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UNEMPLOYMENT INSURANCE SAVINGS ACCOUNTS: AN OVERVIEW

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ABSTRACT: Unemployment insurance and job protection regulations provide assistance to those who face unemployment. Unemployment insurance seems more desirable, since it does not harm flexibility in the labour markets, but it entails a moral hazard risk. Making the unemployment insurance voluntary and private would create more problems related mostly to the nature of the unemployment risk and to asymmetric information. Instead, it would sound more desirable to improve the design of unemployment insurance in a way that it would protect the individuals without harming flexibility and incentives for job seekers and job owners. Against this background, Unemployment Insurance Savings Accounts (UISA) have been proposed by a number of scholars. This paper provides a literature review of the theoretical properties of the UISA and analyses the current experience of Chile. It then investigates the similarities and differences between this UISA system and the severance payment savings account reforms recently implemented in Austria and Colombia. In light of both the theoretical and the practical perspectives, the UISA seem a valuable option, since they provide insurance without excessively harming the incentives of the individuals, offering security without impeding the flexibility in the labour markets

KEYWORDS: unemployment insurance, savings accounts, UISA, Chile, severance pay reform, funded scheme.

JEL Code: H53, H55, I38, J65, J68.

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TIIVISTELMÄ: Tässä kirjallisuuskatsauksessa kuvataan työttömyysturvan järjestämistä henkilökohtaisten tilien avulla. Työttömyystilien perusajatuksena on pitää kirjaa elinkaaren aikana maksetuista maksuista ja työttömyyskorvauksista. Korvaukset veloitetaan omalta tililtä ja jos tilin saldo ei riitä, niin valtio lainaa tarvittavan määrän. Jos tilin saldo on positiivinen eläkkeelle jäätäessä, työntekijä saa summan itselleen. Negatiivinen saldo annetaan anteeksi. Tili parantaa kannusteita kahdella tavalla. Etuuksien nostaminen omalta tililtä johtaa siihen, että työntekijä sisäistää työttömyyskorvausten kustannukset. Lisäksi maksut omalle tilille ovat vähemmän veroluonteiset kuin nykyisessä työttömyysvakuutuksessa. Työttömyystili on nykyisin käytössä Chilessä ja sitä muistuttava erorahatili muun muassa Itävallassa ja monissa Latinalaisen Amerikan maissa.

ASIASANAT: Työttömyysvakuutus, eroraha, säästötili, UISA, Chile

JEL-koodit: H53, H55, I38, J65, J68

1. Introduction

Unemployment insurance is the mechanism that allows the society to protect its risk adverse members from employment shocks. Generally, because the state is not able to distinguish among those hit by the shock and those who are pretending to be hit by the shock, the optimal unemployment insurance is less generous than the one that would exist under perfect information. Moreover, evidence shows that unemployment insurance creates adverse incentives which reduce job search efforts and then increase the overall unemployment duration. The economic literature is unanimous in recognising this impact of moral hazard and the few quantitative studies[1] agree that moral hazard is extremely relevant.

However, unemployment insurance brings some potential welfare gains. In the first place, it allows a good degree of consumption smoothing. Secondly, it allows workers to be more selective in job search, so that there are better job matches. Finally, it allows redistribution, under interpersonal and intrapersonal perspective.

For the reasons above, it would be useful to find an alternative design of unemployment insurance that would guarantee insurance without harming the incentives of the workers, and that would provide a certain degree of security without harming the flexibility of the labour markets. This challenge gets to be the aim of the unemployment insurance savings accounts (UISA), according to which each worker has the duty of saving a fraction of her wage earnings in her own account and draw unemployment compensation from it. As a result, the costs of unemployment benefits would be internalized by each worker and the moral hazard issues pertaining to the traditional unemployment insurance frameworks would be avoided.

This paper provides a literature review on the topic of UISA under a theoretical point of view that follows the proposals made by several authors on the matter, as well as under a more practical one with the observation and evaluation of the experience of Chile, where this form of unemployment insurance has been recently implemented.

The structure of the paper is the following: the next section provides the main rationale behind the UISA by briefly analysing the problems entailed by the traditional unemployment insurance and the potential drawbacks of private and voluntary unemployment insurance. Section

1 Hansen and İmrohoğlu (1992), Zhang (1995), Wang and Williamson (1996).

three describes the UISA focusing on their main characteristics, advantages and concerns highlighted by the existing literature. Section four provides an operational description of the Chilean UISA and a discussion on the results achieved by it. Section five investigates the similarities and differences between the UISA and the current severance pay reforms recently implemented in Austria and Colombia that have led to a system of severance payment savings accounts. Finally, section six concludes.

2. About unemployment insurance

2.1. PROTECTING WORKERS: OPTIONS AND RISKS

To absorb the risk involved in employment separations there are mainly two traditional alternatives: job protection regulations and unemployment insurance. The former protects workers against the risk of dismissal, while the latter guarantees a certain level of income maintenance to those who lose their jobs. Unemployment protection rules entail costs for the employer, discouraging not only firing but also hiring, reducing the turnover in the labour market and the opening up for new entrants. The main example of this instrument is provided by severance payments[2]. Conversely, unemployment insurance offers security without impeding flexibility. For this reason, it can be considered as a superior solution relative to unemployment protection rules (Boeri et al. 2003).

Despite supporting flexibility, unemployment insurance entails a moral hazard[3] risk, that is to say, the unemployed do not take the full social costs of their unemployment into account when seeking jobs or when working. In this way, the unemployment benefit system depresses job search and thereby stimulates unemployment duration: a person may have the tendency to remain unemployed for a longer than efficient duration because she receives unemployment benefits. The individual could even decide to put less effort in job search, since the insurer (the government) is not able to distinguish whether she is unemployed because, despite assiduous search, no job has been offered to her or because, being insured, she is less assiduous in searching for or accepting a job.

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[2] A definition of severance payments is given in section 5, paragraph 1.

[3] Moral hazard: the party insured from the risk may behave differently from the way it would behave if it were fully exposed to the risk. It arises because an individual or institution does not bear the full consequences of its actions, and therefore has a tendency to act less carefully than it otherwise would, leaving another party to bear some responsibility for the consequences of those actions.

Besides issues related to job search, moral hazard drives the individuals towards putting less efforts in performing their job, since they know that if they are fired, the government would provide a help. These moral hazard issues are set in a context in which the dynamic world economy confronts many people with increasing social risks, but the ability of the welfare states to offer security is weakened, as globalization increases the mobility of tax bases and as the changing nature of human capital risks raises the costs of insuring these risks. The dilemma between insurance and incentives is more relevant then ever before (Bovenberg et al. 2007).

2.2. WHY NOT PRIVATE UNEMPLOYMENT INSURANCE?

"Why unemployment insurance is almost always publicly provided, in contrast to most other insurance contracts, remains an important, unresolved question. The answer will likely be relevant to the optimal design of unemployment insurance programs." Acemoglu and Shimer (2000, p. 1222)

If policy makers want to go beyond the concerns cited above and reduce moral hazard, they could promote the radical idea of shifting to a private insurance market for the consumption smoothing of the unemployed worker. An insurance company would then have to deal with different types of individuals that might bear a low or a high risk. Hence, the suggestion would be that the insurance company could charge different premiums according to the different degrees of risk and that the workers would select the insurer privately. However, this solution would entail the following major problems:

i) potential for adverse selection due to asymmetric information[4]*;*
ii) inability of private insurers to diversify the risk;
iii) inability for the government to redistribute income with equity objectives in mind.

i) Potential for adverse selection due to asymmetric information

A risk that the private insurer could encounter is the eventuality that only those who are likely to lose their job would insure, implying that the insurer would have to charge higher premiums than the ones that would be charged if all the individuals were insured. This may lead to a suboptimal pricing structure.

The other side of the coin is that the insurance has an incentive to insure only those workers who are less likely to become unemployed, excluding those who would mostly need to be secured.

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[4] In certain cases the worker better knows her probability of becoming unemployed.

It may also happen that some workers who would qualify for participating in the system would be excluded, while those who would not have the prerequisites might still manage to participate.

This provides a rationale on why in most state-insurance programs participation is compulsory. The compulsion helps to get rid of the adverse selection problem.

ii) Inability of the private insurer to diversify the risk

The unemployment risk is positively correlated among the members of the labour force and hence tends to occur in waves, embodying a strong element of common risk. For this reason, pooling many workers within the same insurance system does not lead to reductions in the aggregate risk faced by the insurer (Barr, 2001 and Fernandez and Wodon, 2001). Unemployment is a risk that can not be diversified, meaning that private insurance companies have difficulty with providing coverage during recessions.

iii) Inability for the government to redistribute income with equity objectives in mind

If the premiums are proportional to the unemployment risk of workers, then those who are lower paid and run a higher unemployment risk would systematically be disadvantaged.

Together with these there are other issues related to private unemployment insurance and concerning the protection of the workers. For instance, how would it be better to protect the workers against rising premiums? Or what happens if the insurance company goes bankrupt?

The result of the above discussion is that markets characterized by moral hazard, adverse selection and systematic risk can benefit from government intervention, that can bring positive impacts on social welfare.

Whether a specific intervention will be beneficial depends on its design, including a combination of benefits and incentives (Green and Riddell, 1993). For instance, while increasing program generosity may lead to increased distortions in behaviour, it may also lead to better consumption smoothing, and the gains from consumption smoothing must be weighted carefully against the potential for behavioural distortions in assessing the optimal benefits. For a private insurance it may be difficult to handle the problems of insuring unemployment risk and a public insurance will never be entirely efficient. Yet, a well designed scheme might be more competitive and less inefficient than private schemes.

3. Unemployment insurance savings accounts: features

3.1. RATIONALE

Against the background depicted above, where it is desirable not to harm the flexibility of the labour markets, where the current unemployment insurance bears a moral hazard risk and where the ability of the welfare state to provide assistance is weakened, it would be useful to find some pursuable ways out, that would get closer to the optimal unemployment insurance.

The optimal unemployment insurance, as suggested by Hopenhayn and Hatchondo (2002), is the lowest cost alternative that gives the worker the utility of full insurance[5] while providing incentives for employment in all periods of his working life. Hence, the highest insurance has to be compatible with giving incentives to the workers to always accept a job offer and keep their jobs. In this context, the incentives are more costly the higher are the value of leisure and the disutility of work.

In the public debate on welfare reform, there has been a wide discussion on individual accounts as a possible answer and practical proposals for unemployment insurance savings accounts have been made by several authors[6]. All the proposals describe the UISA as compulsory savings to provide security against the income loss of unemployment, with the aim of facilitating consumption smoothing without creating disincentives to work and without giving up redistribution.

The UISA have been introduced in Chile in 2002. Reforms of severance payments in Austria (2002), Colombia (1990) and other Latin American countries could represent further steps towards the implementation of such a system. In Chile, the introduction of the system was meant to provide the unemployed with a good insurance and to develop a social security scheme.

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5 The system that provides constant consumption to the workers, independent on their employment state.

6 Fölster (1996), Orszag and Snower (1997), Feldstein and Altman (1998), Sørensen (2001), Kock and Butter (2001), Vodopivec and Rajec (2001), Hopenhayn and Hatchondo (2002), Desbonnet (2004), Goerke (2007) Brown et al. (2007), Bovenberg et al. (2007), Bovenberg (2008).

3.2. OPERATION

3.2.1. Contributions

During employment, a percentage of the individual's wage is credited on her own unemployment account as mandatory savings. It substitutes the compulsory social security contributions that currently finance the unemployment benefits. Deducted from the payroll, the contributions to the individual accounts are calculated as a percentage of the gross wage income. Additionally, they need to be mandatory not only because of adverse selection risks, but also because of lack of self control and myopia of the individuals.

According to some scholars, it is possible to set an upper ceiling of savings, after which contributions are no longer mandatory or then are terminated. Some other authors do not consider the possibility of setting such a ceiling, so they probably assume mandatory contributions for the whole working life.

3.2.2. Benefits when unemployed

In case of job loss, the individual is entitled to withdraw benefits from her account according to specific rules set by the government, which concern the replacement rate or the maximum duration of the unemployment benefits. The existing characteristics of the unemployment benefit scheme, namely the eligibility criteria and the benefit amount and duration can remain unchanged, but at the same time variations in term of contributions and withdrawals are conceivable (Feldstein and Altman, 1998). The government would set maximum limits for withdrawals, but smaller ones could always be done. Besides the existing Chilean system, Vodopivec (2004) distinguishes two possible designs of the unemployment insurance savings accounts: pure UISA and UISA *cum* borrowing. In Chile, the unemployment insurance is constituted by individual accounts and by a common fund. Those with not enough funds on their account can withdraw from the common fund, but the subsidies received by both the account and the common fund are limited for a maximum duration of five months, after which the unemployed receive no financial assistance.

The pure UISA distinguished by Vodopivec implies that, for those with insufficient account balances, the government does not provide additional transfers or additional support as a mean of another income source. Instead, in the UISA *cum* borrowing it is planned that, if the account balance is insufficient to finance the unemployment spells during the working life, the worker can still receive unemployment benefits from the government. Whenever the taxpayer receives these benefit payments from the transfer program included in the scheme *cum* borrowing, a corresponding amount is debited to his saving account and a market rate of interest is added or subtracted from the balance each year (Sørensen, 2001). However, a debt ceiling can be established in order to give to everyone a realistic possibility of accumulating positive account balances: when this ceiling is reached, the benefits received from the social insurance are no longer debited from the individual account and they are financed with general tax revenues, with no consequence for the individual's account balance. The ceiling may be set according to a sliding scale for different ages, so that people in different life stages would have more possibilities of accumulating positive balances (Sørensen, 2001).

3.2.3. Additional retirement benefits

At retirement age, the positive account balances would be either converted to an annuity or given as a lump sum transfer for the individual who retires. If the owner of the account deceases, the accumulated surplus can be handed down to her heirs. Instead, if the account balance is negative, the government cancels the debt and the individual would receive the normal amount of retirement benefits. This suggests that, linked to the credit and debit balances, there might be the possibility of integrating the UISA with other types of welfare accounts.

3.3. INSURANCE WITHOUT GIVING UP THE INCENTIVES

3.3.1. What type of insurance?

The UISA *cum* borrowing, like the existing tax transfer system, provides two forms of social insurance: *lifetime income insurance* and *liquidity insurance* (Sørensen, 2001). First, the intervention of the government for individuals with negative balances ensures desired amount of redistribution by guaranteeing a minimum lifetime income. This implies that less lucky individuals would have their benefits financed by general tax revenues contributed by all taxpayers, just like in the traditional unemployment insurance schemes. Second, the UISA system allows the individual to collect social insurance benefits under eligibility rules that may be identical to those existing at present, regardless of her account balance. Therefore, the UISA offer the same liquidity insurance as the current social insurance system, even though an individual who has not negative or zero account balance must accept a reduction on her supplementary retirement pension whenever he draws a social transfer via her individual account.

In Chile, the system guarantees a certain degree of liquidity insurance for a limited amount of time, that cannot exceed six months. The pure UISA set up guarantees liquidity insurance within the limit of the account balance; in fact, once the balance reaches zero, the individual could not rely on the government income support.

3.3.2. No more space for moral hazard

This way of supplying unemployment insurance would considerably reduce the problem of moral hazard associated with the traditional unemployment benefit systems.

Brown et al. (2007) suggest that this result is achieved essentially thanks to an internalisation effect and to a tax reduction effect. Namely, under the unemployment accounts system, the workers with positive accounts have to finance their own unemployment spells via their accounts, and hence they completely internalize the cost of their own unemployment. This would provide an incentive to keep certain productivity standards when employed and not to precipitate firing for minor reasons. In addition, it would increase search effort when unemployed. The latter effect refers to the fact that lower taxes provide higher incentives for keeping a job and for seeking a job. According to the authors, a tax reduction not only raises the reward for keeping a job, but it also generates better incentives for job owners in terms of productivity. Indeed, a wage increase would bring to higher contributions to the account and hence to better benefits when retiring, besides the fact that they would internalize the cost of becoming unemployed. Since the reward for finding a job would increase, younger unemployed workers have more incentives to search harder for a job and, since hiring rates depend positively on search intensity, a reduction in unemployment duration is likely to be observed. Compared to traditional public insurance schemes, a UISA would induce workers to try to prevent unemployment and to strive for rapid outflow from unemployment.

In a pure UISA system, unemployment would become completely unattractive and moral hazard problems would be likely to disappear. However, a UISA *cum* borrowing seems a more realistic option. In this case, moral hazard is unlikely in the case of workers with positive account balances or with balance slightly in the red and have hence the possibility to bring it back to positive digits. In case of individuals with notably negative account balances, a moral hazard problem could still arise since they anyway have to rely on the government help because they might not see any possibility of turning their accounts positive. The same applies if individuals are myopic. In fact, one of the favourable incentive effects of the UISA is based upon the presumption that an individual recognizes and responds to the future cost of reduced pension benefits, but if the individuals are myopic, they may not respond fully. In particular, especially for the young unemployed workers, the repayment of borrowing or reduced pension benefits may be too remote to affect their search incentives. For such individuals, search can only be affected by differences in income experienced in the short run. That is, only limitations on the total benefit induce search (Stiglitz and Yun, 2005).

In Chile, the system rules out moral hazard by planning a small disposable income for a limited duration of five months. Since the access to the common fund is possible just when the account balance is exhausted and the duration of the benefits is limited, moral hazard is likely to fade away.

3.4. REDISTRIBUTION

Redistribution from rich to poor and social insurance against income losses are basic functions of the welfare state. However, Fölster (1996) argues that in modern welfare states a large part of the taxes levied to finance social transfers merely redistributes resources from one stage in an individual's life cycle to another.

Several studies[7] assess that a considerable part of the social security does not redistribute life-time income from the life-time rich to the life-time poor but is essentially income that the tax-payer transfers to himself over his own life course. In the same way, not all the unemployment benefits and taxes under the traditional unemployment system are in reality interpersonal redistribution. On the contrary, most of the people who are unemployed at one point in time are employed at other times[8], and thus part of the taxes they pay when they are employed serve to pay the benefits when they are unemployed: they are in effect paying themselves. This is intrapersonal redistribution in the form of inter-temporal income smoothing, rather than interpersonal redistribution. These intrapersonal redistributions are handled inefficiently under the traditional unemployment benefit system, since both taxes and the benefits create

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[7] Hussénius and Selen (1994) estimated that in Sweden in the early 1990, for the average citizen, only about 24 percent of the taxes levied to finance social insurance accomplished interpersonal redistribution. Their estimations have been recently updated by Pettersson and Pettersson (2003): using a more extended concept of income, they found that only 18 percent of the taxes levied to finance social insurance transfers and social services in Sweden can be categorized as interpersonal redistribution. Similar estimations made by Sørensen et al. (2007) show that the degree of interpersonal redistribution in Denmark amounts to 26 percent across the tax payers. Falkingham and Harding (1996) found a degree of interpersonal redistribution of almost 30 percent in Great Britain.

[8] For most individuals, a typical spell of unemployment is less than six months (Stiglitz and Yun, 2004).

externalities that encourage unemployment duration. The current taxes and transfer system has distortive effects on labour supply, and transfer programs often create moral hazard, as taxpayers have no incentives to reduce their reliance on transfers.

A pure UISA would just allow intrapersonal redistribution and would leave little space for the interpersonal one, unless redistribution is involved across people's accounts along the lines of a "conditional negative income tax", as proposed by Orszag and Snower (1997). Individuals would be taxed according to the contributions they deposit, since the contributions themselves depend on the income. Individuals with low contributions, instead of paying taxes, receive government transfers financed with the taxes charged to richer individuals.

In the Chilean system, a certain percentage of the payroll contribution is devoted to a common fund, from which the unlucky individuals can withdraw.

In the UISA *cum* borrowing, the government provides assistance for those who did not manage to accumulate enough on their accounts- the unlucky. In this case, the government could provide them with the same transfers that it gives nowadays.

The UISA system redistributes income more efficiently (Brown et al. 2007). Since intrapersonal redistributions are conducted through individual accounts rather than through taxes, the costs and benefits of these redistributions are internalized by the account holder, whereas under the traditional unemployment insurance system, an employed person whose taxes pay for her subsequent unemployment benefits do not internalize the costs and benefits. These taxes discourage work effort and these unemployment benefits discourage job search under traditional unemployment insurance whereas the corresponding intrapersonal redistributions under the unemployment accounts do not. Hence, the UISA generates less unemployment and thus there is less need for interpersonal redistribution.

3.5. TAX CONTENT OF THE CONTRIBUTIONS

Consumption smoothing can be accomplished not only thought the welfare state, but also through saving schemes that link taxes and benefits at the individual level, thus avoiding disincentives to work and constituting a limitation of labour market distortions (Orszag and Snower, 1997).

The current social insurance contributions represent a tax for all the employed, while within the UISA part of the individual taxpayer's current tax bill is converted into mandatory contributions that are essentially money transferred to the taxpayer himself. In other words, such a reform implies a cut in taxes. Thus, since the mandatory UISA contributions do not have the character of a tax, marginal tax rates will tend to decrease by the amount of tax replaced by the individual accounts contributions.

As long as an individual can expect to accumulate even the slightest surplus on her individual account, every additional euro of contribution to her account will be repaid to her with interest added. Yet, note that, in the *cum* borrowing scheme, if the account balance is significantly negative, the employee might still perceive the contributions as taxes, since she might assume that she would not be able to repay her debt before retirement and hence to turn positive the balance of her account.

Because the contributions no longer represent taxes, the introduction of the individual accounts improves incentives for high income earners and at the same time it protects the consumption of the low income earners via the lifetime income guarantee (for the *cum* borrowing). Moreover, with the introduction of personal accounts, workers themselves monitor such payments having a higher sense of ownership and personal responsibility. Under the traditional unemployment insurance system, employers in developing and transition countries may sometimes fail to pay program contributions. By introducing personal accounts, workers themselves monitor such payments. At the same time, the UISA system would enhance transparency regarding lifetime redistribution. In the context of a developing country, a stronger sense of ownership might create oppositions if the government decides to reduce the benefits, hence mitigating the political risk.

3.6. WHO PAYS?

To analyse the effect of a tax on the distribution of the economic welfare, the notion of tax incidence is widely used among the economists. This theory refers particularly to the ultimate payer of a tax; for instance, suppose that social security payroll taxes are paid half by the employee and half by the employer. If the employer passes the tax in the form of lower wages, then the tax incidence falls on the employee that ends up bearing almost the entire tax burden. Technically, the tax incidence depends on the price elasticity of demand and on the price elasticity of supply. Namely, it falls mostly upon the group that responds least to price (the group that has the most inelastic price-quantity curve). In general, because businesses are more sensitive to wages than employees, payroll taxes, employer mandates and other taxes collected from the employer are passed onto the employees in the form of lower wages.

In the case of UISA, if the contributions that need to be saved are higher than the current payroll tax, the employees will observe a decrease in their net wage, and hence they would have the perception of being those who pay. However, the contributions do not have the character of a tax, since the individual essentially transfers money to herself. In other words, workers would not carry a tax burden, since their contributions will be deposited on their own saving accounts. In the particular case of the severance pay reform in Colombia, the wage effects of individual accounts have been analysed by Kugler (2001). Since savings accounts guarantee an unemployment benefit and eliminate uncertainty[9], workers should be more willing to accept wage cuts to assume part of the costs of the unemployment benefits. Individual accounts thus allow firms to shift part of the contributions into the accounts towards workers as lower wages. This shifting of severance payments towards workers should have reduced costs for employers as well as distortions to hiring and firing; at the same time, when workers pay for part of the costs, the system replaces employer insurance with self insurance against temporary income shocks.

3.7. DETERMINATION OF THE CONTRIBUTIONS AND GOVERNMENT INVOLVEMENT

Unemployment benefits, pensions, national health and public education are commonly financed through general taxes. The current welfare states are organised predominantly along central planning paradigm: the government usually decides how much to spend on health and education, how much to tax and transfer, how to structure pension provisions and employment regulations and so on.

Replacing the current tax and transfer scheme by a system of compulsory savings would mean that the government sets mandatory minimum contribution rates and mandatory maximum withdrawals. These would be established in an actuarially fair manner, so that for each of the accounts the discounted value of the associated aggregate benefits equals the discounted value of the aggregate contributions. The mandatory contribution rates would depend on income and age. How are the transfers to those with insufficient balances going to be financed?

[9] Prior to the reform, severance payments were not guaranteed.

In a pure UISA, the system is automatically balanced, since the savings accounts eliminate pooling of resources across individuals and instead rely on individual means. In the existing UISA in Chile, as we shall see later, the existence of a solidarity fund guarantees a minimum support for those ending up with insufficient balances. This fund is financed through the contributions of the taxpayers, in addition to a fixed amount predetermined by law taken from general tax revenues.

In the UISA *cum* borrowing scheme, it is necessary to determine how the government finances the benefits of those with negative account balances and the consequent debts it forgives. For instance, it would be conceivable to rely on general tax revenues, but there are other options, as well.

3.8. FEASIBILITY

In general, the feasibility of such a program is tightly associated to the number of individuals that would end up with negative account balances at retirement age or during their working life. In other words, the practicality of the savings accounts depends on the extent to which insured unemployment is concentrated in a subgroup of the population. If the insured unemployment is sufficiently concentrated, individuals may not be able to finance their own unemployment benefits by saving moderate shares of their earnings in the UISA. The use of individual accounts to finance unemployment benefits would be irrelevant if those who collect the benefits would typically have negative balance accounts and therefore be drawing on the government guarantee.

Feldstein and Altman (1998) regarded this as a potentially serious problem that could make the savings account approach not viable. They hence try to infer the number of people who would develop negative account balances. To do so, they examine the extensive experience represented by individuals in the Panel Study of Income dynamics (PSID) for the United States and simulate a UISA system over a 25 years historic period (1967-1992). Their key empirical question is whether UISA based on a moderate savings rate (4 percent of the gross wage) can finance a significant share of unemployment payments, assumed to be equal to the ones guaranteed by the current unemployment insurance. Secondly, they investigate whether the concentration of unemployment would force the “unlucky” individuals to rely on government benefits with the same adverse effects that characterize the more traditional unemployment insurance. They further propose to either implement an EET[10] tax scheme, or then a TEE[11] one. From a theoretical standpoint, a TEE and an EET would produce equivalent revenues for the government, since the discounted value of the tax revenues is equal to zero.

Their analysis implies that approximately 5-7 percent of the employees would end their working life with negative account balances and that the cost to the government of the unrecovered loans in the negative accounts is substantially less than the cost of the current unemployment insurance system. Moreover, they estimated that only 7-10 percent of the individuals would end up with negative balances ever in their life. The cost to taxpayers was estimated to be less than half the cost of the current system, thus it would be possible to reduce the current distortionary payroll tax as well as in the distortionary effects on the existing benefit system. Thus, their analysis suggests that the UISA, combined with a government guarantee, can be an economically viable approach to unemployment insurance.

The same type of analysis, conducted by Vodopivec and Rejec (2002) for the Estonian economy, prompts that the UISA system could offer a feasible alternative to the traditional unemployment insurance system. In this case, only 8 percent of the workers at the end of their working life would end up with negative account balances and approximately 35 percent would experience negative account balances ever during their working life. The authors further note that the UISA allow less interpersonal redistribution compared to the traditional unemployment insurance and that, unsurprisingly, the higher the education of workers, the less the likelihood that they end their working life with negative balances, as well as that these balances are ever negative.

The same simulations have been run for Slovenia in a recent work by Vodopivec (2008). The conclusions drawn are similar: the percentage of individuals who end their working life with a negative account balance is modest, but the results suggest that the UISA tend in general to allow less interpersonal redistribution. However, within the context of a *cum* borrowing system, the consumption smoothing properties of the UISA are significantly improved and most of the individuals are able to repay their debt once their account balance falls below zero.

None of the simulations cited take behavioural effects into account and hence tend to underestimate the viability and the effectiveness of the system. In addition, the results of these studies

[10] In academic literature, savings taxation regimes are generally described by a three letter name indicating at what point taxation is imposed. The presence of a “T” reflects the imposition of a tax, while an “E” stands for exemption. If a system is EET, it means that it exempts contributions and earnings (interests) but it taxes the benefits (withdrawals, in the case of the unemployment accounts).

[11] A TEE scheme would tax the contributions, but not the interest and the withdrawals.

are fairly sensitive to changes in the parameter values. For instance, setting a low contribution rate or a high replacement rate is likely to cause that a significant fraction of workers and their working careers with negative balances on their UISA.

3.9. INVESTMENTS AND ADMINISTRATION

Sørensen (2001) proposes that a simple market interest rate could be added to the balance of the individual accounts. Feldstein and Altman (1998) suggest instead that the funds in the individual accounts can be invested in a variety of ways; however, since the government augments the funds in those accounts that have insufficient funds to meet benefits during spells of unemployment, the nature of the investments might be tightly regulated. In Feldstein and Altman proposal, the UISA could be invested in money market mutual funds that earn six months commercial paper rate of interest or, alternatively, the accounts could be invested in a continuously rebalanced mixture consisting of 60 percent corporate stocks and 40 percent corporate bonds. In the case of the Austrian severance pay reform, it has been argued that, due to the possibility of disbursement of the severance payments, the expecting holding periods are rather short, implying a rather conservative portfolio composition that does not allow high shares of equities.

Bovenberg et al. (2007) assume that the interest rate paid on account balances would roughly equal the rate of income growth, so that the growth adjusted interest rate would be zero. The interest rate applied to the UISA balances should be the after tax rate of interest to ensure that savings via the individual accounts are treated in the same manner as ordinary savings via the capital market.

But how would the accounts be administered? Bovenberg et al. (2007) argue that the account system could be administered directly by the government or by private sector financial institutions. If taxpayers already contribute to funded pension schemes, it would be reasonable to use the existing infrastructure for the administration. In Chile, the management of the resources accumulated by the system has been assigned by auction to the firm that agreed to charge the lowest administrative fees for ten years and guaranteed a specified quality standard of the service.

3.10. INTEGRATIONS AND EXTENSIONS

In prospect of declining labour force due to population ageing, the social costs of early retirement benefits are increasing. Under this rationale, Bovenberg et al. (2007) suggest including early retirement benefits in the UISA system, combining them with the preservation of special schemes for worn down elderly workers. Individuals with positive account balances could hence finance their own early retirement, limiting the existing subsidization of burdensome early withdrawals from the labour force.

A system of UISA could also help to strengthen the funded pillar of a pension system, as suggested by Stiglitz and Yun (2005).

Apart from the possible connections with the pension system, the UISA can be integrated with all of the benefits that embody negligible levels of interpersonal redistribution from rich to poor, as proposed by Bovenberg et al. (2007). These include for example grants to students in higher education, since they are given to all the students without means testing and hence are not very redistributive. Sørensen (2001) proposes that other social transfers that are normally taken from social security contributions should be debited to the individual accounts. Besides unemployment benefits and social assistance related to unemployment for a period of three months, these include sickness benefits, child benefits for the first two children, benefits paid during the maternity leave and parental leave (for the first two children), education benefits for students above 18, benefits paid during education and sabbatical leave, early retirement benefits for able individuals below 62 making only the individuals with a surplus on their account able to draw early retirement benefits. According to his proposal, other programs such as disability benefits clearly cannot enter the individual accounts set up, since they entail a certain degree of interpersonal redistribution.

More radical ideas (Orszag and Snower, 1997) suggest insulating the welfare system from the rest of the budgetary process, by establishing a comprehensive framework of welfare accounts. Examples of integrated systems of accounts are provided by the Provident Funds of Malaysia and Singapore that not only shape retirement savings, but also offer life and health insurance, extensive home-purchase support and educational accounts. In the particular case of Singapore, the contributions are allocated into three accounts within the fund: medisave account, ordinary account and special account. The savings of the first account can be spent on medical care expenses and catastrophic illness insurance. The second account may be devoted to finance home purchases, educational expenses, insurance premiums and approved investments including stock purchase on Singapore stock exchange. The special account must then be saved for old age purposes, but may be also invested in approved assets.

3.11. TRANSITION

If any switch from an unfunded system to a fully funded one is planned, a central question is what happens to the benefits of the older generations that do not have full contributions records. In the context of a transition from a pay-as-you-go pension system to a fully funded one, Barr (2001) regards the possibility of financing those benefits through government debt, but he points out that the higher returns on the investments of the individual accounts are offset by the interest payments on the debt required to pay the pension of the transition generations. Belan and Pestiau (1999) write: "*privatisation which involves moving from an unfunded to a fully funded scheme is neutral if public borrowing is used to finance the retirement of the transition generation. In other words, a pension privatization that leaves the mandatory contribution rate equal to the payroll tax of the former public system, and that does not alter the terms of eligibility or magnitude of the retirement benefits under the old system, will have no impact on the disposable income and wealth of individuals who move from the old system to the new. [...] In effect, the privatization simply converts an implicit government obligation to future retirees into explicit debt*".

If the transition is instead financed by taxation, the younger generations would be forced to pay twice; at the same time, it would not be fair to consider the hypothesis of not paying any benefits to the transition generations.

An alternative would be the institution of a *notional* UISA framework, where the savings do not physically exist. There could just be the book keeping of contributions and collected benefits. Thus, the transition would become a matter of letting the administrative rate of return on these notional accounts to adjust.

It is interesting to note that the same rationale can be applied to the transition towards an UISA system, but in this latter case the scale would be smaller and hence less costly. In addition, these transition concerns depend on the country where the reform has to be implemented and on its initial unemployment rate. In fact, in a country where there exists a small social security scheme, it is more pervious to implement the conversion, as occurred in Chile.

4. Unemployment insurance in Chile

Besides the severance pay reforms recently implemented in Austria and Colombia, the existing framework of unemployment insurance in Chile is the only applied example of the UISA.

In its form, it can be thought as a hybrid between a pure UISA and a UISA *cum* borrowing. An analysis of it proves to be useful to better understand the consequences brought by the application of such a system, as well as some issues that may arise with its application.

4.1. THE TRANSITION BETWEEN THE OLD AND THE NEW SYSTEM OF UNEMPLOYMENT INSURANCE

Since 1936 there exists an unemployment subsidy for salaried employees[12] that pays very low monetary benefits (between 12 and 25 USD per month) for a maximum period of 12 months to all the involuntary unemployed who registered in a municipal unemployment office and worked for at least 12 months during the prior 24 months. On average, within this plan, only 10 percent of the job seekers have been covered by the benefits (Vroman, 2003). The fiscal cost of this program was on average 10 million USD per year.

Together with this limited unemployment insurance, the workers were entitled to receive severance payments in case they were dismissed for no fault of their own.

Since 1990, with the restoration of the democracy, the party in government in Chile has always been a coalition of centre-left winged parties that set as a priority the improving of bargaining power of workers and the implementation of social security schemes. Since then, it sent a number of proposals to the Congress to improve the economic support for the unemployed workers. Almost all the proposed initiatives presented problems of weak targeting, low coverage, poor control and of fiscal constraints, revealing the necessity to improve the protection of the unemployed. To address these issues, there has been the proposal of constituting a system of individual savings accounts, presented with the name of PROTRAC (PROteccion al TRAbajador Cesante). This first draft planned that employers and employees had to deposit certain percentages of the wages to the individual accounts. More precisely, according to the proposed scheme of contributions, the employer had to deposit 3.6 percent of the wages and the employee 0.8 percent. For those workers dismissed for no faults of their own and who had contributed for twelve months, but did not have enough benefits on their accounts, the government would have guaranteed a minimum level of transfers. No compensation was designed for temporary workers.

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[12] This system will be terminated as soon as the transition to the new system will be completed. The transition phase is expected to be concluded in 2009.

This first draft of the UISA was rejected because on the one hand it was thought to provide benefits only marginally higher than those provided by the unemployment subsidies and on the other hand to impose too high contribution fees to the employers. Moreover, the government did not provide a bound for fiscal outlays, since it did not consider the possibility of creating a fund to pay workers with insufficient balances in their individual accounts. In addition, the fact that temporary workers were excluded a priori by the PROTRAC caused a strong opposition from the representatives of the rural areas, due to the high incidence of seasonal workers in agriculture.

Despite the failure of the PROTRAC, the government persisted in its efforts to set up a new unemployment insurance system. Finally, in 2001, the unemployment insurance savings accounts scheme was approved with a noteworthy political consensus and a high quorum.

When the PROTRAC was proposed, the unemployment rate was relatively low. Yet, a contraction in the economy in the late 1990s brought a rise of unemployment. This rekindled a debate on how best to protect workers against the risk of unemployment (Acevedo et al., 2006). The government made the approval of the new UI scheme a priority, emphasising the importance of social protection in the context of high and growing unemployment.

The new proposal presented a phased-in approach, by which only new hires were mandated to enrol (while enrolment would be voluntary by workers with ongoing employment contracts). A stepwise approach eased the fiscal costs of the state in the first few years, as the fiscal contributions would gradually increase with the number of enrolled workers.

4.2. THE NEW CHILEAN UNEMPLOYMENT INSURANCE: UISA

4.2.1 Self insurance and redistribution pillar

The new Chilean unemployment insurance system is based on two main components. The first one is shaped as a self insurance by means of individual savings accounts, funded by the workers and their employers according to a fixed percentage of the worker's wage. These funds, together with the returns they provide, can be withdrawn at the end of an employment relationship, according to a predetermined schedule. The second component is constituted by a redistributive pillar that aims at providing the necessary subsidies to those workers that do not have enough funds on their accounts at the end of their working relationship. This redistribution element is embodied by a common fund, better known as provident fund, created with part of the contributions of the firms and with a fixed contribution from the government determined by law.

4.2.2 Coverage

The coverage of the insurance includes salaried workers over 18 years old enrolled to the program and employed to the formal private sector. A notable improvement in the coverage with respect to traditional UI systems is that temporary workers are included as well, yet they cannot have access to the benefits provided by the common fund[13]. Several categories are instead excluded from this system for various reasons. Public workers are excluded because they are considered to run insignificant unemployment risks; domestic service workers because they are entitled to their own severance pay savings accounts[14] and under 18 workers because they should not be encouraged to leave school.

The participation in the unemployment insurance system is compulsory for all the eligible categories of workers that started a new job after October 2002 and voluntary for those who started before that date. However, voluntary participation of non-eligible workers is not possible, probably to avoid problems of adverse selection, that would just encourage "lemons" to join the system and receive unemployment benefits from the common fund.

4.2.3 Contributions

The contributions are deposited by workers, employers and government as follows. The permanent employees transfer 0.6 percent of their wages to their own individual accounts and their employers contribute for 2.4 percent to the whole UI program. Two thirds of these contributions go indeed to the individual accounts, while the remaining 0.8 percent is transferred to the common fund. For collection and tax purposes, the contributions are applied to the gross wage up to a maximum of 90UF[15] per month. Each worker with more than one job can choose the employer/employers with whom she is going to pay the contributions, but she can have just one account.

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[13] It would be too expensive to give benefits to all the seasonal workers, due to their high incidence in the rural areas.

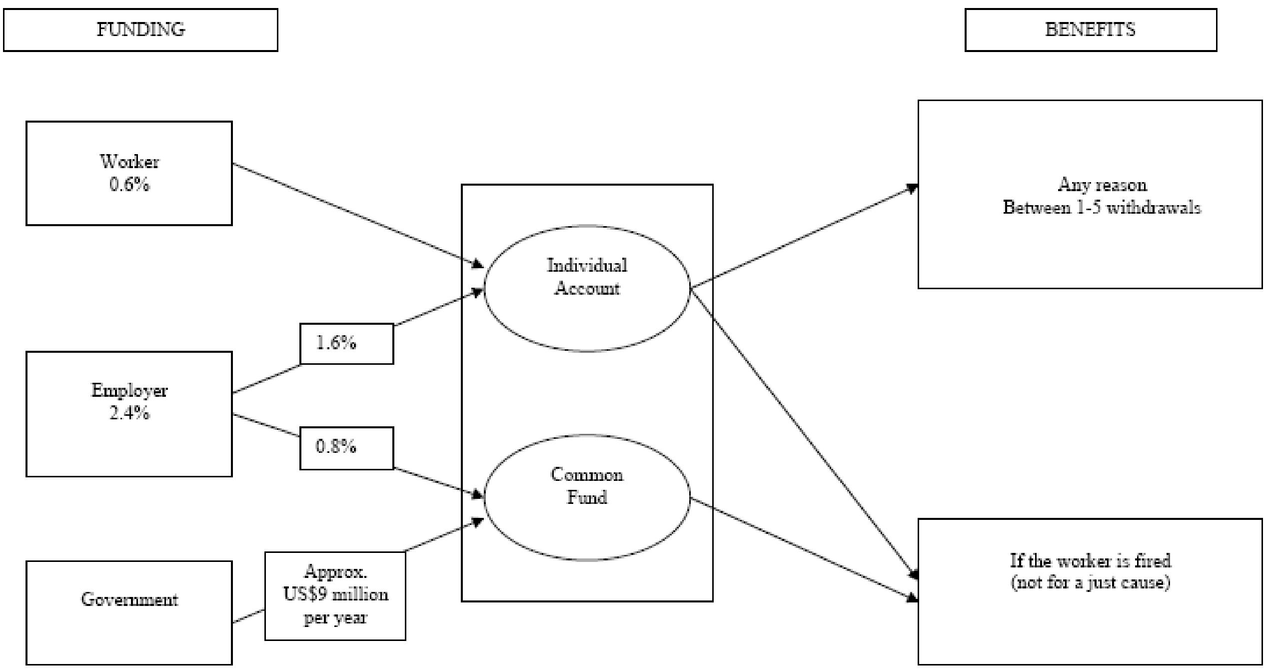
[14] This system establishes that 4.11 percent of the wage has to be deposited by the employer to the savings accounts of each worker, that becomes entitled to money withdrawal at the end of the employment relation.

[15] Unidad de Fomento, a standard measure of living costs. The amount of 90 UF is equivalent to about 2500 USD.

The contribution of the government instead finances directly the provident fund with an amount predetermined by the law (USD 10 million per year fixed in real terms) equivalent to the unemployment subsidy that existed before this new insurance was introduced. This government transfer is financed by general tax revenues.

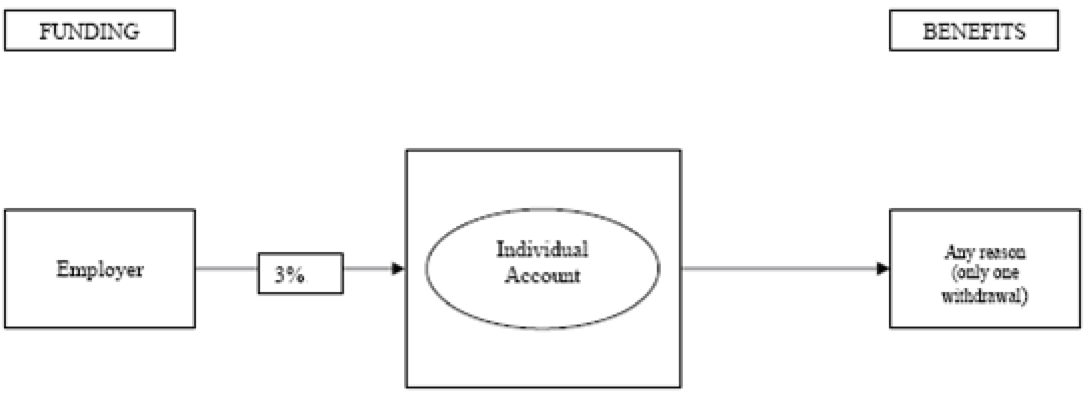
In the case of temporary workers, their employer simply deposits a contribution of 3 percent of the wages directly on the individual accounts.

Figure 1. Contributions and benefits for permanent workers



Source: Acevedo, Eskenazi, Pagés (2006)

Figure 2. Contributions and benefits for temporary workers



Source: Acevedo, Eskenazi, Pagés (2006)

If the employer fails to pay the contributions or does not pay the opportune amounts, she will be fined with one UF per month per employee and will have to pay the missing contributions, adjusted with the CPI. In addition, she will be charged a penal interest equivalent to the current interest rate, augmented by 20 percent if the payment delay is less than 90 days and by 50 percent if it is more than 90 days. This payment is deposited on the individual accounts of the affected employees.

4.2.4 Benefits from the individual accounts

The individual funds can be withdrawn independently on the reason of termination of the employment relation because they constitute a property of the employees. Nevertheless, in case of unjust dismissal, workers are entitled to receive an additional amount of money as a severance payment from their employers.

In order to withdraw from the individual accounts, workers need to complete a minimum contribution period of twelve months if their contract is permanent and of six months if their contract has a fixed term. Besides this, each worker cannot receive benefits for more than two unemployment spells within a period of five years.

Both temporary and permanent workers have access to their own accounts after a month from the termination of the employment relation. Nevertheless, while the former have access to their entire accumulated resources, the latter are entitled to withdraw a monthly sum for a maximum period of five months.

If a worker looses her job, she is entitled to a number of withdrawals from his account corresponding to the number of months of contribution, with a maximum of five withdrawals. The benefit schedule is reported in the following table:

Table 1. Scheme of withdrawals from the individual accounts

Months of contribution	Number of withdrawals allowed
less than 12	0
between 12 and 17	1
between 18 and 29	2
between 30 and 41	3
between 42 and 53	4
more than 54	5

Source: AFC Chile (2008)

For workers entitled to more than one withdrawal, the amount of the first benefit 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 for five) . The amounts for the remaining withdrawals are computed in proportion to the amount of the first withdrawal (90 percent for the second withdrawal, 80 percent for the third, 70 percent for the fourth). The fifth and last withdrawal corresponds to whatever is left in the account.

In general, together with the sum saved, the workers have the right to receive all the interests accumulated on their accounts, minus the costs of the administration, which count for the 0.6 percent of the account balance. Table 2 illustrates an estimation of the replacement rate provided by the individual accounts:

Table 2. Estimated replacement rate

Payment	Estimated replacement rate
first	37 %
second	33 %
third	29 %
fourth	26 %
fifth	22 %

Source: Acevedo et al. (2006)

Note: Calculations based on assumed 4,4 percent annual rate of return and no growth in wages.

At time of retirement, the holder of the account can freely dispose of the positive balance. If she instead dies, the account balance will be inherited by whomever the worker has designated as heir.

4.2.5 Benefits from the common fund

The common fund covers a minimum level of benefits for those permanent workers who have contributed for at least twelve months to the program, but cannot finance the full five months schedule of withdrawals. At the beginning of the unemployment spell, the eligible workers make withdrawals from the existing balance of their accounts. When the account is exhausted, then they are entitled to receive transfers from the solidarity fund, for a maximum of two unemployment spells within five years.

Note that this is not possible for temporary workers, since they are not entitled to any benefit from the common fund.

The predetermined monthly payment is a function of the wage earned during the last twelve months of work. The following table shows that there are however ceilings and floors to the assistance provided, so that the better off do not receive large sums of money and those who had low wages do not fall below a subsistence level.

Table 3. Scheme of withdrawals[16] from the provident fund

Month	Average percentage of the wage of the last 12 months	Upper Ceiling **(in Pesos)**	Minimum Floor **(in Pesos)**	Upper Ceiling **(in Euros)**	Minimum Floor **(in Euros)**
First	50 %	148 360	77 146	209,93	109,16
Second	45 %	133 523	64 091	188,94	90,69
Third	40 %	118 687	54 597	167,94	77,25
Fourth	35 %	103 851	45 695	146,95	64,66
Fifth	30 %	89 015	35 607	125,96	50,38

Source: AFC Chile (2008)
Note: Exchange rate= 706.51Peso/1Euro (March 11th 2008)

To ensure that the system is not encountering financing difficulties, it has been established that in any given month, the aggregate withdrawals from the solidarity fund cannot exceed one fifth of the existing balance in the common fund. If the total claims are larger, then they will be reduced proportionally to make their sum equal the one fifth of the existing balance.

4.2.6 Example of benefit scheme

The benefits offered by both the individual accounts and the solidarity fund for a worker that receives a monthly salary of 400 Euros[17] can be resumed as reported in the two tables below. The two tables depict the scheme of the benefits received by a permanent worker that contributed to the program for 12 and 55 months, respectively.

[16] Values in force from February 1st 2008 to January 31st 2009. The first of February of each year, each of the ceiling and floor values of the table are adjusted according to the CPI of the previous year.
[17] Average monthly wages, as reported in the statistical database of the Chilean Central Bank. *Exchange rate= 706.5 1Peso/1Euro (March 11th 2008).*

Table 4. Payments for a permanent worker that contributed for 12 months to the program (In Euros).

	Sum to be received	Individual account	Solidarity fund
First withdrawal	195,77	105,18	90,59
Second withdrawal	176,19	0,00	176,19
Third withdrawal	156,61	0,00	156,61
Fourth withdrawal	137,04	0,00	137,04
Fifth withdrawal	117,46	0,00	117,46
TOTAL	**783,06**	**105,18**	**677,88**

Source: AFC Chile (2008)

Table 5. Payments for a permanent worker that contributed for 55 months to the program (In Euros).

	Sum to be received	Individual account	Solidarity fund
First withdrawal	195,77	195,77	0,00
Second withdrawal	176,19	176,19	0,00
Third withdrawal	156,61	144,65	11,96
Fourth withdrawal	137,04	0,00	137,04
Fifth withdrawal	117,46	0,00	117,46
TOTAL	**783,06**	**516,60**	**266,46**

Source: AFC Chile (2008)

A temporary worker that earns the same wage is entitled to withdraw from her account a sum equivalent to 71.34 Euros[18] if she contributes for the minimum required period of six months.

4.2.7 Administration

The new program is effectively a funded system in contrast to the precedent one which operated as a pay-as-you-go system. This implies new aspects of financial administration that arise when dealing with deposits and withdrawals from individual account balances and when tracking transactions involving the common fund. The management of the resources accumulated by the system has been assigned by auction to the firm that agreed to charge the lowest administrative fees for ten years and guaranteed a specified quality standard of the service. The duties of the private administrator (Sociedad Administratora) are mainly the collection of the contributions and the payment of the benefits, which entail the verification of the eligibility criteria and the credit of the individual savings accounts. In fact, the resources accumulated in the individual savings accounts are invested in financial markets, even if under a set of strict regulations that aims at reducing the risks of portfolio and the cyclicality of returns (for instance, only a fraction of the funds can be invested abroad, together with the fact that the concentration of the investments is considerably restricted).

[18] *Exchange rate= 706.5 1Peso/1Euro (March 11th 2008).*

The administrating firm is allowed to contract out activities such as customer service, collection of contributions and database management to other providers.

In order to protect the resources of the workers in case of financial failure, both the individual accounts and the common fund are separated from the assets of the managing firm. The resources of the workers are separated also from the State, in order to reduce the political capture risk.

The new unemployment insurance law further created a commission that controls the activities of the private administrator, to ensure that appropriate payments and accurate information on benefits and collection are undertaken. The commission also monitors the instruments and policies of the Sociedad Administratora, making sure that it respects the terms of the contract.

Finally, if monetary benefits go to some beneficiary who should not have received them, the administrator is responsible for reimbursing such resources to the common fund; this may limit the scope for abuses or overpayments.

4.2.8. Theoretical evaluation

It is still early to make a profound evaluation of the Chilean experience, especially in terms of consumption smoothing. However, there already exists a fraction of literature that devotes its attention to a theoretical evaluation of this innovative unemployment insurance scheme.

Normally, the traditional unemployment insurance schemes tend to increase the duration of unemployment because a problem of moral hazard arises. Such problems disappear when the funds belong to the worker, but on the other hand this seems to give insufficient insurance to workers that did not accumulate sufficient funds in their accounts. Sehnbruch (2004) argued that, since in Chile there is a high turnover in the labour force, it may be difficult for the workers to accumulate twelve consecutive months of contribution into their accounts. The empirical results of the same author seem to support this concern: in 1999, 60 percent of the unemployed did not stay in their job for the minimum one year period. Moreover, only 9 percent of the unemployed had previously worked for five years (the necessary minimum period to receive unemployment benefits without needing the support of the common solidarity fund).

This provides a reason why it is necessary to have a common fund to better protect the poorest workers, even if this could bring a moral hazard problem back. Acevedo, Eskenazi, Pagés (2006) see some factors why the solidarity fund should still exist despite the moral hazard concerns. First, workers cannot have access to the common fund until they exhaust the resources in their own accounts. Second, they argue that the private administrator has incentives to give a payment only to the eligible workers, since it is responsible for incorrect payments. Third, the level of benefits is kept anyways low and limited to a period of five months.

A second concern is that the insurance provided to long term unemployed workers appears to be insufficient, because the system seems to be designed just to provide an insurance against frictional unemployment (Fernandez and Wodon, 2001). In spite of this concern, Sehnbruch (2004) shows that the majority of the unemployed (72 percent) found a new job within six months and Vroman (2003) notes that despite the relatively short benefit duration, this program offers higher monthly benefits if compared to the previous one. According his results, it seems that the total benefits will increase, since the increase in average monthly replacement rates is much larger than the decrease in the average duration and the indexation to the CPI makes the erosion of the payments less likely. To improve the assistance for the long term unemployed, Acevedo, Eskenazi, Pagés (2006) suggest that instead of lengthening the time span of the benefits, which would increase the moral hazard problem, it would be more desirable to create initiatives of long term assistance, such as training programs tailored for workers with long unemployment spells.

Third, it is necessary to consider that in South America the informal sectors count for an important proportion of the employed labour force. More precisely, 46.5 percent of the labour force of the entire Latin American region in 2002 was employed in the informal sector (ILO, 2003[19]). This has obviously an important impact on the shape and coverage of any unemployment insurance program. On the one hand, the informal sector provides in fact many employment opportunities for the unemployed acting as a “shock absorber” in case of economic downturns (Vodopivec, 2005) and it provides a certain degree of unemployment insurance (Sehnbruch, 2004). On the other hand, it is also characterized by a high degree of insecurity (Arango and Maloney, 2000). In the Chilean context, the main two concerns are: not being eligible for unemployment insurance makes workers of the informal sector much more vulnerable than those working in the formal one. In second place, workers can have incentives to

[19] Using the ILO definition of informal sector, that includes the self employed, workers of microenterprises (less than five employees), nonremunerated family members and domestic employees.

"drive and run", that is to say that they might withdraw from the solidarity fund when unemployed from the formal sector and then find a job in the informal one. (Vodopivec, 2005 and Sehnbruch, 2004). In addition to this, it should be remembered that developing countries usually do not have the capacity and the means to monitor the behaviour of the unemployed.

Fourth, a common concern in Chile is that the monopolistic administrator of the funds could provide lower yields in order to maintain low fees, but the problem can be ruled out, since the commission can monitor both the market yields and the activities of the Sociedad Administratora. Together with this, there is the common consideration that the provider is a monopolist, thus the quality of the service might be compromised (for instance, in terms of delays in the payments), but again, this should not be a cause of concern, since there is a commission designated for checking this issue. In any case, competition would not be easy to achieve, since there are economies of scale for such an administration and the elasticity of demand[20] for such services is low.

Moreover, it has been claimed that the introduction of this system has negatively affected the wages. Firstly, it has increased the costs for the employers, unless wages adjusted downwards to compensate the increase in benefits. Heckman and Pagés (2004) estimated that there has been an increase in labour costs by 2.16 percent that could have had a negative influence on the employment rate. Secondly, in has been argued that wage rigidity can increase (Acevedo et al., 2006). Substantial evidence of downward wage rigidity in Chile during the downturn 1999-2002 has been found by Cowan (2005). Such rigidity could increase with unemployment insurance[21], and its effects could be felt in the event of a negative aggregate shock.

4.2.9. Are the Chilean workers better off?

In general, it is possible to assert that the Chilean workers are on average more protected now through this program then they were before. To affirm this, it is necessary to consider first that the self employed are a priori excluded from any unemployment insurance program and cannot even voluntarily contribute to it. Secondly, workers who become unemployed for "just" reasons are more protected by this program, since they are entitled to obtain an income support by withdrawing savings from their accounts or by the provident fund. Those instead

[20] The demand for a good is relatively inelastic when the quantity demanded does not change much with the price change. Goods and services for which no substitutes exist are generally inelastic.

[21] Unemployment insurance, by improving the bargaining power of workers, in the face of adverse shocks may lead to higher equilibrium wages (Blanchard, 1999).

dismissed for “unjust” reasons are significantly more protected now: they remain in fact entitled to receive the severance payments, and in addition they can make withdrawals from their own accounts or from the solidarity fund. Those who never lose their job accumulate all savings to their accounts during their working periods and are entitled to get an additional payment at the time of retirement.

Yet, there is still a category of workers that when become unemployed are left without an adequate protection and become more vulnerable to significant income losses or reductions. Unemployment is in fact much more likely among the lowest income categories end especially among workers who earn less than minimum wages. According to Sehnbruch (2004), the lowest income categories count for 80 percent of the unemployed; consequently, the jobs they held are of a significantly inferior quality than those of workers in employment and very often they never have a formal written contract. In addition, they are unlikely to be able to contribute to the program for long enough before becoming unemployed and the accumulated savings in their accounts may not be sufficient to keep them from falling below the poverty line.

However, it should be remembered that Chile is a developing country that does not have extensive alternative means of social protection, so those who do not benefit from the unemployment insurance program would not be covered by alternative funds. Moreover, we should consider that there are insufficient connections with other labour market institutions, such as job centres or professional training institutions, and that there is little available infrastructure to adequately monitor the unemployed and help them to find new jobs. Currently, the individual characteristics of the unemployed (family size, health conditions, and economic independence of the family members) are not taken into account and this makes difficult to access whether the unemployment insurance is sufficient to maintain the people who will depend on it.

5. Severance payments accounts: steps towards the UISA

5.1. INTRODUCTION: TRADITIONAL SEVERANCE PAY SCHEMES

5.1.1. Definition

Traditional severance payments are lump sum benefits paid by the firm to discharged employees. As a rule, the severance benefits depend on the number of years of service, with a standard formula of one month salary pay for each year of service, up to a maximum that can increase with collective bargaining. In most of the cases, a minimum number of years of service is required in order to receive the entitlement.

The coverage varies in different countries, based on whether the individuals have a temporary or permanent contract, or on whether they are white or blue collars.

In several cases, the entitlement to severance pay depends on the cause of separation. In fact, in most cases, only workers laid off by the employer are qualified to receive the payment, so that the severance pay can be seen as a tax conditional on dismissal.

This system provides the employees with two sources of protection: in first place, mandatory severance pays reduce the risk of unemployment by making dismissal more costly for the employer. Secondly, they provide an indemnity to protect the employee against the loss of income due to unemployment.

5.1.2. Benefits

Among the potential gains associated with severance pay, there is the promotion of longer lasting employment relationships, which increase the employer's incentives to provide training, thus increasing the productivity of the employees and their future employability. In addition, longer lasting employment relationships are claimed to increase the loyalty and cooperation and to enhance a team spirit between workers and employers.

5.1.3. Costs

The economic literature recognises severance payments as a source of labour market sclerosis, since they reduce the intensity of labour market flows, particularly from and to employment. By increasing the firing costs, they reduce the probability of exit from employment to unemployment and impose firing taxes on employers, inhibiting job creation (Bertola, 1990 and Blanchard, 1998). This leads to greater job stability, yet to higher unemployment duration (Nickell 1997), but also to a decrease in productivity (Caballero et al. 2004).

Further evidence shows that an increment in firing costs results in higher unemployment of marginal groups of workers, because of their lower access to jobs. Productivity of these workers before hiring is not easily revealed and therefore their probability of being hired in the presence of increasing firing costs is lower (Blanchard, 1998). The results found by Kugler and Saint-Paul (2000) lead to similar conclusions: larger firing costs raise discrimination against unemployed workers, because they increase the costs associated with hiring an unskilled worker. Moreover, in the presence of higher severance costs for older workers, separation decisions may be biased against young workers. In other words, it seems that large firing costs contribute to the emergence of dual labour markets, with well protected formal sector workers (which tend to be predominantly prime age males) contrasted by much less protected informal sector workers and the unemployed.

Another problem associated with severance payments arises when the firm goes through a period of distress and have to dismiss workers. In most of the cases, layoffs coincide with liquidity problems and in case of bankruptcy the severance pays will not be disbursed. In this case, severance pays are a more likely to be received by those workers who have higher ability to withstand long judicial processes to collect benefits. For all these reasons, severance pay is a problematic mechanism to reduce the income risk associated to unemployment.

5.2. REFORMS

As depicted above, the consensus among the economists is not only that traditional schemes of severance payments constitute a weak instrument of income protection for the unemployed, but also that they distort the behaviour of firms and workers, imposing rigidities in the labour market. Since, especially in developing countries, severance pay is the most common system of income support for the unemployed, there is the necessity to address a question: how can this system be reformed or changed in order to diminish such distortions? Recent reforms in Colombia (1990) and Austria (2003) as well as other cases in Latin America suggest that the severance pay system can be converted into a funded system, thus avoiding the non-performance problem and the inefficiencies of the traditional severance pay schemes. The reforms can be seen as a way to transform the conditional obligations made to dismissed employees into unconditional obligations to all workers paid on a regular basis to their individual accounts. More precisely, this change can be considered as introducing a pure UISA, hence a savings account system without government funding.

5.2.1. The Colombian reform: less distortions and coverage improvement

Prior to the 1990 labour market reform, the system of severance payments in Colombia resembled the traditional scheme common to many countries: the employer had to pay a certain sum at the time of separation. Employers were required to provide severance pay equal to one month per year worked, based on the salary at the time of separation. With this system, firms about to go bankrupt could simply negotiate a package substantially below what was owed to the worker, or more simply they could avoid paying.

The goal of the reform introduced in Colombia in 1990 was twofold: it first aimed at reducing the distortions associated to the traditional severance payment schemes, and secondly at increasing the coverage of the unemployment insurance. Operationally, the new regulation made compulsory for firms to deposit every month 8.3 percent of the payroll into guaranteed severance payment accounts (SPSA) available to the employees in the event of job separation. The new scheme imposed fines up to 12 percent of the severance payment on employers who failed to make monthly deposits to their workers. In addition, the sums accumulated on the individual accounts are monitored and invested by administrative agencies that ensure that the earnings are at least equal to the average return on three-months treasury bonds, based on the average determined by the Central Bank every quarter.

Unemployed or retired workers have unrestricted access to their accounts and hence can take all the savings at once, whereas employed workers can merely make withdrawals in order to finance education or investments in housing.

The reform further established that the contributions had to be made exclusively by the employer, who for this reason might have shifted part of the payment to workers in terms of lower net wages. Under the workers´ point of view, a cut in wages could be acceptable in a situation in which severance payments are guaranteed by the presence of a fund.

The effects of the transformation of the severance pay program in Colombia have been analyzed solely by Adriana Kugler (1999 and 2002). The following considerations are thus mostly based on her work.

According to her analysis, the introduction of the new system seems to have reduced the rigidity in the labour market. This result has been achieved because the reform has removed the discretionary nature of the severance payments, consequently increasing job separations and accessions.

Furthermore, Kugler finds that the introduction of the individual accounts has reduced wages, and this seems to have brought an increase in employment due to a labour supply effect, measured by weekly hours. More precisely, the contributions to the severance payment accounts have been shifted by the employers to the employees by 80 percent showing up as a reduction in wages.

Her results further suggest that the reform has led to a consumption smoothing effect among workers covered by the SPSA. In fact, these individuals seem to save more (hence, to consume less) when employed and to consume more when unemployed. This indicates that SPSA essentially turn employer insurance into self insurance by generating forced savings from lower consumption during employment and by increasing consumption during periods of non-employment.

The reform also enhanced the insurance function of the severance pay by transforming uncertain, conditional payments to unconditional payments monitored by the government. Before the reform, the non-performance of severance payments was an important problem, but thanks to the pre-funding requirement, the likelihood that the legal entitlement to severance pay is actually carried out has increased.

Kugler’s work, however, does not shed light on the interesting question of the effects of the severance payment savings accounts on the reemployment probability, that is, whether or not the system improves job search incentives.

5.2.2 The Austrian reform: coverage improvement, less distortions and more strength to the pension system.

In 2002, Austria reformed its severance pay legislation converting the traditional system into a fully funded contributory system similar to the UISA one.

The previous system stipulated that employees working for the private sector were entitled to receive severance pay if the employment relationship lasted for more than three years and was terminated by the employer. Thus, such a system reduced the incentives for firms to lay off workers and for workers to change job, since spontaneous dismissals made them lose the entitlement to severance pays. This resulted in an introduction of rigidities in the labour market.

As in the case of Colombia, the reform aimed at extending the coverage of the unemployment insurance and at removing obstacles to workers mobility. In addition, the Austrian government set as key objective the strengthening of the funded pillar of the pension system.

All the new employees automatically join the new scheme, while the ones that already have a contract can choose whether to stay in the old scheme or whether to join the new one. In practice, in cases of a normal employment contract, the employers pay every month an untaxed contribution equivalent to 1.53 percent of the gross wage of each individual worker to funds being held by entities called "*Mitarbeitervorsorgekassen*" (employee provision funds - MVK). The MVKs are legally independent from the employers and according to the legislation, they have to invest the contributions of the employers in order to increase the revenues for the employees. The MVK have to be licensed by the Austrian Financial Market Authority (FMA), which has also the qualification to supervise and inspect their activities.

The employer concludes a contract with one of the nine MVKs[22] licensed by the FMA, chosen with an agreement with the work council[23].

In case of enterprises without work council, the employer is entitled to decide and in any case, changing MVK is always possible. The MVKs retain an administrative fee that can vary in a range between 1 percent and 3.5 percent of the annual severance pay contributions; additionally, it can charge an asset management fee up to 0.8 percent of the invested capital.

The provision funds can be accessed at job termination after a qualifying period of contributions of three years. When eligible for payment, the employee can decide either to withdraw the savings accumulated on the account or to keep them and claim them upon retirement converting them into an annuity or then carrying on the balance to the new employment relationship. While the cash withdrawals are taxed at a flat rate of 6 percent, the annuities remain untaxed, providing a saving incentive.

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[22] BAWAG Allianz Mitarbeitervorsorgekasse AG, APK- Mitarbeitervorsorgekasse, BONUS Mitarbeitervorsorgekasse AG, BUAK Mitarbeitervorsorgekasse GesmbH, Niederösterreichische Vorsorgekasse AG, ÖVK Vorsorgekasse AG, Siemens Mitarbeitervorsorgekasse AG, VBV-Mitarbeitervorsorgekasse AG, VICTORIA VOLKSBANKEN Mitarbeitervorsorgekasse AG.

[23] Work councils act as representatives of the interests of workers. They function at local/firm level as a complement to the national labour organizations.

The funds can further be invested in the capital market by the MVKs. Consequently, the level of severance payment would depend upon the annual net yield, but the nominal contribution paid by the employer is guaranteed by the law.

Discussions over the relative merits of the new approach have focused on, for instance, the extension of the entitlement to severance pay or on whether the move away from severance pay as a tax on dismissal to a savings account-based approach might result in more labour market flexibility. Most of the concerns have instead been raised over the relatively low level of employer contribution.

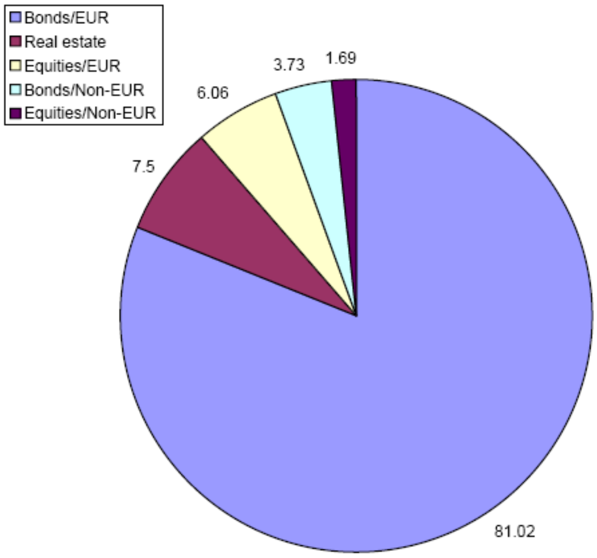
From a labour economics point of view, this reform matches nicely with the theoretical considerations made by Blanchard and Tirole (2004) about the institutional design of optimal labour market flexibility. Despite the limited available evidence, Hofer (2006) confirms that the reform has given an important contribution to increase the labour market flexibility in terms of hiring and firing decisions.

Common concerns are mainly focused on the too low contribution made by the employers. In fact, although the coverage has been extended considerably[24] entitling now more workers to receive severance payments, the average level of pay has been reduced. The current percentage of the aggregate wage paid now, even if invested, is likely to bring smaller sums than the amount paid under the old system, which was around 2.5 percent of the wage. Simulations (Koman et al. 2005) suggest that, under reasonable assumptions about the rates or return, severance payments will be on average about 30 percent lower in the new system.

As stated above, the performance of the MVKs on the capital market affects the level of severance pays. How has the performance been so far? In 2003, the MVKs did not bring more than 3 percent and 4 percent investment yields, against the average annual net yield of 6 percent expected by the Austrian ministry of finance. In 2004 and 2005, the MVKs performed an average annual net yield of 4.6 percent and 5.5 percent, respectively. From figure 3, that shows the asset allocation of the MVKs, it emerges that only a minor percentage of the assets is invested in equities.

[24] According to Kristen et al. (2002), with the old scheme only one third of all workers was entitled to receive severance payments.

Figure 3. Asset Allocation of MVKs



Source: Österreichische Kontrollbank

The MVKs argue that higher returns are possible only if the portfolio contains more equities. However, due to the possibility of disbursement of severance payments, the expecting holding periods are rather short, implying a rather conservative portfolio composition that does not allow a higher share of equities.

Focusing instead on the objective of the government of creating a funded pillar of the pension system, Hofer (2006) notes that the current Austrian pay-as-you-go pension system is no longer sustainable[25], so that it becomes necessary to create a new, funded pillar. He further notices that the severance pay reform was intended in part to address this problem, but the current the contribution rate of 1.53 percent is likely to be too low to generate a sufficient funded pillar for retirement income.

Under the employer's point of view, the new system converts unpredictable dismissal costs at the time of hiring into predictable costs, avoiding liquidity problems that usually hit smaller firms (Gautié, 2006) when simultaneous severance pays have to be made. For workers, instead, job mobility is enhanced because they do not lose the entitlement to severance payment if they end the employment relationship.

[25] It is one of the most generous and complete PAYG schemes in Europe, but it is financially costly and encourages early retirement (OECD 2003).

In general, the new approach to severance pay in Austria has generated a rising interest among other countries and it fits within the strategy that has attracted much of attention under the name of *flexicurity*. This policy platform model combines three elements: first, very liberal unemployment protection rules to enhance flexibility in hiring and firing decisions; second, conspicuous benefits to those hit by separation and third, intense labour force activation programs by the Public Employment service.

As some scholars suggested (Gautié, 2006), a change in this direction is particularly appealing to France, especially considering that the current French system for severance payments reminds quite closely the pre-reform one in Austria.

5.2.3. Other severance pay schemes: Latin American applications

In Latin America, the most popular instrument to protect the workers from income fluctuations due to unemployment is constituted by severance payments. In general, Latin America is the region with the most restrictive labour market regulations and with the most costly overall regulation of employment termination. (Sehnbruch, 2004 and Jaramillo and Saavedra, 2005).

In some cases, severance payments are shaped according to the traditional scheme. In other cases, such as Argentina (only for construction workers), Brazil, Colombia, Ecuador, Panama, Peru, Uruguay and Venezuela, the severance payments take the form of individual accounts. The conditions of these programs vary significantly from country to country and shape the level of the benefits, the amount of contributions, as well as other characteristics.

The oldest of such systems in Latin America is the FGTS of Brazil, where in 1966 the traditional severance pay system of protection against non justified dismissals was transformed in a funded scheme. When hiring a worker, every employer has to open a bank account (Fundo de Garantia por Tempo de Serviçio - FGTS) for her and deposit 8 percent of the value of the wage on it. A government savings and loans institution (Caixa Economica Federal) invests the FGTS levy mostly in urban housing projects and guarantees to the workers a minimum deposit rate.

If fired, the worker is entitled to withdraw the resources accumulated on the account. If fired for unjust cause, then the worker receives an additional 40 percent of the account balance that the employer has to pay (Gill et al. 2000).

The case of Venezuela cannot be considered to be a funded reform, since the individual accounts remain in the firm's books and hence are not kept in banks (Jaramillo and Saavedra, 2005).

Similarly, in Peru, there has to be a document of agreement between the employer and the employee to establish if the accounts remain in the firm's books or if they are kept in a bank. In any case, the employers are required to deposit 8 percent of the monthly salary on the worker's CTS (Compensación por Tiempo de Servicio) accounts. The government authorises the workers to withdraw fully the amount of the account to pay eventual liabilities (Jaramillo and Saavedra, 2005).

5.3. SIMILARITIES AND DIFFERENCES BETWEEN THE UISA AND THE SPSA

Finally, note there is a link between the severance payment reform of the Austrian type and the pure UISA system. The reform of the severance pay system is indeed a first step towards the UISA system and it provides a rationale to compel myopic individuals to save in order to protect against the risk of unemployment. Thus, the system turns out to be a forcing saving device, rather than a funded insurance system. A difference between the two systems is that, while the UISA system allows unemployed workers to receive monthly benefits for a limited amount of time, the SPSA allow workers to withdraw all funds at once after separation, hence creating the possible risk that the employees could precipitate firing in order to access the sums accumulated on their accounts. In general, both systems seem to be viable ways to provide incentives to work and reduce the moral hazard of the traditional unemployment insurance systems, since the costs of the unemployment spells are internalized by the employees (when they infer that the final incidence of the employer's contribution is on wages).

6. Concluding remarks

This paper has provided an overview on the unemployment insurance savings accounts, focusing on its central characteristics and on the current experience of Chile.

In particular, it has been noted that the UISA allow a reduction of the tax burden and that they make the workers internalise the costs of their own unemployment benefits. In addition, the

UISA would enable the resolution of the moral hazard risks incidental to the current unemployment insurance. In fact, current unemployment insurance systems provide unemployment benefits under the condition that the recipients are unemployed and transfers are financed through taxes falling primarily on the employed. When the unemployed find jobs, their benefits generally are withdrawn and taxes are issued so that, under a tax point of view, an unemployment insurance system rewards people for being unemployed and penalises them for being employed (Brown et al. 2007). The internalization of the unemployment costs thereby could eliminate the externalities that typically distort the incentives to work and to search for a job.

In other words, it seems that the UISA constitute a valuable option that would provide unemployment insurance with limited harms to the incentives of the individuals[26]. In addition, the UISA seem to offer security without impeding the flexibility in the labour markets.

Another aspect to take into account is that the UISA would perform efficiently on intrapersonal redistribution and would reduce the need for the interpersonal one, since the internalization of the costs would cut the unemployment duration, which constitutes one of the major causes of poverty.

Individual accounts would also make people gain more discretion and more responsibility for their employability, social insurance and financial planning. Bovenberg (2007) suggests: *"a challenge in this respect is to better prepare people […]: schools, employers and unions can play an important role in helping people acquire the necessary financial competences and life and work skills*". The author further points out that this would result in better awareness of the voters of the fundamental trade offs in social policy, leading to a notable improvement in the quality of the political debate.

Note that the UISA are in principle savings accounts, but they involve two main advantages over the attitude of letting people save without any assistance or regulation. In first place, the mandatory contributions would mitigate the moral hazard problem that a person, knowing that the government will support them in unemployment regardless of how much they have saved, will not have sufficient incentives to save enough. Secondly, the UISA system cum borrowing fulfils a redistributive function, thus people who are unable to support themselves out of their savings could receive support.

[26] Note that if a system allows interpersonal redistribution, it inevitably entails distortions.

Several proposals for the implementation of an UISA framework have been made in Denmark, United States and Latin American countries. The recent experience of Austria on the severance payment savings accounts reform has awakened the interest of other European countries, France *in primis*. In general, according to the international experience, it seems that a system of savings accounts would constitute a valuable option for the protection of the workers facing unemployment.

References

Acevedo, G., Eskenazi P. & Pagés C. (2006). *Unemployment in Chile: a new model of income support for unemployed workers*. World Bank Social Protection Discussion Paper No. 0612.

Administratora de Fondo de Cesantia de Chile. Simulación de Beneficios. AFC Chile [online]. Available from http://www.afcchile.cl/ [accessed in March, 2008].

Barr, N. (2001). The welfare state as piggy bank. *Oxford University press.*

Blanchard, O. & Tirole, J. (2004). *The optimal design of unemployment insurance and employment protection: a first pass.* MIT Economics Working Paper 04-15.

Bovenberg, A. L. (2007). *The life-course perspective and social policies: an issue note*. World Bank Social Protection Discussion Paper No. 0719.

Bovenberg, A. L. & Sørensen P. B. (2004). *Pareto-improving social insurance reform*. Mimeo.

Bovenberg, A. L. & Sørensen P. B. (2004). Improving the equity-efficiency trade off: mandatory savings accounts for social insurance. *International Tax and Public Finance, 11*, 507-529.

Bovenberg, A. L., Hansen, M. I. & Sørensen P. B. (2007). *Individual accounts and the life-cycle approach to social insurance*. Mimeo.

Brown, A. J. G., Orszag, J. M. & Snower D. J. (2007). *Unemployment accounts and incentives*. Kiel Working Paper, No.1274.

Cardinale, M. & Orszag, M. (2005). Severance pay and corporate finance: empirical evidence from a panel of Austrian and Italian firms'. *Empirica, 32,* 309-34.

Castro-Fernandez, R. & Wodon, Q. (2001). *Protecting the unemployed in Chile: from state assistance to individual insurance?* World Bank Background paper No.6.

Desbonnet, A. (2004). *Epargne de précaution: quel potentiel d'assurance contre le risque de chômage?* EUREQua-Université Paris I.

Feldstein, M. & Altman, D. (1998). *Unemployment insurance savings accounts*. National Bureau of economic research Working Paper No. 6860.

Fölster, S. (1996). *Social insurance based on personal savings accounts: a possible reform strategy for over burdened welfare states?* Industrial Institute for Economic and Social Research Paper No. 454.

Fölster, S. (1999). Social insurance based on personal savings accounts. *Economic record 75,* 5-18.

Gautié, G. (2006). *Reform of severance pay law*. University of Paris 1

Goerke, L. (2007). *Unemployment insurance savings accounts and collective wage determination*. IZA discussion paper No. 3141.

Hofer, H. (2006). *Reform of severance pay law in Austria*. Institute of Advanced Studies (IHF) Discussion Paper.

Holzman, R. & Palacios, R. (2001). Individual accounts as social insurance: a World Bank perspective. *Scheil-Adlung X. (ed): Building social security-the role of privatization, ISSA (Geneva),* pp.45-61.

Hopenhayn, H. A. & Hatchondo, J. C. (2002). *The welfare consequences of alternative designs of unemployment insurance savings accounts.* Mimeo.

Jaramillo, M. & Saavedra, J. (2005). Severance Payment Programs in Latin America. *Empirica, 32,* 275-307.

Karni, E. (1999). *Optimal unemployment insurance: a guide to the literature.* World Bank Social Protection Discussion Paper No. 9906.

Kling, J. R. (2006). *Fundamental restructuring of unemployment insurance: wage loss insurance and temporary earnings replacement accounts*. The Hamilton Project, Brookings Institution.

Kock, U. & Den Butter, F. A. G. (2001). *Can individual unemployment savings accounts resolve the Okun's equity-efficiency trade-off?* Mimeo.

Koman, R., Schuh, U. & Weber, A. (2005). The Austrian severance pay reform: toward a funded pension pillar. *Empirica, 32*, 255-274.

Kugler, A.D. (2002). *From severance pay to self insurance: effects of severance payments savings accounts in Colombia*. IZA Discussion Paper No.434.

McCarthy, D., Mitchell, O. S. & Piggot, J. (2001). *Asset rich and cash poor: retirement provision and housing policy in Singapore*. The Wharton School, Pension Research Council Working Paper No.2001-10.

Orszag, J.M. & Snower, D. (1997). Expanding the welfare system: a proposal for reform. *European Economy, 4*, 101-118.

Orszag, M. J., Orszag, P. R., Snower, D. J. & Stiglitz, J. E. (1999). *The impact of individual accounts: piecemeal vs. Comprehensive approaches.* The World Bank.

Parsons, D. O. (1999). *Private unemployment insurance: asymmetric information and severance pay design.* Research Program in Labour and Social Insurance, George Washington University.

Peer review, Vienna. (2006). *Reform of severance pay law, summary of the peer review*. Mutual Learning Programme of the European Employment Strategy [online]. Available from http://www.mutual-learning-employment.net/stories/storyReader$195 [accessed in April, 2008].

Sehnbruch, K. (2004). *Privatized unemployment insurance: can Chile's new unemployment insurance scheme serve as a model for other developing countries?* University of California, Centre for Latin American Studies Working Paper No.12.

Shiller, R. J. (2005). *The life cycle personal accounts proposal for social security: an evaluation.* Yale University, Cowles Foundation Discussion Paper No. 1504.

Stiglitz, J. E. & Yun, J. (2005). Integration of unemployment insurance with retirement insurance. *Journal of Public Economics, 89*, 2037-206

Superintendencia de AFP, Gobierno de Chile. Seguro de Cesantia. Superintendencia de AFP [online]. Available from http://www.safp.cl/573/article-3064.html [accessed in March, 2008].

Synthesis Research, in collaboration with the Federal ministry of Economics and Labour. (2006). *From severance Pay to the separation account, a labour economics point of view of the Austrian reform process.* In Mutual Learning Programme of the European Employment Strategy [online]. Available from http://www.mutual-learning-employment.net/stories/storyReader$195 [accessed in April, 2008].

Sørensen P. B. (2001). *Social insurance based on individual savings accounts.* Mimeo.

Vodopivec, M. (2004). *Income support for the unemployed: issues and options.* The World Bank.

Vodopivec, M. & Rejec, T. (2002). *Unemployment insurance savings accounts: simulation results for Estonia.* The World Bank.

Vodopivec, M. (2008). *How viable are unemployment insurance savings accounts: simulation results for Slovenia*. IZA Discussion Paper No. 3438.

Vroman, W. (2003). *Unemployment protection in Chile*. The World Bank.

Vroman, W. (2007). *Strengthening unemployment insurance: a critique of individual accounts and wage-loss insurance.* Washington, Economic Policy Institute Briefing Paper.

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