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The Political Economy of Unemployment Insurance based on Individual Savings Accounts: Lessons from Chile

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ABSTRACT

In recent years, unemployment protection systems based on individual savings have been instituted in several developing countries. Chile was one of the first to establish such a system, which at the time was widely cited as a model for other countries. This article discusses the particular political context in which the Chilean system was created before examining how it works in terms of coverage and levels of benefits received by unemployed workers. The authors undertake a detailed analysis of the administrative data produced by the system and conclude that the insurance covers only a small proportion of the unemployed, as most workers generally had precarious jobs that did not allow them to contribute to the system consistently. The Chilean case illustrates how difficult it is to establish functioning unemployment insurance in developing countries with precarious labour markets. Based on the interaction between employment characteristics and the conditions imposed by the benefit system, the article assesses the efficacy of the Unemployment Insurance Savings Accounts (UISA) system and analyses whether it can indeed serve as a model for other developing countries.

INTRODUCTION

In recent years, several middle-income developing countries have implemented unemployment insurance systems based on a financing mechanism which relies principally on individual savings accounts (ISAs). In some cases, these savings accounts are complemented by a minimal shared funding mechanism (a 'solidarity pillar') that aims to even out the risk of unemployment among the insured. These unemployment compensation systems

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have been much lauded and promoted by multilateral international institutions,[1] because they are considered to be easy to establish and administer, have low fiscal funding requirements, and limit the risk of moral hazard associated with more traditional insurance systems. The literature on unemployment insurance systems in the developing world generally expresses concern that the risk of moral hazard is higher in countries where the institutional capacity to monitor the job search behaviour of the unemployed is more limited (Holzmann and Vodopivec, 2012). Systems based on ISAs, such as the Chilean one, are expected to lower the risk of moral hazard, thus constituting a more feasible solution to the dilemma of unemployment in developing countries.

As the first system to be implemented that combined ISAs with a 'Solidarity Fund' designed to provide minimum levels of coverage to workers who had not been able to accumulate enough savings in their individual accounts, the Chilean unemployment insurance savings account (UISA) system provides an excellent case study for Latin America, and also for other developing countries. Chile has historically had an exceptional status in the Latin American region as a 'pioneer' of privatized social security systems to which so-called 'solidarity pillars' have been added over time, which provide basic social protection floors for those not covered by their own savings.[2] In the same way that Chile's pension system was once regarded as a model for other developing countries, its unemployment insurance has now also been copied elsewhere. For example, Colombia legislated in 2013 to institute a system based on ISAs, while Mexico has legislated that it will implement such a system in the near future. Mauritius implemented a similar system in 2009 (known as the 'Workfare Programme'), while Sri Lanka is still debating the precise form of the unemployment insurance system it will adopt (Vodopivec, 2013). As we now have enough administrative data to analyse how well the system is working, it is important to examine whether the Chilean system can indeed serve as a model for other developing countries.

This article therefore dedicates an extensive part of the discussion to an analysis of the political circumstances that led to the implementation of the Chilean UISA system. As will be explained below, the system's design responds to a very particular constellation of concerns about labour market flexibilization and the potential for abuse of social protection systems, as well as the limited institutional capacity characteristic of Chile during the 1990s.

1. In 2001, the International Labour Organization (ILO) described the Chilean unemployment insurance system as 'new legislation that could lead to a new generation of reforms in unemployment insurance matters' (ILO, 2001: 50). See also Vodopivec (2013) for a succinct summary of this literature.
2. See Contreras and Sehnbruch (2013) for a detailed discussion of how Chilean social security systems developed between 1990 and 2010.

The article uses administrative data to examine the extent to which unemployed workers benefit from the Chilean UISA system. It is the first publication on the insurance system to use data from a period when the system can be considered to have 'matured' rather than still being in a process of gradual implementation through the incorporation of new contracts.[3] Our data show that the functioning of the system is highly dependent on the employment conditions prevalent in the labour market in which it operates. In developing countries with a high proportion of temporary contracts and high levels of job rotation among workers with formal jobs, an ISA-based system is unlikely to provide much protection against unemployment, especially because the unemployed tend to come from the more precarious segments of the labour market. This means that other Latin American countries with similarly poor employment conditions are unlikely to benefit greatly from copying the Chilean system.

The rest of the article proceeds as follows: we begin by explaining the particular historical and theoretical context of ISA-based unemployment insurance systems in Latin America generally, and in Chile more specifically. We then describe how the Chilean UISA system works, before turning to the administrative data to analyse its coverage. The concluding section discusses the extent to which the Chilean UISA system can serve as a model for other countries, before closing with more general observations on the relationship between employment conditions and social protection systems in developing countries. The article's conclusions are highly relevant for research on welfare states in developing countries, which tends to ignore the important link between social protection systems and the employment conditions on which they are based (Huber, 1996).

Before beginning, we must, however, draw attention to two issues. The first is that like all unemployment insurance systems in the world, the Chilean UISA only covers salaried workers and not informal workers, who do not contribute to the system, and therefore cannot claim benefits.[4] This article therefore does not discuss informality and its relationship with unemployment — a highly complex subject in its own right, which cannot be covered here. Second, we deliberately use the term 'unemployment insurance savings account system' even though it is a cumbersome expression to illustrate that the Chilean system is not really an 'unemployment insurance' in the traditional sense. As we will see from the analysis that follows, the system can better be described as a mandatory savings system based on individual accounts with an unemployment insurance component.

3. This point is discussed in more detail later in the article; it is based on Table 2.
4. Evidence from panel surveys in Chile shows that informal workers rarely become unemployed, but instead adjust to economic fluctuations through lower income levels.

THE CONTEXT OF UNEMPLOYMENT INSURANCE SYSTEMS IN LATIN AMERICA

Historical Context

Of all the social protection mechanisms that have been instituted in developed and developing countries over the course of history, unemployment insurance is the most complicated (and often ideologically contentious) as there are no easily identifiable characteristics that make a person eligible for a potential benefit, such as an age limit (as with pensions), household structure or income levels (as with benefit payments), or a health condition (as with disability insurance). By contrast, in the case of the unemployed, the state has to monitor whether a worker is legitimately unemployed, looking for a new job, and available to take advantage of a potential job opportunity. Monitoring the behaviour of the unemployed is particularly difficult in developing countries, where many workers are employed informally or frequently switch between different (and sometimes multiple) precarious jobs.[5] This also explains why most developing countries, even those in the higher middle-income bracket, do not establish fully fledged unemployment insurance systems, and instead prefer to focus on other social programmes such as health insurance, pension systems, or conditional cash transfer programmes. Most importantly, the perception that European unemployment insurance benefits were overly generous and had created undue moral hazard significantly shaped the theoretical and political debates on the subject in Latin America during the 1990s and 2000s, as will be discussed below.

Having said this, the problem of unemployment has always been an important subject for policy makers in the Latin American region where, historically, frequent economic crises have led to bouts of high unemployment. Governments therefore began to consider implementing mechanisms that would protect workers against unemployment almost as soon as they began instituting basic labour market legislation in the 1920s. The logic of protecting workers against unemployment is enshrined in dismissal clauses, which generally require employers to give at least one month's notice, and in severance pay mechanisms that require employers to pay one monthly wage (generally) per year of service if the worker is made redundant.[6]

However, aside from debates on whether or to what extent severance pay legislation distorts the functions of labour markets in developing countries, it is clear that it does not work well as an unemployment 'insurance'

5. The difficulties faced by developing countries in the establishment of functioning unemployment insurance systems mirror those experienced by developed countries during the late 19th and early 20th centuries, when insurance systems suffered from problems of low coverage, financing issues (sometimes bankruptcies), and fragmentation (some groups of workers were excluded ex-ante from the new systems); see Berg and Salerno (2008: 88).
6. A similar logic applies in Asian countries, although the amounts stipulated by severance pay legislation vary (Asami, 2013: 28).

mechanism.[7] First, it does not cover workers who have worked informally or for short periods of time under fixed-term contracts. Second, it is difficult to enforce severance pay legislation, and we know little about the extent to which it is actually paid in Latin America.[8] Critics contend that employers use flexible, informal or precarious hiring mechanisms to avoid this legislation, which probably leads to unnecessarily high levels of job rotation. In addition, we know that severance pay is rarely paid in full as employers gamble that workers are unable to face the lengthy and expensive legal process required to enforce their rights. Finally, the right to severance payments evidently does not apply if a worker resigns voluntarily, or is fired for any form of misconduct.

Given the limited use of severance pay as a protection mechanism in the case of unemployment, some countries in Latin America oblige employers to contribute to an ISA to make a provision for potential future rights to severance pay. In this case, the worker has the right to withdraw funds from the account under any circumstance of job loss. This is the case, for example, of the Fundo de Garantia do Tempo e Serviço (FGTS) in Brazil and the Cuenta Individual de Indemnización (CII) in Ecuador,[9] or the severance pay contributions paid by employers for domestic service workers in Chile. These mandatory savings accounts have been operating for many decades, and in fact form the basis of the idea that unemployment insurance can be funded through ISAs. However, these savings account systems were instituted as a form of severance pay. They do not contain a 'Solidarity Fund' that pools risk among the unemployed. What was innovative about the Chilean system when it was inaugurated in 2002 was that it combined savings accounts with a solidarity pillar.[10]

Other countries in Latin America have also established limited traditional unemployment insurance systems in the past. They include Argentina, Brazil, Uruguay and Venezuela.[11] However, their coverage often excludes entire groups of workers from the insurance (such as construction workers, domestic or public sector employees in Argentina), and their benefits are limited, both in terms of replacement rates and number of payments (Mazza, 2000; Velásquez, 2010). It is the perceived limitation and unworkability of these traditional unemployment insurance systems in developing countries with weak institutions and largely informal labour markets that have led

7. For a debate on the disadvantages of severance pay, see for example Heckman and Pagés (2000); Holzmann and Vodopivec (2012).
8. More information is available on Asian countries, where payment levels are also low; see Asami (2013: 31).
9. Employee Indemnity Guarantee Fund and Individual Compensation Account, respectively.
10. For a more detailed discussion of these subtle differences, see Holzmann and Vodopivec (2012); Sehnbruch (2006).
11. A Chilean unemployment benefit scheme also existed prior to 2002, but its benefits were so limited that few unemployed workers bothered to claim them (Sehnbruch, 2006).

policy makers in Latin America and elsewhere to look for alternative insurance models.

Recent Political Context and Theoretical Debates in Latin America

The origin of the modern theoretical debate on unemployment insurance in Latin America lies both in the historical experiences described above and in the recommendations made by the Washington Consensus to flexibilize labour markets in the region, in particular by reducing or abolishing severance pay mechanisms to boost the creation of more and better jobs, especially for low-income workers, women and young people (Heckman and Pagés, 2000). However, such reforms are politically difficult to implement, as illustrated by the fact that severance pay mechanisms have not been reformed or eliminated from Latin American labour legislation.[12] Their persistence has therefore led to the recommendation that severance pay be replaced by functioning unemployment insurance mechanisms based on ISAs, which could then function as a kind of 'provision' against severance pay, and be deducted from any final severance payment made (Ferrer and Riddell, 2012). Unemployment insurance is also a part of the 'second generation' of reforms recommended by the Washington Consensus institutions that advocate improving active labour market policies in developing countries, by establishing vocational training programmes and institutions that can better match workers and jobs (Inter-American Development Bank, 2004; World Bank, 2013). Unemployment insurance is part of this recommended package.

In this context, the existing literature often begins by explaining that unemployment insurance constitutes a legitimate space for public policy action because, as historical experience in both Europe and Latin America has shown, such an insurance cannot be provided through voluntary mechanisms or by private providers, as imperfect information systems and adverse selection criteria make the systems unworkable (Chetty and Finkelstein, 2012: 2; cited in Vodopivec, 2013: 3). However, this raises the question of how unemployment insurance can be optimally designed in developing countries, where unemployment is not a 'discrete' event and where job search effort cannot be monitored.[13] Workers, for example, can receive benefits from unemployment insurance systems while either working informally, or not bothering to look for a job at all. This raises the spectre of 'moral hazard' as studies from developed countries are often extrapolated to developing countries even though analysts recognize that unemployment in developing

12. Discussions of the reasons for this can be found in Carnes (2014) and Sehnbruch (2012).
13. Vodopivec (2013: 3) uses the term 'discrete event' to reflect the fact that in an industrial and urbanized society, 'workers either work or do not work'. He contrasts this with developing countries where workers can resort to self- or home production.

countries is a completely different phenomenon (Vodopivec, 2013). Yet, repeatedly, analysts working on optimal social insurance design in developed countries are quoted in the literature on developing countries. Espino and Sanchez (2013: 2), for example, quote Hansen and Imrohoroglu (1992: 118), who are referring to a general equilibrium model based on the United States economy when they say that 'if there is moral hazard, and the replacement ratio is not set optimally, the economy can be much worse off than it would be without unemployment insurance'.[14]

Political Context and Theoretical Debates in Chile

Concerns about moral hazard such as these have profoundly shaped the debate about unemployment insurance in Latin America from a theoretical perspective and have been incorporated by the Chilean literature on the subject. They led policy makers to search for a new balance between fiscal cost, social insurance and potential mechanisms of abuse by combining insurance contributions with ISAs (Acevedo, 2002; Acevedo et al., 2006; Calvo, 2002; Ministerio del Trabajo, 2000; Solari 2002; Velásquez, 1998).

In addition to the profound influence of the international literature on Chilean policy makers, Chile's history as a pioneer of privatized social insurance also played a role.[15] Its pension system based on ISAs was initiated in 1981, and health insurance based on individual insurance plans was established in 1983. Any funding mechanism for unemployment insurance based on sharing risk among workers was viewed with suspicion during the intensely neoliberal public policy atmosphere of the 1980s and 1990s, which had not yet fully analysed or understood the failings of individualized and privatized social insurance.[16] In this context, traditional unemployment insurance as it existed at the time in Europe was viewed very negatively, especially by employers' associations and the political right, as illustrated by the following quotation from an interview in 1993:

> The experience has been extraordinarily negative. The majority of these countries — Spain, England, and other nations of Europe, and including the USA, are having great trouble reversing these systems, which only tend to encourage leisure .... There is an increasingly larger group of people that makes arrangements to live off these benefits without any interest whatsoever of working in the formal economy. Moreover, many continue working informally and earning a double income .... [I]t would be foolish on our part if we should wish to apply

14. Similarly, papers by Feldstein and Altman (1998), Orszag and Snower (2002), and Parsons (2003) are frequently cited by the development literature on unemployment insurance.
15. See Chapters 8–12 in Sehnbruch and Siavelis (2013) for background information on this subject.
16. Although a national health insurance does exist in Chile, financed by contributions from lower-income workers and the state, even nowadays there is little shared funding between public and private insurers. See Infante and Paraje (2010) for details.

> a system in Chile that has been proven, by other countries that came before us, to be wrong and negative.[17]

An influential Chilean labour market analyst portrayed European unemployment insurance systems as being badly designed and encouraging leisure (*ocio*) (Beyer, 2000: 2, 7). This illustrates the simplistic arguments into which complex problems were distilled.

The idea of establishing unemployment insurance to protect the unemployed, and positive arguments in favour of such a scheme, such as theories related to job–skill matching and countercyclical expenditure, therefore clashed with a political economy consensus that was intensely suspicious of any form of state intervention in markets (especially labour markets), and of risk sharing. This explains why the Chilean literature on the subject follows the wider literature mentioned above, and begins by explaining that there is a legitimate role for public policy and the state in the provision of unemployment insurance, as it cannot be provided by a private insurance system (Acevedo, 2002; Acevedo et al., 2006; Solari, 2002, Velásquez, 2010).

Initial proposals to establish unemployment insurance in Chile were based purely on ISAs, and suggested an additional fiscal subsidy only for those who did not qualify for the insurance payments (Ministerio del Trabajo, 2000; Velásquez, 1998, 2010). Until the 1999 economic crisis, legislative proposals languished on the political backburner. But when the unemployment rate in Chile almost doubled within the space of one year to over 10 per cent, and clearly hit the most vulnerable workers hardest, unemployment insurance became a political priority. Due to lack of data, however, policy makers at the time did not realize the extent to which the formal sector of the Chilean labour market had become flexibilized through non-traditional contractual mechanisms, such as short-term, subcontracted, or freelance contracts, or simply through open-ended traditional contracts with short durations.[18] This was therefore not taken into account when the system was originally designed.

The structure of the Chilean UISA discussed in the following section was thus born out of a political ideology particular to Chile during the late 1990s, out of a Washington Consensus recommendation to flexibilize labour markets (by replacing severance pay with a more flexible structure of

17. Interview with Antonio Guzmán, President of the Confederación de la Producción y del Comercio (CPC), Chile's principal employer organization, between 1990 and 1996; in El Diario Financiero, 19 April 1993 (quoted in Haagh, 2004: 182).
18. For more detail see Sehnbruch (2006). The UISA was, in fact, designed without any reliable information on the types of contracts used, the duration of these contracts or the characteristics of workers who became unemployed. The official Chilean labour market survey (Encuesta Nacional del Empleo) included questions on the type of contract and on employment duration only in 2010. Before then, the Chilean national household survey (Caracterización Socioeconómica de Hogares, CASEN) asked about contracts and duration in 1996. However, the results from this survey and the administrative data are very different.

unemployment insurance), and out of an almost complete lack of information on the state of the Chilean labour market. The objective of preventing moral hazard outweighed the objective of protecting workers who lost their jobs, and led to a system which imposed such stringent conditions of eligibility on workers claiming benefits that its initial coverage of the unemployed turned out to be negligible (Sehnbruch, 2013). This explains why a system that was only instituted in 2002 had to undergo a first reform as early as 2009, in response to the realization that its real coverage was minimal.[19] It was then reformed again in 2015, in an effort to make the Solidarity Fund more accessible to the unemployed.

THE STRUCTURE OF THE CHILEAN UISA: GENERAL CONDITIONS, FUNDING AND BENEFITS

Funding

The Chilean UISA is a mixed system which is financed by all three social actors — government, employers and workers. The system generates two principal funding mechanisms: individual savings accounts (ISAs) for each worker financed by contributions from the worker and employer in the case of open-ended contracts, and only by employers in the case of workers with fixed-term contracts. In addition, the system generates an unemployment Solidarity Fund (Fondo de Cesantía Solidario), financed by employers and fiscal contributions (see Table 1 for details).

The contributions that each worker makes to her or his ISA constitute the worker's personal savings, withdrawable only in the case of unemployment, termination of contract, retirement or any other event in which the worker leaves or loses her/his job. The UISA system establishes different methods of financial contributions depending on the type of contract held by a worker. In the case of workers with open-ended contracts, employers pay 1.6 per cent of gross wages into the ISAs of their workers, while workers pay an additional 0.6 per cent of their gross wages into their ISAs. Over the course of one calendar year, these contributions add up to one quarter of a worker's monthly wage. In addition, employers commit 0.8 per cent of their total gross payroll to the Solidarity Fund, which also receives fiscal contributions. For workers with fixed-term contracts, the contributions to the UISA system are made only by employers, and amount to 2.8 per cent of a worker's gross wage. An additional contribution of 0.2 per cent is paid into the Solidarity Fund. Both the ISAs and the Solidarity Fund are administered

19. A senior official of the Ministry of Labour, who participated in discussions leading up to the 2009 reform of the UISA, confirmed that even during this reform, the concern of experts over the possibility of generating undue moral hazard by making the insurance system more generous was predominant and outweighed other considerations. Interview with senior official, Ministry of Labour, 8 September 2016.

Table 1. Structure of the Chilean Unemployment Insurance Savings Account System, including 2015 Reform

		Pre-2015 reform (2009–2015)		Post-2015 reform	
	Conditions of the UISA: Contributions and Benefits	**Workers with open-ended contracts**	**Workers with fixed-term contracts**	**Workers with open-ended contracts**	**Workers with fixed-term contracts**
Conditions relating to contributions to the UISA system	**General conditions**	Age range of workers: 18–65 years Had a formal written contract			
	Contribution to ISAs	Total contribution 2.2%: 1.6% from employers 0.6% from workers	2.8% only from employers	No change	No change
	Employer contribution to Solidarity Fund	0.8%	0.2%	No change	No change
	Government contribution to Solidarity Fund	225,792 monthly tax units (UnidadTributariaMensual)[a] per year (around US$ 16 million)			
Conditions relating to benefits paid by the UISA system	**General conditions**	Benefits from ISAs can be applied in any circumstance of job loss, including voluntary resignation, mutual agreement, redundancy, or end of fixed-term contract. The level of benefits, however, varies depending on the cause of job loss			
Benefits receivable from ISAs	**Contributions to UISA required before being able to withdraw funds**	12 not necessarily continuous contributions since last UISA payment	6 not necessarily continuous contributions since last UISA payment	No change	No change
	Number of payments receivable from ISA	As many payments as individual funds can provide based on the replacement rates established below			
	Monthly replacement rates	50%, 45%, 40%, 35%, 30%, 25% and 20% until funds run out (there is no time limit to these payments)		70%, 55%, 45%, 40%, 35% and 30% until funds run out (there is no time limit to these payments)	

(*Continued*)

Table 1. Continued

	Conditions of the UISA: Contributions and Benefits	Pre-2015 reform (2009–2015)		Post-2015 reform	
		Workers with open-ended contracts	Workers with fixed-term contracts	Workers with open-ended contracts	Workers with fixed-term contracts
Conditions relating to access to the Solidarity Fund	**Contributions required before being able to receive payments from Solidarity Fund**	12 contributions over a 24-month period, with the last 3 contributions being continuous and from the same employer			
	When the Solidarity Fund becomes accessible	When funds from ISA are unable to provide minimum replacement rates stipulated below			
	Replacement rates covered by Solidarity Fund	5 payments over 5 months @ 50%, 45%, 40%, 35%, 30% (with legal maximum and minimum amounts that are stipulated by the law and adjusted each year with inflation)	2 payments over 2 months @ 35% and 30% (with legal maximum and minimum amounts that are stipulated by the law and adjusted each year with inflation)	5 payments over 5 months @ 70%, 55%, 45%, 40%, 35% (with legal maximum and minimum amounts that are stipulated by the law and adjusted each year with inflation); In addition, a maximum of 10 SF payments can be made over a period of 5 years	3 payments over 3 months @ 50%, 40%, 35% (with legal maximum and minimum amounts that are stipulated by the law and adjusted each year with inflation)
Emergency payments from Solidarity Fund that become available when the national unemployment rate reaches levels that exceed the rolling average of the last 4 years by 1%		2 more payments over 2 months @ 25%		2 more payments over 2 months @ 30%	
Other conditions that must be fulfilled when receiving Solidarity Fund benefits		Beneficiaries must search for a job 'in an effective way' (i.e. register with local employment offices and labour market exchange website, attend interviews for job offers, not reject any job offer equivalent to at least 50% of the last received wage); Beneficiaries also have to attend vocational training courses if these are offered by the local employment office			

Note: [a]The Monthly Tax Unit is a currency unit established for fiscal use in Chile that is adjusted for inflation on a monthly basis.
Source: authors' summary based on the analysis of unemployment insurance legislation.

by the Sociedad Administradora de Fondos de Cesantía (AFC Chile) — the Administration for Unemployment Funds.

The workers' payments are limited to a maximum of 11 years. If a worker stays in the same job for more than 11 years, contributions to the UISA system cease, as it is assumed that 11 years allow for a sufficient accumulation of resources in the ISAs to cover the eventuality of unemployment (Acevedo et al., 2006; Beyer, 2000).[20] The employer's obligation to contribute to the Solidarity Fund, however, remains until the end of the working relationship.

Benefits Paid by the UISA

To withdraw money from the UISA system, workers are required to have contributed to it (not necessarily continuously) for 12 months in the case of workers with open-ended contracts, and for six months over the course of the last 24 months in the case of workers with short-term contracts. In either case, the last three contributions have to have been continuous and from the same employer. Workers must be between 18 and 65 years of age, and have been unemployed for at least 30 days. The amount and number of payments that can be withdrawn from the individual savings account therefore depends on the type of contract held by a worker prior to becoming unemployed, on the amount accumulated in the worker's ISA, and on the cause of dismissal. If a worker changes jobs without passing through a period of unemployment in between, his status in the UISA system is reset. Funds can then be either withdrawn from the savings account or left in the account for future use. In either case this does not affect the obligation of the new employer to contribute to the insurance system.

Prior to 2016, replacement rates decreased in increments of 5 percentage points from 50 per cent to 20 per cent over a maximum period of seven months. As of 2016, replacement rates were set at 70 per cent, decreasing at the same rate of 5 per cent, to a minimum of 30 per cent. If a worker has sufficient savings, the number of withdrawals that can be made is unlimited, although after the seventh month of unemployment the replacement rate is maintained constant at 30 per cent. If the funds accumulated in a worker's individual savings account are insufficient to fund a period of unemployment, and if the worker was dismissed for economic reasons (i.e. through no fault of his/her own), s/he has the right to obtain additional benefits from the system's Solidarity Fund. The amount and number of payments made by the Solidarity Fund provide replacement rates for up to five months that are

20. The cap of 11 years on unemployment insurance payments is also related to the structure of severance pay in Chile, which is set at one month's wage per year of service, with a limit of 11 months' wages. Since accumulated savings from the unemployment insurance system are deducted from severance pay liability, the insurance legislation matched this time period.

equal to what a worker would obtain from his or her ISA. However, these payments are subject to legal minimum and maximum amounts (Table 1). Unemployed workers thus only receive payments from the Solidarity Fund if their own savings are insufficient to cover their period of unemployment. Workers who resign from their job only have the right to receive payments from their ISA, but not from the Solidarity Fund. It is this inclusion of a Solidarity Fund that distinguishes the Chilean UISA system from other unemployment insurance systems in Latin America and that led to it being regarded as a model for other developing countries.

Beneficiaries of the UISA system are also automatically registered with municipal employment intermediation offices (Oficina Municipal de Intermediación Laboral — OMIL). For this purpose a national employment exchange was created (Bolsa Nacional de Empleo), which facilitates the process of employment placement services by municipal administrations, thus contributing to a better match between employment demand and supply. Unemployed workers receiving insurance payments and made redundant for economic reasons have preferential access to vocational training programmes offered by Chile's national training and employment service, the Servicio Nacional de Capacitación y Empleo (SENCE). Unemployment insurance payments cease if a worker refuses a place on a vocational training programme offered and financed by the SENCE. Similarly, insurance payments are suspended if a worker rejects, without justification, an employment opportunity (with a salary equal or superior to 50 per cent of his or her last wage) offered by a local municipal employment intermediation office.

This UISA system operates in parallel to the severance pay legislation, which entitles workers with open-ended contracts who are made redundant to one month's wage per year of employment duration with a maximum of 11 months' wages. The UISA system does not affect severance pay entitlements, except for the fact that contributions made by the employer to a worker's ISA are deducted from them. UISA contributions can therefore be regarded by employers as a provision for future severance payment costs. The four main factors that determine benefits received from the UISA are the reason for unemployment, the duration of the previous job, the worker's former wage level, and the contractual status the worker had prior to becoming unemployed (open-ended or fixed-term contracts). These are therefore the conditions that we have to take into account when analysing the empirical evidence that relates to the functioning of the Chilean unemployment insurance system.

EMPIRICAL EVIDENCE FROM THE CHILEAN UISA

The Coverage of the Chilean UISA: Real Usage

The question of how many workers benefit from the system and under what conditions is, of course, crucial to understanding how the Chilean UISA

system works, and whether it should serve as a model for other developing countries. In this section, we first examine the real usage that is made of the system in terms of how many workers contribute and actually receive benefits from the system. As the level of benefits claimed is low, we then proceed to simulate the hypothetical coverage of the UISA, i.e. how many workers are theoretically covered even if they do not make a claim when becoming unemployed.

Since the UISA system was instituted in 2002, only formal employment contracts that entered into effect after November 2002 become part of the UISA. As we can see from Table 2, which is based on the annual reports published by the Superintendent of Pensions in Chile, the insurance now covers 52 per cent of the total labour force, and over 75 per cent of the eligible salaried labour force.[21] Workers not covered by the insurance are the self-employed, public sector employees (including the military and police), who are subject to a different Labour Code, as well as domestic service workers (who have an ISA system to which employers contribute).

In terms of methodology, this article uses a random 5 per cent sample of all workers affiliated to the system, which constituted around 4.4 million contributors for the year 2015.[22] The available database follows individuals from the moment they make their first contribution to the system and includes their monthly contribution histories until December 2015. To analyse these data, we constructed two different databases from the sample: the first (sample 1) uses cross-sectional data from the month of November[23] for each year, and the second (sample 2) compiles data on all of the employment relationships that terminated in a given year. The second sample therefore allows us to analyse the employment conditions of workers who subsequently become unemployed or stop contributing to the system. All the tables in the article specify whether they are using the full database or one of the two samples.

Table 3 shows that due to the gradual process of incorporating new contracts, the proportion of fixed-term contracts (which rotate more frequently) initially outweighed the proportion of open-ended contracts. However, by 2005, these proportions inverted, and open-ended contracts became the majority. By 2015, 70 per cent of workers had an open-ended contract, while 30 per cent were hired on a fixed-term basis. The data show that the

21. Note that this calculation relates the administrative data from the UISA to data from Chile's official labour force survey, the Nueva Encuesta Nacional de Empleo (NENE), to arrive at an approximate calculation of real coverage.
22. This random sample of administrative data is provided in anonymized form by the Chilean Supervisory Agency of the pension system (Superintendencia de Pensiones).
23. We have chosen the month of November rather than the year end month of December as December employment data in Chile are affected by the entrance of seasonal workers into the labour market; this positively distorts participation rates and negatively distorts the distribution of contracts as seasonal workers are overwhelmingly hired on a short-term basis.

Table 2. Development of the Coverage of the UISA System (in thousands and %)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Number of open-ended contracts	95	353	731	1,055	1,359	1,657	1,931	2,135	2,244	2,480	2,667	2,862	2,942	3,113
Number of fixed-term contracts	335	686	858	1,013	1,112	1,200	1,235	1,100	1,262	1,335	1,436	1,410	1,385	1,334
Total number of contracts in UISA	429	1,039	1,588	2,068	2,472	2,857	3,166	3,235	3,506	3,816	4,103	4,272	4,327	4,447
Total labour force (NENE)	6,177	6,396	6,605	6,799	6,806	6,950	7,201	7,302	7,775	8,054	8,150	8,280	8,436	8,557
UISA coverage of labour force (%)	7%	16%	24%	30%	36%	41%	44%	44%	45%	47%	50%	52%	51%	52%
Total salaried labour force (NENE)	3,618	3,671	3,808	3,986	4,166	4,361	4,583	4,502	4,911	5,143	5,362	5,481	5,531	5,651
UISA coverage of salaried labour force (%)	12%	28%	42%	52%	59%	66%	69%	72%	71%	74%	77%	78%	78%	79%

Source: authors' calculations based on data provided by the annual reports published by the Superintendencia de Pensiones in Chile; labour force data from Chile's official labour force survey, the Nueva Encuesta Nacional de Empleo (NENE).

Table 3. Development of the UISA System in Terms of its Contributors

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Proportion of people working with OCs or FCs in November (%)	65	61	61	60	60	58	54	55	56	56	55	53	52
Proportion of people not contributing to the UISA in November (%)	36	39	40	41	40	42	46	45	44	44	45	47	49
Proportion of Open-ended Contracts (%)	37	46	52	54	58	60	65	63	64	65	67	68	70
Proportion of Fixed-term Contracts (%)	63	54	48	46	43	40	35	37	36	35	33	32	30
Average income of FCs as a proportion of average income of OCs (%)	64	63	62	62	58	59	59	57	57	59	61	61	62
Average income of FCs as a proportion of median income of OCs (%)	79	74	72	70	67	67	64	63	63	64	66	66	69
Average duration of OCs (months)	7	12	15	18	21	23	27	30	31	33	35	38	39
Proportion of OCs lasting 3 months or less (%)	23	16	13	12	10	9	8	7	7	6	6	7	6
Average duration of FCs (months)	5	6	8	8	8	9	9	9	9	9	10	9	10
Proportion of FCs lasting 3 months or less (%)	52	51	47	48	49	47	49	49	49	48	48	50	49
Average duration of non-contribution (months) for OCs	–	1	2	2	2	2	2	2	2	2	2	2	2
Proportion of periods of non-contribution lasting more than 3 months, OCs (%)	–	14	19	19	20	19	18	19	18	18	18	16	17
Average duration of non-contribution (months) for FCs	–	4	5	5	6	5	6	6	6	6	6	6	6
Proportion of periods of non-contribution lasting more than 3 months, FCs (%)	–	36	44	46	47	45	50	52	49	48	47	49	51

Note: OC = open-ended contract; FC = fixed-term contract.
Source: authors' calculations based on a random sample from UISA administrative data (5% of the total); data for November of each year (sample 1).

characteristics of contributors to the UISA stabilized after 2009, with few significant changes in the composition of the data since then. This is an important point to bear in mind, as it means that studies of the UISA which use data from prior years may be significantly biased due to the evolving nature of the insurance system.[24]

It is clear from Table 3 that the employment conditions of workers with open-ended and fixed-term contracts can vary significantly. On average, fixed-term contracts earn only 62 per cent of the average wages of open-ended contracts or 69 per cent of their median earnings (2015). Similarly, the duration of fixed-term contracts is much lower, at 10 months on average compared to the average duration of almost 40 months for open-ended contracts.

Table 3 also shows differences between the average duration of periods of non-contribution for workers who had open-ended or fixed-term contracts. In this context, we must note that we cannot assume that workers are necessarily unemployed while they are not contributing to the UISA. Since we have no information on what they are actually doing while they are not contributing, we have to consider that they may be unemployed, inactive or working informally. It is important to emphasize this point as studies of the UISA that analyse whether the system generates moral hazard or not simply assume that workers are unemployed while they are not contributing.[25] From Table 3 we can see that fixed-term workers on average spend six months not contributing to the UISA, and over 50 per cent of them do not contribute to the UISA for longer than three months. Workers with open-ended contracts, on the other hand, spend an average of just under two months not contributing between jobs, and 16.6 per cent of them take longer than three months to start contributing again from a new job. Unfortunately, it is impossible to analyse these differences in more detail as we do not know whether workers are genuinely unemployed while they are not contributing.

Table 4 shows that of all the workers who stop contributing to the system[26] (either due to unemployment, informal work or inactivity), only 28 per cent actually made an insurance claim in 2015, almost all of which were approved.[27] Of these workers, 62.5 per cent had fixed-term contracts, while

24. Studies by Huneeus et al. (2012) and Reyes et al. (2011), for example, use data from prior years.
25. See for example Fajnzylber and Poblete (2011); Huneeus et al. (2012); Reyes et al. (2011). The fact that we do not know what workers are doing while not contributing to the UISA system extends to those workers who may be claiming benefits from the system. This is also true for workers claiming benefits from the Solidarity Fund, who, theoretically, must be actively looking for work, and who must accept job offers with particular criteria (see details in Table 1). These conditions do not, however, preclude workers from working informally elsewhere.
26. Defined as workers who stopped contributing to the system for longer than one month during a given year.
27. Of the remainder, 8.2 per cent of the benefits requested are rejected because workers are still in a current employment relationship at the time they make their claim (i.e. they are not

Table 4. Development of the UISA System in Terms of its Benefits

Year	Number of employees who terminate their employment	Number of UISA requests (total)	Percentage of total UISA benefits requested (%)	Number of UISA requests approved	Percentage of requested UISA benefits approved (%)	Percentages of people with benefits who had fixed-term contracts (%)	Percentages of people with benefits who had open-ended contracts (%)	Benefits received that include SF payments: All contracts (%)	Benefits received that include SF payments: Open-ended contracts (%)	Benefits received that include SF payments: Fixed-term contracts (%)	Average number of payments received	Total Replacement Rate (%)
2003	93,747	5,613	6	5,589	100	80	20	–	–	–	1	21
2004	119,952	22,438	19	21,279	95	75	25	3	3	1	1	29
2005	138,529	32,059	23	30,689	96	73	27	4	3	1	1	31
2006	159,293	40,577	26	38,727	95	70	30	6	6	1	1	32
2007	178,176	44,436	25	42,835	96	69	31	6	5	3	1	32
2008	191,795	48,992	26	47,168	97	68	32	7	5	2	2	34
2009	176,240	54,456	31	52,559	97	65	35	13	10	4	2	35
2010	186,608	36,940	20	35,700	97	68	32	17	12	10	2	37
2011	206,052	51,029	25	49,455	97	67	33	12	9	5	2	38
2012	216,522	53,396	25	51,889	97	67	33	11	9	4	2	38
2013	221,919	57,745	26	55,793	97	66	35	11	8	4	2	39
2014	220,066	62,535	28	60,534	97	64	36	9	7	4	2	41
2015	220,421	61,684	28	60,070	97	63	38	15	11	6	2	44

Source: authors' calculations based on a random sample from UISA administrative data (5% of the total); data for formal employees who terminate their employment in a year (sample 2).

37.5 per cent had open-ended contracts prior to becoming unemployed, which illustrates that workers who stop contributing to the UISA system are much more likely to have had fixed-term contracts. Of these beneficiaries, 15.3 per cent receive some form of payout from the Solidarity Fund once they have used up savings accumulated in their ISAs. If we unpick this figure, we see that this proportion is higher for workers who had open-ended contracts (20.4 per cent) but lower for workers who had fixed-term contracts (9.4 per cent). Table 4 also shows that, on average, workers received 2.2 payments from the UISA system with an average replacement rate of 44.4 per cent.

From Table 4 we can see that few workers who stop contributing to the UISA system actually apply for and receive benefits (just over 25 per cent). If we then look at how many of these workers actually receive payouts from the Solidarity Fund, this proportion decreases to 15.3 per cent. The data further indicate that the 2009 reform of the UISA system did not significantly increase either its level of payouts, or the proportion of workers benefiting from the Solidarity Fund.

In part, this figure is so low because 43 per cent of workers who are entitled to payments from the Solidarity Fund do not claim these benefits (Huneeus et al., 2012). These data are consistent with reports from other experts (Fajnzylber and Poblete, 2011; Reyes et al., 2011) and with survey data (Consejo Asesor, 2008). The reasons for this low level of claims are not clear. Although the Ministry of Labour tried to research this question through a survey that was applied to contributors in the system, the response rate was too low for the survey's conclusions to be considered reliable, and they have not been made public.[28]

Again, and as discussed above, one possible explanation for the low take-up rate is that workers are not actually unemployed when they do not contribute to the system. It also seems that workers on average expect to spend only two months without contributing to the system (Consejo Asesor, 2008), so may therefore not bother to make a claim. Lack of information about the UISA system and how to make a claim may also be a problem. Similarly, low replacement rates (38–44 per cent according to Table 4) and the conditions requiring workers to register with employment offices (and potentially have to accept jobs that are offered) may put workers off. In addition, Huneeus et al. (2012) present strong evidence that workers who

unemployed according to the register of contributions); 4.4 per cent are rejected because the job for which the worker is claiming benefits is not the last job registered by the UISA database; and 2.5 per cent are rejected because the system shows that previous claims made are still outstanding. There are other reasons for which claims are rejected, such as the claimant never contributed to the UISA or the employer is not registered in the system, but these reasons add up to less than 1 per cent of total claims.

28. Interview with senior official from Ministry of Labour, September 2016.

Table 5. Coverage of the UISA of Formal Employees who Terminate their Employment in a Year (%)

		2009	2010	2011	2012	2013	2014	2015
OCs with insufficient contributions		13	11	10	10	11	12	14
FCs with insufficient contributions		36	33	31	31	31	31	36
	Subtotal	48	44	41	41	42	44	50
OCs with right to Solidarity Fund		18	18	19	18	19	19	17
FCs with right to Solidarity Fund		10	14	13	12	11	10	8
OCs with enough savings, no Solidarity Fund		5	6	6	7	7	7	6
FCs with enough savings, no Solidarity Fund		18	19	21	22	22	20	18
	Subtotal	52	57	59	59	58	57	50
Total		100	100	100	100	100	100	100

Notes: OC = open-ended contract; FC = fixed-term contract. Numbers have been rounded.
Source: authors' calculations based on a random sample from UISA administrative data (5% of the total); data for formal employees who terminate their employment in a year (sample 2).

decide not to claim UISA benefits despite having the right to do so have a higher probability of finding a new job.[29]

The Coverage of the Chilean UISA: The Hypothetical Case

Given that the levels of benefit claims of the Chilean UISA are so low, it is important to ask whether workers are at least hypothetically covered by the system, even if they choose not to claim benefits. In this section, we therefore analyse these low levels of usage from two perspectives: first, we examine how the history of the workers' contributions relates to the conditions imposed by the UISA system under which workers may benefit from its insurance component (Table 5). Second, we look at other characteristics of workers, such as their age, sex or level of education, to analyse which workers are more likely to benefit from the system (Table 6).

Table 5 simulates the potential coverage by the UISA system of those people who stop contributing to the insurance system in a given year (the potentially 'unemployed'), and who should therefore be entitled to receive some form of benefit, provided they have accumulated enough savings in their individual accounts, either from their prior job or from previous jobs. This means that we simulate the level of benefits that workers would receive if everybody who stops contributing to the system actually made a claim. By contrast, Table 4 looked only at actual claims made in the system.

We constructed Table 5 by examining the relationship between the different types of contracts that workers had before ceasing their contributions to the UISA system, the reasons why their employment relationship ended, and

29. See also Fajnzylber and Poblete (2011) for details on these arguments.

Table 6. The Characteristics of Workers with at least One Month Pause of Contribution to UISA in 2015

	Workers with insufficient contributions		Workers entitled to Solidarity Fund payments		Workers entitled only to individual saving account payments	
Variables	**Open-ended contracts**	**Fixed-term contracts**	**Open-ended contracts**	**Fixed-term contracts**	**Open-ended contracts**	**Fixed-term contracts**
Percentage in the sample	14	36	17	8	6	18
Percentage of women	36	34	45	34	37	25
Average age (years)	32	31	34	32	38	35
Education level (%)						
Non-high school	19	28	19	31	15	34
High school	48	41	52	42	42	48
Complete higher education degree	8	4	9	5	19	8
No information about education level	25	27	20	22	24	10
Average income of formal work before ceasing contributions (Chilean Peso)	409,874	271,755	447,145	278,080	1,003,153	469,426
Average duration of the most recent formal work before ceasing contributions (months)	7	3	25	6	39	9
Average duration of the break in contributions	5	5	6	5	6	4
Economic sector (%)						
Not specified	1	1	1	1	1	1
Agriculture	4	17	3	15	3	11
Fisheries	1	1	1	1	1	1
Mining	1	0	1	0	3	1
Manufacturing (non-metallic)	6	6	7	5	7	4
Manufacturing (metallic)	3	2	3	2	3	3
Electricity, gas and water	0	0	0	0	1	0
Construction	13	24	7	25	10	34
Commerce	17	13	19	12	16	9
Hotels and restaurants	9	5	7	5	4	3
Transport and communication	8	4	8	4	8	5
Financial services	3	1	4	1	9	2
Real estate	22	17	22	18	20	18
Public administration	3	1	5	2	4	2
Teaching	2	2	3	3	4	3
Health services	1	1	3	1	2	1
Other services	7	6	8	7	5	5

Source: authors' calculations based on a random sample from UISA administrative data (5% of the total); data for formal employees who terminate their employment in a year (sample 2).

the level of contributions that must be made to the system before being able to claim benefits. We found that if all workers who stopped contributing to the insurance system during 2015 made a claim, only half of these workers would actually receive a payment from the system. Of this universe of

potential beneficiaries, 51 per cent would receive a benefit from the Solidarity Fund, while the remaining 49 would have accumulated enough savings in their ISAs to receive payments from these accounts. The other 50 per cent of the workers who stop contributing to the system would not receive a payment from the system: they have not accumulated enough contributions in their ISAs to be entitled to a payout. This result can be explained by the fact that a high percentage of those workers who do become 'unemployed' had fixed-term contracts in their previous jobs during which they did not accumulate sufficient contributions in their ISAs to be able to claim benefits. This fact is supported by the evidence presented in Table 3, which showed that 50 per cent of fixed-term contracts do not even last three months. One potential reason why the administrative data presented in Table 4 show that a significant proportion of 'unemployed' workers never claim benefits may therefore be that these workers know when they leave a job that they do not have sufficient savings accumulated in their ISAs to make a worthwhile claim.

The results in Table 5 are different from the results presented in Table 4, because our simulation uses the entire universe of potentially unemployed workers and examines their rights to benefits, rather than just looking at those workers who actually receive benefits. It is important to examine the data from this perspective, because these results eliminate the self-selection bias included in Table 4 that is introduced by the fact that the real payments made by the system are only made to people who actually claim benefits. Overall, the combined results of Table 4 and Table 5 show that few 'unemployed' workers actually benefit from the 'insurance component' of the UISA system, i.e. from some form of payment from the Solidarity Fund. This prompts the question of whether there are other characteristics particular to the worker that might explain whether or not he or she receives benefits from the system.

In Table 6, we describe the sample for 2015 by the groups defined in Table 5. The first thing to note is that there appear to be differences between the groups, and the differences are related to what is expected of the Chilean labour market. Around a third of all workers are women, but workers with open-ended contracts and with access to the Solidarity Fund show a higher concentration of women, while the fixed-term workers without access include only 25 per cent of women. As expected, people who have enough savings in their ISAs and who therefore do not need the Solidarity Fund are older, more educated, with higher wages and more stable jobs. This is particularly true for the open-ended contracts, with an income which is double that of the next highest income level. In terms of economic sectors, the stronger relation appears to be with the type of contract, with a concentration of fixed-term contracts in agriculture and construction, and a concentration of open-ended contracts in commerce and real estate. For the category of open-ended contracts with enough savings, there is a higher than average concentration of workers in mining, manufacturing, financial services and public administration.

Table 7. Probit on the Probability of Using the UISA for 2010–2016 (Marginal Effects)

	All Sample			Enough Savings + Right to SF			Right to SF		
	Beta		Std. Error	Beta		Std. Error	Beta		Std. Error
Contract (open-ended)	0.106	***	(0.008)	0.177	***	(0.012)	0.116	***	(0.018)
Gender (female)	0.057	***	(0.008)	0.04	***	(0.011)	0.015		(0.013)
Age	–0.016	***	(0.002)	0.003		(0.003)	0.002		(0.004)
Age squared	0.000	***	(0.000)	0.000	***	(0.000)	0	***	(0.000)
Education									
Non-high school	(Ref)			(Ref)			(Ref)		
High school	0.085	***	(0.008)	0.146	***	(0.011)	0.151	***	(0.015)
Complete higher education degree	–0.055	***	(0.013)	0.000		(0.017)	0.046	*	(0.024)
No information about education level	–3.144	***	(0.038)	–3.858	***	(0.060)	–3.931	***	(0.071)
Log of income	0.160	***	(0.005)	0.080	***	(0.007)	0.074	***	(0.011)
Duration of employment	0.004	***	(0.000)	0.001	***	(0.000)	0.001	***	(0.000)
Duration of last pause	0.225	***	(0.001)	0.324	***	(0.002)	0.327	***	(0.002)
Economic activity									
Not specified	(Ref)			(Ref)			(Ref)		
Agriculture	0.099	***	(0.035)	0.036		(0.051)	0.075		(0.069)
Fisheries	0.352	***	(0.049)	0.290	***	(0.067)	0.291	***	(0.090)
Mining	0.016		(0.045)	0.019		(0.060)	0.071		(0.094)
Manufacturing (non-metallic)	0.149	***	(0.036)	0.095		(0.051)	0.115		(0.067)
Manufacturing (metallic)	0.111	***	(0.039)	0.050		(0.055)	0.050		(0.074)
Electricity, gas and water	0.120	*	(0.061)	0.053		(0.081)	0.030		(0.117)
Construction	0.227	***	(0.034)	0.166	***	(0.049)	0.156	*	(0.066)
Commerce	0.146	***	(0.034)	0.102	*	(0.049)	0.107		(0.065)
Hotels and restaurants	0.137	***	(0.037)	0.124	*	(0.053)	0.100		(0.068)
Transport and communication	0.097	***	(0.036)	0.071		(0.051)	0.088		(0.067)
Financial services	0.093	*	(0.038)	0.053		(0.053)	0.092		(0.072)
Real Estate	0.120	***	(0.034)	0.092		(0.049)	0.094		(0.065)
Public administration	0.236	***	(0.039)	0.057		(0.055)	0.095		(0.072)
Teaching	–0.037		(0.039)	–0.222	***	(0.054)	–0.186	***	(0.072)
Health services	0.032		(0.044)	0.005		(0.060)	0.034		(0.077)
Other services	0.084	*	(0.037)	0.012		(0.052)	0.029		(0.069)
Building management councils	0.103		(0.060)	0.061		(0.087)	–0.026		(0.106)
Extraterritorial organizations	–0.056		(0.215)	0.121		(0.275)	–0.245		(0.482)
Constant	–3.639	***	(0.079)	–2.864	***	(0.113)	–2.610	***	(0.164)
Observations	44,541			252,053			138,134		

Note: Standard error in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.
Source: authors' calculations based on a random sample from UISA administrative data (5% of the total); data for formal employees who terminate their employment in a year (sample 2).

Finally, Table 7 uses probit regressions to study the relationship between the variables described in Table 6 and the probability of actually using the UISA for workers from 2010 onwards. Table 7 includes three regressions: for all workers in sample 2; for only those workers who have the right to access the UISA; and for workers with right to access the Solidarity

Fund.[30] As expected, having an open-ended contract is positively related to using the UISA. The same is true for age and income. When considering the whole sample, having higher education is related to a lower probability of using the UISA, but once a worker has the right to the Solidarity Fund, having higher education is positively related to using the UISA. In terms of economic activities, among workers with the right to use the Solidarity Fund, there is a higher relative presence of the fisheries and construction sectors, and a lower presence of teachers. The duration of the employment relationship has a positive impact, as does the duration of the latest pause, which has a stronger relationship among people with a right to the Solidarity Fund.

At first glance, these results seem counterintuitive, as one would expect workers with lower levels of income to be more likely to claim benefits from the insurance system. The data, however, make sense if we remember Table 5, which shows that many of the 'unemployed' do not accumulate enough contributions in their ISAs to be able to receive benefits from the system.[31]

CONCLUSIONS

The Chilean case illustrates how difficult it is to establish a functioning unemployment insurance in developing countries that guarantees appropriate levels of coverage and benefits, has low administrative costs, and provides the right balance of incentives between protecting the income levels of the unemployed and avoiding any kind of abuse. To establish which lessons other developing countries can learn from the Chilean case, in particular from its hybrid nature that combines ISAs with a risk-sharing mechanism, we must consider several aspects.

First, we must question whether the system genuinely succeeds in avoiding moral hazard in the way it was expected to do. As discussed throughout the text, examining this issue is difficult as we do not know whether people who stop contributing to the system are genuinely unemployed or not. Initial studies carried out by experts suggest that some degree of moral hazard is operating among users of the Solidarity Fund (Huneeus et al., 2012; Reyes et al., 2011). This finding would suggest that moral hazard can never be entirely avoided in unemployment insurance systems, even when the actual insurance component of the system (the Solidarity Fund) is quite limited. Whether this finding is conclusive is doubtful, however, mainly because

30. The results show the point estimate for each regression. Marginal effects are available on request.
31. We need a longer period of data from the unemployment insurance database after 2009 to be able to determine more specific details about how contribution trajectories influence the potential use of the UISA system.

we know so little about why the vast majority of potential beneficiaries from the system never claim benefits. Further research on the behaviour of those workers who stop contributing is needed to be able to come to more reliable conclusions.[32] While the question about moral hazard is therefore theoretically interesting, it is not relevant in the context of a UISA system in which only 1.5 per cent of the 'unemployed' actually receive a benefit from its insurance component.

The second important lesson that developing countries can learn from the Chilean case is how difficult it is to construct functioning social protection systems based on contributions from formal employment in a labour market that is highly precarious. The Chilean government has recognized and responded to this difficulty by twice reforming a system which has only been operational since 2002 and initially provided even more limited coverage. The Chilean UISA system would probably work quite well in a labour market in which long-term, stable employment relationships predominate. However, the reality of most developing countries is that even their formal labour markets are relatively precarious. The high proportion of short-term contracts prevalent in the Chilean labour market combined with high levels of job rotation of all contracts, but especially of short-term contracts, means that those workers who are most likely to become unemployed are the least likely to accumulate sufficient benefits to cover an extended period of unemployment. Given current job rotation levels in Chile, it would therefore be difficult for any unemployment insurance (traditional or otherwise) to provide adequate coverage. Whether other countries should copy the Chilean model or not therefore depends on the characteristics of their own labour markets.

While the current UISA system could probably be improved further by reducing contribution requirements and increasing potential benefit levels, the current system is neither particularly onerous in terms of its eligibility criteria, nor particularly stingy in terms of its replacement rates if compared with other systems in developing countries. Furthermore, making the Chilean UISA more generous is unlikely to solve the fundamental problem generated by the high levels of job rotation in the Chilean labour market. As it seems that other developing countries, especially in the Latin American region, have similar problems with job turnover (Banco Central de Chile, 2016: 27) we must therefore emphasize that more traditional mechanisms of social protection such as emergency employment programmes or conditional cash transfer programmes are still essential to prevent families from falling below the poverty line when household members become unemployed, especially during times of high unemployment rates or economic crisis.

32. Once the 2015 reform of the UISA system has been operating for at least a year and a more recent database becomes available, we will be able to undertake a sequential and differential analysis.

Finally, policy makers attempting to copy the Chilean UISA system in other developing countries must also remember that it was established in a very particular political economy context. As this article has highlighted, the historical moment during which the system was designed meant that policy makers were more concerned with whether an insurance system would generate moral hazard rather than whether it would protect the unemployed from significant drops in income levels.

Overall, the Chilean case illustrates the importance of the interrelationship between the conditions of a social security system and the employment conditions on which it is based. If employment conditions are too precarious, social security systems cannot function appropriately. This means that contribution-based systems without sufficient risk-sharing components between potential beneficiaries can significantly increase the need for fiscal contributions from governments in developing countries with limited resources, especially during periods of high unemployment when governments must focus on preventing significant increases in poverty levels.

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