Crises and Social Protection in Developing Countries: Chile in the 1998 downturn

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Keywords: Chile, social protection, safety nets, covariate shocks, employment programs

JEL classification: E24, H53, J21, J48

September, 2011

Abstract

European countries are increasingly looking at social protection policies adopted by other countries as an alternative to parts of their costly welfare systems. Among developing countries, Brazil, Mexico, India and Chile are considered leaders in developing innovative social protection solutions. In this context, this paper assesses the Chilean experience during the 1998 global financial crisis by examining the private coping mechanisms and the government policy responses adopted. The evidence indicates that the adjustment policy response to the crisis exacerbated the effects of the 1998 external shocks. The inability to achieve a balanced mix of monetary and fiscal policies, in conjunction with some inflexibility in labor markets, resulted in a costly adjustment, with high and persistent unemployment. However, fiscal discipline and the strong public institutions developed before the crisis alleviated the impact of the downturn in comparison to the other affected countries in the LAC region. The increase in the labor force participation of household members (other than the head) appears to be one of the private coping mechanisms used during the crisis. The government adopted a mix of direct and indirect employment programs that are still operative. There are some institutional factors and administrative limitations that influenced the particular response adopted. Although the recovery of employment became evident and the economic situation notably improved, the government maintained and even increased employment programs after the crisis. This expands the discussion towards the ideal design of public employment programs, in the context of a permanent safety net policy.

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For helpful comments to previous version of this paper I thank without implicating Emanuele Baldacci, Polly Jones, Andrew Mason, and Truman Packard. I am also grateful to Maris Goldman, Thomas Marhoefer, Divya Mathur, Claudio Montenegro and Heidi Smith. Needless to say, any remaining errors are my own.

1 INTRODUCTION

European countries have increasingly acknowledged the advantages of social protection policies as effective substitutes for parts of their costly welfare systems (Brunori and O´Reilly, 2010). These policies can potentially deliver social security without dampening fiscal sustainability and economic growth. Among developing countries, Brazil, Mexico, India and Chile are considered leaders in developing innovative social protection solutions (European Report on Development, 2010).

In this context, this paper assesses the Chilean experience during the 1998 global financial crisis by examining the private coping mechanisms and the government policy responses adopted. There are three main reasons explaining the interest in Chile. First, the Chilean economy is considered a successful case of development, and its experience is used as a paradigm among developing countries. Since the late 80s, it has experienced positive rates of economic growth with a poverty rate decreasing from 39% in 1990 to 15% in 2009. Second, these remarkable results have been reached combining fiscal discipline with the development of strong public institutions, two key aspects for tackling poverty, reducing the impact of shocks and promoting sustainable growth and inclusive development in the long run. Third, Chile is the earliest reformer in the Latin American region, enhancing the role of market forces and increasing the financial integration into the global economy, which has yielded better opportunities but also greater concern about economic insecurity[1].

Chile suffered a severe change in external conditions during 1998. The Asian Crisis reached a global dimension transmitting to Russia and the Latin American countries, which suddenly reduced the capital inflows toward Chile from an average of 6.8 percent of the GDP in 1990-1997 to 2.5 percent of the GDP in 1998. Likewise, the terms of trade decreased 12.5 percent in 1998, which turned into a current account deficit that peaked 6.5 percent of the GDP in the third quarter of that year.

There is evidence that the adjustment policy adopted by Chilean authorities during 1998 exacerbated the effects of these initial external shocks (e.g. Corbo and Tessada, 2003). There was a lack of coordination between the fiscal and monetary policies adopted after the crisis; the monetary adjustment coincided with an expansionary fiscal policy, such that the monetary and fiscal policy operated at cross purposes. Thus, the pressure of the adjustment almost exclusively relied on the monetary policy. In addition, several speculative attacks on the currency took place as a consequence of the contagion from the external crises to the Latin American markets. The Central Bank, in a difficult position, opted to defend the exchange rate, not allowing a depreciation of the

[1] This paper analyses the 1998 global crisis instead of the most recent 2008 financial crisis because the former allows us to look at its short and long run effects, since the consequences of the 2008 crisis are still in place.

currency. There was an excessive apprehension that a high pass-through from the depreciation to inflation would jeopardize the inflation target for the following year.

This situation derived into a disproportionate monetary adjustment, which turned into an illiquidity episode in 1998 that induced contractive effects in the economy beyond what was necessary to adjust the domestic expenditure. The investment and consumption decreased substantially after initiated the crisis, which severely affected the employment. The unemployment rose to an average of 9.7 percent in 1999, up from an average of 6.8 over the previous five years.

Although the adjustment policy adopted during the crisis can be ex-post judged as inappropriate, the fiscal discipline and the strong public institutions developed before and after the crisis strengthened Chilean social protection policies. In particular, this paper identifies four key factors that positively affected the ability to deal with the effect of the 1999 downturn: (1) the public debt reduction during the 1990s along with (2) the Copper Stabilization Fund created in 1987 have reduced and/or mitigated the risk and hence the vulnerability of the Chilean economy to turbulent episodes. Likewise (3) the adoption in 2000 of the structural surplus rule of 1 percent of GDP and (4) the new combination of monetary and fiscal policy adopted after the crisis, allowed the implementation of a countercyclical fiscal policy during 2000-2003.

As a result, the impact of the 1999 recession was milder in Chile than in other countries in the region. The poverty effect of the crisis was limited but not negligible for certain groups. The increase in the labor force participation of other (aside from the head) household members appears to be one of the private coping mechanisms used by households during the crisis.

As part of the countercyclical response, Chile developed a new generation of public employment programs after the 1999 downturn. Unlike the 1970s and 1980s, the government has diversified its intervention away from direct employment by providing other “active” labor market programs, such as job-training and the provision of time-bound subsidies for employment creation in the private sector. The acceleration of the investment in labor intensive public infrastructure projects has also been utilized as an emergency employment instrument, since it acted by increasing the demand for labor in the middle of the downturn.

Although the recovery of the employment became evident and the economic situation notably improved, the government maintained and even increased the employment programs after the crisis. This moves the debate beyond the analysis of the temporary measures adopted during the crisis to mitigate the raise in unemployment. In particular, it opens the discussion towards the ideal design of public employment programs in the context of a permanent safety net policy, which is discussed in the paper.

The rest of the paper is organized as follows. Section II summarizes the nature of the 1999 downturn, its effects at the macroeconomic and microeconomic level and the principal coping mechanisms adopted by households. Section III describes the

government policy responses during the covariate shock, including macroeconomic policies, labor policies and employment programs adopted. Section IV presents an assessment of the government policy response to the covariate shock. Section V concludes.

2 NATURE OF THE SHOCKS AND EFFECTS

2.1 The Nature of the 1999 downturn

In 1998 the external conditions faced by Chile deeply changed with respect to the previous years. The Asian Crisis, that initially covered the emerging Asian economies, later reached a global dimension transmitting to Russia and the Latin American countries. As a result, the Chilean economy lost resources equivalent to 6.2 percent of the GDP in 1999 as consequence of the combined effect of the decline in the terms of trade, the fall of the exports volume and the reduction of the capital inflows (see the External Conditions Index in the Table 1)[2].

These damaging external conditions coincided with an economy already overheating, with a high current account deficit derived from a large expansion of the domestic expenditures in 1997. In the first quarter of 1998, the GDP was growing at an annually rate of 6.8 percent whereas the domestic expenditure was growing at 12.3 percent (see Figure 1 and Table 2).

The combination of these factors caused a fast increase in the current account deficit, which reached 6.5 percent of the GDP in the third quarter of 1998. As a result and with the beginning of several speculative attacks on the currency, it became necessary to adopt an adjustment policy in order to correct the expenditure path[3].

The period of adjustment, initiated in 1998, coincided with an expansionary fiscal policy, such that the monetary and fiscal policy operated at cross purposes (Corbo and Tessada, 2003). Thus, the pressure of the adjustment almost exclusively relied on the monetary policy. This situation derived into a disproportionate monetary adjustment. At the end of 1998, the economy went through an illiquidity episode caused by a substantial increase of the interest rates, which severely affected the investment and consumption decisions of the private sector.

This had an immediate effect on unemployment, which rose to an average of 9.7 percent in 1999, up from an average of 6.8 over the previous five years. At the same time, the economy accumulated four consecutive quarters of negative GDP growth (1998.4-1999.3), ending up with a negative GDP variation of -0.8 percent of in 1999. This

[2] The Table 1 summarizes the 1990-2004 evolution of some Chilean macroeconomic indicators. The Table 2 zooms in the 1997-2000 quarterly evolution of some selected variables.

[3] Although the monetary policy focused on an inflation target, it also concerned on the size of the current account deficit. In contrast to other independent Central Banks, the Central Bank of Chile is also responsible for the exchange rate system and for the exchange rate policy.

was the first year with negative growth since the Latin-American crisis debt episode of 1982-1983. Overall, while economic effects of crises were moderate and short-lived, social impacts such as unemployment were more persistent. In fact, GDP per capita recovered its pre-crisis level in 2000, one year after the 1999 downturn, whereas six years after the beginning of the slowdown, the unemployment was still greater than the 1990-1997 average.

2.2 The effects of the crisis at the microeconomic level (individuals/households)

2.2.1 Main indicators

The rhythm of poverty reduction in Chile decelerated at the end of the 1990s, when the downturn in economic activity took place (see Table 3). Even though the incidence of (moderate) poverty slightly decreased in the 1998-2000 from 21.7 percent to 20.6 percent, there was a heterogeneous situation among groups and sectors (Feres, 2001). In particular, the reduction in poverty during that biennium combines an important reduction in rural poverty (3.8 percent points) with a slight reduction in urban poverty (0.6 percent points). Likewise, the extreme poverty remained virtually constant during the same period (around 5.7 percent points). Like poverty, the extreme poverty evolution was different between rural and urban areas.

The small reduction in the incidence of poverty between 1998 and 2000 contrasts somehow with the general perception of a decline in socioeconomic conditions during this period. Indeed, the reduction of the poverty appears to be related to certain distributional issues (Feres, 2001): unlike the middle and high deciles, the average household income of the lowest deciles grew between 1998 and 2000. As a result, the effect of the 1999 crisis was concentrated in the middle and high deciles, with an increase in their unemployment and a reduction in their real income above what happened at the aggregate level. These results are consistent with the findings from De Ferranti et. al (2000), who show that in moderate recessions the most affected are the middle and upper classes.

On the other hand, even though the aggregate unemployment rate substantially increased during 1997-2000, the evolution of unemployment across groups of workers was diverse in that period. Cowan et. al. (2005) analyze in detail the evolution of unemployment in Chile. Table 4 describes their analysis of the 1997-2000 unemployment rates by years of education and age. We observe that the increase in unemployment was especially severe for people with 12 years of schooling (high school graduates) and for people with more than 12 years of schooling. By age, we see that the increase in unemployment was higher among people under 25 years old, in particular, among people between 19 and 24 years old.

Complementarily, Table 5 presents the decomposition of the unemployment rate change, labor force participation change and employment rate change during 1997-

2000, by different levels of education and experience[4]. We see that the unemployment of the *low experience-low education* group rose less than that of the *low experience-high education* group during this period. However, the employment rate (employment over economically active population) decreased substantially more among the *low experience-low education* group (24.5 percent versus 12.7 percent). This divergence between changes in unemployment and changes in employment rate arises from the different paths of labor force participation in each case. Consequently, the fall in employment during 1997-2000 mostly affected the *low experience-low education group*; however, the *low experience-high education* group suffered the major increase in unemployment rate during that period.

Table 6 describes three different indicators of income distribution during 1990-2003. All of them reveal that the income distribution in Chile has been relatively stable, including the crisis episode. In particular, we observe a stable Gini coefficient in 1998 (before the crisis) and in 2000 (after initiated the crisis), with a slight decrease in 2003 (with values equal to 0.58 in 1998, 0.58 in 2000 and 0.57 in 2003). The Chilean Gini coefficient is one of the highest in Latin America.

Figure 2 shows the HDI ranking of Chile and four other Latin American countries during 1990-2003. These five countries improve their position in the rankings when comparing 2000 with respect to 1995. This relative advance is reversed in 2003 compared to 2000, since all the countries declined in their relative position. Overall, Chile's position in terms of human development is remarkable, with considerable improvement in indicators concerning life expectancy, education enrollment and GDP per capita.

2.2.2 Principal private coping mechanisms

The private coping mechanisms adopted by household that are analyzed in this section cover (1) the movements of underused family labor during the crisis, (2) the possible transition to self-employment during the crisis, (3) early retirement to cope with the unemployment in old age and (4) the move from private health insurance affiliation (ISAPRES) to public health affiliation (FONASA)[5].

Figure 3 presents the (detrended and deseasonalized) evolution of the labor force participation of married and unmarried couples of household heads between 1996 and 2005 (secondary axe). It also shows the (lag of) employment participation (over

[4] Low Education: high school dropouts or less; High Education: high school graduates or more; Low Experience: less than 10 years of (estimated) potential experience; High Experience: 10 years or more of (estimated) potential experience.

[5] An in depth empirical analysis of the private coping mechanisms adopted *because of* the crisis is beyond the scope of this study. Therefore, the evidence presented is basically descriptive and should be treated with caution. However, it may be used to shed light on some possible hypotheses about the private coping mechanisms adopted by families.

economically active population) of household heads[6]. There is a positive correlation between these two series (0.6), which can also be observed in the graph. However, this correlation becomes negative starting at the end of 1998 and ending at the beginning of 2000. This shows that in the middle of the crisis the decrease on employment opportunities for household heads motivated the labor force participation of married and unmarried couples of household heads. Table 7 presents the regression version of Figure 3. Controlling for time trend and seasonally effects, the model 4 (last column) captures the association between the labor force participation of spouses/couples and the lag of employment participation of household heads (ocupper_hhead1)[7]. The lower section of the table shows that when crisis1=0 (i.e., not in the deepest part of the crisis), a one percentage point increase on the employment participation of household heads is associated with a 0.977 percentage point increase on the labor force participation of spouses/couples (row 12). However, in the deepest part of the crisis (when crisis1=1, 1999.1-1999.4), this association goes down to 0.412. In other words, the crisis decreases the positive association between these variables in 0.565 percentage points (row 13). Overall, this evidence suggests that there is a tendency of families to cope the effects of the crisis by increase the underused family labor[8].

Table 8 presents the same exercise as before but using the labor force participation of children of household heads instead of spouses/couples.

Figure 4 and Table 9 shows the association between employment rate of self-employed and dependent workers. Unlike the previous cases, the positive association between employment rate of self-employed and dependent workers does not decrease too much during the crisis. Out of the deepest part of the crisis, a one percentage point increase on the employment rate of dependent workers is associated with a 0.345 percentage point increase on the employment rate of self-employed, compared to 0.231 during the deepest part of the crisis. In other words, it seems that the informal (self-employed) sector acts only in part as the reserve sector for the formal sector unemployed during the crisis, which is consistent with the findings from De Ferranti et. al, 2000 for other Latin American countries[9].

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[6] The time series are detrended and deseasonalized using a linear time trend and indicator variables for each quarter.

[7] Each model is estimated as a Generalized Linear Model (GLM) for proportion data using data from 1996.q1-2005.q2.

[8] If this is a natural effect of the crisis or something induced in someway by the public policies adopted during the crisis (e.g., emergency employment programs) is beyond the scope of this exercise.

[9] However, we have to interpret these numbers with caution. The self employed classification does not correspond to the broader category of informal workers, because it does not include dependent informal workers. Besides, these numbers do not come from an individual panel data. In other words, this evidence does not necessarily imply that unemployed workers move or not move from the dependent to the informal sector when they lose their jobs. However, it does suggest that there is an aggregate positive

Overall, these data suggest that households utilized underused family labor and/or transit to self-employment during the 1999 crisis episode. Since more than 85 percent of the household heads participating in the labor force are men, this result is also consistent with the countercyclical pattern of female labor force participation rates.

Figure 5 and Table 10 looks at the third private coping mechanism analyzed in this paper. They bring out the evolution of the number of people who began to receive pension payments from the AFP System before the legal age of retirement (65 years old for men and 60 years old for women), as a proportion of the total AFPs retirees each year. From the detrended data, we see that the proportion of early retirement increased from 53 percent in 1999 to 70 percent of the flow of new retirees in 2001. Table 10, row 7, shows that a one percentage point increase on the lag of unemployment rate is associated with 4.9 percentage point increase on the proportion of early retirements. This suggests a possible strategy followed by individuals coping with liquidity constraint episodes caused by unemployment in old age[10].

Finally, Figure 6 and Table 11 tell us the fluctuation in the number of beneficiaries of the private health insurance system managed by the ISAPREs (Institutos de Salud Previsional) and the number of beneficiaries of the public health insurance provided by FONASA (Fondo Nacional de Salud). The idea is to examine whether individuals move from the private to the public health system in order to decrease health co-payments and relax liquidity constraints during the crisis. During 1998 through 2000 we observe an increase in the number of beneficiaries covered by FONASA, which suggests a large transfer of people from the private to the public health system during the crisis[11].

3 GOVERNMENT POLICY RESPONSE

3.1 Main policy interventions adopted after the crisis

3.1.1 Macroeconomic policies adopted

The mix of the severe external shocks and the fast increase in the current account deficit in 1998 forced the Chilean authorities to adopt an adjustment policy in order to correct the expenditure path.

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effect on the participation rates in the informal sector when there is an unemployment crisis episode in the formal sector.

[10] Before delving deeper into this analysis, we should also consider the structural changes in the pension system during the last few years, such as the introduction of a Multi-fund System and the increase in the regulation of the administrative costs and fees charged by the AFPs.

[11] There have been important structural changes in the public/private health system, with an important improvement in the public health system along with a large increase in the amount of resources provided to FONASA. This implies that the transition of beneficiaries from one system to the other is also affected by this. These changes are captured by the linear trend included in the regressions in Table 11.

Nonetheless, there was a lack of coordination between the fiscal and monetary policies adopted after the crisis: the period of adjustment coincided with an expansionary fiscal policy, such that the monetary and fiscal policy operated at cross purposes (Corbo and Tessada, 2003). The fiscal budget for 1998 was built under the assumption that the GDP would grow up to 7 percent, but it finally reached a 3.2 percent. Even though the authorities made three additional adjustments to the fiscal expenditure during 1998 (Direccion de Presupuestos, 1999), the pressure of the adjustment almost exclusively relied on the monetary policy. Furthermore, during 1998 the authorities raised the public sector wages 6 percent and established a three-year plan to increase the nominal minimum wage more than 10 percent annually. These measures made switching more difficult and costly in terms of unemployment.

The monetary policy faced a trade-off between the inflation target and the downturn in the real activity. In addition, several speculative attacks on the currency took place as a consequence of the contagion from the Asian crisis to the Latin American markets. As the external environment became worse and the expectation of depreciation increased, the market interest rate became much higher than the policy interest rate, seriously affecting the liquidity of the financial market. Indeed, the overnight interest rate reached the highest values of the decade when it exceeded the 30 percent points in September 1998 (see Figure 7).

In 1999, when the excessive reaction of the domestic expenditure became evident, the authorities began to reorient the monetary and fiscal policy toward an expansive cycle. During 1999, the Central Bank reduced the policy interest rate several times and the fiscal expenditure grew 4.5 percent, 5.3 percent more than the variation of the GDP in the same period (-0.8 percent).

In the second half of 1999, Chile began to move towards a new mix of monetary and fiscal policy. In September 1999, the Central Bank redefined its inflation target announcing that the objective was now to keep the annual inflation in the range of 2-4 percent[12]. At the same time, it replaced the exchange rate band system with a floating rate. This was implemented in a context of increasing integration with international financial markets. Finally, in 2000 the government introduced a fiscal rule based on a structural surplus of 1 percent of GDP to reaffirm its commitment to fiscal responsibility[13].

This new policy framework allowed for the pursuit of a countercyclical fiscal policy during 2000-2003, while keeping a substantially low interest rate.

[12] Previously, the Central Bank set a point estimate of the inflation each year, since 1994.

[13] For further details of the new fiscal rule, see Section 4.

3.1.2 Labor policies

Active labor market policies are one of the prevention strategies available at the public level to reduce labor markets risks (Holzmann and Jorgensen, 2001). In this category, we can consider the measures adopted to improve the flexibility of the labor market in order to decrease the probability of a huge impact of crises on unemployment. Another active labor policy that is likely to have consequences on the labor market, especially for unskilled workers, is the enforcement of a legal minimum wage. Among the passive labor policies, unemployment insurance schemes mitigate the effects of unemployment during crisis. Chile launched a contributory unemployment insurance in 2002, which combines savings and market-type risk pooling aspects.

The discussion on the degree of flexibility of the Chilean labor market and the effects of the minimum wage is quite abundant (e.g. Beyer (2000), Cowan et. al (2005), Edwards and Edwards (2000), Heckman and Pages (2000), Marinakis (2005), Mizala y Romaguera (2001), Montenegro and Pages (2003), Saavedra (2004)). The main discussion has focused on the effects of labor legislation on employment, and the flexibility of the labor market regarding real wage responses to unemployment during the crises. In particular, the slow recovery of employment after 1999 crisis has caused a large debate on the possible lack of flexibility in the Chilean labor market (e.g., Bergoeing and Morande (2002), Beyer (2000), Cowan et. al (2005)). Even though the slow recovery of the employment since 1999 is consistent with the idea of some real wage inflexibility, the evidence with respect to this point is not conclusive and there is a scope for more analysis[14].

On the other hand, since 1999 the government introduced several changes to the labor legislation, which raised the point whether the government should introduce new changes in order to facilitate the capacity of the economy to create employment and whether these changes could end up encouraging the creation of precarious jobs (e.g., Costa (2003), Schkolnik (1999)).

Since 1998, when the crisis started, the growth of the minimum wage was greater than the growth of the unskilled worker wage. In consequence, the ratio between the minimum wage and the unskilled worker wage rose from 52 percent in June 1998 to 60 percent in June 2000 (see Figure 8). This increasing tendency remained until the middle of 2002, when the minimum wage stayed around 63 percent of the value of the unskilled worker wage. This result arises as a combination of two effects. First, there was a constant rise in the nominal value of the minimum wage since the beginning of the 1990s, as a result of an intentional policy adopted to increase its real value. Secondly, the increase in the minimum wage at the end of the 1990s coincided with the crisis when there was a significant decline in the economic activity of labor intensive areas, such as manufacture and construction sector. Moreover, during 1998, the former government agreed with the Workers Central Union (Central Unitaria de Trabajadores-

[14] For a detailed discussion about wage rigidity in the Chilean labor market, see Cowan et. al. (2005).

CUT) to implement a three-year plan to increase the minimum wage by more than 10 percent in nominal terms. This self-imposed measure tied the hands of the government in the middle of the crisis[15].

In May 2002 Chile began to replace a non-contributory unemployment benefit –the *subsidio de cesantia*, financed out of general revenues- with a contributory unemployment insurance system (UI). The new system mixes elements of both savings and market-type risk pooling. Employers and workers monthly contribute to privately managed individual saving accounts and to a common fund that finance the pooled component of the system. The government also contributes to this pooled fund annually (a fix amount of resources)[16]. This design attempts to protect against unemployment avoiding the traditional fiscal imbalances and employment search disincentives faced by traditional European unemployment insurances.

3.1.3 Employment programs with fiscal support

Since the substantial increase in unemployment during the second half of 1998, the government has implemented active labor policies called "Employment Programs with Fiscal Support". The acceleration of the investment in labor intensive public infrastructure projects has been also utilized as an instrument to increase the demand for labor in the middle of the downturn.

The employment programs with fiscal support can be broadly classified into two categories: (1) direct employment programs (through public institutions providing employment, like municipalities) (2) private employment subsidies or indirect employment subsidies. Programs within the first category offer employment that pays at least the legal minimum wage and requires contribution to the pension/social security system. Programs within the second category offer employment operated by the private sector.

Table 12 shows a summary of the main employment programs. The employment program policies adopted can be divided in two stages. The first stage includes the immediate post-crisis period (1999-2000), when the government basically expanded the programs already in operation and when it mostly utilized the municipalities as executors of the employment programs. This stage ended with the rapid decrease in the

[15] Some studies have documented the labor market effects of this disconnection between the evolution of the minimum wage and the prevailing economic situation. Overall, they find that this increase in the minimum wage had a significant impact on youth unemployment (e.g. Beyer (2000), Bravo (2005), Cowan et al (2005)).

[16] The main support of the pool component is given by the implicit cross subsidies existing within the system (from the less-frequently unemployed workers to the more-frequently unemployed workers and from the high-level income workers to low-level income workers). When becoming unemployed, workers can draw resource against their individual accounts, having limited access to the pool of funds to top-up benefits if they exhaust the balance in their accounts. The benefits are decreasing within a single spell of unemployment, having a maximum length of five months.

coverage made at the end of 2000. The second stage began in 2001, when the government launched the majority of the new programs and reduced the participation of the municipalities by incorporating private executors. The diagnosis at the end of the first stage was that the municipalities programs generated high dependence among their beneficiaries, making difficult to reduce positions during periods of less unemployment (University of Chile, 2004)[17].

The increase and acceleration of labor intensive public infrastructure projects was another policy used by the government to mitigate the impact of the crisis on the unemployment. This policy differs from the public employment programs in that it refers to the private employment generated by public investment in large-scale infrastructure, such as the construction of roads, housing projects or educational infrastructure investment[18]. Therefore, this provided an indirect support to employment through an increase in the demand of (predominantly) unskilled labor as a consequence of the increase in investment.

4 ASSESMENT OF THE GOVERNMENT POLICY RESPONSE

4.1 Successful programs and what could have been done differently

4.1.1 Assessment of the macroeconomic policies adopted during the crisis

There is evidence that the adjustment policy response exacerbated the effects of the 1998 external shocks (e.g. Corbo and Tessada, 2003). The lack of coordination between the fiscal and monetary policies adopted during 1997-1998 aggravated the effects of the initial external shocks faced by Chile in the late 1990s (namely reduced capital inflows, worsening terms-of-trade and contagion of other countries' crisis). The 1998 illiquidity episode, mainly induced by an excessive apprehension that a high pass-through from the depreciation to inflation would jeopardize the inflation target for the following year, caused contractive effects in the economy beyond what was necessary to adjust the

[17] In addition, the programs incorporated a large number of people who were previously out of the labor force, which was negatively judged in terms of the ability of these programs to reduce the unemployment rate. It is arguable whether reducing the unemployment rate should be the single target of emergency employment programs. If emergency employment programs are used as income transfer programs, incorporating people from out the labor force could in principle be judged positively. However, the cost-effectiveness of both alternatives should be taken into account. For a discussion about this point, see the evaluation of Argentina's plan Jefes y Jefas in Galasso and Ravallion (2003). It was established, therefore, that the best way to reduce positions of workers already in direct employment programs was moving from full-time to part-time job offers. Also during the second stage, the indirect employment programs got preponderance, the targeting requirements of all programs were strengthened in order to restrict the entrance to people already in the labor force, and some of the new programs incorporated job training components.

[18] In particular, this category includes the investment financed by the Ministry of Housing and Urbanism (Ministerio de Vivienda y Urbanismo-MINVU), the Ministry of Public Infrastructure (Ministerio de Obras Publicas-MOP), the Ministry of Education (educational reform), and the Ministry of Justice.

domestic expenditure. This severely affected the investment and consumption decisions of the private sector and had prolonged effects on unemployment.

With the expectation of a further rise in the current account deficit, the appropriate response should have been a monetary and fiscal policy combination aimed at moderating spending while facilitating the real depreciation required for switching. Given that the exchange rate was already in the lower range of the exchange rate band, the correct mix would have been a restrictive fiscal policy and monetary policy conducted towards supporting a nominal and real depreciation of the currency[19].

Rigid exchange rate policies without the option of an independent monetary policy may enhance credibility, but can also make adjustment to shocks more painful in the presence of inflexible labor markets or inadequate fiscal policy (De Ferranti et. al, 2000). This seems to be applicable in Chile's initial policy response to the turbulent period of 1997-1998. The defense of the exchange rate against the speculative attacks of 1998 preserved the credibility of the monetary policy. However, the inability to achieve a balanced mix of monetary and fiscal policies, along with some inflexibility in the labor markets, implied a costly adjustment to the shocks in terms of unemployment.

Although the adjustment policy adopted *during* the crisis can be ex-post judged as inappropriate, the fiscal discipline and the strong public institutions developed *before* and *after* the crisis strengthened Chilean social protection policies. Specifically, the public debt reduction during the 1990s, the Copper Stabilization Fund created in 1987, the adoption in 2000 of the structural surplus rule of 1 percent of GDP and the new combination of monetary and fiscal policy adopted after the crisis have reduced and/or mitigated the risk and hence the vulnerability of the Chilean economy to new turbulent episodes[20].

In particular, the new combination of monetary and fiscal policy adopted in 1999-2000 (which includes the structural surplus rule of 1 percent of GDP, the definition of a target inflation range and the switch to a floating exchange rate system) allowed the implementation of a countercyclical fiscal policy during 2000-2003. Thus, the fiscal policy rule attenuated the impact of the external shocks on the economy and stabilized the financing of social policies. Consequently, this has become a fundamental element of the Chilean social protection system.

[19] Moreover, the beginning of the crisis coincided with an already overheating economy, with a high current account deficit derived from a large expansion of domestic expenditures in 1997. A more restrained fiscal budget for 1998 and lower wage adjustments might have helped in adjusting domestic spending without having to rely exclusively on the monetary policy (Corbo and Tessada, 2003).

[20] The section 4.2 details these elements, since they are the main factors of the macroeconomic policies that have helped in introducing counter cyclicality of social and fiscal policy during the crisis.

4.1.2 Assessment of the labor policies adopted

The Chilean economy took six years to recover from the 1997-1998 turbulent episode compared to three years in the case of the East Asian economies and two years in the case of Korea[21].

In this context, the three-year plan of minimum wage increase that was concerted in 1998 did not contribute to the later necessary adjustment of the labor markets. This self-imposed measure tied the hands of the government in the middle of the crisis, reducing the policy instruments available to accommodate the shock and affecting youth unemployment. In principle, concerting long term adjustments of the minimum wage can be an effective instrument in reducing the uncertainty of future labor regulation and in decreasing the political pressure for excessive increases in the minimum wage during booms. It can also eliminate the costly bargain process that the government and unions otherwise engage in each year. However, in order to become a risk management instrument, a long term minimum wage increase should consider contingent adjustment mechanisms related to the evolution of the economy and/or the unemployment[22].

On the other hand, the labor legislation changes approved in 2001 seem insufficient in terms of augmenting the labor market flexibility. There is scope for further advances in this area, such as norms that could increase flexibility in the distribution of work hours, replace severance payment in case of firing by an all-event-payment, and encourage part time jobs to increase low female participation rates. In all these cases, reforms should maintain the balance between the necessary step toward more flexibility and the concern about possible abuse by employers and the possible displacement of regular jobs by more precarious jobs.

In that sense, the contributory unemployment insurance system (UI) introduced in 2002 appears to be a promising step towards balance the economic efficiency and social equity. The new system, which combines aspects of savings and market-type risk pooling, has reached high level of consensus among all participants. Further expansions on the benefits and/or coverage of the UI should be judged from the learning process that is being accumulated while the new system is being consolidated.

Overall, further steps can be made toward the introduction of modern labor protection norms that promote and facilitate the capacity of the economy to create employment. This would reduce the probability of adverse employment shocks in the case of future disturbances.

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[21] Exposition of the Central Bank to the Finance Committee, Senate of Chile, 2005. Korea developed a threefold agreement within the government, workers and firms, who concerted a reduction in salaries in order to increase the adjustment velocity of the employment.

[22] This is the case of the Netherlands, where the minimum wage can remain constant whether or not the unemployment has passed some threshold.

4.1.3 Assessment of the employment programs

Chile made a substantial effort in terms of resources and administrative capacity to develop a new generation of public employment programs after the 1999 downturn. Unlike the 1970s and 1980s, the government has diversified its intervention away from direct employment by providing other "active" labor market programs, such as job-training and the provision of time-bound subsidies for employment creation in the private sector. The acceleration of investment in labor intensive public infrastructure projects was also utilized as an instrument to increase the demand for labor in the middle of the downturn.

The main concerns that have been raised include: (1) the absence of a self-selection mechanism induced by the relatively well-paid jobs offered by direct employment programs, which make it politically difficult to eliminate positions and move workers into private sector jobs in a period of economic growth, and (2) the absence of a self-targeting mechanism in the design of the programs caused by the requirement of presenting proof of unemployment. This is likely to leave informal workers without an instrument to mitigate the losses from unemployment.

Given administrative difficulties and the inflexibility of the direct employment programs, the government opted to expand the indirect employment programs, in particular the private employment subsidies administered by SENCE. This lowered the earlier preponderance of direct programs. At the same time, the government focused its efforts on self-employed workers in the Program of Labor and Employment Relocation-FOSIS. In some degree, this strategy filled the absence of coverage to informal workers.

Overall, there remain concerns about the low impact of the subsidies on the number of *new* jobs generated *as a result* of the program (which is distinct from the number of employment financed by the program). The possible stigmatization caused by the subsidy and the high level of monitoring that is necessary to prevent fraud and abuses are other causes of concern.

On the other hand, the Contingent Unemployment Fund created in 2001 is an attractive fiscal instrument that has been utilized to allocate additional public resources towards the employment programs, contingent on an increase in the unemployment rate beyond a previously established boundary. It allows for increased flexibility in fiscal policy, through the relocation of resources within previously defined budget limits, without compromising the achievement of the structural surplus rule. Likewise, it avoids committing a priori an excessive amount of resources to the employment programs.

Despite the recovery of the employment and the economic situation, the government maintained and even increased employment programs since 2004. Thus, some employment programs, initially oriented as anti-crisis tools have been reoriented toward structural poverty interventions, in light of the improvement in economic conditions. For example, the training components of direct employment programs have been increased.

This situation moves the debate beyond the analysis of temporary measures adopted during the 1999 crisis to mitigate rising unemployment. In particular, it opens the discussion towards the ideal design of public employment programs in the context of a permanent safety net policy.

On this matter, Ravallion (1999) proposes a public guarantee of low-wage work on community-initiated projects as the central element of a safety net for developing countries. He recommends setting the wage paid to these works at sufficiently low levels in order to provide the incentive to accept regular work when available. Provided the wage rate is low, he states that most workers will automatically return to regular work when the crisis is over. He also recommends the work be performed only on technically feasible projects proposed by community groups.

In the Chilean case, there are two primary concerns about the difficulties that may arise if this proposal were to be fully implemented. First, as Ravallion says, setting the wage rate correctly is the key to success. He argues that in most countries, a wage slightly lower than the wage for unskilled agricultural labor in a normal year is a good benchmark. However, setting the wage at that level would probably not be an incentive high enough to move workers to private sector jobs during booms. Since workers that participate in direct employment programs have precarious human capital and irregular attachment to the labor force, staying in the employment program may be the best alternative available to them, even if this implies receiving lower wages during booms.

The reason for this is twofold. Firstly, what matters for workers' decision to leave the program is the expected wage of both alternatives (program versus private sector). In other words, what matters is the wage paid by the alternatives adjusted by the probability of maintaining the job in each alternative. If there is high uncertainty about future labor market conditions, the probability of maintaining employment may be quite low for unskilled workers in the private sector, even in the middle of a boom. In that case, a forward-looking worker will estimate the expected wage considering the joint probability of losing the private job and obtaining a second position in the program[23].

Secondly, it is likely that beneficiaries of public programs evaluate that staying in the program for longer periods (including booms) increases the possibility of becoming a regular (and not merely temporary) public employee. Eventually they can exert pressure to be incorporated as regular public employees and thereby enjoy better labor conditions (such as long term stability, wage increases regardless of changes in

[23] Even though in principle program positions can be fully guaranteed, the subjective probability of obtaining a second position in the program may be less than one. Workers may perceive a risk of not getting a position when they need it (for instance, due to uncertainty about the maintenance of the program's regulation in the future, or as a result of rationing at the municipalities level caused by the inability to scale up the program rapidly enough). In this case, the worker will assume that the probability of getting the same position again is less than 1, and this probably should be considered in the estimation of the wage paid by the program.

productivity or performance, etc.). Certain experiences in Chile demonstrate the high degree of pressure that temporary workers can exert[24].

As a result, the wage that should be paid by a fully self-targeting public program seems to be much lower than the levels paid by the programs in Chile[25]. Therefore, it would be politically difficult in the short-term to switch from high-salary-rationed positions to low-salary-guaranteed positions. The transition from full-time to part-time jobs as well as improvement in economic perspectives, may improve the probability of moving towards a low-salary-guaranteed position employment program as part of a permanent safety net.

On the other hand, while administrative capacity can always be built over time, it does limit the options of the government in the immediate future (De Ferranti et. al., 2001). If Chilean public employment programs want to fully guarantee positions for all workers, it would be necessary to build a substantial administrative capacity, which would require time, effort and improvement in the current experiences of employment programs.

In summary, if a particular country wants to build a permanent public safety net that includes permanent employment programs, it should balance the advantages and disadvantages of the different alternatives adopted in Chile during the 1999 crisis episode. There is plenty of accumulated experience that cannot only help to improve on the previous experience, but also imposes limits on the scope of future actions.

[24] For instance, the Chilean municipal employment program workers demonstrated active organization in some regions during 2000, when the government started to reduce the positions available. Also, it already exists a national union of temporary workers (Federacion Nacional de Trabajadores Eventuales), which announced in April 2005 that they will sue the Chilean State. They claim that the military government did not pay contributions to the pension/social security system of workers that participated in the extinguished employment programs of the 1970s and 1980s (namely the Minimum Employment Program (Programa de Empleo Mínimo--PEM) and the Employment Program for Heads of Households (Programa de Ocupación para Jefes de Hogar--POJH).

[25] Therefore, in order to introduce a fully self-targeting public employment program, we need to estimate the equilibrium wage differential between the public program and the private sector job. This estimation should include the joint probability of losing the private job and obtaining a second position in the program. The estimation should also include the net discounted expected benefits of becoming a public employee that accrue if a worker remains in the public program for a sufficiently long time.

4.2 Factors that affected the ability to scale up social protection programs

4.2.1 Positive factors

a) The public debt reduction in the 1990s as mechanism of self-protection

Between 1989 and 1999 the gross central government debt was reduced from 47 percent to 14 percent of the GDP. This continuous decline in the public debt burden contributed in several ways to maintain a stable growth in social spending after 1999, and hence, to scale up social protection programs during the crisis. First, the reduction in debt implied a decrease in the amount of resources needed to service it, which had direct consequences in terms of more resources available to redirect towards social areas. This has been called the "social dividend" of the fiscal policy (Ministry of Finance, 2004). Secondly, keeping public debt low constitutes a mechanism of self protection at the country level, since severe fiscal adjustments are less likely to be needed when the interest rates sharply rise and capital flows behave pro-cyclically with respect to trade shocks. Lowering the public debt during booms contributes to get better external credit conditions during recessions (Arenas de Mesa and Guzman, 2003). For example, Chile experienced the lowest country risks of the LAC region along the crisis period and its macroeconomic policies has been positively evaluated in the international competitive rankings (e.g. World Economic Forum, 2004).

b) The Copper Stabilization Fund as a mechanism of self-insurance

The Copper Stabilization Fund (CSF) was created in 1987 to stabilize the fluctuations in the fiscal revenues produced by changes in the copper price. Its main purpose is to save resources when the current price is above an estimated long term price (called the reference price) in order to use these resources when the current price is lower. In addition, the government has sometimes used the accumulated resources to prepaid public debt. The accumulated resources are administrated by the Central Bank which avoids any discretional use since this institution is independent of the central government[26].

The CSF can be catalogued as a mechanism of self-insurance at the country level that allows transferring resources from good to bad states to mitigate the effects of adverse shocks in terms of trade.

Before the creation of the CSF, it was likely that the increase in public spending followed the increase in (transitory high) revenues, which made difficult to reduce the expenditures in cases of severe term of trade shocks. Like other LAC economies, former Chilean governments commonly failed to provide for bad times by saving in good times and suffered the lack of sufficiently diversified fiscal revenue base. In contrast, the creation of the CSF -along with the fiscal rule explained below- has contributed to

[26] See Arellano (2005) for a detail description of the CSF operation and rules.

increase the fiscal expenditure according to a more sustainable path and allow the fiscal policy to play a contra cyclical role even during the 1999 downturn.

c) The structural surplus rule as a mechanism of self-insurance

Since the budget of 2001, the government incorporated to the stabilization mechanism not only the copper price fluctuation but also the fiscal revenues oscillation occasioned by the GDP growth fluctuation with respect to its long term trend. It was introduced an estimation of structural revenues based on a long term tendency in order to define the amount of current expenditures looking to a medium term base. Thus, the structural balance reflects the amount of revenues and expenditures reached if the economy were operating to its full potential and if the copper were trading at its medium term price[27].

This mechanism includes a self-imposed fiscal rule based on a structural surplus defined as a percent of GDP. This rule allows automatic stabilizers in the budget to operate fully while avoiding a fine tuning of the fiscal policy at any phases in the cycle. It allows a countercyclical fiscal policy since expenditures follows a path determined by the structural revenues. As a result, the variance in the changes of expenditures has decreased substantially since the beginning of the application of the rule. Figure 9 shows the results of its application during 1999-2005.

According to Gill and Ilahi (2000) and Engel, Neilson and Valdes (2011), Chile's fiscal rule can be seen as a measure of country-level self insurance. Like a stabilization fund, transfers resources from good to bad states. Furthermore, by pursuing long term sustainability of fiscal policy and communicating a clear sign of fiscal discipline to the markets, the rule should operate as a mechanism of self-protection, reducing the likelihood of financial contagion from the crises affecting other countries in the region.

d) The new combination of monetary, exchange rate and fiscal policy

Along with the implementation of the new fiscal rule, Chile moved to a new combination of monetary, exchange rate and fiscal policy. Since 1999, the Central Bank oriented its policy to keep the annual inflation in the range of 2-4 percent. Also in 1999, the exchange rate policy moved from a band scheme to a freely fluctuation of the currency. That was implemented in a context of increasing integration to the financial international markets.

This new policy framework has been remarkably effective since 2000. In particular, the interest rate remained substantially low during the new negative phase of the cycle that took place in 2001-2002. This allowed to the monetary policy to play the stabilization role, with an improving in the coordination among the macroeconomic

[27] The operating system of the already explained CSF is incorporated in the fiscal rule. For a detail description of the Structural Balance methodology and its operation rules, see Marcel et al (2001) and Ministry of Finance (2001).

policies. Thus, the fiscal policy played a countercyclical role since 2000 but, unlike the case of 1998-1999, this has not implied more pressure on the interest rate. This undoubtedly has improved the position of the Chilean macroeconomic to absorb the effects of future disturbances.

4.2.2 Negative factors

a) Absence of systematic interaction among programs and duplicity of functions and objectives

The stable progress and financing of the social protection system helped to attenuate the impact of the 1999 downturn among the poor households. However it is likely that the lack of a deeper developed social protection system affected the ability to scale up social protection programs during the 1999 shock episode.

In particular, the lack of common institutional framework and systematic interaction among the public institutions undermined the efficiency of the employment programs in terms of coverage and duplicity of functions.

b) Insufficient installed administrative capacity before the crisis

The insufficient installed administrated capacity before the crisis put considerable pressure to set up a public apparatus to rapidly respond to the urgent demands arisen after the crisis. In fact, in short time a new public apparatus was set up in response to the crisis. In that sense, the coverage reached by the programs in a short period of time is remarkable. However, this lack of administrated capacity stressed some public institutions (e.g. SENCE[28]), who not only had to deal with their regular programs, but also had to implement new tasks relocating human resources, as well as achieving demanding coverage objectives (in terms of number of beneficiaries covered by the respective program in each month).

c) Inertia in expenditures committed before the crisis

The ability to scale up social protection programs after the beginning of the crisis was affected by the rigidity and inertia of a high percentage of the fiscal expenditures. A large percentage of expenditures were already committed before the beginning of the crisis as a result of permanent laws concerning extensive reforms initiated before the crisis. That was the case, for instance, of the judicial and the educational reforms, which were initiated in the 1990s. For example, around 76 percent of the public expenditures included in the 2000 budget were already committed before 2000.

[28] See University of Chile, 2004.

5 CONCLUSIONS

There is evidence that the adjustment policy adopted by Chilean authorities during 1998 exacerbated the effects of the initial external shocks faced by Chile in the late 1990s (namely reduced capital inflows, worsening terms-of-trade and contagion of other countries' crisis). The 1998 illiquidity episode induced contractive effects in the economy beyond what was necessary. This severely affected the investment and consumption decisions of the private sector and had prolonged effects on unemployment.

Although the adjustment policy adopted *during* the crisis was inappropriate, the fiscal discipline and the strong public institutions developed *before* and *after* the crisis strengthened Chilean social protection policies. In particular, the public debt reduction during the 1990s, the Copper Stabilization Fund created in 1987, the adoption in 2000 of the structural surplus rule and the new combination of monetary and fiscal policy adopted after the crisis have reduced and/or mitigated the risk and hence the vulnerability of the Chilean economy to new turbulent episodes.

The slow response of unemployment to improved economic conditions after 2000 is likely to be consistent with the idea of some inflexibility in Chilean labor markets. Particularly, the three-year plan of minimum wage increase that was concerted in 1998 did not contribute to the later necessary adjustment of the labor markets. However, concerting long term adjustments of the minimum wage can be an effective instrument in reducing the uncertainty of future labor regulation and in decreasing the political pressure for excessive increases in the minimum wage during booms. Nonetheless, in order to become a risk management instrument, a long term minimum wage increase should consider contingent adjustment mechanisms related to the evolution of the economy and/or the unemployment.

The labor legislation changes approved in 2001 seem insufficient in terms of augmenting the labor market flexibility. There is scope for further advances in this area, such as norms that could increase flexibility in the distribution of work hours, replace severance payment in case of firing by an all-event-payment, and encourage part time jobs to increase low female participation rates. In all these cases, reforms should maintain the balance between the necessary step toward more flexibility and the concern about possible abuse by employers and the possible displacement of regular jobs by more precarious jobs. In that sense, the contributory unemployment insurance system introduced in 2002 appears to be a promising step towards balance the economic efficiency and social equity.

Chile has made a substantial effort in terms of resources and administrative capacity in the development of a new generation of public employment programs after the 1999 downturn. However, there remain concerns about the low impact of the subsidies on the number of *new* jobs generated *as a result* of the program (which is distinct from the number of employment financed by the program). The possible stigmatization caused by the subsidy and the high level of monitoring that is necessary to prevent fraud and abuse are other causes of concern.

On the other hand, the Contingent Unemployment Fund created in 2001 is an attractive fiscal instrument that has been utilized to allocate additional public resources towards the employment programs, contingent on an increase in the unemployment rate beyond a previously established boundary.

Although the recovery of the employment became evident and the economic situation notably improved, the government maintained and even increased the employment programs after the crisis. This moves the debate beyond the analysis of temporary measures adopted during the 1999 crisis to mitigate rising unemployment. In particular, it opens the discussion towards the ideal design of public employment programs in the context of a permanent safety net policy. In this context, the wage that should be paid by a fully self-targeting public program seems to be much lower than the levels some authors have suggested and lower tan the levels paid by the programs in Chile.

Overall, the Chilean experience during the 1999 crisis is a notable case for analysis in order to adopt social protection policies within a context of fiscal discipline and inclusive growth, which has increasingly become necessary among European countries.

REFERENCES

Albagli, Elias, Jorge Restrepo and Pablo Garcia. 2004. “Labor Market Rigidity and Structural Shocks: An Open-Economy Approach for International Comparisons.” Working Paper No. 263, May. Central Bank of Chile.

Arellano, Jose Pablo. 2005. “Del Deficit al Superavit Fiscal: Razones Para Una Transformacion Estructural en Chile.” Serie Estudios Socio/Economicos No.25, Abril. Corporación de Investigaciones Económicas para Latinoamérica, CIEPLAN. Santiago, Chile.

Arenas de Mesa, Alberto and Julio Guzman. 2003. “Politica Fiscal y Proteccion Social en Chile.” Revista de la Cepal, 81, Diciembre. Comisión Económica para América Latina y el Caribe (CEPAL). Santiago, Chile.

Bergoeing, Raphael and Felipe Morande. 2002. “Crecimiento, Empleo e Impuestos al Trabajo: Chile 1998-2001”. Cuadernos de Economía, Año 39, No. 117, pp. 157-174. Agosto. Santiago, Chile.

Beyer, Harald. 2000. “Notas Sobre el Desempleo.” Puntos de Referencia, 231, Agosto. Centro de Estudios Publicos. Santiago, Chile.

Bravo, David. 2005. "Desempleo: Aspectos Metodológicos, Salario Mínimo y Rigidez Salarial”. Comentario a “Un Diagnostico del Desempleo en Chile” Cowan, Micco, Mizala, Pages y Romaguera, 2004. Un Diagnóstico del Desempleo en Chile, 2005. Departamento de Economia, Universidad de Chile.

Cerda, Rodrigo. 2005. "Pro-ciclicidad de la Oferta de Trabajo y Rigidez Salarial" Comentario a “Un Diagnostico del Desempleo en Chile” Cowan, Micco, Mizala, Pages y Romaguera, 2004. Un Diagnóstico del Desempleo en Chile, 2005. Departamento de Economia, Universidad de Chile.

Corbo, Vittorio and Jose Tessada. 2003. “Growth and Adjustment in Chile: a Look at the 1990s”. Working Paper No. 204, March. Central Bank of Chile.

Costa, Rosanna. 2003. “Hablando de Flexibilidad Laboral.”. Columnas Diario La Tercera, Diciembre.

Cowan, Kevin, Alejandro Micco, Alejandra Mizala, Carmen Pages and Pilar Romaguera. 2005. “Un Diagnostico del Desempleo en Chile.” Departamento de Economia, Universidad de Chile.

De Ferranti, David, Guillermo Perry, Indermit Gill and Luis Serven. 2000. “Securing Our Future in a Global Economy.” World Bank Latin American and Caribbean Studies.

Dirección de Presupuestos. 1999. “Aspectos Macroeconomicos del Proyecto de Ley de Presupuestos del Sector Publico del Año 2000”. Presentado a la Comision Especial de

Presupuestos del Congreso Nacional, Octubre. Direccion de Presupuestos. Santiago de Chile. [www.dipres.cl]

_____. 2000. “Aspectos Macroeconomicos del Proyecto de Ley de Presupuestos del Sector Publico del Año 2001’. Presentado a la Comision Especial de Presupuestos del Congreso Nacional, Octubre. Direccion de Presupuestos. Santiago de Chile. [www.dipres.cl]

Edwards, Sebastian, and Alejandra Cox-Edwards. 2000: “Economic Reforms and Labor Markets: Policy Issues and Lessons from Chile.” Working Paper, No. 7646. NBER.

Engel, Eduardo, Christopher Neilson and Rodrigo Valdes. 2011. “Chile’s Fiscal Rule as Social Insurance”. Working Paper 627. Banco Central de Chile.

Feres, Juan Carlos. 2001. “La Pobreza en Chile en el Año 2000.”. Serie Estudios Estadisticos y Prospectivos, 14, Julio. División de Estadística y Proyecciones Económicas, Comisión Económica para América Latina y el Caribe (CEPAL). Santiago, Chile.

Fiess, Norbert. 2002. “Chile’s New Fiscal Rule.”. Background Paper for Household Risk Management and Social Protection in Chile, a World Bank Country Study, 2005. World Bank.

Galasso, Emanuela and Martin Ravallion. 2003. “Social Protection in a Crisis: Argentina’s Plan Jefes y Jefas.”. World Bank Policy Research Working Paper 3165, November. Development Research Group, World Bank.

Gill, Indermit, and Nadeem Ilahi. 2000. “Economic Insecurity, Individual Behavior, and Social Policy.” World Bank, Office of the Chief Economist, Latin America and Caribbean Region, Washington, D.C.

Heckman, James J. and Carmen Pages. 2000. “The Cost of Job Security Regulation: Evidence From Latin American Labor Markets.” Working Paper, No. 7773. NBER.

Holzmann, Robert and Steen Jorgensen. 2001. “Social Risk Management: A New Conceptual Framework for Social Protection, and Beyond.” International Tax and Public Finance, 8, 529-556. Netherlands.

Landerretche, Oscar. 2004. “"Sobre la Necesidad de Datos Longitudinales" Comentario a “Un Diagnostico del Desempleo en Chile” Cowan, Micco, Mizala, Pages y Romaguera, 2004. Un Diagnóstico del Desempleo en Chile, 2005. Departamento de Economia, Universidad de Chile.

Marcel, Mario, Marcelo Tokman, Rodrigo Valdes and Paula Benavides. 2001. “Balance Estructural del Gobierno Central: Metodología y Estimaciones para Chile: 1987-2000.” Serie Estudio de Finanzas Publicas, Santiago de Chile.

Marinakis, Andres. 2005. “La Rigidez de los Salarios en Chile.” Oficina Internacional del Trabajo (OIT). Noviembre. Oficina Subregional para el Cono Sur de America Latina, Chile, Paraguay y Uruguay.

Mensaje Presidencial. 1999. Legislatura 340a, Ordinaria, Sesion del Congreso Pleno, 21 de mayo.

Mideplan. 2002. “Dinamica de la Pobreza: Resultados de la Encuesta Panel 1996-2001”. Diciembre. Division Social, Departamento de Informacion Social, Ministerio de Planificacion y Cooperacion,

Ministerio del Trabajo y Prevision Social. 2003. “El Trabajo y la Proteccion Social en Chile 2000-2002”. Febrero.

Ministry of Finance. 2001. “Exposición Sobre el Estado de la Hacienda Pública 2001, presentación del Ministro de Hacienda, Santiago de Chile, Octubre.

_____. 2002. “Exposición Sobre el Estado de la Hacienda Pública 2002, presentación del Ministro de Hacienda, Santiago de Chile, Octubre.

_____. 2004. Exposición Sobre el Estado de la Hacienda Pública 2004, presentación del Ministro de Hacienda, Santiago de Chile, Octubre

Mizala, Alejandra and Pilar Romaguera. 2001. “Las Reformas Laborales y el Mercado del Trabajo.” En R. Ffrench-Davis, y B. Stallings (eds) Reformas Crecimiento y Políticas en Chile desde 1973. Editorial LOM-CEPAL, Santiago.

Montenegro, Claudio E., and Carmen Pages. 2003. “Who Benefits from Labor Market Regulations? Chile 1960-1998.”. NBER, Working Paper 9850.

Ravallion, Martin. 1999. “Protecting the Poor in a Crisis and Beyond”. PremNotes, No.12, January. World Bank.

Saavedra, Carlos. 2004. “Heterogeneidad del Mercado Laboral Chileno.” Octubre Serie de Investigacion Ministerio del Trabajo y Prevision Social.

Schkolnik, M. (1999) ¿Empleos más flexibles o más precarios?. Revista Estadísticas y Economía Nº 18, Diciembre. Instituto Nacional de Estadísticas (INE), Santiago de Chile.

University of Chile. 2004. “Informe Final Evaluacion de Impacto: Programs de Empleo con Apoyo Fiscal.”. Diciembre. Facultad de Economia, Universidad de Chile, [www.dipres.cl].

Vroman, Wayne. 2002. “Unemployment Protection in Chile.”. Background Paper for the World Bank Country Study “Household Risk Management and Social Protection in Chile.”, 2005.

World Bank. 1997. “Poverty and Income Distribution High-Growth Economy, Chile 1987-1995”. Diciembre. Informe Nº 16377 CH.

World Bank. 2005. “Household Risk Management and Social Protection in Chile.” World Bank Country Study. Washington, D.C. World Bank.

World Economic Forum. 2004. Executive Summary. World Economic Forum. [www.weforum.org].

TABLES AND FIGURES

Table 1: Annual macroeconomic variables 1990-2004

	Real GDP Growth (1)	Real Domestic Expenditure	Trade Balance	Current Account Balance	Capital Flows (2)	Public Sector Balance (3)	External Conditions Index (4)	Real Exchange Rate	Real Interest Rate (5)	Inflation Rate	Unemployment Rate	Real Wage Growth	Poverty	Indigency
	(%)	(%)	(% GDP)	(% GDP)	(% GDP)	(% GDP)	(% GDP)	(1990=100)	(% annual)	(% Dec-Dec)	(%)	(%)	(% HH)	(% HH)
1990	3.7	2.9	4.2	-1.6	9.6	2.4	5.4	100.0	13.3	27.3	7.8		33.3	10.6
1991	8.0	6.2	4.3	-0.3	2.7	1.8	-1.6	94.4	8.5	18.7	8.2	4.9		
1992	12.3	15.0	1.7	-2.3	7.4	2.1	1.7	86.6	8.1	12.7	6.7	4.5	27.7	7.2
1993	7.0	10.8	-2.2	-5.7	7.1	1.4	0.0	86.0	9.2	12.2	6.5	3.3		
1994	5.7	5.5	1.4	-3.1	10.5	1.5	3.1	83.6	9.3	8.9	7.8	4.7	23.2	6.2
1995	10.6	16.2	2.1	-2.1	3.5	3.1	0.1	78.9	8.5	8.2	7.4	4.8		
1996	7.4	7.9	-1.4	-4.1	5.5	2.2	2.1	75.1	9.3	6.6	6.5	4.1	19.7	4.9
1997	6.6	7.2	-1.7	-4.4	8.1	2.1	4.9	69.4	8.8	6.0	6.1	2.4		
1998	3.2	3.7	-2.6	-4.9	2.5	0.4	-3.2	69.2	11.9	4.7	6.2	2.7	17.8	4.6
1999	-0.8	-5.8	3.3	0.1	0.3	-2.1	-6.2	73.0	8.2	2.3	9.7	2.4		
2000	4.5	6.0	2.8	-1.2	1.0	-0.6	-4.6	76.3	7.5	4.5	9.2	1.4	16.6	4.6
2001	3.4	2.4	2.7	-1.6	2.0	-0.5	-5.8	85.0	6.3	2.6	9.2	1.6		
2002	2.2	2.4	3.5	-0.9	2.4	-1.2	-4.5	85.9	4.4	2.8	9.0	2.0		
2003	3.7	4.8	4.8	-1.5	2.3	-0.4	-3.7	92.6	4.3	1.1	8.5	0.9	15.4	3.9
2004	6.1	7.9	9.6	1.5	-0.6	2.2	-2.6	88.0	3.2	2.4	8.8	1.8		

Source: Central Bank, DIPRES, INE, CASEN surveys

(1) 1990-1996 period: using 1986 base; 1997-2004 period: using 1996 base

(2) Capital and financial account excluding reserve assets

(3) Public Sector includes total Central Government

(4) The External Conditions Index (ECI) is estimated by the Ministry of Finance. It shows the size of the external shock that face the economy every year in terms of the amount of resources that can be assigned to expenditure. It is measured in GDP percentage points. The index includes (1) the income effect of changes in the terms of trade as a consequence of changes in the copper and oil price compared to a "normal' year; (2) the effect of the difference between the actual growth and the average growth of the world economy into the volume of non copper exports; (3) the difference between the actual volume of capital inflows and the tendency.

(5) 90-365 lending operations

Table 2: Quarterly macroeconomic variables 1997-2000

Quarter	Real GDP Growth (12 months %)	Real Domestic Expenditure Growth (12 months %)	Consumption Growth (12 months %)	Investment Growth (12 months %)	Trade Balance (% GDP)	Current Account Balance (% GDP)	Capital Flows (1) (% GDP)	Market Real Interest Rate (2) (% annual)	Policy Real Interest Rate (% annual)	Inflation Rate (12 months %)	Unemployment Rate (%)
1997.1	4.6	1.3	4.3	4.6	-0.8	-3.2	7.0	14.4	7.4	6.9	5.5
1997.2	6.2	8.1	5.1	7.0	-1.1	-3.6	8.8	11.1	7.0	6.1	6.3
1997.3	7.4	9.7	7.7	13.9	-1.4	-3.9	9.9	11.6	6.7	5.6	6.7
1997.4	8.2	9.6	8.6	16.3	-1.7	-4.4	8.1	16.8	6.5	6.6	5.9
1998.1	6.8	12.3	8.5	11.8	-3.1	-5.9	7.8	15.6	7.9	6.2	5.2
1998.2	5.6	7.5	7.4	14.6	-3.9	-6.5	4.8	14.6	8.5	5.4	5.7
1998.3	3.2	4.4	3.3	2.0	-4.0	-6.5	2.3	23.1	9.3	5.3	6.7
1998.4	-2.3	-7.6	-1.1	-17.3	-2.6	-4.9	2.5	16.7	10.3	4.3	7.1
1999.1	-2.5	-8.5	-2.1	-19.9	-0.9	-3.4	-0.8	8.7	7.4	3.6	7.7
1999.2	-4.1	-10.1	-4.0	-25.6	0.6	-2.2	0.4	10.8	6.1	4.0	9.8
1999.3	-1.1	-6.5	-0.1	-21.1	2.2	-0.6	2.0	6.5	5.0	3.4	11.3
1999.4	4.8	2.5	4.4	-4.8	3.3	0.1	0.3	8.3	5.0	2.5	10.0
2000.1	5.5	6.2	4.5	3.6	3.6	0.4	2.9	9.4	5.2	2.8	8.2
2000.2	5.1	9.0	4.8	7.7	3.0	-0.2	3.3	11.9	5.5	3.5	8.9
2000.3	4.2	4.2	3.5	12.1	3.1	-0.5	1.4	7.7	5.3	3.8	10.5
2000.4	3.2	4.6	1.8	12.0	2.8	-1.2	1.0	11.4	5.0	4.5	9.2

Source: Central Bank and INE

(1) Capital and financial account excluding reserve assets

(2) Corresponds to the overnight inter-banking system interest rate

Table 3: Poverty Indicators 1990-2003(*)

Official poverty lines

	Number of poor people	Headcount FGT (0)	Poverty Gap FGT (1)	FGT (2)	Number of indigent people	Headcount FGT (0)	Poverty Gap FGT (1)	FGT (2)
1990	4,965,604	38.6	14.6	7.9	1,659,301	12.9	4.5	2.3
1992	4,331,701	32.6	13.1	6.7	1,169,267	8.8	2.8	1.3
1994	3,780,038	27.5	9.7	5.0	1,036,163	7.6	2.9	1.5
1996	3,288,271	23.2	7.9	3.8	813,766	5.7	2.1	1.1
1998	3,160,076	21.7	7.5	3.8	820,021	5.6	2.0	1.1
2000	3,081,052	20.6	7.1	3.7	849,169	5.7	2.1	1.2
2003	2,905,424	18.7	6.3	3.2	726,509	4.7	1.7	1.0

Source: Mideplan (2001), Mideplan (2004), Feres (2001) and author's own calculations based on microdata from CASEN 2003

(*) FGT (0)=headcount ratio; FGT (1)=poverty gap, FGT (2)=Foster, Greer and Thornbecke index with parameter 2.

(*) 2003 Indexes estimated using expansion factors based on Census 2002

Table 4: Unemployment Incidence, 15-65 years old Population 1997-2000

Unemployment Incidence, 15-65 years old Population

Unemployment Rate by Years of Education					
	0-8	9-11	12	>12	Total
1997	4.4	6.0	6.9	5.1	5.4
1998	6.2	8.4	9.6	6.1	7.3
1999	7.6	10.1	12.1	7.8	9.1
2000	5.9	8.6	12.0	9.0	8.5
1997-2000 (var)	1.4	2.6	5.1	3.9	3.1

Unemployment Rate by Age					
	15-18	19-24	25-50	>50	Total
1997	17.0	12.3	4.4	2.6	5.4
1998	19.3	16.3	6.2	3.6	7.3
1999	24.0	20.1	7.6	5.3	9.1
2000	22.1	19.5	7.0	5.2	8.5
1997-2000 (var)	5.1	7.3	2.7	2.5	3.1

Source: Cowan et. Al (2005) based on ENE, INE

Table 5: Changes in the Labor Force Participation, Employment and Unemployment by Level of Education and Experience (1), (2)

1997-2000

	Low Education Low Experience	High Education Low Experience	Low Education High Experience	High Education High Experience	Total
			Total Population		
Change in L.F. participation (%)	-20.4	-4.2	0.5	0.2	-0.8
Change in Employment Rate (%)	-24.5	-12.7	-1.6	-2.7	-4.1
Change in Unemployment	4.1	8.5	2.1	2.9	3.3
			Men 15-65 years old		
Change in L.F. participation (%)	-18.3	-4.3	-0.7	0.4	-1.8
Change in Employment Rate (%)	-21.7	-12.6	-3.5	-2.9	-5.3
Change in Unemployment	3.4	8.3	2.8	3.3	3.6
			Women 15-65 years old		
Change in L.F. participation (%)	-27.6	-5.2	1.0	2.4	0.7
Change in Employment Rate (%)	-34.5	-13.9	0.5	0.2	-2.1
Change in Unemployment	6.9	8.7	0.5	2.2	2.8

Source: Cowan et. al (2005) based on ENE

(1) Low Education: high school dropouts or less; High Education: high school graduates or more; Low Experience: less than 10 years of (estimated) potential experience; High Experience: 10 years or more of (estimated) potential experience.

(2) Labor Force Participation: Labor Force over Economically Active Population (EAP); Employment Rate: Employment over EAP; Change in Unemployment: approximated as the change in L.F. participation minus the change in the Employment Rate.

Table 6: Inequality indicators 1990-2003

	Gini coefficient	20/20 Index		10/40 Index	
	Primary Income	Primary Income	Monetary Income (1)	Primary Income	Monetary Income (1)
1990	0.58	14.0	12.9	3.5	3.3
1992	0.57	13.2	12.2	3.3	3.2
1994	0.58	14.3	13.2	3.5	3.3
1996	0.57	14.6	13.8	3.5	3.4
1998	0.58	15.5	13.9	3.5	3.3
2000	0.58	15.3	13.2	3.6	3.3
2003	0.57	14.3	12.3	3.3	3.1

Source: Mideplan

(1) Primary Income+Monetary Transfers

Table 7: Labor force and employment participation of household heads and spouses/couples

Dependent Variable: Labor Force Participation spouses/couples								
	glm1		glm2		glm3		glm4	
	b	se	b	se	b	se	b	se
(1) ocupper_hhead1	-2.87	(.414)**	3.400	(0.878)**	3.980	(0.619)**	4.460	(0.552)**
(2) trend			0.016	(0.002)**	0.018	(0.002)**	0.019	(.0015)**
(3) dquarter2			0.018	(0.013)	0.023	(0.012)	0.021	(0.011)
(4) dquarter3			0.049	(0.012)*	0.059	(0.019)**	0.056	(0.019)**
(5) dquarter4			0.113	(.0216)**	0.124	(0.018)**	0.122	(0.017)**
(6) crisis1					0.063	(0.020)**	1.910	(0.336)**
(7) 1.crisis1#c.ocupper_hhead1							-2.630	(0.479)**
(8) N	37		37		37		37	
(9) Log likelihood	-15.481		-15.468		-15.467		-15.466	
	meff	se	meff	se	meff	se	meff	se
(10) ocupper_hhead1	-0.631	0.092	0.748	0.192	0.875	0.136		
(11) ocupper_hhead1 if crisis1=1							0.412	0.148
(12) ocupper_hhead1 if crisis1=0							0.977	0.121
(13) (11)-(12)							-0.565	0.107

* p<0.05, ** p<0.01

Source: author's own calculations using aggregate data from Encuesta Nacional de Empleo (ENE), INE. Each model is estimated as a Generalized Linear Model (GLM) for proportion data using data from 1996.q1-2005.q2. All models but model 1 include a linear time trend and indicator variables for each quarter. The dependent variable is the labor force participation of spouse/couple, measured as the labor force participation of married and unmarried couples of household heads. The lag of employment participation of household heads (ocupper_hhead1) is the ratio between the employment and the working age population of household heads. Crisis1 is an indicator variable that equals 1 if the lag of quarterly GDP growth is negative (1999.q1-1999.q4). Model 4 interacts ocupper_hhead1 with crisis1 to look whether the marginal effect of ocupper_hhead1 varies with the crisis. The upper section of the table shows the estimated coefficients and their standard errors. The lower section of the table shows the marginal effects and their standard errors (calculated by delta-method) of a one percentage point increase on the employment participation of household heads in the previous quarter.

Table 8: Labor force and employment participation of household heads and children (all ages)

Dependent Variable: Labor Force Participation children (all ages)								
	glm1		glm2		glm3		glm4	
	b	se	b	se	b	se	b	se
(1) ocupper_hhead1	0.899	(.174)**	0.723	(0.437)	0.770	(0.429)	1.010	(.487)*
(2) trend			0.000	(0.0012)	0.000	(0.001)	0.000	(0.001)
(3) crisis1					0.009	(0.011)	0.800	(.32)*
(4) 1.crisis1#c.ocupper_hhead1							-1.130	(.455)*
(5) N	37		37		37		37	
(6) Log likelihood	-16.703		-16.703		-16.703		-16.703	
	meff	se	meff	se	meff	se	meff	se
(7) ocupper_hhead1	0.225	0.044	0.181	0.109	0.192	0.107		
(8) ocupper_hhead1 if crisis1=1							-0.030	0.055
(9) ocupper_hhead1 if crisis1=0							0.252	0.121
(10) (8)-(9)							-0.281	0.114

* p<0.05, ** p<0.01

Source: author's own calculations using aggregate data from Encuesta Nacional de Empleo (ENE), INE. Each model is estimated as a Generalized Linear Model (GLM) for proportion data using data from 1996.q1-2005.q2. All models bur model 1 include a linear time trend. The dependent variable is the labor force participation of children of household heads, measured as the labor force participation of children (from all ages) of household heads. The lag of employment participation of household heads (ocupper_hhead1) is the ratio between the employment and the working age population of household heads. Crisis1 is an indicator variable that equals 1 if the lag of quarterly GDP growth is negative (1999.q1-1999.q4). Model 4 interacts ocupper_hhead1 with crisis1 to look whether the marginal effect of ocupper_hhead1 varies with the crisis. The upper section of the table shows the estimated coefficients and their standard errors. The lower section of the table shows the marginal effects and their standard errors (calculated by delta-method) of a one percentage point increase on the employment participation of household heads in the previous quarter.

Table 9: Employment Rate of dependent and self-employed workers

Dependent Variable: Employment Participation of Self-Employed								
	glm1		glm2		glm3		glm4	
	b	se	b	se	b	se	b	se
(1) asalocupper1	9.988	(1.821)*	12.827	(2.056)*	11.985	(2.730)*	13.233	(2.831)*
(2) trend			-0.005	(0.002)*	-0.006	(0.003)*	-0.005	(0.003)
(3) dquarter2			-0.151	(0.081)	-0.152	(0.080)	-0.156	(0.079)*
(4) dquarter3			-0.034	(0.096)	-0.047	(0.110)	-0.052	(0.109)
(5) dquarter4			0.305	(0.095)*	0.288	(0.111)*	0.283	(0.112)*
(6) crisis1					-0.052	(0.098)	4.652	(2.549)
(7) 1.crisis1#c.asalocupper1							-5.250	(2.838)
(8) N	37		37		37		37	
(9) Log likelihood	-3.603		-3.59		-3.59		-3.589	
	meff	se	meff	se	meff	se	meff	se
(10) asalocupper1	0.261	0.047	0.335	0.054	0.313	0.072		
(11) asalocupper1 if crisis1=1							0.231	0.080
(12) asalocupper1 if crisis1=0							0.345	0.077
(13) (11)-(12)							-0.114	0.075

* p<0.05, ** p<0.01

Source: author's own calculations using aggregate data from Encuesta Nacional de Empleo (ENE), INE. Each model is estimated as a Generalized Linear Model (GLM) for proportion data using data from 1996.q1-2005.q2. All models but model 1 include a linear time trend and indicator variables for each quarter. The dependent variable is the employment rate (as a percentage of labor force) of self-employed. The lag of employment participation of dependent workers (asalocupper1) is the ratio between the employment and the labor force of dependent workers. Crisis1 is an indicator variable that equals 1 if the lag of quarterly GDP growth is negative (1999.q1-1999.q4). Model 4 interacts asalocupper1 with crisis1 to look whether the marginal effect of asalocupper1 varies with the crisis. The upper section of the table shows the estimated coefficients and their standard errors. The lower section of the table shows the marginal effects and their standard errors (calculated by delta-method) of a one percentage point increase on the employment rate of dependent workers in the previous quarter.

Table 10: Proportion of early retirements and Unemployment Rate of 50 years old and over

Dependent Variable: Proportion of Early Retirements								
	glm1		glm2		glm3		glm4	
	b	se	b	se	b	se	b	se
(1) L.unemp50	3.792	(8.142)	9.528	(7.084)	6.018	(6.135)	20.439	(8.817)*
(2) L.dumunemp50_96			-0.193	(0.108)	-0.361	(0.213)	-0.347	(0.137)*
(3) trend					0.035	(0.047)	0.264	(0.058)**
(4) trend squared							-0.017	(0.005)**
(5) N	12		12		12		12	
(6) Log likelihood	-5.358		-5.349		-5.345		-5.312	
	meff	se	meff	se	meff	se	meff	se
(7) L.unemp50	0.918	1.967	2.304	1.697	1.454	1.481	4.912	2.100

* p<0.05, ** p<0.01

Source: author's own calculations using aggregate data from the Encuesta de Prevision Social 2002 (EPS, 2002) and the Encuesta Nacional de Empleo (ENE), INE. Each model is estimated as a Generalized Linear Model (GLM) for proportion data using data from 1990-2002. Models 3 include a linear time trend and Model 4 a linear and a quadratic time trend for each year. The dependent variable is the proportion of early retirements, calculated from the Encuesta de Prevision Social 2002 (EPS, 2002) as the ratio between the flow of early retirements and the flow of total retirements each year. The lag of the unemployment rate of people 50 years old and over (L.unemp50) is calculated using the 1986-1995 Encuesta Nacional de Empleo (ENE). L.dumunemp50_96 is an indicator variable that captures the methodological change of the ENE in 1996. The upper section of the table shows the estimated coefficients and their standard errors. The lower section of the table shows the marginal effects and their standard errors (calculated by delta-method) of a one percentage point increase on the lag of unemployment rate of people 50 years old and over in the previous year.

Table 11: Number of beneficiaries of private (ISAPRES) and public (FONASA) health insurance

Dependent Variable: Beneficiaries of public health insurance (FONASA)						
	reg1		reg2		reg3	
	b	se	b	se	b	se
(1) ben_isapres	-0.912	(0.284)**	-1.013	(0.069)**	-0.955	(0.070)**
(2) trend			123824.130	(8849.017)**	123109.783	(8310.488)**
(3) L.crisis					302379.691	(114870.724)*
(4) N	14		14		13	
(5) r2	0.416		0.966		0.979	

* p<0.05, ** p<0.01

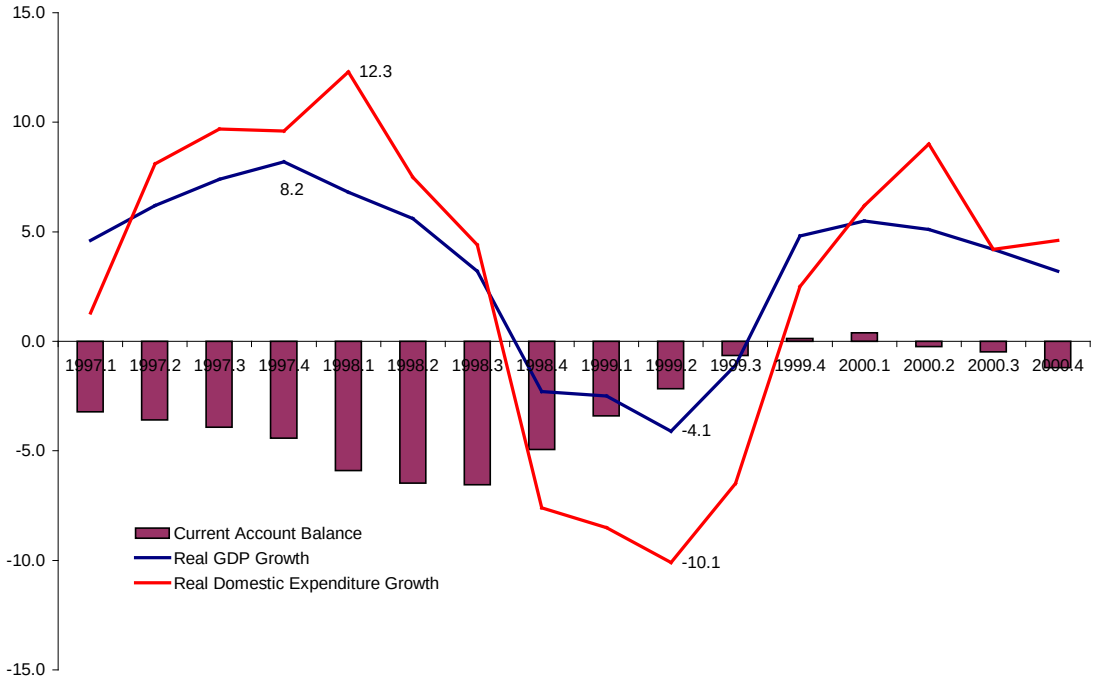
Source: author's own calculations using aggregate data from the Superintendencia de Salud and Fonasa. Each model is estimated by a linear regression using data from 1990-2003. Models 2 and 3 include a linear trend for each year. The dependent variable is the stock of beneficiaries of the public health insurance system (FONASA) at December of each year. The beneficiaries of the private health insurance system, ISAPRES, (ben_isapres) are the stock of beneficiaries in any ISAPRE at December of each year. L.crisis is an indicator variable that equals 1 if the lag of yearly GDP growth is negative (1999).The table shows the estimated coefficients and their standard errors.

Table 12: Summary of the Main Employment Programs

Name of the Program	Proempleo-Subsecretaria	EEP-CONAF	FOSAC-Interior	PMU	Proempleo-SENCE	Reinsercion-Fosis
Type of program	Direct	Direct	Direct	Direct	Indirect	Indirect
Institution responsible	Ministry of Labor	Conaf	Undersecretary of Inrerior	Subdere	SENCE, Ministry of Labor	Fosis
Year of beginning	2001	2001	1999	1987	2001	2000
Executors	Private and Public Institutions	Conaf	Private and Public Institutions	Municipalities	Private employers	Private and Public Institutions
Beneficiaries	unemployed household head	unemployed household head	unemployed household head in poverty condition	unemployed household head in poverty condition	unemployed	unemployed household head in poverty condition
Elegibility Criteria and targeting system	Self declaration of being a household head and unemployment, registered OMILs	Self declaration of being a household head and unemployment, registered OMILs	Self declaration of being a household head and unemployment, registered OMILs	Self declaration of being a household head and unemployment, registered OMILs	Self declaration of being a household head and unemployment, registered OMILs	Self declaration of being a household head and unemployment, registered OMILs

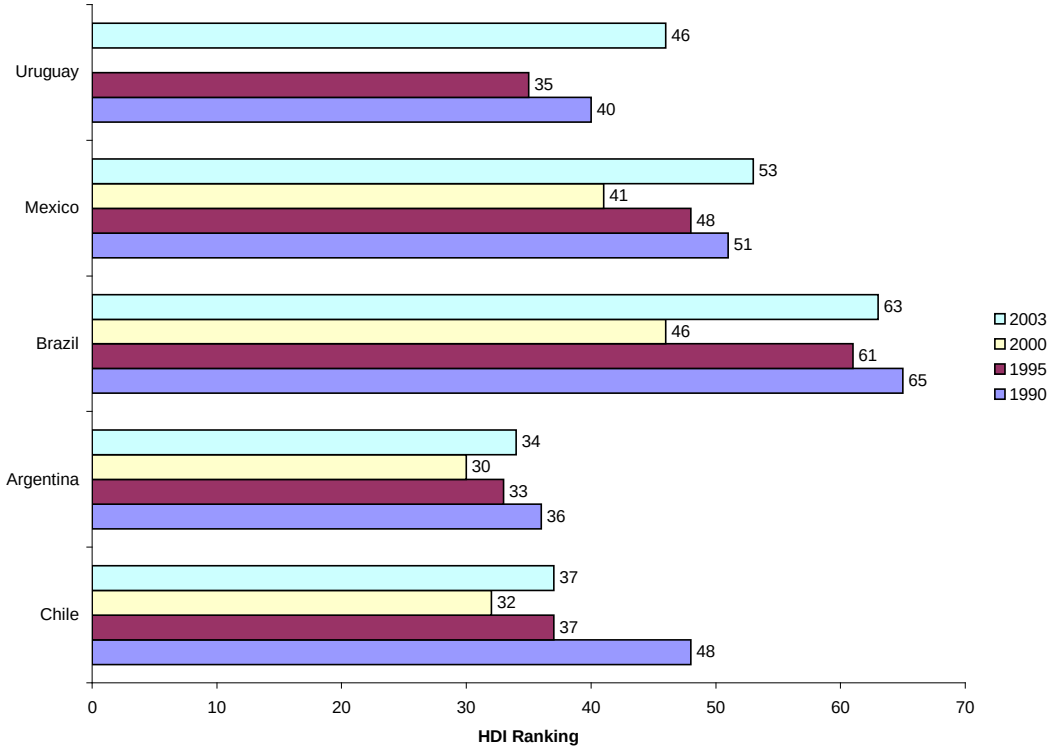
Source: University of Chile (2005)

Figure 1: Current account balance, GDP and domestic expenditure 1997-2000



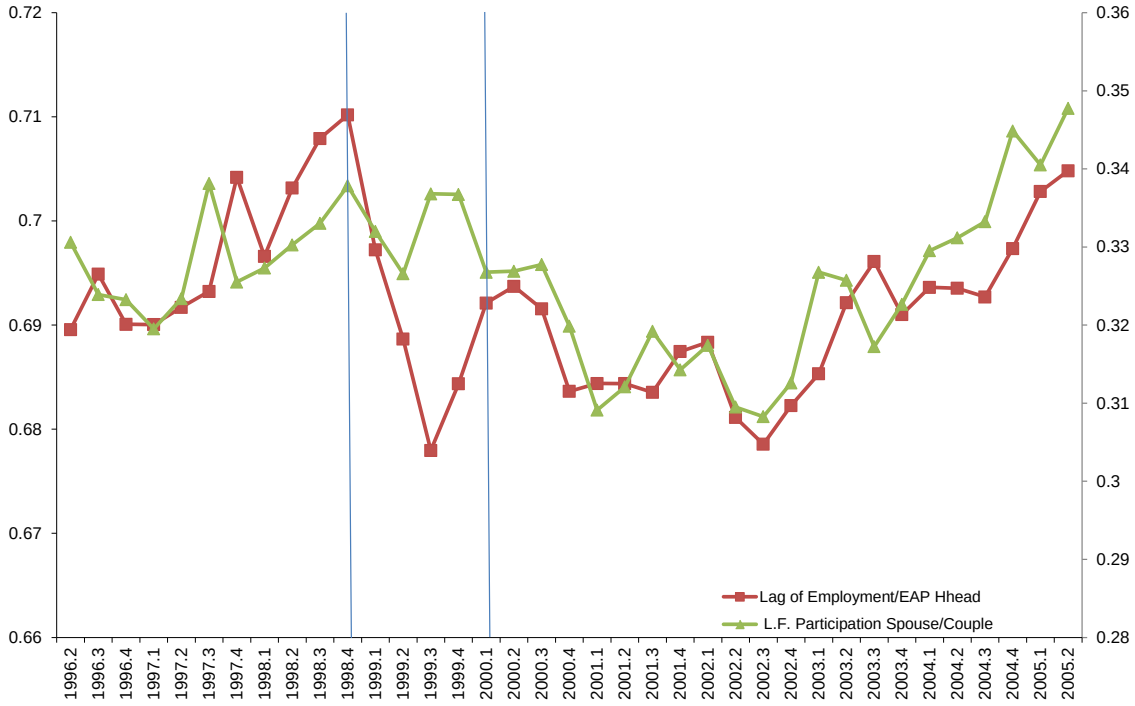
Source: Central Bank of Chile

Figure 2: Human Development Index



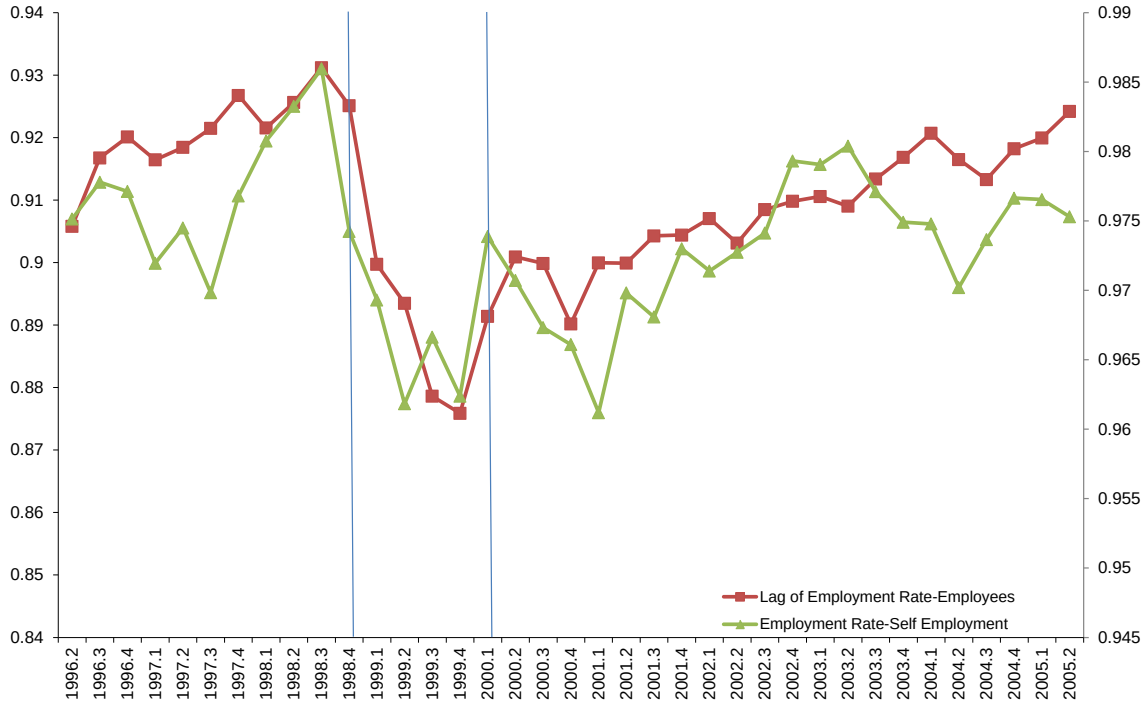
Source: Human Development Reports, UNDP

Figure 3: Labor force and employment participation of household heads and spouses/couples



Source: author's own calculations using aggregate data from Encuesta Nacional de Empleo (ENE), INE. The lag of employment participation of household heads is the ratio between the employment and the working age population of household heads (principal axe). The labor force participation of spouse/couple is the labor force participation of married and unmarried couples of household heads (secondary axe). The time series are detrended and deseasonalized using a linear time trend and indicator variables for each quarter.

Figure 4: Employment Rate of dependent and self-employed workers

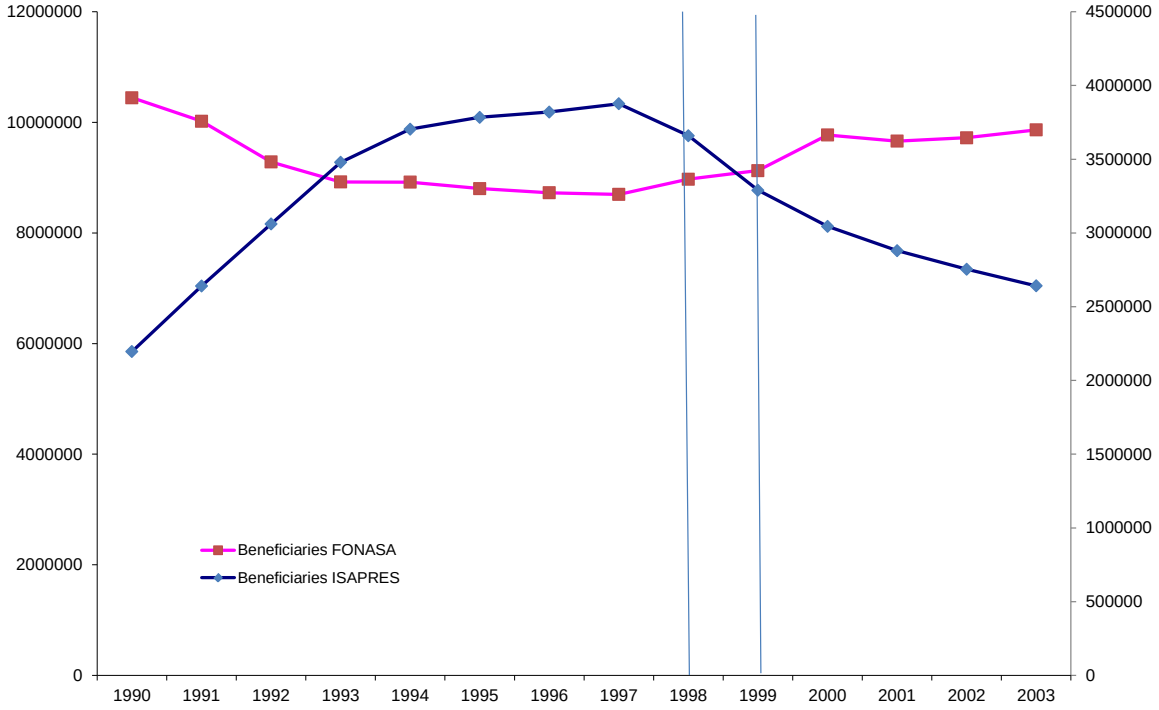


Source: author's own calculations using aggregate data from Encuesta Nacional de Empleo (ENE), INE. The lag of employment rate of employees is the ratio between the employment and the labor force of dependent workers (principal axe). The employment rate of self-employment is the ratio between the employment and the labor force of independent workers (secondary axe). The time series are detrended and deseasonalized using a linear time trend and indicator variables for each quarter.

Figure 5: Proportion of early retirements and Unemployment Rate of 50 years old and over

Source: Proportion of early retirements: author's own calculations using the Encuesta de Prevision Social 2002 (EPS, 2002). It is calculated as the ratio between the flow of early retirements and the flow of total retirements each year. The unemployment rate of people 50 years old and over is calculated using the 1986-1995 Encuesta Nacional de Empleo (ENE). The time series are detrended using a linear and a quadratic time trend for each year.

Figure 6: Number of contributors to private (ISAPRES) and public (FONASA) health insurance

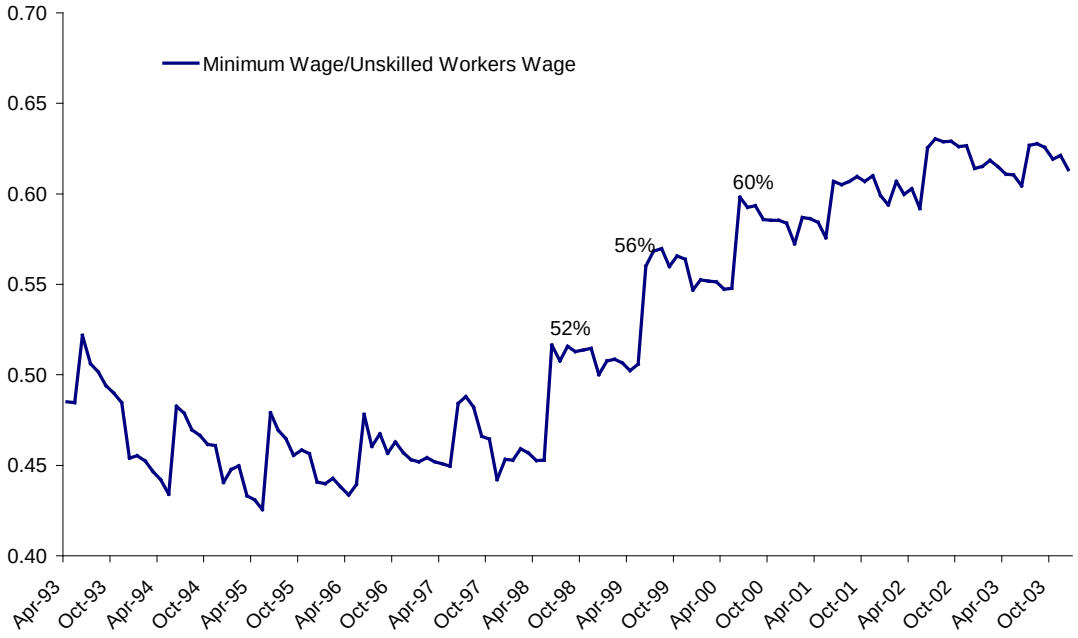


Source: Fonasa and Superintendencia de Salud

Figure 7: Market interest rate and policy interest rate 1997-2000

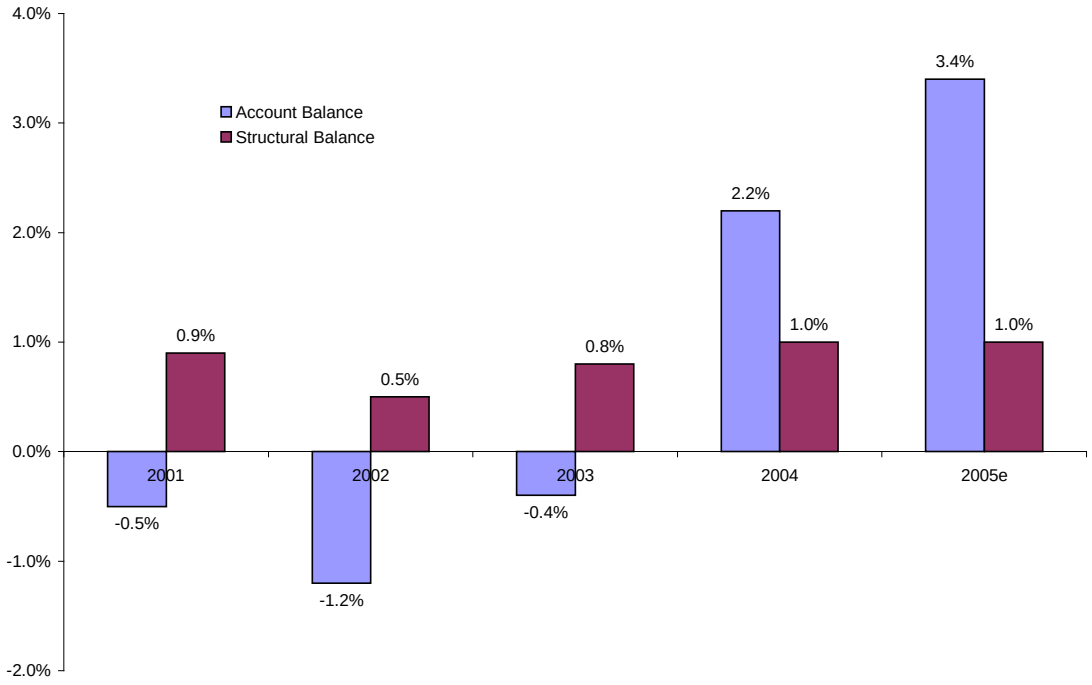
Source: Central Bank of Chile

Figure 8: Minimum wage and Unskilled Workers Wage 1993-2003



Source: INE

Figure 9: Account (or Regular) Fiscal Balance and Structural Fiscal Balance 2001-2005



Source: Dipres