

# Informality and Contributory and Non-Contributory Programmes. Recent Reforms of the Social-Protection System in Uruguay

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*Several countries in Latin America are expanding their social-protection systems. There is an on-going debate about the trade-offs implied by these expansions, and by the resulting interactions between contributory and non-contributory programmes with informality in the labour market. This article analyses the potential incentive effects for formal and informal employment from a set of social-protection reforms implemented in Uruguay in the 1990s and 2000s. It presents empirical evidence of the expansion of health insurance to formal workers' dependants, and finds that this reform significantly increased formal employment. Finally, it discusses possible alternatives to extend social-protection systems while maintaining incentives for formal work in Latin America's labour markets.*

**Key words:** Social-protection systems, labour-market informality, Latin America

## 1 Introduction

Social-protection systems have evolved heterogeneously in Latin America, but all the countries in the region have both contributory and non-contributory programmes (Bertranou, 2004).<sup>1</sup> For historical reasons tied to the emergence of labour movements by industrial sector, most countries have established some variant of a contributory social-security system. Individuals who did not have access to the system's benefits through wage contributions received some level of non-contributory social services.

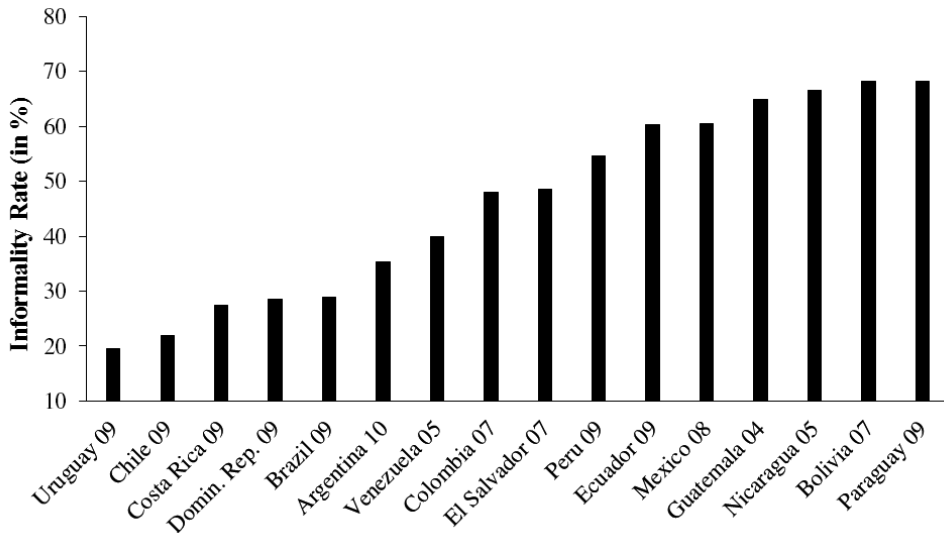
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1. Contributory programmes are those in which financing and access to benefits (such as healthcare, old-age pensions, and workers' compensation) are directly related to contributions made by the workers, their employers, and, in some cases, the state. In contrast, non-contributory programmes are not tied to the workers' contribution history, and their financing is largely dependent on taxes (Bertranou, 2004).

Such systems can function adequately for people with coverage, and they were created with the implicit objective of achieving wide coverage. However, the countries in the region are characterised by high levels of informality, which we define in this article as jobs that do not provide access to social-security benefits. Given the size of the informal sector in so many countries (see Figure 1), in the best of cases the result was an incomplete or two-tiered protection system.<sup>2</sup>

**Figure 1: Informality in Latin America. Salaried workers, c.2009<sup>a</sup>**



Note: a) Informal workers are defined as salaried workers who do not have the right to a retirement pension. The informality rate represents the share of adults in informal jobs.

Source: Authors' construction, based on SEDLAC (CEDLAS and World Bank, 2011).

There is an extensive literature on the economic mechanisms explaining formal-informal labour-market segmentation (see, for example, Fields, 1990; Harris and Todaro, 1970; Maloney, 1999). Some recent studies suggest that the co-existence of partial contributory systems and universal and means-tested benefits generates a complex incentive structure, which could at least partly explain the levels of informality seen in the region (Levy, 2008). In a world where workers evaluate the package of benefits provided by the social-protection system (with some space for the valuation of future benefits – see Summers, 1989) and the cost in terms of contributions, while employers impose the ‘tax’ implied by the contributions with the probability of being detected and punished, workers’ access to similar social benefits through the contributory and non-contributory systems would reduce the incentives for formal-sector employment.<sup>3</sup>

This mechanism is particularly relevant in Latin America, where many countries have expanded or are planning to expand their social-protection systems through (conditional

2. See Gasparini and Tornarolli (2009) for a thorough analysis of the evidence for the region.

3. Levy (2008) considers contributions and premiums to be taxes on formality when there is also a non-contributory benefits system.

and unconditional) income-transfer programmes and other non-contributory benefits (Barrientos and DeJong, 2006; Barrientos and Santibañez, 2009; Rawlings, 2004). In this framework, a deep debate is needed on the consequences of the expansion of non-contributory social-welfare programmes for the Latin American economies, especially in terms of the effects on the interaction of the formal and informal segments of the labour market.

This article contributes to the discussion by analysing the potential effects on informality of a set of social-protection reforms that have recently been implemented in Uruguay, including reforms to the pension system, health insurance, and the family allowance programme. In the case of pension-system reform, the main objective was to address financing problems and improve the incentives to contribute to social security. The main motivation for reforming health insurance and family allowances was to expand the coverage of the protection system. In particular, the last two reforms were launched by a newly elected centre-left government in response to the major economic crisis of 2002-3 and the resulting increase in the economic vulnerability of the population. These measures are in line with a number of policies implemented in the last decade by many countries in Latin America aimed at extending their social-protection systems (ECLAC, 2006).

Uruguay has one of the oldest and most developed contributory social-protection systems in Latin America, with a high degree of coverage and low levels of labour-market informality relative to other countries in the region (Gasparini and Tornarolli, 2009). Moreover, the protection-system reforms were realised through modifications to both contributory and non-contributory programmes. This makes Uruguay an interesting case study for exploring the different mechanisms through which changes in incentives can affect informality. We also present empirical evidence on the effects of the health-insurance reform on the levels of formal-sector employment, which allows us to size up (at least in the case of Uruguay) the extent to which social-protection incentives affect workers' decisions on formal versus informal jobs.

The rest of the article is organised as follows. The next section briefly describes the social-protection system in Uruguay. Section 3 discusses the recent reforms and the resulting incentives for workers' decisions about working in the formal sector. Section 4 presents empirical evidence on the effects of the health-insurance reform on labour-market informality. Finally, we provide a brief discussion and conclusions in Section 5.

## 2 The social-protection system and the labour market in Uruguay

The system is structured around a set of contributory programmes, although in the past there were also programmes that did not depend on the beneficiary's contribution history (Ferreira-Coimbra and Forteza, 2004). Table 1 lists the main programmes that currently make up the Uruguayan system by type of social risk covered and their ties to the labour market.

With regard to the contributory pillar of the system, several institutions regulate and manage specific aspects of the programmes, with the most important institution in terms of coverage being the public Social Security Bank (*Banco de Previsión Social*, or BPS).<sup>4</sup>

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4. The BPS was created in 1967, when several social-security institutions that covered specific groups of workers were combined.

Private-sector employees and employers are required by law to make contributions to the BPS, which in turn offers workers a set of services – a bundle of social benefits that is essentially provided for salaried workers in the private sector.<sup>5</sup> These benefits have traditionally included post-retirement benefits (retirement and pensions), as well as other benefits during the working stage of the lifecycle, including access to certain healthcare services (health insurance), unemployment insurance, and family allowances for workers with dependants. While the total amount of the contributions is the sum of the different components (mainly employee contributions for health insurance and retirement pensions), the bundle of social benefits is indivisible and is tied to a single contribution that encompasses all these benefits. Consequently, BPS affiliation guarantees the worker access to all the services in the social benefits package.

**Table 1: The social-protection structure in Uruguay and its ties to the labour market**

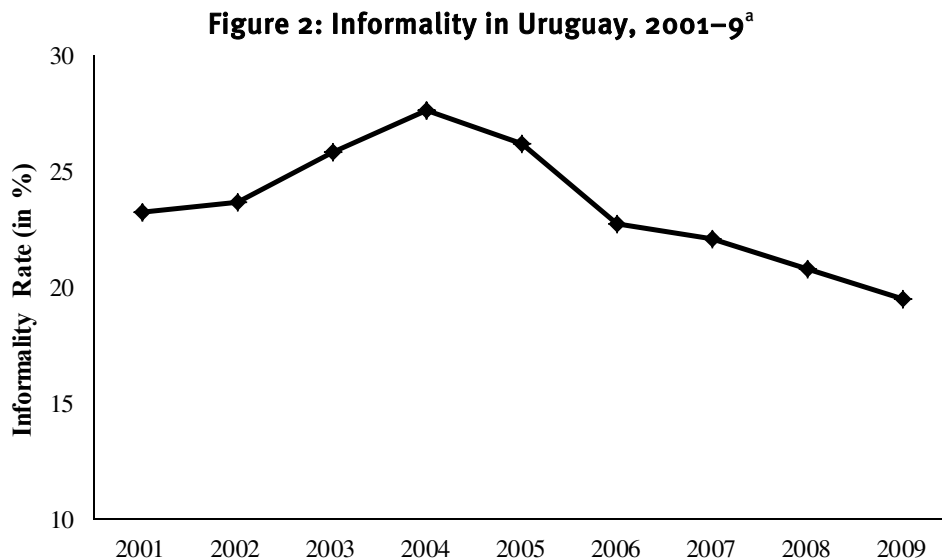
Risk	Benefits	Link to the labour market	
		Non-contributory	Contributory
Old-age, disability, survivorship	Retirement and pensions	Old-age pension; disability pension	Ordinary retirement; old-age retirement; disability retirement; survivor's pension; housing programmes
Illness, accidents, childhood	Healthcare and monetary assistance	Health services at public healthcare facilities	Health insurance (worker and family); sickness insurance; workers' compensation; maternity leave
Unemployment	Unemployment benefits	Employment programmes; unemployment assistance	Unemployment subsidy; vocational training and reentry programmes
Socio-economic vulnerability	In-kind and monetary social assistance	Health, education, and scholarship programmes; housing programmes; food programmes; family allowances	Family allowances

Source: Authors' construction, based on Bertranou (2004).

Workers who are not covered by social-security benefits – that is, who are not registered with the BPS or similar institutions – have access to some non-contributory

5. These benefits are generally also provided to public-sector employees when they sign an employment contract.

programmes, including non-contributory pensions and, more recently, family allowances. These programmes generally have stricter requirements, such as being below a specified income threshold. Figure 2 illustrates the evolution of the informality rate for salaried workers in the 2001–9 period.



Note: As for Figure 1.

Source: *ibid.*

### 3 Social-protection reforms and incentives to work formally

Uruguay has recently developed a set of reforms to some of the main programmes in its social-protection system. This article concentrates on three programme reforms: (i) the retirement and pensions system; (ii) health insurance; and (iii) the family allowance system. The first two programmes are contributory in nature and are made up of a bundle of social-security benefits; the third has moved from a purely contributory system to a mixed programme.

The reforms could potentially have a series of effects on worker incentives and subsequent labour-market outcomes. Given the considerable level of informality in the Uruguayan labour market, the decision to operate formally or informally – that is, as a registered worker with BPS or an unregistered worker – should be subject to an important margin of behavioural change. This is especially relevant in the case of workers at the margin between the formal and informal sectors of the labour market (Maloney, 1999, 2004; Heckman and Pagés, 2004; Fields, 2005; Gunther and Launov, 2012). The decision should be guided by a cost-benefit analysis in which individuals compare the gains from contributing to the BPS, which consist of the bundle of social-security benefits described above, with its cost in terms of increased contributions, and will ultimately depend on the weight that employees and employers attach to these costs and benefits.

Next, we present the main characteristics of the programmes and reforms under analysis and discuss their probable incentives for working in the informal sector.

### **3.1 Reform of the retirement and pension system**

*The pension system.* In Uruguay, the first initiatives to cover long-term disability, old age, and survivor risk date back to the nineteenth century. Since 1950, the system has been institutionalised, and has achieved almost universal coverage among workers. The current system is structured around ten institutions that operate in both the public and private spheres. The BPS is the main institution in terms of income and expenditures as well as coverage (Ferreira-Coimbra and Forteza, 2004).<sup>6</sup>

Since its creation, this institution has managed both contributory and non-contributory social-security programmes. The most important contributory programmes are the so-called ‘ordinary’ retirement and old-age retirement pensions. The ordinary retirement pension is a contributory programme which provides a full benefit to workers who met two conditions before the 1996 reform discussed below: a minimum retirement age (55 and 60 for women and men, respectively), and 30 years of contributions. The ‘alternative’ old-age retirement pension is a less generous contributory benefit granted to workers who have made contributions for a number of years above a certain threshold (15 years), but who have not reached the minimum years of contributions to qualify for ordinary retirement. Meanwhile, the non-contributory old-age and disability-pension programme consists of a means-tested monetary transfer to low-income households and the elderly, and to people with permanent disabilities, without any contribution requirement.

The Uruguayan pension system has undergone a series of modifications in the last two decades. In 1995, fiscal restrictions led to the reform of the retirement and pension systems managed by the BPS (Law 16,713/1995). This reform introduced several changes in the contributory system, including adjustments to the financing scheme and the main management and distribution parameters. The system was thus gradually transformed from a pay-as-you-go system to a mixed scheme that combines pay-as-you-go and individual capitalisation mechanisms. The new legal framework also tightened the qualifications for the retirement system by modifying some of the basic parameters. For the so-called ordinary retirement programme, the minimum retirement age for women was raised to the same level as men (from 55 to 60 years), and the minimum years of contributions to the system were increased (from 30 to 35 years). For the alternative old-age retirement plan, the minimum years of contributions were kept the same (15 years), but the minimum retirement age was increased from 65 to 70. In addition, the BPS was obligated to maintain continuous records on labour histories, which are the mechanism for verifying contributions made to the system. With regard to non-contributory pensions, the most important change of the 1995 reform was the increase in the minimum age (also from 65 to 70) for low-income workers with a right to an old-age pension (Ferreira-Coimbra and Forteza, 2005).

Additional changes to the pension system were approved in 2008 (Law 18,395/2008), the primary objective being to loosen the qualifications for retirement and pensions, in particular for contributory programmes. The minimum number of years of contributions to

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6. The BPS manages four important retirement and pension plans that cover workers in the public and private sectors (with exceptions), rural workers, and domestic workers.

qualify for ordinary retirement was lowered to the level prevailing before the 1995 reform (30 years). The new law stipulates that women workers will be credited with an additional one year of contributions for each child (up to 5 years). It also loosens the eligibility requirements for the alternative old-age pension, to 65 years of age (instead of 70 years) with 25 years of contributions, while workers who have made contributions for less than 25 but more than 15 years are eligible for the benefit at a more advanced age.<sup>7</sup> In addition to these modifications, the law establishes an unemployment subsidy of two years for workers who are aged 58 and have made 28 years of contributions to the BPS (which is taxed on contributions) so that workers in this situation can meet the minimum requirements to be eligible for retirement benefits.

*Future benefits and the incentives for formal-sector employment.* As described above, the Uruguayan pension-system reforms of the past twenty years have mainly affected the contributory component of the programme – namely, ordinary and alternative retirement. The most important changes were implemented in 1995, and the central objective – apart from alleviating the future fiscal burden of the state – was to redesign these programmes so as to improve the incentives for individuals to contribute to the pension system.

As in the majority of pension-system reforms in Latin America in the 1990s, the new design of the worker contribution scheme in 1995 assumed that greater individual responsibility and direct ownership of savings would improve the incentives for workers to contribute to social security and remain in the system, thereby reducing informal employment (Bertranou, 2004).

The tightening of qualifications for ordinary retirement (namely, a higher age for women and an increase in the years of contributions for all workers) could *a priori* generate incentives for workers to establish a longer history of social-security contributions, possibly reducing both the frequency and duration of stints in the informal sector. However, Forteza and Ourens (2009) indicate that the changes in the parameters for qualifying for retirement benefits in 1995 penalise workers with short contribution histories. They find evidence that the size of the pension expected in return for contributions (i.e., the internal rate of return) increases with the number of contributions, and it is much lower for workers who contribute for 30 years or less instead of the post-reform minimum of 35 years.<sup>8</sup>

While there are no empirical studies assessing and quantifying the net effect on informality of the 1995 reform, some recent studies find that a significant proportion of workers who make social-security contributions will not reach the minimum number of years of contributions required to retire at the normal retirement age (Bucheli et al., 2008a). These results suggest that the changes in qualifications that penalise short contribution histories have not generated strong incentives for workers to strengthen their ties to social security.

This may indicate that the margin for changing the behaviour of workers in the labour market – an assumption on which these reforms are based – is not very wide when it comes

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7. The eligibility requirements are graduated, such that the worker can receive an old-age retirement pension at 66 years of age with 23 years of contributions, at 67 years of age with 21 years of contributions, and so forth up to 70 years of age with 15 years of contributions.

8. Workers who do not have 35 years of contributions are not eligible for ordinary retirement and must wait until they are 70 years old to receive an old-age pension. They thus receive the benefits for a shorter period of time, which means that the amount of the benefit is lower when the contribution history is shorter.

to social benefits that are not immediately accessible. At the same time, the 1995 reform's tightening of qualifications for ordinary retirement has perhaps reduced the incentives to contribute to social security for individuals who are just beginning to participate actively in the labour market – by increasing the number of work years and shortening the time horizon in which they will enjoy the future benefits for which they are contributing today.

The changes introduced to the pension system in 2008 aimed at loosening qualifications by lowering the minimum years of contributions required for ordinary retirement and redesigning the conditions for the alternative old-age retirement. This might be expected to reduce the incentives for workers to develop long social-security contribution histories, although, as discussed above, the margin of these incentives for affecting workers' willingness to contribute to social security appears to be small – at least in terms of adjustments that do not alter the current pension scheme. Furthermore, the objective of the changes appears to be to improve the welfare of workers with short contribution histories rather than to act on workers' incentives (Forteza and Ourens, 2009).

### 3.2 Health-insurance reform

*Health insurance.* The healthcare system in Uruguay is characterised by a complex and fragmented structure. The main public healthcare provider is the Ministry of Public Health, which provides free medical services and medicines to low-income sectors. Private healthcare is mainly provided through a network of private hospitals and clinics known collectively as *instituciones de asistencia médica colectiva* (IAMC).<sup>9</sup>

The BPS historically granted healthcare insurance to registered private employees. This benefit was individual and did not cover the worker's family. To finance the health insurance benefit, employers and workers paid payroll contributions in the order of 5% and 3% of taxable wages, respectively. Contributing workers are eligible to select an institution from the IAMC network as their healthcare services provider, paid for by the BPS. Uninsured individuals can choose to pay for their own private healthcare package, use the public healthcare system (subject to a means test), or remain uncovered.

In 2007, the national Parliament approved a Bill (number 18, 211/2007) to reform the healthcare component of the social-protection system. In implementing the reform, the government sought to strengthen three areas: healthcare coverage (focusing on primary care); health management; and health financing. The pivotal component of the reform was the extension of healthcare coverage to workers' dependants who were registered with the BPS, mainly children and spouses or partners. Because of fiscal restrictions, however, the coverage was extended in stages. The first stage began in January 2008, when the workers' children became eligible for healthcare. To qualify, they had to be under 18 years of age. To finance the expansion almost all payroll tax contributions were increased. For example, employee payroll tax grew from 3% to 6% of taxable earnings for individuals with children, while contributions for individuals with no children increased from 3% to 4.5%. Employer contributions remained unchanged at 5%. With these funds, the BPS pays the IAMC or public health providers (depending on the user's choice) for healthcare services.

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9. The private sector also encompasses private insurers and providers of highly specialised medical services, among others.



The expansion of healthcare coverage to workers' children affects both public employees and private-sector workers registered with the BPS. However, many public-sector workers were already entitled to this coverage by the state, so the extension of coverage was most significant for registered private-sector workers, who previously had to pay for their children's healthcare directly. Even children of formal low-income workers, who previously used public health services, are now eligible for private care since the BPS entitles them to choose an IAMC in the private health sector.

*Health-insurance expansion and incentives for formal-sector employment.* If workers value mandated benefits – mainly those immediately available, such as health insurance – then their behavioural labour supply responses must internalise that these are only obtainable through formal employment contributions.<sup>10</sup> In particular, health insurance is a substantial component of the mandated benefits package in Uruguay in terms of both the BPS's total expenditure and the quality and quantity of healthcare services provided. The expansion of healthcare coverage to other household members may thus modify the incentives for workers to operate formally. Some workers might decide to move into formal jobs or to negotiate different employment conditions with their employers in order to profit from the expansion, despite the higher cost in terms of contributions (which increased from 3% to 6% of taxable earnings for those taking advantage of this option). However, the net impact of the healthcare reform on formality is ambiguous, as it depends on whether the allocation of workers to the formal and informal sectors of the labour market is decided at the individual or household level.

From the perspective of an individual worker, the incentive to become a formal employee stems from the benefit of no longer needing to pay directly for a child's healthcare once it is covered by the social-security contribution. This incentive is substantial: for a worker with an average salary, the direct cost of paying for IAMC coverage for their children is comparable to the total payroll tax of a registered worker, which gives the worker access to the whole bundle of social-security benefits (including retirement savings and unemployment insurance).<sup>11</sup> Thus, at the individual level, the reform would potentially increase the incentives of private-sector workers to become formal, and should also result in an increase in the number of children affiliated with the IAMC.

If the decision to operate formally or informally is taken jointly at the household level, the healthcare reform may have a differential impact for adults within the household depending on the intra-household allocation of employment relations before the policy change. Galiani and Weinschelbaum (2012) analyse this point from a theoretical perspective and also provide empirical results for Latin America. Their study indicates that secondary workers have a higher probability of operating informally when primary workers are formal. Under the healthcare reform in Uruguay, if more than one member of the

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10. Several studies have attempted to capture the valuation of single components of benefit packages, especially in the context of employer-provided health insurance. Royalty (2008) and Krueger and Kuziemko (2011) provide two examples of estimates of willingness to pay for health insurance.

11. In 2008, the average monthly wage for salaried workers with children was around US\$630 (at 2005 purchasing power parity), of which about US\$130 corresponded to social-security contributions for formal workers. In the same period, the average amount that workers paid to enrol a child in an IAMC was US\$60. Since salaried workers have two young children, on average, the total amount paid for private healthcare would amount to US\$120.

household is formal, the health coverage for children incurs a double contribution, since the law stipulates that payroll taxes are computed at the individual and not the household level. In these cases, the reform may induce some household workers to move towards the informal sector, as children would still receive coverage with only one formal worker in the household. When all workers in the household are informal, the reform may induce some of them to operate formally in order to obtain health coverage for children and spouses. Finally, in households that have members in both sectors, the policy might not induce any changes in their formality status. The incentives also remain unchanged for households with older or no children – in fact, there may even be incentives to leave the formal sector due to the increase in the payroll tax linked to the health-insurance component, which rose from 3% to 4.5% for those without children.

### ***3.3 Reform of the family-allowance system***

*Family allowances.* The family-allowance system was created in 1943 under the framework of the law developed by the Wage Boards (Law 10,449/1943).<sup>12</sup> The beneficiaries were private-sector workers covered by social security, and the programme was aimed at households with dependent children.<sup>13</sup> Benefits were subject to compliance with conditions on school attendance for children over the age of six.

Since the mid-1990s, the family-allowance scheme has undergone substantial changes. As a result, it has been transformed from a system that benefited workers who made social-security payments to a programme focused on households made up of low-income wage earners and adults who are not covered by the social-protection system and have dependent children. Starting in 1995 (Law 16,713/1995), the programme moved away from universal coverage of workers who make social-security contributions and was reoriented towards lower-income households. The benefit was anchored to a means test; income thresholds were set for people with dependent children; and a sliding scale was established for the benefit. The nature of the benefit was changed in 1999 and 2004 (Law 17,139/1999 and Law 17,758/2004), gradually disconnecting it from the contributory requirement. In particular, in 2004 the family allowance was extended to all households (not covered by earlier laws) with income from any source totalling less than three national minimum wages.<sup>14</sup>

The changes introduced in 1999 and 2004 led to a significant expansion of the system's coverage among children under the age of 18, especially among lower-income families. Several studies show that the family-allowance benefit targeting low-income households reached the households with the greatest need, whereas the contributory programmes (both public and private) served the low-middle and middle segments of the income distribution (World Bank, 2007; de Melo and Vigorito, 2007). Despite these extensions, however, the amount of resources dedicated to family allowances continued to

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12. This law established several provisions tied to job wages, including the family allowance.

13. There is also a family allowance specifically for government workers, which is modeled on the contributory scheme for private-sector workers but with independent financing mechanisms. The access requirements and the amount of the benefit are analogous to the general scheme.

14. The allowance for these households was set at 16% of the national minimum wage.

be small relative to the other benefit programmes in the social-protection system, due to the low amount of the transfer.

Within the framework of the programme *Plan de Equidad* launched in 2008 (Law 18,227/2007), the family-allowance system was reformulated with the objective of making the programme the main instrument for transferring income to vulnerable households with dependent children.<sup>15</sup> One of the central goals of the new system was to substantially reduce the gaps in the social-protection system's coverage in low-income sectors, as detected in previous assessments (World Bank, 2007).

The reform maintained the contributory scheme (with income limits since 1995) and expanded the target population of the non-contributory pillar, which encompassed 500,000 children under the age of 18 living under vulnerable conditions. In 2009, this figure represented approximately 45% of all children in the country (Arim et al., 2009). Thus, the beneficiaries of the programme are vulnerable households with dependent children under the age of 18 who qualify for assistance under the education programme. Socio-economic vulnerability is determined using a mean test score that combines a broad set of household characteristics, similar to the proxy means tests used by various income-transfer programmes in Latin America (Fiszbein and Schady, 2009). In addition, the monthly amount of the transfer was increased significantly relative to the average amount in 2007. The amount is scaled to encourage older children to finish high school, with the amount increasing for teenagers who decide to stay in school. The extension in the coverage and the increased amount of the benefit implied by the reform were financed through an increase in the government budget allocated to welfare programmes. The non-contributory pillar of the family-allowances programme was also financed out of general government revenue.

*Changes in the family-allowance programme and incentives for formal-sector employment.*

The theoretical literature suggests that a conditional income-transfer programme such as the family-allowance system could generate disincentives for the labour supply, with a drop in participation or in hours worked (see, for example, Moffit, 2002; Tabor, 2002). In labour markets with a relatively large informal sector, such as Uruguay, part of the adjustment can be expected to be made through a reduction in formal employment (Levy, 2008). In particular, some of the changes to the family-allowance system in the last fifteen years have probably reduced the incentives for programme beneficiaries to work in the formal sector.

As described above, the creation and later expansion of the non-contributory component of the family-allowance programme in the early 2000s transformed this income-transfer programme into a dual contributory and non-contributory system. At least theoretically, this change in the programme design could have increased the incentives for beneficiaries to work in the informal sector of the labour market: while all individuals who meet the programme's eligibility requirements (namely, belonging to a low-income household and having dependent children) receive the transfer, only some workers (those with formal jobs) 'pay' for the benefits implicitly through contributions.

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15. The *Plan de Equidad* had five main components: (i) an income transfer to households with dependent children (family allowance); (ii) a subsidy to people between the ages of 65 and 70 living in poverty; (iii) subsidy and work programmes for low-skilled jobs; (iv) educational interventions; and (v) food transfers using an electronic balance transfer (EBT) card targeting 10% of households with dependent children (see Arim et al., 2009, for details on this programme).

In addition, the introduction of an income requirement into the programme design means that the BPS must verify household income to determine eligibility for the programme. This could have generated additional incentives to not contribute to social security: some workers might be willing to accept informal jobs so as to hide some of their labour income and thereby remain below the threshold to qualify for the programme. The incentives arising from this mechanism have probably been reduced since the 2008 reform, since programme eligibility is based not only on the income threshold, but also on the vulnerability indicator, which incorporates other dimensions of household poverty.

The extent to which these incentives affect the formality decision depends largely on how much the workers value the programme's benefits, which in this case is associated with the size of the transfer. Before the programme was reformed in 2008, the amount of the benefit was very low, so the adverse incentives of the programme would have had significant effects on the decision to work in the formal sector. The reform substantially increased the size of the transfer, however, which may generate stronger incentives for workers to participate in the informal sector of the labour market. More workers are probably willing to work informally in order to hide part of their household income.

There are no studies to date on the effects of the family-allowances reform on the levels of informality in the labour market. Amarante et al. (2011) studied a large non-contributory anti-poverty cash-transfer programme, *Plan de Atención Nacional a la Emergencia Social* (PANES), which was implemented between 2005 and 2007. The results from this study indicate a decline in formal employment among the eligible population, in particular among men. Similar results were found from a similar programme implemented in Argentina (Gasparini et al., 2009) during the same period. This limited evidence suggests that non-contributory income-transfer programmes may introduce disincentives for work in the formal sector, and that the potential effect of the family-allowances reform in Uruguay may not be negligible.

#### **4 Incentive effects of social protection and labour informality: Evidence from the health-insurance reform**

This section provides empirical evidence on how the incentives from the social-protection system affect labour-market formality in Uruguay and the extent to which workers respond to the policy incentives discussed above when they are making decisions about formal and informal status. To address this issue, it reviews some of the findings in Bérgholo and Cruces (2011), which evaluates the incentive effects on labour informality introduced by the 2008 healthcare reform. That study exploits the exogeneity of the reform's extension of healthcare coverage to workers' children as an identification strategy.<sup>16</sup> The estimation relies on a difference-in-differences methodology to identify and estimate the reform's causal effect using household survey data from repeated cross-sections of Uruguay's *Encuesta Continua de Hogares* (ECH) from 2001 to 2009.<sup>17</sup> Table 2 shows the results discussed in the following paragraphs.

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16. Boyle and Lahey (2010) and Gruber and Madrian (1995) use a similar approach to analyse the effect of health-coverage extensions on different outcomes in the US labour market.

17. The ECH is the main source for information in Uruguay to calculate statistics on demographics, labour market and incomes. The ECH files from 1990 up to the present and additional information (e.g., questionnaires and

The authors find that the healthcare reform significantly induced private-sector salaried workers with at least one child (the group affected by the reform) to switch to formal employment, with a statistically significant decline in the informality rate of about 1.3 percentage points on average (column 1, row 1 in the table), relative to those without children (the group not affected by the reform). In terms of the average pre-intervention informality rate of 26.3% (row 3 in Table 2), this effect represents a 5% decrease in the probability to work informally. The estimated effect is substantial and economically significant, given the size of the informal sector in Uruguay – roughly 23% over the last decade (see Table 1). It is also noticeable because the health reform was not intended (at least directly) to increase registered employment. This result constitutes a lower bound of the incentive effect introduced by the expansion of healthcare coverage, since the main effect is probably mitigated by the increase in the contribution of taxable labour earnings introduced by the reform.

The study also finds heterogeneous effects of the healthcare reform on labour informality for different socio-economic groups, defined by gender, age, educational level, and firm size. In terms of gender, the effect for men is not significant and very close to zero (less than 0.3 percentage points). Most of the effects arise from the impact on female salaried workers – around 2.6 percentage points, and statistically significant at the 1% level (column 3). This represents a decrease of 7% from the pre-policy average for women. These results are qualitatively similar to those found by Juárez (2009) and Bosch and Campos-Vázquez (2010) for the Mexican programmes *Programa de Servicios Médicos y Medicamentos Gratuitos* (PSMMG) and *Seguro Popular*, respectively.

Table 2 also reports the estimated effect of the reform by firm size (columns 4–7). The results demonstrate negative and statistically significant effects at the usual levels for those employed in small firms (one employee) and large firms (more than 50 employees).<sup>18</sup> Among salaried workers employed in small firms, the reform produced a 4.6%age point decrease in the likelihood of working without contributing to social security, compared with a 0.8%age point decrease for those employed in larger firms. These findings are consistent with the fact that, in smaller firms, workers may have more room to negotiate employment conditions with their employers.

Although not reported in Table 2, the impact of the reform also varies by age group and educational level. While the effect is negative and statistically significant across all age groups considered in the analysis, the impact is stronger for older than for younger workers both in absolute terms and relative to the pre-policy average informality rate. For the youngest group (aged 19–29), the likelihood of working without contributing to social security falls by 1.0 percentage point (a decline of 3%), while for the oldest group (aged 50–60) the estimated impact is a decrease of about 2.1 percentage points, which represents an 8% reduction.

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methodological definitions on sample selection and stratification) are available online in the official website of the Uruguayan National Institute of Statistics: [www.ine.gub.uy](http://www.ine.gub.uy).

18. The information recorded by the ECH does not support a further breakdown of wage earners working in firms of ‘more than 50 employees’.

**Table 2: Effect of health reform on informal employment levels**

	By gender		By firm size (no. of employees)					Men married to women in the informal sector	Men married to women in the formal sector
	Male	Female	[1]	[2-4]	[5-9]	[10-49]	[50]	(8)	(9)
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Effect on informality	-0.0125*** [0.0033]	-0.0259*** [0.0037]	-0.0469*** [0.0097]	0.0055 [0.0077]	-0.0057 [0.0068]	-0.0078** [0.0029]	-0.0062 [0.0052]	-0.0495*** [0.0200]	
Observations	84109	44171	39938	11453	14088	29755	28813	10929	3663
% Informal (avge. 2001-7)	26.33	20.1	33.43	69.03	47.54	18.23	4.34	11.63	33.61

Source: Authors' construction, based on Bérgho and Cruces (2011).

Regarding educational level, the results show a negative and statistically significant effect for workers with secondary and tertiary levels of education and no significant effects on workers in the low educational group. For those with secondary education, labour informality decreases by 2.0 percentage points after the reform, with a 0.6 percentage point reduction rate for the tertiary education group. In both groups, this impact represents a decrease of 8% relative to the pre-policy period average.

As discussed in Section 3, the direction of the reform's effect on formality probably depends on the existing intra-household allocation of employment relations prior to the reform. Thus, the reform may generate changes in labour arrangements within the household, since health coverage for children only requires one adult to be a formal employee. The incentive will be greatest for nuclear households in which both adults operate informally, while for other types of household the decision depends on the valuation of additional social-security benefits. To account for these movements in status within the household, the study explores the possible effects of the reform on labour informality, taking into consideration the effects of potential joint decision-making by household members. The estimates compare the response of individuals whose spouses are employed in the formal sector with that of individuals whose spouses are employed in the informal sector. As discussed, the policy change is expected to affect salaried workers who have dependent children and who are married to a worker employed in the informal sector, while the reform might not affect workers married to an employee in the formal sector since their children are already entitled to healthcare insurance. Columns 8 and 9 in Table 2 display the results for men married to women in the formal and informal sectors, respectively.<sup>19</sup>

As expected, the effect of the reform on labour informality is negative and statistically significant at the usual levels for men whose spouses are employed in the informal sector (column 8), and small and statistically negligible for individuals married to workers operating in the formal sector (column 9). Bérgholo and Cruces (2011) find qualitatively similar results using the household, rather than the individual, as the unit of observation in the analysis.

In sum, the results indicate that the healthcare reform had a sizeable impact on women, middle-aged and older workers, and workers with secondary and higher education. In addition, the reform's effect seemed to be more relevant for workers employed in small firms. This evidence suggests that the reform increased the incentives for workers to operate formally, either by renegotiating their employment conditions with their employers or by moving to other formal jobs. The evidence also indicated that household members react jointly to the change in the incentive structure implied by the extension of benefits to children.

In the case of Uruguay, these results support the expected theoretical prediction that improving the benefits from a mandated social package provides additional incentives to become a formal worker. They also imply a positive valuation of mandated social-security benefits for a subset of the population.

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19. The results are qualitatively unchanged when the estimates are conducted for women married to men.

## 5 Discussion and conclusions

Like most countries in Latin America, Uruguay has expanded its social-protection system in the past decade. One thing that Uruguay did differently, however, was to base a lot of the expansion on the contributory programmes – the pensions system, health insurance, and unemployment insurance. Furthermore, the extension of the income-transfer system to groups that have traditionally been excluded from coverage was accomplished within the existing traditional social-welfare framework – namely, through the expansion of the family-allowance programme. Thus, instead of extending differentiated benefits and services to people who could not make contributions, the new scheme (which was mainly implemented in the second half of the 2000s) represented an original alternative to the new regional paradigms in the area of social welfare (ECLAC, 2006).

The extent to which the changes to these programmes are able to satisfy coverage objectives while at the same time improving the willingness of workers to contribute to social security depends, in part, on the workers' valuation of the costs and benefits of social security, the alternatives to these costs and benefits, the magnitude of the changes introduced, and the degree of consistency among the incentives they generate. In some cases, the design of these reforms appears to be consistent with better incentives for workers to contribute to social security and thus to obtain coverage through the bundle of social-security benefits. In other cases, the changes may have improved worker coverage at the expense of generating adverse incentives to registering for social security. In still other cases, the changes introduced to the programmes have probably generated ambiguous incentives.

The empirical evidence on the effect of these reforms on formality is scarce. With regard to the extension of health insurance to cover the children of registered workers, the evidence suggests that the reform improved workers' willingness to contribute to social security. In principle, the expansion of this contributory programme appears to have reconciled the objectives of improving population coverage and providing incentives for workers to operate formally. The pensions-system reform, however, does not appear to have achieved the same result. In this case, we do not find evidence that the penalty in terms of the rate of return for short contribution histories, after the reform in 1995, has changed the contributions profile of workers. Moreover, some studies indicate that a very large proportion of workers will not reach the minimum years of contributions required to retire from the labour market at the normal retirement age, even after the requirement was lowered from 35 to 30 years in the 2008 reform (Bucheli et al., 2008b).

Some of the reforms appear to have narrowed the coverage gaps, but the gaps are still large, in particular those associated with the contributory social-protection system (Arim et al., 2009). The strategy of expanding the contributory programmes to narrow the coverage gaps and at the same time improve the levels of formality in the economy clearly has limitations. One possible restriction has to do with the difference between the state's and the worker's valuation of contributory benefits and how these benefits are provided to the workers – bundling benefits. The state requires workers to buy a whole set of goods and services, so as to fulfil certain objectives that are considered socially necessary. This bundling requires workers to assess a single set of components that have widely different characteristics – present versus future consumption, collective versus individual needs, monetary versus in-kind receipts, everyday use versus emergencies, and so forth. The



imperfect match between the individual needs (or preferences) of workers and the set of benefits in the bundle implies that workers may not want to consume all the benefits, or at least not all at the same time. The impossibility of splitting up the package of benefits lowers the value of social security for workers and thus reduces their willingness to contribute (Levy, 2008). After the healthcare reform in Uruguay, many workers may be willing to contribute 6% of their wages to obtain health-insurance coverage for their families, but they do not want to contribute additional resources to gain access to the rest of the benefit bundle. While the expansion of health insurance has increased the formality incentives for a group of workers, the number of individuals with health coverage would probably be greater if they could make contributions for this benefit alone.

In addition, there is a limit to how far coverage can be expanded through the redesign of contributory social-welfare programmes, given the current productive and labour-market conditions of a developing country like Uruguay. One indication of this restriction is the difficulty of lowering the levels of informality even in periods of strong growth, such as the 2004–10 period in Uruguay.

Given this framework, what are the options for continuing to expand the social-protection system in Uruguay? One option is to continue expanding and/or reforming the contributory social-welfare scheme so as to generate incentives for workers to make contributions. Given the limitations discussed above, this strategy requires rethinking the criteria for supplying the bundle of social benefits – for example, considering the possibility of breaking up the bundle and having workers voluntarily ‘buy’ the type and quantity of social goods and services desired based on their individual preferences. The workers’ valuation will be influenced by the available alternatives and their costs, as well as by the quality of these alternatives (non-contributory benefits and services provided by the market). An alternative that does not alter the obligatory nature or indivisibility of the bundle of social benefits, while still being based on the expansion of the contributory system, would require deep changes in the design of the bundle so as to improve the incentives to contribute or at least eliminate mechanisms that generate counter-incentives. One possibility would be to consider the household, rather than the individual, as the basis for contributions. In Uruguay, as in most countries, each worker must pay for all the benefits in the bundle even when some of the benefits extend to the family, thereby generating situations of overlapping contributions by different family members. The health reform provides an example of this design issue: in nuclear households, both spouses must make contributions to extend their health coverage to their children, but one of the spouses does not ‘enjoy’ the additional benefit implied by the extra contribution (that is, only one contribution is necessary to cover the children). Bérgholo and Cruces (2011) explore the possible adverse effects on the formality status of this type of household and do not find significant effects. However, this incentive may become more important following the extension in 2011 of health coverage to the spouses of formal workers (as established by the law).

A second option would be to expand the existing non-contributory programmes or to implement new programmes that are not tied to the contribution history of the beneficiaries, so as to provide coverage to workers and their families who participate in the labour market without contributing to social security. In this case, the scale would be tipped towards coverage rather than incentives. For example, the extension of the family-allowance programme in Uruguay has provided huge benefits, but it undoubtedly removes one of the

distinctions between formal and informal employment: under the new system, everyone receives the allowance, but only some ‘pay’ for the benefits implicitly through their contributions. The same situation arises with less immediate benefits like retirement, where less stringent qualifications for the benefits are currently still under discussion, or even the expansion of the non-contributory component of pensions. The evidence on the incentive mechanisms affecting formality and informality in the region’s labour markets suggests that the co-existence of contributory and non-contributory programmes – while providing broader coverage of the population – probably undermines the incentives to contribute to social security.

Finally, at the other extreme, there is the possibility of moving towards a universal system financed through taxes (that is, universal incomes for the elderly and children, universal access to unemployment and health insurance, and so forth). Under certain regulatory conditions, this could be considered the ‘first-best’ option in terms of equity, efficiency, and coverage (see Levy, 2008). However, these universal social-protection systems appear to be difficult to implement in the short and medium terms, since there are so many different interests involved and so many norms and regulations that would need to be modified.

The near future for Uruguay and the rest of the countries in Latin America will probably be sealed by a ‘second-best’ scenario, in which the traditional systems live side by side with ever-growing non-contributory programmes. The key may lie in conducting a cost-benefit analysis of the programmes and then defending those that appear to have a positive balance in net terms.<sup>20</sup> In this case, one potential problem is that the presence of disincentives leads to the rejection of measures with a potentially positive net impact.

In the absence of governments with a broad mandate to reform social protection and to institute far-reaching transformations, it will be necessary to design policy options that minimise the incentive conflicts (in terms of informal work, labour-market participation, and so forth). This is ultimately the objective of the research agenda that is being developed in the region on the interaction between social-protection systems and labour markets.

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20. Cruces and Gasparini (2008) discuss these aspects in the context of the universal family allowance in Argentina.

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