Protecting the Unemployed in Chile: From State Assistance to Individual Insurance?

Castro-Fernandez, Rodriguo and Wodon, Quentin
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FROM STATE ASSISTANCE TO INDIVIDUAL INSURANCE?
Rodrigo Castro-Fernandez and Quentin Wodon[111]
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Introduction

Many workers are at risk of loosing their job due to involuntary separations from firms. Traditionally, countries have dealt with those risks through a combination of state-funded unemployment assistance (or insurance) and firm-funded severance payments. Chile has both types of programs. The problem with these types of programs is that they have a number of weaknesses. Unemployment assistance is supposed to help workers who loose their job to smooth their consumption spending during an unemployment spell. Yet when the unemployment benefits are large, there may create incentives for the workers to remain unemployed longer than necessary. This "moral hazard" problem may have been at work in the rise of unemployment rates and the length of unemployment in European economies.[112] As for severance payments programs, they also have the potential of creating distortions in the labor market, not only in the relationships between firms and workers, but also between younger and older workers.

The weaknesses of traditional policies for dealing with unemployment shocks has placed the reform of social insurance programs at the center of the public policy debate. Unemployment insurance saving accounts (UISAs) have been proposed as an instrument to protect workers from the loss in earnings associated with unemployment (e.g., Feldstein and Altman, 1998; Orszag and Snower, 1997). The idea is to have all workers (and possibly their employers as well) deposit a share of their monthly incomes into their UISA, with the balance in the account accruing market interest rates. During an unemployment spell, the workers who would be eligible to do so could withdraw funds from their individual account. It is only when there would be no or few funds left in the account that complementary unemployment assistance allowances would be provided. The fact that the accounts are individualized helps to solve the moral hazard problem. Moreover, the fact that the contribution system is mandatory also helps to solve another problem, namely the adverse selection mechanisms through which only some workers might choose to self-insure, or through which the private insurance firms insuring workers would try to hand-pick those workers with the lowest risk of being unemployed. Overall, the objective of UISAs is to set incentives right. Recent proposals for replacing standard forms of unemployment assistance by UISAs are being implemented in several Latin American countries (e.g., Brazil and Colombia).

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[112] Beyer (2000) shows that the unemployment duration in Chile is lower than that observed in the OECD, and especially in Europe. In Chile, the average unemployment spell was 3 months over 1995-97, while in OECD countries, more than half of unemployed workers have been unemployed for more than a year (OECD, 1999).

In Chile, the need to rethink the unemployment protection system is reinforced by the fact that the current mix of unemployment assistance and severance payments does not work properly. The unemployment assistance benefit provided by the government is of such a small amount (compared with the minimum wage) that it is insufficient for ensuring adequate protection. Probably in part because the benefits are so low, only 8 percent of the unemployed get benefits (another reason for the low take-up is the fact that only formal sector workers with a certain length of job tenure are eligible). Under the severance payments system, unemployed workers receive one month of pay for each working year with the firm, up to a limit of eleven months of pay. The problem is that many of the workers who need support the most when unemployed because they have few savings are also excluded from the severance payments system because they lack adequate tenure (this is the case for youths and women).[113]

This paper explores some of the implications of replacing in Chile the current job security system with UISAs. To motivate the paper, we start in section 2 by presenting evidence as to the role played by unemployment as a determinant of poverty. Section 3 then discusses the weaknesses of the current system of unemployment protection in Chile (severance payments by firms and unemployment assistance by the government). Section 4 outlines the theoretical rationale for UISAs and discusses the main proposal for UISAs made in Chile so far, in July 1999. The section also analyzes the potential impact on the distribution of income of a shift from the current system to the new one. Section 5 concludes.

Impact of Unemployment on Per Capita Income and Thereby Poverty

Unemployment is a key determinant of poverty in Chile. To motivate the rest of the paper, the objective of this section is to support this assertion by measuring the marginal impact of unemployment and other labor market variables on the per capita income of households and thereby on their probability of being poor. To do so, we use data from the nationally representative 1998 CASEN survey and linear regressions as indicated in Box 1. The dependant variable is the logarithm of per capita nominal monetary income (without imputations). Separate regressions are provided for the urban and rural sectors. Apart from a constant, the regressors include: (a) the geographic location of the household according to Chile's regions; (b) household size variables and their square (number of infants, children, and adults), whether the household head is a woman, the age of the head and its square, and whether the head has a spouse or not; (c) characteristics of the household head, including his/her level of education; whether he/she is employed, unemployed and searching for work, or not working; his/her sector of activity; his/her position; whether he/she works in the public sector; the size of the firm in which he/she works; and whether he/she is underemployed; and (d) the same characteristics for the spouse of the household head when there is one.

While the regressions can be used for poverty simulation (the regression results are robust to the choice of the poverty line), we focus below on the percentage increase in per capita income associated with household characteristics rather than on the impact on poverty per se. Although we present below the regression results in separate tables by topic, only one set of regressions

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[113] Another weakness of Chile's current system is that severance payments can be cumulated with unemployment assistance. Coloma (2000) has proposed to use the severance payments system as a deductible, in such a way that the worker who has lost his/her job would not become eligible to receive unemployment benefits during the period covered by the severance payments.

with all the relevant exogenous variables were estimated in urban and in rural areas separately. We discuss subsequently (a) the impact on per capita income of demographic and household structure variables; (b) the impact of education; and (c) the impact of employment variables, including the fact of being unemployed.

As indicated in Table 1, per capita income decreases, and thereby poverty increases with the number of infants and children in the household (negative coefficient estimates, with the estimates representing the percentage decrease in per capita income associated with the corresponding variable). While these results make sense, it must be mentioned that they may be sensitive to the methodological choices made for poverty measurement.[114] It is also worth noting that after controlling for other household characteristics, female headed households have a level of per capita income 10 percent below that of male headed households (this type of finding can be used to justify the implementation of special programs and provisions for women heads of households; when a women head of household is unemployed, the combination of the loss of earnings due to the absence of a partner and the woman's own loss is large).

Table 1: Marginal Percentage Increase in Per Capita Income Due to Demographic Variables

	Urban	Rural		Urban	Rural
Number of infants	-0.105	-0.143	Number of adult squared	0.005	0.009
Number of infants squared	-0.002	0.036	Female head	-0.108	-0.112
Number of children	-0.186	-0.204	Age of the head	0.005	0.034
Number of child squared	0.018	0.017	Age of the head squared	-0.001	-0.001
Number of adults	-0.047	-0.038	No spouse for the head	0.018	0.004

Note: The excluded reference categories are a household with a male head and a spouse.

Source: World Bank staff using : CASEN 1998. NS means not statistically different from zero at the 10% level. Coefficients underlined are significant at the 10% level. Coefficients not underlined are significant at the 5% level.

The gains from education are substantial. A household with a head having gone to the university (superior level in table 2) has almost twice the expected level of income of an otherwise similar household whose head has no education at all. Completing secondary schooling brings in an 70 percent gain versus no schooling. Completing primary school brings in a 30 to 40 percent gain. There are some differences in the gains for the head in urban and rural areas, probably because that there are more opportunities for qualified workers in urban. The gains from a well educated spouse are also large and similar in urban and rural areas, but they are slightly smaller than for those observed for the head. This is not surprising given that the employment rate for women is

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[114] By using per capita income as our indicator of well being, we do not allow for economies of scale in the household, nor for differences in needs between household members. By ruling out economies of scale, we consider that the needs of a family of eight are exactly twice the needs of a family of four. With economies of scale, a family of eight having twice the income of a family of four would be judged better off than the family of four. Thus, not allowing for economies of scale over-estimates the negative impact of the number of infants and children on poverty. Moreover, by ruling out differences in needs between household members, we do not consider the fact that larger households with many children may not have the same needs per capita than smaller households because the needs of infants and children tend to be lower than those of adults. In other words, our poverty line measures the cost of basic needs for an "average" individual, but very large families do not consist of average individuals because infants and children are over-represented in them. Not considering differences in needs also leads to an overestimation of the impact of the number of infants and children on poverty. Nevertheless, even if corrections were made to take into account both differences in needs and economies of scale within the household, a larger number of infants and children would still lead to a higher probability of being poor.

smaller than for men for all levels of education, so that women use their education endowment less than men. Another explanation could be that there is gender discrimination in pay, but this would require further analysis to be established.

Table 2: Marginal Percentage Increase in Per Capita Income Due to Education

	Urban	Rural		Urban	Rural
Household head			Household spouse		
Primary partial	0.398	0.256	Primary partial	0.205	0.325
Primary total	0.365	0.302	Primary total	0.198	0.187
Secondary partial	0.701	0.513	Secondary partial	0.351	0.523
Secondary total	0.651	0.612	Secondary total	0.413	0.506
Superior (university)	0.901	0.814	Superior (university)	0.687	0.789

Note: The excluded reference categories are a household head and a spouse with no education at all.

Source: World Bank staff using CASEN 1998. NS means not statistically different from zero at the 10% level. Coefficients underlined are significant at the 10% level. Coefficients not underlined are significant at the 5% level.

Employment patterns for the head and the spouse also have a large impact on per capita income and thereby on poverty. The regression specification enables us to look at various issues (table 3):

- *Unemployment:* Not surprisingly, having a head or a spouse available for work or searching for employment has a large negative impact on per capita income in both urban and rural areas. In most cases, the household suffers from a drop in income of 20 percent as compared to the case when the head or the spouse is fully employed (these are the excluded reference categories in the regression). While these results probably overstate the impact of unemployment on consumption poverty (households may use smoothing strategies in order to cope with unemployment, and the volatility of consumption expenditures is lower than the variability of income because households save and borrow), the fact that unemployment can lead to serious consequences for per capita income is clear. Moreover, households with a head or spouse not working also tend to have lower levels of income.

- *Underemployment:* Having a head or spouse working less than 20 hours per week is not associated with a low level of per capita income, which suggests that many of those who work few hours can afford to. By contrast, underemployment at the level of 21 to 39 hours per week is associated with lower per capita income and higher poverty in the case of households heads, but not for spouses.

- *Sector of activity and position held:* Having a head or a spouse belonging to the construction, commerce, service, mining/manufacturing/electricity, or transport sector brings in additional per capita income as compared to working in agriculture (the excluded reference category). There is a surprisingly large premium for heads working in the public sector (which is worth investigating further; note however that the data may not be representative of the public sector), and a gain in working for a firm with more than 10 employees. Self-employment is associated with a lower income, and being an employer generates a gain in per capita income, while unpaid family work is associated with poverty.

Table 3: Marginal Percentage Increase in Per Capita Income Due to Employment Variables

	Urban	Rural		Urban	Rural
Household head			Household Spouse		
Employment of head			Employment of spouse		
Available (unemployed)	-0.198	-0.029	Available (unemployed)	-0.171	-0.187
Searching (unemployed)	-0.225	-0.725	Searching (unemployed)	-0.154	-0.058
Not working	0.058	-0.517	Not working	-0.210	-0.598
Sector of activity of head			Sector of activity of spouse		
Mining/Manuf./Electricity	0.302	0.388	Mining/Manuf./Electricity	0.042	0.057
Construction	0.528	0.043	Construction	0.617	1.007
Commerce	0.402	0.501	Commerce	0.278	0.175
Transport	0.491	0.684	Transport	0.458	0.256
Services	0.405	0.204	Services	0.391	0.144
Type of employment of head			Type of employment of spouse		
Self-employed	-0.105	-0.540	Self-employed	-0.215	-0.290
Employer	0.515	-0.054	Employer	0.304	-0.145
Unpaid family work	-0.403	-0.274	Unpaid family work	NS	-0.574
Public sector	1.105	2.154	Public sector	NS	NS
Size of firm > 10 people	0.104	0.054	Size of firm > 10 people	0.187	0.214
Underemployment of head			Underemployment of spouse		
Hours of work per week < 20	0.125	0.154	Hours of work per week < 20	-0.028	0.196
20≤ hours per week ≤39	-0.155	-0.256	20≤ hours per week ≤39	0.187	0.485

Note: The excluded reference categories are a household head and a spouse fully employed (at work and not underemployed), and working as wage earners (as opposed to self-employment) in the agriculture sector.

Source: World Bank staff using CASEN 1998. NS means not statistically different from zero at the 10% level. Coefficients underlined are significant at the 10% level. Coefficients not underlined are significant at the 5% level.

Box 1: Determinants of Poverty: Categorical or Linear Regressions?

It has become a standard practice to analyze the determinants of poverty through categorical regressions such as probits and logits. When using such categorical regressions, it is assumed that the actual (per capita) income of households divided by the poverty line, which is denoted by the latent variable y^*_i, is not observed. We act as if we only know whether a household is poor or not, which is denoted by the categorical variable y_i, which takes the value one if the household is poor, and zero if the household is not poor. If we denote by X_i the vector of independent variables (including a constant), the model is :

$$y^*_i = \beta'X_i + \varepsilon_i \quad \text{with } y_i = 1 \text{ if } y^*_i > 0 \text{ and } y_i = 0 \text{ if } y^*_i \leq 0$$

Under the hypothesis of a normal standard distribution for the error term ε_i, this model can be estimated as a probit. The probability for a household with characteristics X_i of being poor is given by $Prob[y_i^* > 0] = Prob[\beta'X_i + \varepsilon_i > 0] = Prob[\varepsilon_i > -\beta'X_i] = F(\beta'X_i)$ where F denotes the cumulated density of the standard normal distribution. The marginal impact of a change in a continuous variable X_A on the probability for household i of being poor, all other variables being held constant, is $f(\beta'X_i)\beta_A$, where f is the standard normal density. A coefficient β_A positive (negative) implies a positive (negative) effect of an increase in the corresponding variable on the probability of being poor. The marginal probability variations can be measured for any particular value of the X_i vector since $f(\beta'X_i)\beta_A$ depends upon X_i. The convention is to compute the marginal effects at the sample mean. If X_A is discrete, its impact on the probability of being poor can be obtained by comparing the cumulated normal densities at various values.

The main problem with such categorical regressions is that the estimates are sensitive to specification errors. With probits, the parameters will be biased if the underlying distribution is not normal. The alternative is to use the full information available for the dependant variable (indicator of well-being), and to run a regression of the log on the indicator (if its distribution is log normal.) Assume that k^*_i is the normalized indicator divided by the poverty line, so that $k^*_i = y^*_i/z$, where z is the poverty line. A unitary value for w^*_i signifies that the household has (per capita) income exactly at the level of the poverty line. Then, we can run the following regression:

$$\text{Log } k^*_i = \gamma'X_i + \varepsilon_i$$

From this regression, the probability of being poor can then be estimated as follows:

$$Prob[\log k^*_i < 0 \mid X_i] = F[-(\gamma'X_i)/\sigma]$$

where σ is the standard deviation of the error terms and, as before, F is the cumulative density of the standard normal. This does not mean that probit/logit regressions should never be used. Categorical regressions will typically have better predictive power for classifying households as poor or non-poor. However, to conduct inference on the impact of variables on poverty, it is better to use linear regression. Another advantage of linear regressions is that probabilities of being poor can be computed for any poverty line the analyst whishes to use without having to rerun a new regression for every poverty line. This is with region-specific poverty lines valid for urban or rural areas as a whole, or for specific departments within the urban and rural sectors, only the constant and/or the coefficients of the regional dummy variables in the regression will change, and this happens in a straightforward way.

Weaknesses of Chile's Current Protection System for the Unemployed

A key finding from the previous section is that unemployment for a household head or his spouse generates a loss of up to 20 percent in the household's per capita income. The unemployment assistance and severance payments systems that have been in existence for many years in Chile (see Box 2 for an outline of the history of the two types of programs) are supposed to offset such losses, but the systems as they function today do not succeed in protecting the unemployed. In this section, after briefly mentioning some of the limitations of both types of programs in theory, we discuss their main observed weaknesses.

Unemployment assistance. At the theoretical level, the main critique of unemployment assistance programs (and more generally, of traditional social insurance programs which are funded through tax revenues) is that the programs generate moral hazard. As suggested by Gruber (1997), social assistance and insurance programs can have distorting effects on individual and firm decision-making. The workers who are laid off may take longer to find new employment if they benefit from generous allowances which are funded by others. The employers who are laying off workers regularly may do so because they do not bear the cost of their decisions. Empirical studies show that these distortions exist, and that they can be sizeable.

There are at least three ways of reducing the likelihood of moral hazard. One possibility is to make sure that unemployed workers loose part of their earnings when becoming unemployment (i.e., the unemployment allowances are typically set below the wage previously earned by the workers). Another possibility is to have the unemployment benefit depending on the past contributions to the system by the worker. For example, workers who have contributed more to the system may be entitled to better benefits, and employers who have avoided laying off staff may see their contributions to the system reduced. A third possibility is to require the unemployed workers receiving benefits to be actively seeking work and to accept a suitable job when such a job is offered to them. While the first two methods for reducing the likelihood of moral hazard can be implemented either publicly or privately, the third method is easier to implement when a public agency is in charge of monitoring the unemployed.

In Chile, one could argue that the first possibility for reducing the likelihood of moral hazard by limiting benefits has been taken to such an extreme that today, the problem is not moral hazard *per se*, but rather the inadequacy of the benefits and the lack of coverage of the unemployed population. The deterioration over time in coverage and benefits is shown in table 4, which provides for the period 1980-1999 the unemployment rate in percentage of the labor force, the number of workers receiving unemployment assistance, the total outlays for assistance, and the share of GDP that the outlays represent.

- *Low benefits:* As shown in table 4, each unemployed worker received US$300 on average in 1998 for the full length of the unemployment spell. By comparison, in June 1998, the minimum wage was worth US$178 per month, at which time five percent of the labor force was earning the minimum wage.[115] Given that only one in five unemployed workers was

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[115] According to the Economy and Labor Program (PET), in April 1996, the gap between the legal minimum wage and the minimum monthly wage required to meet basic needs, defined in the government's minimum basket for the satisfaction of basic needs, was 34.2 percent. That is, the legal minimum wage was CH$58,900 while the salary required by a worker to satisfy his or her basic needs was $89,538.

without a job for less than 2 months in the last quarter of 1998 (table 5), it is clear that the unemployment assistance benefits were low. This can be made more apparent by noting that in the 1998 CASEN survey, unemployment assistance benefits represent only 0.3 percent of total income. At the time of the survey, the unemployment assistance benefits were (Chilean Pesos) CH$17,300 for the first three months of unemployment, CH$11,600 for the next three months, and CH$8,700 for the next six months, versus a minimum wage of about CH$80,500. Table 4 clearly shows that there has been over time an erosion in the unemployment assistance benefits per unemployed worker, with the total outlays for unemployment assistance representing only 0.01 percent of GDP in 1998, versus 0.23 percent in 1980.

- *Low coverage:* Figure 1 shows that only 8 percent of all unemployed workers were receiving benefits in 1998. While this is a higher share of unemployed workers than in 1994, it is well below the levels of coverage of the 1980s. The low coverage is due in part to the fact that only formal workers are eligible, and the decrease in coverage may be accounted for in part by the strength of the Chilean economy during most of the late 1980s and the 1990s. Still, it is also possible that the decrease in coverage is due in part to the erosion of the benefits, with some eligible unemployed workers deciding not to apply for benefits because they do not believe that the benefits are worth the effort.

Table 4: Unemployment Rate and Unemployment Assistance Outlays in Chile, 1980-1999

	Unemp. rate (%)	Number receiving assistance	Assistance outlays (US$M)	Outlays as share of GDP (%)		Unemp. rate (%)	Number receiving assistance	Assistance outlays (US$M)	Outlays as share of GDP (%)
1980	10.40	74,000	56,000	0.23	1990	5.70	33,845	6,000	0.02
1981	11.30	75,000	65,000	0.25	1991	5.30	30,246	6,000	0.02
1982	19.60	131,000	103,000	0.46	1992	4.40	23,432	6,000	0.01
1983	14.60	142,000	95,000	0.43	1993	4.50	19,147	4,000	0.01
1984	13.90	98,000	52,000	0.22	1994	5.90	20,572	6,000	0.01
1985	12.10	97,000	47,000	0.19	1995	4.70	21,282	6,756	0.01
1986	8.80	85,000	31,000	0.12	1996	5.40	21,343	7,234	0.01
1987	7.90	66,051	18,000	0.07	1997	5.30	22,586	7,610	0.01
1988	6.30	51,750	14,000	0.06	1998	6.15	27,290	8,014	0.01
1989	5.30	39,245	9,000	0.03					

Source: Compendios Estadísticos, INE (Instituto Nacional de Estadísticas) and Boletines Mensuales, SSS (Superintendencia de Seguridad Social).

Table 5: Unemployment Duration in October-December 1998 by Gender (entries are in percentage)

Duration in months	Males	Females	All	Duration in months	Males	Females	All
Total	64.67	35.33	100.00	9-12	4.45	9.21	6.13
< 2	22.38	13.25	19.15	12-24	6.09	13.08	8.56
2-4	36.95	26.05	33.10	24-48	0.79	1.98	1.21
4-7	14.86	15.76	15.18	48+	0.50	0.27	0.42
7-9	4.61	5.68	4.99	Never work	9.39	14.75	11.28

Source: Instituto Nacional de Estadísticas

Figure 1: Coverage of Unemployment Assistance (share of unemployed workers)
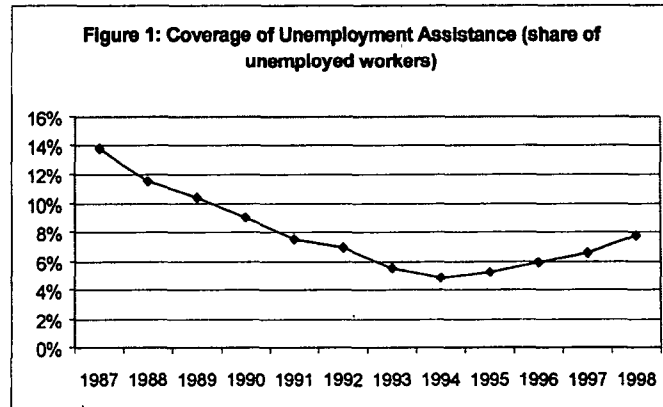
Source: INE

Box 2: Brief Review of the Unemployment Assistance and Severance Payments Systems in Chile

Unemployment assistance (UA). Three periods can be distinguished in the history of the Chilean UA system: until 1974, from 1974 to 1982, and after 1982. The main difference between the system that existed before 1974 and the system in place between 1974 and 1982 consisted in the fact that the pre-1974 system was formed by different programs for different occupational groups (e.g. private employees, workers, bank employees, etc). The reform implemented in 1974 (Law Decree 603) led to some level of harmonization in the eligibility rules and benefits received by workers, and to the extension of the coverage of the system to all formal sector workers, including those from the public sector who were not eligible before. The maximum level of the benefits could not be greater than the 90 percent of four times the minimum wages, nor could it be less than 80 percent of two minimum wages. Differences in funding and benefits persisted between the private and public sectors. Former public employees were entitled to 75 percent of their last wage, while private sector employees were entitled to 75 percent of the average wage earned during the six months before they became unemployed. The assistance granted to former public employees was fully financed by the government, while for former private sector employees, the assistance was financed in through a two percent tax on wages paid by workers (employers also contributed, but to a lower extent). One key requirement for eligibility was to have at least 12 months of tenure/contribution to the system (in continuous or discrete form) in the two years preceding the unemployment spell. After receiving benefits and finding a new job, a worker had to wait for two years before being eligible for assistance again.

The UA system was reformed again in March 1982 (Law Decree 150), in part to tighten the eligibility rules. It was decided that in order to receive assistance, the reason for being unemployed (i.e., fired) was to be beyond the worker's control. The worker also had to be enrolled in the unemployment records of the social security office as well as of the municipality where she or he belonged. It was also decided that a worker would no longer receive assistance if he/she were to refuse a job offer from the Training and Employment National Service, unless the wage offer was less than 50 percent of his/her previous salary. The eligibility conditions regarding the required previous contributions to the system and the length of time necessary before being eligible again for assistance were kept unchanged. The maximum benefits duration was set at 360 days, with decreasing payments over time. The payments were set independently of the pre-unemployment wage. Along with the UA, the workers were made eligible for other benefits such as health and maternal allowances. It was explicitly stated that UA benefits were incompatible with certain other types of incomes (e.g., workfare under the emergency employment schemes used during the 1970s and 1980s). UA benefits were also incompatible with benefits such as allowances received for sick-leave, occupational disease, and work place accidents. One important change brought by the reform relates to the financing of the system. Since 1982, UA benefits are funded by the Unemployment Insurance Fund using general tax revenues, without taxes on private firms and workers.

Severance payments. Since April 1966, the Law No. 16455 deters employers to fire workers without a justified cause. Originally, the system worked as follows. If the layoff was considered unfair by the court, the employee had to be reinstated, or the employer had to provide a severance payment equivalent to one month of pay per year of service, with no maximum threshold. If the layoff was justified, no severance payment had to be provided. In June 1978, the Law Decree No. 2200 reintroduced employee dismissal as a way of putting an end to an employment contract. The employer could layoff a worker without providing a specific reason, provided the worker received a severance payment corresponding to one month of pay for each working year. The rule applied only to workers hired after the Law Decree took effect. The ability of employers to end contracts was confirmed by the Law No. 18018 of August, but the severance payment was reduced to one month per working year with a five-year limit. In December 1990, the Law No. 19010 required again that all layoff be justified, and for all workers hired after August 14, 1981, severance payments were set at one month per working year with a eleven-year limit. The workers hired before that date keep a severance payment with no maximum year limit.

Severance Payments. Severance payment systems have a number of virtues. They strengthen the workers' bargaining position and create an income source for unemployed workers without depressing labor supply. They help older workers who may loose some of their investment in human capital when they are laid off because they had specialized in a given area and they have more difficulty in acquiring new skills. Severance payments also force firms with higher layoff rates to pay a higher part of the cost of protecting the workers who are laid off, thereby reducing the cross subsidies which are implicit in traditional unemployment assistance and insurance mechanisms. In some extreme cases, the firm and the worker may agree to a temporary separation funded by a partial severance payment allowance, with the promise that the worker will be hired again when the firm's situation becomes healthier. This may lower the temporary unemployment that could arise when the firm faces short-term difficult market conditions.

At the same time, despite these interesting features, severance payment systems also have a number of weaknesses. They may discourage firms from investing in their workers' human capital since the programs tend to lead to shorter and less formal contracts (this hypothesis, however, would have to be validated empirically, and other factors may help provide incentives for firms to invest in human capital). Severance payments may also lead firms to reduce wage increases. The employment relationship between the firm and the worker may be distorted because older workers have perverse incentives to induce their layoff and firms have perverse incentives to promote the worker's resignation instead. Severance payments may reduce labor mobility, with older workers not seeking otherwise better jobs out of the fear of losing their accumulated job tenure. The labor market becomes more rigid, so that it cannot adapt well to during the business cycle, since it becomes more difficult for the firms to adjust their payroll when the state of the economy require some flexibility. While some severance payment systems were established in part to provide mandatory savings for retirement, this function is progressively loosing its importance because public and private social security systems are being developed. There is also a risk for workers in that it remains uncertain whether the worker will indeed receive severance payments. The reason leading to a worker's dismissal may also lead to a denial of benefits. Alternatively, if the firm is in a poor economic situation, the worker may have to accept a severance payment of lower value than what is stipulated in the law. The firm's liquidity problem become critical under weak business conditions, which may lead to the dismissal of workers with less tenure even though these workers may be more productive. The workers who have not completed the required number of years in the firm when they are laid off are not eligible for severance payment, so that the system does not provide protection for all.

While Chile's unemployment assistance system has low coverage and low benefits, the problem with severance payments is rather that the coverage and the benefits tend to differ a lot between workers.

- *Uneven coverage:* Mizala et al. (1993) estimated that among formal sector workers, 68 percent of those who might encounter an unemployment spell should be well covered by the severance payments system, in that they would receive an allowance equal to at least three months of pay. The workers who are not well covered tend to be young workers (27 percent are between 15 and 24 year of age, and 41 percent are between 25 and 34 year of age; these two groups represent respectively 16 percent and 35 percent of all formal workers). These groups are not entitled to large severance payments because they lack employment tenure since they are at the beginning their professional life.

- *Uneven benefits:* The disparities which are observed in terms of coverage are also observed in terms of benefits since the benefits are proportional to the tenure of the employee. As shown in table on average a worker that is laid off would have 6.2 months of severance payments. Since the average length of unemployment is about 3 months, the average worker benefits from a small rent and does not necessarily face hardship during an unemployment spell. However, in the case of young workers, the average number of years worked does not provide for a generous severance package. Some of the workers above 35 year of age also lack good severance packages because they have recently changed job or because they found their job after an unemployment spell. Since female workers are over-represented in this last group, they would tend to gain from a reform of the system.

Table 6 : Tenure at the Current Job by Gender and Age Group

Gender	15-24	25-34	35-44	45-54	55-64	65+	Total
Males	1.7	3.8	7.5	11.7	14.5	15.5	6.7
Females	1.7	3.7	5.8	11.1	13.9	9.1	5.0
Total	1.7	3.8	7.0	11.6	14.4	14.9	6.2

Source: Mizala et al. (1993).

The Rationale for Unemployment Insurance Savings Account

Problems with Private Insurance Markets. It was mentioned earlier that a number of mechanisms can be used to reduce the moral hazard problems faced by traditional unemployment insurance systems. If policy makers want to go beyond these mechanisms for reducing moral hazard, a more radical idea is to promote a shift to private insurance markets for the consumption smoothing of unemployed workers. The suggestion is that workers could pay insurance premiums in order to be entitled to unemployment benefits when unemployed. The workers would select their insurer privately, and the insurance market would ensure an appropriate costing of the insurance premiums. There are, however, three problems with this solution: the potential for adverse selection on the part of the worker and the insurer, the inability for private insurers to diversify risk, and the inability for the government to redistribute income with equity objectives in mind.

- *Adverse selection:* There are two types of adverse selection, on the part of workers and insurers.
- *Workers:* First, there is a possibility that only those workers who are likely to loose their job will want to insure. This implies that the premium that these workers will have to pay will be larger than what they would have had to contribute under a mandatory contribution system, so that the mechanisms of solidarity between workers will be reduced. This is why in most state-sponsored insurance programs, the participation of all workers is required. The compulsory participation prevents the opting out of the insurance coverage by the individuals who believe themselves to be low risk. A comparable but not identical outcome could be achieved with private sector provision by requiring that all labor market participants to carry at least some minimum level of insurance.
- *Insurers:* Second, on the part of the insurer, there is an incentive to insure only those workers who are less likely to be unemployed. This may lead to "cream-skimming" and to the rejection from the insurance system of those workers who need insurance the most. Also, given the fact that there is asymmetric information between the worker and the insurer (the worker knows better what his/her probability of becoming unemployed is), some workers who would qualify for participating in the system could be excluded, while others who would

not qualify if the insurer had perfect information could be able to participate. This could lead to a sub-optimal pricing structure for the premiums, and the premiums could be higher because the insurer would face a higher risk due to the imperfect information at its disposal. Finally, in order to reduce their risk exposure on an individual basis, private companies may be unwilling to offer insurance against the risk of unemployment except under very narrowly specified circumstances.

* *Systematic risk:* Due to the business cycle, the risk of unemployment is positively correlated across members of the labor force so that pooling many workers within the same insurance system need not lead to a substantial reduction in the aggregate risk faced by the insurer. To say this differently, unemployment is a largely non-diversifiable risk, except over time. This may lead to a failure of private insurance markets to provide adequate coverage and benefits during recessions. Although fully developed private insurance markets may not exist for the above reasons, it would be a mistake to assume that there are no private market responses at all to respond to the demand for insurance among workers. Firms may be able to insure their employees to some degree, thereby shifting the risk from the labor market to the capital market, where it can be handled more readily via portfolio diversification by shareholders. This is the central insight of implicit contract theory, whereby in exchange for offering relatively stable employment, the firm can afford to pay a lower wage.[116] Yet even successful firms may not be able to fully protect their workers during a recession. Because of their softer budget constraint (and the pressure of public opinion to provide public support when needed), publicly funded insurance mechanisms may be more apt to diversify the risks across time than both insurance companies and employers.

The upshot of the above discussion is that public interventions in markets characterized by moral hazard, adverse selection, and systematic risk can have positive impacts on social welfare. Whether a specific intervention will be beneficial depends on the intervention's design (Green and Riddell, 1993). That is, when policy makers consider the design of social insurance programs, they must weight various factors. For example, while increasing program generosity may lead to increased distortions in behavior, it may also lead to better consumption smoothing, and the gains from consumption smoothing must be weighted carefully against the potential for behavioral distortions in assessing the optimal benefits.

Design of Unemployment Insurance Savings Accounts. In the specific case of a system of unemployment insurance saving accounts (UISA), workers have individualized accounts to which they contribute in periods of employment and from which they draw funds when they are unemployed. Interest payments are credited or debited to their account, depending on its balance (see, for example, the simulations done by Feldstein and Altman, 1998, for the US economy.) A typical design for UISAs should specify the rate of contribution to the system, the limits and rules for drawing funds, the limits on total liability, and the interest rate applied to balances. The main advantage of UISA's is that by internalizing the cost of remaining unemployed (or becoming unemployed), employment incentives are improved. This is particularly true for workers with lower unemployment risk, who are more likely to retire with positive balances in

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[116] If employees are more risk averse that the owners of firms, which is likely given that human capital risks are difficult to diversify, both the employee and the firm can benefit from such an arrangement. In effect, the employment contract, whether explicit or implicit, involves two transactions: a transaction for the labor services provided by the employee, and an employment insurance provided by the employer. In general, the employer will be better able to deal with the adverse selection and moral hazard problems than a private insurance company.

their UISAs if they manage to avoid unemployment spells. The more likely it is that the system will result in positive final balances, the better the incentives are for keeping jobs and searching for employment opportunities while unemployed. This is because under the UISA system, the incentive to find a new job and to shorten the unemployment spell as much as possible is the fact that any withdrawal decreases the individual's net worth (assets and income), something which does not happen with the more traditional unemployment insurance schemes.[117]

Feldstein and Altman (1998) and Orszag and Snower (1997) have discussed whether UISAs would be appropriate for the US economy. In the proposal made by Feldstein and Altman (1998), workers would contribute roughly 4 percent of their wages to their UISA (there could be some variation in the contribution rate depending on the wage level of the individual), and they would be allowed to withdraw funds under rules yielding benefits similar to those provided by the system of unemployment insurance currently in place (i.e., the wage replacement ratio would be at about 50 percent, with a time limit of six months). Market-based interest rates would be applied to the balance in the accounts, and negative balances would be allowed (i.e., if the account is exhausted, the government lends money to the account). Those workers reaching retirement with a negative balances would be forgiven. Positive UISA balances could be converted into retirement income or bequeathed if the individual dies before retirement age.

The key empirical question is whether UISA accounts based on a moderate savings rate can finance a significant share of unemployment payments, or whether the concentration of unemployment among a relatively small number of individuals would force these workers to rely on government benefits with the same adverse effects that characterize the more traditional unemployment insurance. Feldstein and Altman (1998) used the Panel Study of Income Dynamics (PSID) surveys to simulate a UISA system over a 25 year historic period (1967-1992). Their analysis indicates that even among the individuals who experience unemployment, most would have positive account balances at the end of their unemployment spell. Although about half of the benefit dollars would go to individuals whose account balance is negative at the end of their working life, less than one third of the benefits would go to individuals who also have negative account balances when unemployed. The cost to taxpayers of forgiving the negative balances was estimated to be less than half the cost of the current system. Since the simulations took as given the behavior of workers under the current system, the magnitude of the negative balances may be overestimated, so that the savings could be even larger for tax payers.

Unemployment Insurance Savings Accounts in Chile

The Law Adopted by Congress in April 2001. This section reviews the characteristics of the "PROYECTO DE LEY QUE ESTABLECE UN SEGURO DE DESEMPLEO - LEY NUM. 19.728", (hereafter denoted as the law), an unemployed-worker-job-security-program which is similar to an unemployment insurance savings account. The law was approved by the Chilean Congress in April 2001.

- *Funding:* The UISAs are financed with contributions from workers (0.6 percent of the gross wage) and employers (2.4 percent of the gross wage). This is specified in Article 5. For collection and tax purposes, the contributions are treated as social security payments, and

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[117] At the extreme, when the rate of contribution to the individual account nears zero, we have the traditional unemployment insurance system. As the rate of contribution to the individual account increases, and the likelihood of negative balances due to unemployment falls, the system becomes closer to self-insurance for retirement.

they are applied to the gross wage up to a maximum of 90 UF[118] (about CH$1,400,000 or US$2,500) per month. Workers with more than one job pay the tax for each wage they earn and the various employers pay as well for each contract that a worker may have with them. The maximum period for making payments into the system is 11 years. Out of the 2.4 percent of the gross wage contributed by the employer, 1.6 percent goes to the UISA and 0.8 percent is pooled into a unemployment assistance fund which intervenes when the worker fulfills various requirements (this is explained below). The unemployment assistance fund is complemented by government transfer of about US$ 10.5 million per year (at the current exchange rate of CP$600/US$). The government transfer is funded from general tax revenues.

- *Coverage:* To be eligible for benefits when unemployed, the workers must have lost their job due to one of the reasons specified in the law, with reference to the labor code.[119] Essentially, the worker may not have been at fault in order to receive the benefits. Each worker cannot receive benefits more than twice within a period of 5 years. Workers must also have made a minimum of twelve monthly contributions to the system in order to be eligible for benefits (these contributions do not need to have been made continuously).

- *Withdrawals from the UISA when unemployed:* When unemployed, the workers may withdraw funds from their UISA. If the worker loses his job due to one of the reasons specified in the law, he/she is entitled to a number of withdrawals from his/her account corresponding to the number of years of contribution, with a maximum of five withdrawals. For workers entitled to more that one withdrawal, the amount of the first withdrawal is obtained by dividing the balance available in the UISA by a factor that varies depending on the number of withdrawals the worker is entitled to (the factor is equal to 1.9 for two withdrawals, 2.7 for three, 3.4 for four and 4.0 for five). The amounts for the remaining withdrawals are computed in proportion to the amount of the first withdrawal (90% for the second withdrawal, 80% for the third, and 70% for the fourth). The fifth and last withdrawal corresponds to whatever is left in the account. Depending on the reason for the lay-off, the worker may or may not receive severance pay, and this will affect the withdrawals allowed from the account. Once the worker gets a new job, he/she is entitled to one last withdrawal, but he/she may also decide to keep the corresponding amount in his/her account.[120]

- *Other withdrawals, retirement and death:* If the account holder dies, the balance of the account passes to whomever the worker has designated for this purpose under his contract with the entity managing his/her account. If no one has been designated by the worker, the balance is allocated according to Article 60, N° 2 of the Labor Code. If the holder retires, he can freely dispose of the funds.

- *Withdrawals from the public fund:.* The employer and Government contributions, as specified in Article 5, are pooled in a fund which can be used by those 1) who have made at least 12 monthly contributions to their account, 2) who have been laid off due to one of the reasons mentioned in Article 159, N° 6 or Article 161 of the Labor Code, and 3) whose

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[118] *Unidad de Fomento,* a standard measure of real living costs.

[119] Workers must have lost their job due to one of the reasons mentioned in the Labor Code in Articles 159, 160, 161 171 (N°1), with the exception of the reasons specified in Article 159, N°4 and N°5.

[120] Under a previous version of the law (known as PROTRAC), a potentially serious problem was the fact that if a worker changed job, he had the possibility of withdrawing the full balance of the funds from the UISA corresponding to his previous job. Of course, the worker could in principle keep the fund in his UISA, but he has no incentive to do so. This is not feasible anymore under the new law, since the worker may only retrieve an amount corresponding to one more month of benefits once he/she finds a new job.

account balance is not sufficient to obtain a predetermined monthly payment stipulated by the law. The predetermined monthly payment is a function the wage earned during the last 12 months of work and is described in Article 25. There are ceilings and floors to the assistance provided, so that the better off do not receive large sums of the money, and those who had low wages do not fall below a subsistence level.

- *Administration:* The collection and payment business is awarded by a public auction to one entity that can be national or international, but must be incorporated in Chile. This entity will run both the unemployment individual accounts and the public assistance fund. The entity is supervised by the Superintendence of Pension Funds (SAFP). The contract is awarded taking into account the proposed fee structure, adjustments, and technical conditions.

Limits of the New System. The law has a number of interesting features in terms of providing adequate incentives for workers. At the same time, it has weaknesses as well, which may not be easy to avoid.

- *Forced savings and lack of flexibility to account for the heterogeneity among workers:* Some workers have stronger short term liquidity constraints and/or higher inter-temporal discount rates than other workers. In a private insurance market, the workers would be free to save as they wish in order to smooth their consumption over time. Those workers who would not save would do so either because: they do not value the implicit insurance that the savings provide, or because they face liquidity constraints and high discount rates. When the same savings rate is imposed on all workers, the system is in theory (an in the absence of externalities) inferior to a private unemployment insurance scheme whereby all workers optimize their consumption pattern over time. However, one of the main reasons to justify a compulsory saving scheme is to avoid externalities such as the fact that workers without savings impose a tax on their relatives and society as a whole. Still, poor workers tend to typically have larger liquidity constraints and higher inter-temporal discount rates, so that there remains a question as to whether the same savings pattern for all is optimal or not.

- *Long-tern unemployment for comparatively poorer workers:* The compulsory saving and unemployment assistance system specified by *the* law does not guarantee the financing of a specific unemployment spell. While it is implicitly recognized that it could be necessary to finance unemployment spells of 5 months or more, the only way to do this is to combine large balances in the UISAs and possibly severance payments. Yet the workers who tend to be poorer and who need assistance the most also tend to have shorter job tenures, so that they will not be well protected under the revised system. Comparatively poorer worker with longer unemployment spells may also lack human capital, in which case the balances accumulated in their UISAs will be even lower simply because their expected wage will also be lower. There may be a need to reinforce the unemployment assistance benefits for these workers, but this may not be feasible if they lack a voice in the debate.[121]

- *Bargaining power and severance payments:* It is not clear what the effect of UISAs could be on the workers' bargaining power. On one hand, the workers would have available funds to protect them from unemployment, and this could improve their bargaining power. On the other hand, if the contribution of firms to the UISA was funded through a reduction in severance payments, the marginal cost of firing workers for the firms would be reduced.

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[121] Orszag and Snower (1997) explore the possibility by the government to implement balanced-budget redistribution among the unemployment saving accounts by taxing the contributions of the rich and subsidizing those of the poor.

- *Political economy:* Because the unemployment insurance savings account would be compulsory, the cost of the new system(at 2 to 3 percent of GDP) would appear to be much higher than the cost of the current unemployment assistance system (at 0.01 percent of GDP). Although the balances in the UISAs belong to the workers, the system may be perceived as an additional tax, and this may generate opposition. At the administrative level, the logistics involved in a UISA system would be more complex, and therefore more costly, than those involved in the current assistance system.

Distributional Impact. In this last sub-section, our objective is to assess the distributional impact of shifting from Chile's current system of unemployment assistance to a system of UISAs. To do so, we use the method described in Box 3. For each program, the method will yield two key parameters: the GIE (Gini income elasticity) for the benefits of the program, and the GIE for the taxes through which the program is funded. The interpretation of the GIE in terms of the redistributive impact of a policy differs for benefits and taxes.

- *Interpretation of a GIE for a program benefit:* If the GIE of a program (unemployment assistance or UISAs) is equal to one, a marginal increase in the benefits will not affect the Gini coefficient in after-tax after-benefit per capita income, and thereby the effect on inequality can be considered as neutral (no change). If the GIE is less (greater) than one, then an increase in program benefits will decrease (increase) the Gini of income, and thereby increase (decrease) inequality. The smaller the GIE, the larger the redistributive impact of the program and the gains in inequality.

- *Interpretation of a GIE for a tax:* The rules for taxes are reversed as compared to the rules for programs. If the GIE is less (greater) than one, then an increase in tax revenues will increase (decrease) the Gini of income, and thereby decrease (increase) inequality. The larger the GIE, the larger the redistributive impact of the tax and the gains in inequality. If the GIE of a tax is equal to one, a marginal increase in the tax will not affect the Gini coefficient in after-tax after-benefit per capita income, and thereby the effect on inequality can be considered as neutral (no change).

- *Combining the two GIEs:* Since the GIE is estimated for a dollar spent on the program, or a dollar raised in taxes, we can compare programs and taxes which are of different scale in terms of outlays or revenues. This means that we can compare the GIEs of unemployment assistance and of UISAs, as well as the GIEs of the taxes raised to fund the two programs, in order to find the overall impact on social welfare of shifting at the margin from one type of protection of the unemployed to the other.

Two parameters must be estimated to assess the redistributive impact of the current system: the GIE for unemployment assistance, and the GIE for the general tax revenues used to fund the benefits.

- *GIE for the current system of unemployment assistance:* This elasticity was estimated using data from the 1998 nationally representative CASEN survey. It is equal to –0.84, which is highly redistributive. This is not surprising since the take-up of the program is higher among those who have few other resources to cope with the loss of earnings generated by unemployment.

- *GIE for the general tax revenues used to fund the current system:* Using information from Engel et al. (1998), we estimated that the GIE for general tax revenues was 0.90 in 1996 (the current tax system is regressive since the elasticity is smaller than one). Although the income tax is progressive (i.e., the rich pay a higher share of their income in tax, with a GIE of 1.73),

the VAT is regressive, with an elasticity of 0.79, and other taxes are also regressive, with a GIE of 0.90. The weighted combination of the elasticities for the three types of taxes yields an overall GIE for tax revenues of 0.90.

• _Combining both estimates:_ As explained in Box 3, all what one has to do to assess the impact of the current system per dollar spent on benefits (and raised in taxes) is to sum the impacts from the benefits and the taxes, which each impact being to the relevant elasticity minus one. For the current system, this yields a marginal impact on inequality proportional to (-0.84-1)-(0.90-1) = -1.74.

Box 3: Analyzing the Impact of the Reform of Unemployment Benefits on Inequality

To analyze the distributional impact of the transition from unemployment assistance to unemployment insurance savings accounts in Chile, we use a source decomposition of the Gini index of inequality proposed by Lerman and Yitzhaki (1985, 1994). Denote total pre-tax per capita income by y, the cumulative distribution function for total per capita income by F(y), and the mean total per capita income across all households by μ_y. The Gini index of inequality can be decomposed as follows:

$$G_y = 2\ cov\ [y,\ F(y)]/\mu_y\ =\ \Sigma_i\ S_i R_i G_i$$

where G_y is the Gini index for total income, G_i is the Gini index for income y_i from source i, $S_i = \mu_i/\mu_y$ is the share of total income obtained from source i, and R_i is the Gini correlation between income from source i and total income. The Gini correlation is defined as $R_i = cov\ [y_i,\ F(y)]\ /\ cov[(y_i,\ F(y_i)]$, where $F(y_i)$ is the cumulative distribution function of per capita income from source i. The Gini correlation R_i can take values between -1 and 1. Income from sources such as income from capital which tend to be strongly and positively correlated with total income will have large positive Gini correlations. Income from sources such as unemployment benefits tend to have smaller, and possibly negative Gini correlations. The overall (absolute) contribution of a source of income i to the inequality in total per capita income is thus $S_i R_i G_i$. The above source decomposition provides a simple way to assess the impact on the inequality in total income of a marginal percentage change equal for all households in the income from a particular source. As proven by Stark et al. (1986), the impact of increasing for all households the income from source i in such a way that y_i is multiplied by $(1 + e_i)$ where e_i tends to zero, is:

$$\frac{\partial G_y}{\partial e_i} = S_i(R_i G_i - G_y)$$

This equation can be rewritten to show that the percentage change in inequality due to a marginal percentage change in the income from source i is equal to that source's contribution to the Gini minus its contribution to total income. In other words, at the marginal level, what matters for evaluating the redistributive impact of income sources is not their Gini, but rather the product $R_i G_i$ which is called the pseudo Gini. Alternatively, denoting by $\eta_i = R_i G_i/G_y$ the so-called Gini elasticity of income for source i, the marginal impact of a percentage change in income from source i identical for all households on the Gini for total income in percentage terms can be expressed as:

$$\frac{\partial G_y / \partial e_i}{G_y} = \frac{S_i R_i G_i}{G_y} - S_i = S_i(\eta_i - 1)$$

Thus a percentage increase in the income from a source with a Gini elasticity η_i smaller (larger) than one will decrease (increase) the inequality in per capita income. The lower the Gini elasticity, the larger the redistributive impact. When conducting policy simulations for the marginal impact on inequality of changes in various income sources, it is easiest to consider the impact on the Gini per dollar or peso spent (or taxed), because that marginal impact is directly proportional to (η_i-1). All what one has to do is to sum the impacts from the various sources one by one, with each impact being equal to the relevant elasticity minus one. For example, in the case study analyzed in the main text, we have two elasticities for the current system: (a) the GIE for the current system of unemployment assistance is –0.84; and (b) the GIE for the general tax revenues used to fund the current system: 0.90 As a result, the marginal impact on inequality of the current system is (-0.84-1)-(0.90-1)=-1.74. Under the new system, the GIE for the UISA-based assistance is –0.46 and the GIE for tax revenues on formal sector wages is 1.00, so that the total impact at the margin is –1.46. Under the assumptions made for the estimates, the new system would be less redistributive than the current system, but it would still be highly redistributive.

There are also two parameters which must be estimated empirically to assess the redistributive impact of the new system: the GIE for the publicly funded unemployment allowance received by workers once they have depleted or exhausted their UISA, and the GIE for the tax on formal sector wages used to fund not only the UISA, but also the unemployment assistance benefits once the UISA has been used.

- *GIE for the UISA-based system of unemployment assistance:* To estimate this parameter adequately, we would need to forecast the probability of being unemployed for formal sector workers, their expected balance in the USIA when becoming unemployed, and their expected public unemployment assistance once the unemployed workers are eligible. This is a difficult task. As a proxy, we can use a GIE representing the position in the income distribution of those unemployed workers whom belonged to the formal sector before becoming unemployed. While the previous sector of employment of the unemployed is not given in the 1998 CASEN, it is part of the information provided in the 1997 "Encuesta Nacional de Empleo". Using this survey, we found a GIE of –0.46. Note that the simplification used to compute the GIE assumes that all the workers who are unemployed and who belonged to the formal sector have the same expected benefit from unemployment assistance after they deplete or exhaust the funds available in their UISA. While the unemployment assistance provided under the USIA system would still be redistributive (the elasticity is less than one), it would be less redistributive than the current system per dollar spent, essentially because in the new system, we implicitly assume that the take-up would not be limited to the poorest.

- *GIE for the current system of unemployment assistance:* Since the taxes that would fund the UISA system are proportional to the wages of formal sector workers, the elasticity for the taxes is equal to the elasticity for the source of income represented by these wages. It turns out that the elasticity is equal to one, so that on the taxation side, the taxes for the USIA have no impact on inequality.

- *Combining both estimates:* Given that under the new system, the GIE for the UISA-based assistance would be –0.46 and the GIE for tax revenues on formal sector wages would be 1.00, the total impact at the margin is proportional to –1.46. Under the simple assumptions made for the estimates, the new system would be less redistributive than the current system, but it would still be highly redistributive.

Conclusion

Unemployment is one of the key determinants of poverty in Chile. When a household the head or its spouse is unemployed, the per capita income of the household is reduced by up to 20 percent (up to 40 percent when both the head and the spouse are unemployed). The policy makers involved in the design of unemployment protection systems must deal with a number of trade-offs. At one extreme, when no unemployment assistance or insurance is provided, the unemployed workers must rely on self-insurance through precautionary savings or informal lending channels, such as loans or gifts from relative or friends, in order to smooth their consumption. At the other extreme, one can fund generous government-sponsored unemployment assistance systems, where a worker's contribution is independent of the benefits received. While the proposals for reform discussed in the literature fall somewhere in between, depending on the specific parameters chosen, moving from a traditional unemployment assistance and severance payments system to UISAs does change substantially the incentives faced by workers.

In Chile, under the current system, the workers receive (rather small) unemployment benefits upon losing their jobs, and potentially larger severance payments. They lose the unemployment benefits when they find a new job, but they keep the severance payments. The unemployment benefits are financed through general tax revenues, while the severance payments are financed by firms. The main problem with the unemployment assistance system is less related to the potential moral hazard that the system might create than to the low value of the unemployment benefits and the low coverage of the program among the unemployed. The main problem with the severance payments system is the fact that the coverage and benefits are uneven, to the detriment of poorer and younger worker as well as women.

Under the UISA system, the workers would receive no "reward" upon losing their jobs, and they would suffer no "penalty" for finding jobs quickly. Each employed worker would make a fixed mandatory minimum contribution to his/her UISA each month, and additional voluntary contributions above the mandatory minimum levels would be permitted. Upon becoming unemployed, an individual worker would be entitled to withdraw a fixed maximum amount per month from his or her UISA (smaller withdrawals would also be permitted). When the individual's UISA balance falls to zero, or is seriously depleted, he/she would be entitled to unemployment assistance. The unemployment assistance would be financed through a tax levied on all wage earners. When workers would retire with a positive balance in their UISA, they would be able to use the balances to top their pensions. Overall, the workers themselves would play a much larger role in the financing their own support during periods of unemployment (Guasch, 2000).

The main advantage of UISAs is that they tend to set the incentives right, without creating distortions in the behavior of employers and firms. That is, the funds taken by an unemployed individual from his/her UISA directly reduces the individual's personal wealth by an equal amount, so that individuals fully internalize the cost of unemployment compensation. UISA systems are not without risks, and special interventions are likely to be needed to protect those workers who tend to be younger, poorer, and less well educated. Although the redistributive impact of a UISA-based system would probably be smaller than the redistributive impact of Chile's current unemployment assistance system, the complementary unemployment assistance component of system would still be highly redistributive.

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