.69
2	11.18	10.55	8.56	6.27	22.23	16.87	19.14	13.85
3	0.74	0.79	0.42	0.13	2.95	1.28	1.99	1.30
4	0.14	0.23	0.02	0.00	0.34	0.03	0.21	0.15
5	0.00	0.00	0.00	0.00	0.04	0.01	0.01	0.01
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Mincer Equations of the Determinants of Log Income, with and without Heckman Corrections, 2000
Simple Spline Model

	Without Heckman corrections			With Heckman corrections		
Mincer	**Total**	**Men**	**Women**	**Total**	**Men**	**Women**
Basic	0.049 ***	0.054***	0.040 ***	0.061 ***	0.052 ***	0.053 ***
	(0.002)	(0.002)	(0.004)	(0.002)	(0.002)	(0.004)
Middle	0.099 ***	0.102 ***	0.105 ***	0.114 ***	0.099 ***	0.119 ***
	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.004)
Higher	0.184 ***	0.193 ***	0.180 ***	0.188 ***	0.192 ***	0.184 ***
	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)
Age	0.038 ***	0.041 ***	0.031 ***	0.044 ***	0.039 ***	0.035 ***
	(0.001)	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)
$(Age)^2$	-0.0003 ***	-0.0003 ***	-0.0002 ***	-0.0004 ***	-0.0003 ***	-0.0003 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Constant	4.873 ***	4.836 ***	4.950 ***	4.576 ***	4.909 ***	4.688 ***
	(0.028)	(0.033)	(0.053)	(0.031)	(0.036)	(0.064)
Selection						
Basic				0.062 ***	0.046 ***	0.097 ***
				(0.003)	(0.004)	(0.006)

[20] Excluding households with no children, in each age group.

	Without Heckman corrections			With Heckman corrections		
Mincer	**Total**	**Men**	**Women**	**Total**	**Men**	**Women**
Middle				0.127 ***	0.112 ***	0.156 ***
				(0.004)	(0.005)	(0.007)
Higher				0.079 ***	0.052 ***	0.097 ***
				(0.007)	(0.008)	(0.011)
Age				0.041 ***	0.032 ***	0.050 ***
				(0.003)	(0.004)	(0.006)
$(Age)^2$				-0.0006 ***	-0.0005 ***	-0.001 ***
				(0.0000)	(0.0000)	(0.0000)
In union				-0.051 ***	0.140 ***	-0.251 ***
				(0.013)	(0.020)	(0.021)
Non labour income				-4.28e-07 ***	5.08e-09 (8.19e-08)	-6.35e-07 **
				(1.41e-07)		(3.00e-07)
Children 0-3				-0.017	0.0002	-0.115 ***
				(0.013)	(0.017)	(0.023)
Children 4-6				0.002	0.003	-0.058 **
				(0.013)	(0.018)	(0.024)
Children 7-12				0.007	0.010	-0.074***
				(0.011)	(0.015)	(0.021)
Children 13-17				0.046***	0.026#	0.062***
				(0.012)	(0.015)	(0.021)
Constant				-0.133 ***	0.223***	-0.499 ***
				(0.061)	(0.077)	(0.111)
Inverse Mills						
Rho				0.574	-0.163	0.403
				(0.016)	(0.035)	(0.054)
Sigma				0.722	0.686	0.691
				(0.004)	(0.004)	(0.007)
lambda				0.414	-0.112	0.279
				(0.013)	(0.024)	(0.039)
R^2	0.30	0.30	0.32			
F	5269.79	3400.18	2208.64			
Wald $chi^2(5)$				25108.79	14828.51	8333.34
Wald $chi^2(1)$ rho				721.75	21.19	44.51
N	73,425	50,637	22,788	84,935	57,728	22,207

Mincer Equations of the Determinants of Log Income, with and without Heckman Corrections, 2011
Simple Spline Model

	Without Heckman			With Heckman		
Mincer	**Total**	**Men**	**Women**	**Total**	**Men**	**Women**
Basic	0.034 ***	0.038***	0.023 ***	0.045 ***	0.045 ***	0.038 ***
	(0.002)	(0.003)	(0.004)	(0.002)	(0.003)	(0.004)
Middle	0.070 ***	0.077 ***	0.070 ***	0.081 ***	0.082 ***	0.090 ***
	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)
Higher	0.180 ***	0.182 ***	0.185 ***	0.182 ***	0.182 ***	0.190 ***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Age	0.029 ***	0.039 ***	0.021 ***	0.039 ***	0.048 ***	0.033 ***
	(0.001)	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)
$(Age)^2$	-0.0002***	-0.0003***	-0.0002 ***	-0.0003 ***	-0.0004 ***	-0.0003 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Constant	6.011 ***	5.843 ***	6.137 ***	5.640 ***	5.570 ***	5.639 ***
	(0.030)	(0.037)	(0.052)	(0.032)	(0.039)	(0.055)
Selection						
Basic				0.055 ***	0.046 ***	0.057 ***
				(0.004)	(0.006)	(0.006)
Middle				0.077 ***	0.053 ***	0.114 ***
				(0.004)	(0.006)	(0.006)
Higher				0.050 ***	0.050 ***	0.058 ***
				(0.005)	(0.008)	(0.007)
Age				0.063 ***	0.061 ***	0.080 ***
				(0.003)	(0.005)	(0.005)
$(Age)^2$				-0.0007 ***	-0.0007 ***	-0.001 ***
				(0.0000)	(0.0001)	(0.0000)
In union				-0.071 ***	0.088 ***	-0.256 ***
				(0.013)	(0.022)	(0.018)
Non labour income				-6.94e-07***	-7.03e-07***	7.27e-07***
				(1.06e-07)	(1.45e-07)	(1.85e-07)
Children 0-3				0.022	0.121 ***	-0.060 ***
				(0.015)	(0.025)	(0.020)
Children 4-6				-0.038 **	-0.039	-0.055 **
				(0.016)	(0.026)	(0.023)
Children 7-12				-0.006	-0.007	-0.020
				(0.013)	(0.021)	(0.019)
Children 13-17				0.002	-0.005	0.0001
				(0.013)	(0.020)	(0.019)
Constant				-0.489 ***	-0.188 #	-1.003 ***
				(0.067)	(0.097)	(0.100)
Inverse Mills						
Rho				0.706	0.711	0.650
				(0.009)	(0.014)	(0.018)
Sigma				0.743	0.720	0.735
				(0.004)	(0.004)	(0.006)
lambda				0.524	0.512	0.478
				(0.008)	(0.011)	(0.016)
R^2	0.26	0.27	0.27			
F	4323.72	2691.90	1973.16			
Wald $chi^2(5)$				22154.32	13373.83	10350.22
Wald $chi^2(1)$ rho=0				2228.34	1057.25	635.22
N	72,567	44,175	28,392	79,608	46,885	32,723

Note: Robust standard errors, models run without expansion factors; *** significant at 1%, ** significant at 5%, # significant at 10%

Mincer Equations of the Determinants of Log Income, with and without Heckman Corrections, 2000 Sheepskin Spline Model

	Without Heckman			With Heckman		
Mincer	**Total**	**Men**	**Women**	**Total**	**Men**	**Women**
Basic incomplete	0.041 *** (0.003)	0.044*** (0.003)	0.033 *** (0.006)	0.053 *** (0.003)	0.042*** (0.003)	0.047*** (0.006)
Basic complete	0.096 *** (0.009)	0.109 *** (0.011)	0.081 *** (0.018)	0.104*** (0.009)	0.107*** (0.011)	0.090*** (0.018)
Middle incomplete	0.086 *** (0.003)	0.089 *** (0.004)	0.081*** (0.006)	0.104*** (0.003)	0.085*** (0.004)	0.098*** (0.007)
Middle complete	0.132 *** (0.010)	0.136*** (0.011)	0.178*** (0.017)	0.136*** (0.009)	0.136*** (0.011)	0.181*** (0.017)
Higher level, technical track incomplete	0.094 *** (0.008)	0.096 *** (0.010)	0.079*** (0.012)	0.097*** (0.008)	0.095*** (0.010)	0.082*** (0.012)
Higher level, technical track complete	0.206 *** (0.019)	0.241 *** (0.027)	0.245*** (0.027)	0.213*** (0.019)	0.240*** (0.027)	0.250*** (0.027)
University incomplete	0.179 *** (0.006)	0.181 *** (0.008)	0.166*** (0.009)	0.182*** (0.006)	0.180*** (0.008)	0.169*** (0.009)
University complete	0.294 *** (0.025)	0.342 *** (0.035)	0.318*** (0.037)	0.307*** (0.025)	0.341*** (0.034)	0.325*** (0.037)
Postgraduate studies, incomplete	0.103 *** (0.037)	0.054 (0.056)	0.167*** (0.046)	0.107** (0.037)	0.054 (0.056)	0.170*** (0.046)
Postgraduate studies, complete	0.267 *** (0.083)	0.386 *** (0.112)	0.033 (0.116)	0.266*** (0.083)	0.384*** (0.112)	0.034 (0.116)
Age	0.038 *** (0.001)	0.031 *** (0.002)	0.030*** (0.003)	0.044*** (0.002)	0.040*** (0.002)	0.034*** (0.003)
$(Age)^2$	-0.0002 *** (0.0000)	-0.0003 *** (0.0000)	-0.0002*** (0.0000)	-0.0004*** (0.0000)	-0.0003*** (0.0000)	-0.0003*** (0.0000)
Constant	4.910 *** (0.028)	4.874 *** (0.033)	4.998*** (0.054)	4.616*** (0.030)	4.944** (0.039)	4.746 (0.068)
Selection						
Basic				0.062*** (0.003)	0.046*** (0.004)	0.097*** (0.006)
Middle				0.127*** (0.004)	0.112*** (0.005)	0.156*** (0.007)
Higher				0.075*** (0.007)	0.052*** (0.009)	0.095*** (0.011)
Age				0.041*** (0.003)	0.032*** (0.004)	0.049*** (0.006)
$(Age)^2$				-0.0006*** (0.0000)	-0.001*** (0.0000)	-0.001*** (0.0000)
In union				-0.050*** (0.013)	0.140*** (0.020)	-0.251*** (0.021)
Non labour income				-4.29e-07*** (1.40e-07)	-1.61e-09 (7.86e-08)	-6.28e-0.7** (2.99e-07)
Children 0-3				-0.017 (0.013)	0.0004 (0.017)	-0.116*** (0.023)
Children 4-6				0.001	0.003	-0.060**

Mincer	Without Heckman Total	Men	Women	With Heckman Total	Men	Women
				(0.013)	(0.018)	(0.024)
Children 7-12				0.007 (0.011)	0.011 (0.015)	-0.075*** (0.021)
Children 13-17				0.046 (0.012)	0.026# (0.015)	0.062*** (0.021)
Constant				-0.126*** (0.061)	-0.220*** (0.077)	-0.489*** (0.111)
Inverse Mills						
Rho				0.570 (0.017)	-0.158 (0.033)	0.387 (0.061)
Sigma				0.719 (0.004)	0.684 (0.003)	0.687 (0.007)
lambda				0.410 (0.013)	-0.108 (0.023)	0.266 (0.044)
R^2	0.30	0.31	0.33			
F	2307.26	1466.10	1018.97			
Wald $chi^2(12)$				26109.26	15427.05	8816.84
Wald $chi^2(1)$ rho=0				690.49	21.99	32.25
N	73,425	50,637	22,788	84,935	57,728	27,207

Note: Robust standard errors, models run without expansion factors

*** significant at 1%, ** significant at 5%, # significant at 10%

Mincer Equations of the Determinants of Log Income, with and without Heckman Corrections, 2011. Sheepskin Spline Model

Mincer	Without Heckman Total	Men	Women	With Heckman Total	Men	Women
Basic incomplete	0.023 *** (0.003)	0.027*** (0.004)	0.014 ** (0.006)	0.035 *** (0.003)	0.034*** (0.004)	0.030*** (0.007)
Basic complete	0.087 *** (0.012)	0.093 *** (0.015)	0.070 *** (0.023)	0.092*** (0.013)	0.099*** (0.015)	0.074*** (0.023)
Middle incomplete	0.065 *** (0.004)	0.064 *** (0.004)	0.073*** (0.007)	0.077*** (0.004)	0.069*** (0.005)	0.095*** (0.006)
Middle complete	0.079 *** (0.010)	0.112*** (0.012)	0.057*** (0.017)	0.090*** (0.010)	0.118*** (0.012)	0.074*** (0.016)
Higher level, technical track incomplete	0.088 *** (0.009)	0.093 *** (0.012)	0.081*** (0.012)	0.092*** (0.008)	0.094*** (0.012)	0.088*** (0.012)
Higher level, technical track complete	0.237 *** (0.018)	0.277 *** (0.024)	0.239*** (0.024)	0.240*** (0.017)	0.278*** (0.024)	0.241*** (0.024)
University incomplete	0.144 *** (0.004)	0.144 *** (0.005)	0.139*** (0.007)	0.145*** (0.004)	0.144*** (0.005)	0.142*** (0.007)
University complete	0.361 *** (0.019)	0.372 *** (0.025)	0.413*** (0.028)	0.371*** (0.018)	0.373*** (0.024)	0.426*** (0.028)
Postgraduate studies, incomplete	0.077 *** (0.029)	0.115 *** (0.036)	0.030 (0.044)	0.073** (0.030)	0.122*** (0.036)	0.018 (0.044)

	Without Heckman			With Heckman		
Mincer	**Total**	**Men**	**Women**	**Total**	**Men**	**Women**
Postgraduate studies, complete	0.482 *** (0.050)	0.414 *** (0.065)	0.533*** (0.075)	0.476*** (0.049)	0.401*** (0.065)	0.536*** (0.074)
Age	0.029 *** (0.001)	0.038 *** (0.002)	0.021*** (0.003)	0.038*** (0.002)	0.046*** (0.002)	0.032*** (0.003)
$(Age)^2$	-0.0002 *** (0.0000)	-0.0003 *** (0.0000)	-0.0002*** (0.0000)	-0.0003*** (0.0000)	-0.0004*** (0.0000)	-0.0003*** (0.0000)
Constant	6.0756 *** (0.031)	5.9142 *** (0.037)	6.2108 *** (0.053)	5.7046*** (0.033)	5.6426*** (0.039)	5.7117*** (0.057)
Selection						
Basic				0.055*** (0.004)	0.045*** (0.006)	0.057*** (0.006)
Middle				0.077*** (0.004)	0.053*** (0.006)	0.114*** (0.006)
Higher				0.047*** (0.005)	0.046*** (0.007)	0.055*** (0.007)
Age				0.063*** (0.003)	0.061*** (0.005)	0.080*** (0.005)
$(Age)^2$				-0.0007*** (0.0000)	-0.001*** (0.0000)	-0.001*** (0.0000)
In union				-0.070*** (0.013)	0.089*** (0.022)	-0.255*** (0.018)
Non labour income				-6.84e-07*** (1.07e-07)	-6.88e-07*** (1.48e-07)	-7.32e-0.7*** (1.79e-07)
Children 0-3				0.024 (0.015)	0.122*** (0.025)	-0.058*** (0.020)
Children 4-6				-0.037** (0.016)	-0.038 (0.025)	-0.053*** (0.023)
Children 7-12				-0.006 (0.013)	-0.007 (0.021)	-0.018 (0.019)
Children 13-17				0.001 (0.013)	-0.006 (0.020)	-0.0000 (0.019)
Constant				-0.4896*** (0.067)	-0.1879# (0.096)	-1.0030*** (0.100)
Inverse Mills						
Rho				0.705 (0.009)	0.710 (0.014)	0.650 (0.018)
Sigma				0.741 (0.004)	0.718 (0.004)	0.732 (0.006)
lambda				0.523 (0.008)	0.510 (0.011)	0.476 (0.016)
R^2	0.26	0.27	0.28			
F	1849.87	1140.25	871.88			
Wald $chi^2(12)$				22803.40	13625.54	11009.88
Wald $chi^2(1)$ rho=0				2223.61	1053.00	632.35
N	72,567	44,175	28,392	79,608	46,885	32,723

Note: Robust standard errors, models run without expansion factors
*** significant at 1%, ** significant at 5%, # significant at 10%

Annex 2. Quality of Employment

Men´s Quality of Employment

	Quality of Employment				
Year	**High Secure**	**High Insecure**	**Low Secure**	**Low Insecure**	**Total**
1990	24,78	9,66	40,45	25,11	100
1992	24,47	12,75	37,73	25,05	100
1994	25,32	8,68	40,88	25,12	100
1996	26,62	10,60	39,28	23,50	100
1998	27,16	10,80	38,73	23,31	100
2000	25,80	9,06	41,30	23,84	100
2003	25,87	10,26	40,05	23,82	100
2006	25,56	10,20	43,24	21,00	100
2009	24,80	10,39	41,25	23,57	100
2011	24,91	9,66	46,31	19,13	100

Source: Authors´ analysis of CASEN data

Women´s Quality of Employment

	Quality of Employment				
Year	**High Secure**	**High Insecure**	**Low Secure**	**Low Insecure**	**Total**
1990	17,35	6,15	45,55	30,95	100
1992	16,43	8,05	43,85	31,67	100
1994	19,02	5,57	45,33	30,08	100
1996	20,00	7,16	43,77	29,07	100
1998	22,06	6,58	42,07	29,29	100
2000	19,88	5,46	44,53	30,13	100
2003	20,58	5,95	41,89	31,59	100
2006	18,83	6,75	44,58	29,84	100
2009	18,23	6,56	42,76	32,45	100
2011	18,60	5,80	48,51	27,09	100

Source: Authors´ analysis of CASEN data

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