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# Expanding Social Insurance Coverage to Informal Workers

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# ABSTRACT

The high incidence of informality in developing countries implies that many workers are not covered against important risks, such as unemployment, illness and old-age poverty. Given that expanding the Bismarckian system to include informal workers presents many challenges, several countries implemented non-contributory social insurance programs to expand coverage. However, these contributed to labor market segmentation and are unlikely to be financially sustainable. This note reviews the economic literature dealing with the expansion of social insurance programs and summarizes the main policy insights. It draws on international evidence on social insurance system design and innovations, and the resulting impact on coverage. It also provides general design principles that can apply to unemployment benefits, health insurance, and pensions.

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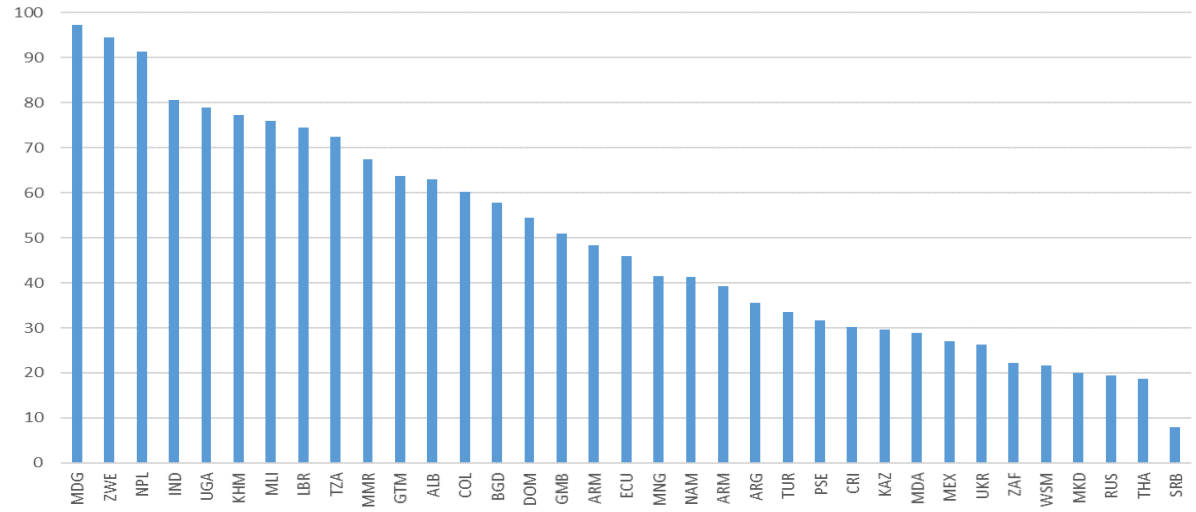
# 1. INTRODUCTION

The high incidence of informality in developing countries implies that many workers are not covered against important risks, such as unemployment, illness and old-age poverty (Figure 1). In Sub-Saharan Africa, for example, typically not more than 5 to 10 percent of the workforce is in formal work with access to social insurance (Van Ginneken, 2010). In many Latin American countries, informality rates exceed 60 percent (Tornarolli et al., 2014). This reality of the predominance of informal employment typically translates into low and unstable earnings in low productivity activities and a high incidence of poverty. Not all informal workers are poor, particularly among highly skilled workers in undeclared self-employment and informal wage work. But even these non-poor are vulnerable to income shocks from unemployment, illness and longevity.

**Figure 1**

Snapshot of Informal Employment around the World (% of total employment)




Source: ILOSTAT. Informal employment comprises all workers of the informal sector (in unregistered firms) and informal workers outside the informal sector (own-account workers, and employees not contributing to social security, paying income taxes, or who lack certain benefits such as family leave or sick leave).

Observed employment trends suggest that formal wage employment is unlikely to become the main source of jobs. The development process that in the past brought economies dominated by decentralized primary production to modern industrial sectors comprised of mostly formal jobs is no longer the prevalent path for economic development today (Cho et al., 2012; Gindling and Newhouse, 2014). Rather, the structural transformations currently underway in the developing world are characterized by transitions out of agricultural activities and other primary production into mainly service activities, much of which in non-wage employment. Stable and formal wage employment is becoming less common even in middle- and high-income countries, with the emergence of alternative work arrangements such as self-employment, part-time work or temporary contracts – all of which tend to lack social insurance coverage and other labor protections (Kelly et al., 2017).

**BOX 1: SOCIAL INSURANCE SYSTEMS: SOME CONCEPTS**

Social insurance systems have two goals: consumption smoothing and poverty prevention. A social insurance system seeks to provide people with resources to smooth the impacts of negative income shocks on their consumption. To prevent poverty, social insurance aims not only to protect individuals from negative shocks, but also to guarantee them with a minimum level of consumption that is socially acceptable. These goals are many times indistinguishable from each other, particularly in low income countries and in cases where a negative shock pushes the non-poor into poverty.

To achieve these goals, social insurance systems have two instruments. The first one is a risk-pooling mechanism, where individuals and employers contribute to a collective fund to finance the transfers to those who face a negative shock. While it is not always the case in practice, these contributions are supposed to be actuarially fair to incentivize participation. The second instrument includes savings arrangements, where individuals save money in individual savings accounts to pay for their consumption when they face a negative shock.

Because of liquidity constraints, social insurance systems also require redistributive arrangements that can operate in two ways: by subsidizing contributions (either in the form of subsidized premiums or topping-up savings), or by subsidizing benefits (for instance, by guaranteeing a universal minimum pension level).

Another important aspect of a social insurance system is its financing. In addition to individual and employer contributions, the sources of finance could include general government revenues and earmarked taxes.

The coverage of current Bismarckian social insurance systems is unlikely to expand considerably. Indeed, these systems are financed by employer and employee contributions, and designed for a traditional employment relationship where workers hold formal salaried jobs with the same employer throughout their working lives.[1] Expanding the Bismarckian system to include informal workers presents many challenges. First, Informal workers are unlikely to be registered, especially in developing economies, thereby governments struggle to identify, locate and monitor individuals in this category. Second, enforcing social insurance contributions for micro-, small- and medium-sized firms or from small agricultural producers is difficult, as inspection costs are high, and can lead to administratively inefficient systems that add distortions to the labor market (Almeida and Carneiro, 2012). Third, the productivity levels of informal workers and/or firms are often too low for them to afford social insurance contributions and the associated transaction costs.

Several countries implemented non-contributory social insurance programs to expand coverage but these contributed to increase labor market segmentation, and are likely to be financially unsustainable. Social pensions or non-contributory health insurance are effective mechanisms to reach out to workers who are “outside” the mandatory contributory systems. The problem is that these programs can become an implicit tax on formal jobs and reduce incentives to enroll and contribute; particularly where

[1] This system design was effective in settings of young population age structures where most workers in an economy made payroll contributions throughout a 40-year career, and retirement periods averaged less than 10 years due to shorter life expectancies.

transitions between formal and informal jobs are frequent. There are also questions about the fiscal sustainability of the programs and whether it make sense to subsidize benefits for informal workers who have, at least partially, the capacity to pay.

This note reviews the economic literature dealing with the expansion of social insurance programs and summarizes the main policy insights. It draws on international evidence on social insurance system design and innovations, and the resulting impact on coverage of and participation by formal and informal workers. The focus is on general design principles that can apply to unemployment benefits, health insurance, and pensions (old-age, disability, and survivorships).

The rest of this note proceeds as follows. Section 2 discusses three different types of social insurance schemes and argues that well-designed integrated programs are the best policy option. Section 3 discusses the common implementation challenges and outlines alternative approaches to overcome them, highlighting the role of digital technologies to promote take-up and retention, and the design options that would minimize potential distortionary effects. Finally, Section 4 concludes.

**BOX 2: EFFICIENCY AND EQUITY GROUNDS FOR GOVERNMENT-PROVIDED SOCIAL INSURANCE**

There are important efficiency and equity considerations to justify the public provision of social insurance. The existence of significant market failures and individuals' diverse risk aversion profiles are key reasons for government involvement.

Insurance Market Failures. Unemployment and health insurance are affected by **adverse selection**, which arises because insurers cannot determine the unemployment and health risks with sufficient accuracy, as work or health histories are imperfect and in some cases nonexistent predictors (Vodopivec, 2004). Low-risk individuals do not have strong incentives to obtain insurance, skewing the pool of insured individuals to those with higher average risk. Adverse selection therefore leads to under-provision of insurance. Unemployment and health insurance are also affected by **moral hazard**, which leads to over-utilization of unemployment benefits or health services. For example, unemployment insurance may reduce work effort when employed and job search efforts when receiving benefits, and health insurance may lead to riskier behaviors. Finally, some of **the risks in question are highly correlated** across a wide range of individuals. More specifically, some risks, such as unemployment, are correlated across individuals during the business cycle, making it difficult for private insurers to diversify risk. A similar issue arises in terms of uninsurable risks, whereby some socio-demographic groups face risks so high that they are priced out of the insurance market. For instance, the chances of re-employment for workers close to retirement age may be so low that private insurance may not be viable. Similarly, pre-existing health conditions may prevent some people from qualifying for private health insurance.

Capital market failures. Imperfect capital markets represent another important impediment for individuals to access private financing to cope with a short-term shock, even when the probability of repayment is high. For instance, individuals who become unemployed because their skills become obsolete may find it difficult to obtain a loan to finance education or training, given the delayed returns to human capital investments.

Myopia. The existence of individual barriers to participation may result in insufficient demand and sub-optimal levels of social insurance coverage. Inadequate long-term planning on the part of individuals can be attributed to many factors, including lack of information, awareness or financial skills, behavioral factors that impede individuals from accurately perceiving and weighing risks, or outright psychological barriers for longer term planning (Holzmann, 2014). There is a large body of literature on the individual barriers to participation in pension schemes, where individuals may rationally postpone deciding on whether to contribute to a pension fund because the cost of gathering the information needed to decide coupled with the complexity involved in evaluating the information may exceed the short-run benefit from doing so (Madrian and Shea, 2001). There are similar examples for unemployment and health insurance take-up decisions (Madrian, 2014).

Poverty and liquidity constraints. Some of the failures that characterize insurance markets are particularly burdensome for informal workers, especially those for whom informal employment is a last resort due to lack of alternatives. For example, unskilled workers in precarious or irregular work are more likely to face credit constraints, lack the resources to make complex decisions, or be affected by uninsurable risks. They are also more likely to live in impoverished communities or lagging regions with limited work opportunities, and therefore are less able to self-insure against risks. Moreover, problems of adverse selection are likely to be heightened compared to formal counterparts whose health or job records are more readily available or verifiable for potential insurance providers to make risk assessments.

# 2. INTERNATIONAL EXPERIENCE IN EXTENDING SOCIAL INSURANCE TO INFORMAL WORKERS

The performance of Bismarckian contributory social insurance programs has been disappointing in developing countries. Given the challenges of extending its coverage to informal workers, several low- and middle-income countries introduced new social insurance schemes to cover individuals who work (permanently or intermittently) in the informal sector and have low or limited capacity to pay regular contributions. While some of these new systems have a universal design targeting workers' economy-wide, such as *Seguro Popular* in Mexico, others focus on a specific segment of the economy, such as Ecuador's efforts to expand coverage in rural areas. Some programs are fully subsidized, requiring no individual contribution – for example, the "30 Baht" in Thailand – whereas others take a mixed approach incorporating a targeted subsidy for vulnerable workers, and an actuarially fair contribution system for formal workers, such as the Chilean pension system.[2] Social insurance systems that incorporate informal workers can be broadly sorted into three categories: non-contributory universal programs, parallel schemes, and nationally integrated programs with explicit subsidies.

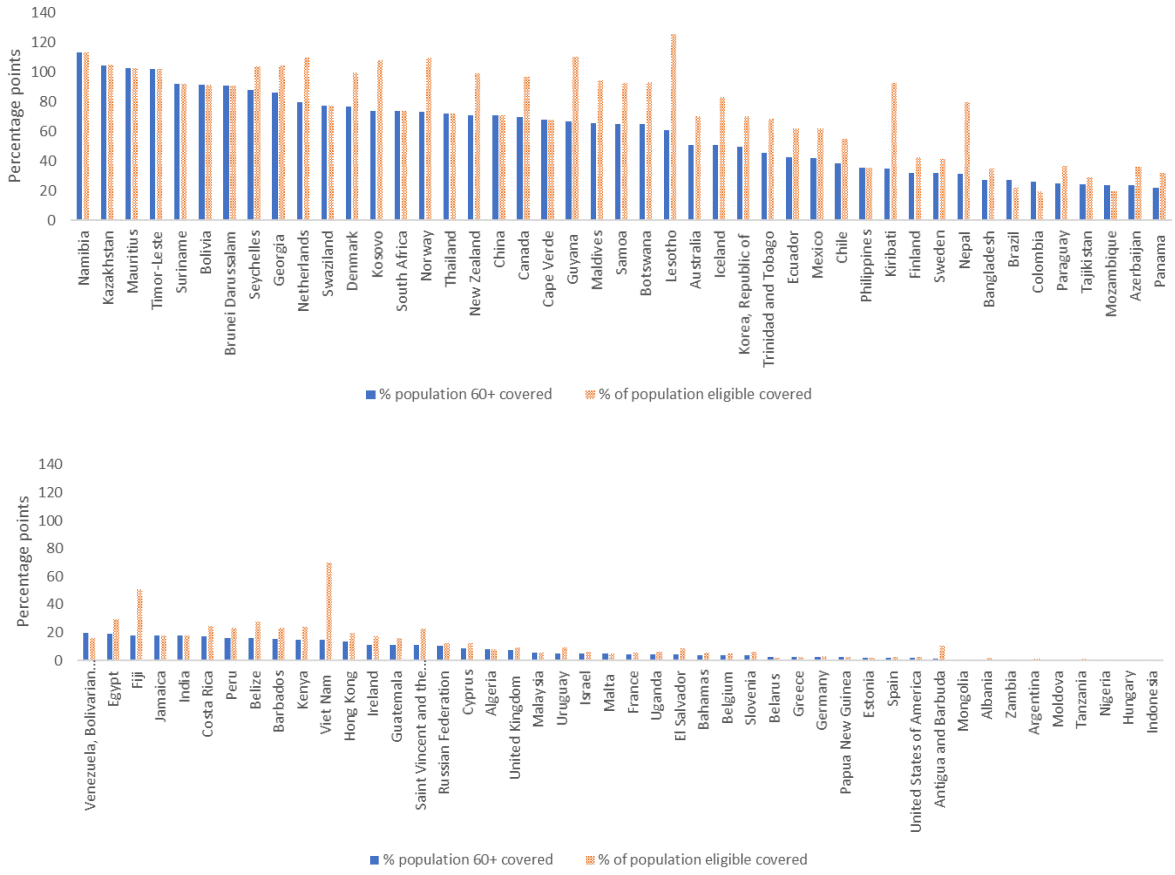
**Non-contributory universal programs** include social pensions,[3] universal health insurance and unemployment assistance where eligibility is not based on past contributions and is instead financed out of general taxation. While social pensions have been in place for a long time, they expanded substantially since the 1990s (Palacios and Knox-Vydmanov, 2014). According to the HelpAge International Social Pensions Database, 110 countries have a social pension, albeit some with low coverage rates (Figure 2). For instance, New Zealand's pension system is based around a social pension for those aged 65 years or older, which is financed from general revenues. Another example comes from the National Health Service (NHS) of the United Kingdom, which provides public healthcare to all permanent residents, and it is paid out of general taxation.

[2] While the contributory part of the Chilean pension system is fully funded by workers' contributions, the government is responsible for financing the Basic Solidarity Pension for persons who did not contribute, and the Pension Solidarity Complement for persons whose contributions are below a threshold. The government also guarantees pension benefits in cases where a pension fund is shut down or becomes insolvent (Shelton, 2012).

[3] Broadly defined, social pensions are cash transfers not linked to contributions that occur after retirement or after a given eligibility age (Holzmann et al. 2009).

**Figure 2**

**Social Pension Coverage across the World**




Source: Based on data from HelpAge International, Social Pensions Database

**Parallel schemes** include those where several fragmented contributory systems coexist, such as in Tunisia, where there are different pension programs for public and private sector workers. Even within the private sector, workers have multiple schemes that depend on where they work (Robalino et al., 2012). Parallel programs also include cases where a Bismarckian system coexists with non-contributory program, where eligibility for the former depends on labor market status and workers cannot be included in both simultaneously, as it is the case with Mexico's health insurance system. Mexico in 2002 introduced *Seguro Popular*, a large program designed to provide health insurance to all workers not affiliated with social security and that covers a pre-determined set of procedures and treatments (Pages, Rigolini and Robalino, 2014). Whereas Mexico's formal social security system provides better coverage, the difference in benefits between the two programs has narrowed over time. Moreover, the program is virtually free of charge to users, with costs borne by the government. Overall, the program has been very effective at increasing health coverage, and reducing health expenditures for Mexican families by an amount equivalent to 4.2 percent of the household budget (Barros, 2009). The program has also reduced infant mortality rates by about 0.5 percentage points, a significant improvement (Pfutze, 2014).

**Integrated national programs.** Some governments have reinforced the solidarity mechanism by integrating a Bismarckian system and new social insurance schemes aimed at including informal workers, into a single system for beneficiaries across the income spectrum. Chile did this by reforming its pension system in 2008 in response to the fact that many individuals did not contribute frequently enough to the system, particularly among groups with low formal labor market attachment (Attanasio et al., 2011). To incentivize workers to join the formal sector and raise contributions, the reform replaced the redistributive component of the pension system with two new components: one consists of a means-tested pension for those not entitled to the contributory pension benefit; the other is a welfare pension complement to sustain consumption by topping-up the contributory pension for those with insufficient contributions. In addition, the new system introduced incentives to encourage the participation in the contributory system for groups with historically low attachment to the formal labor market, such as women, young workers and the self-employed. The reform included subsidies to women for each child they have, a wage and contribution subsidy to young workers, and pension eligibility for the self-employed (including eligibility for the redistributive component).

Parallel and universal non-contributory systems face different sets of challenges. Universal non-contributory systems can add important fiscal pressures because benefits are typically not linked to revenues. Parallel systems can create implicit subsidies or taxes as workers move between jobs that have different formality status and are thus covered by different social insurance schemes. They are more prone to be regressive and distortive when they are highly fragmented.

An integrated system can, in principle, address the limitations inherent to parallel and universal non-contributory schemes by being more financially sustainable and not exacerbating labor market distortions that constrain labor mobility. Integrated systems do have an income effect, since beneficiaries receive larger or smaller subsidies depending on their earnings; and they may still be distortionary, if the income threshold to qualify for subsidies is high enough to incentivize early retirement or reduced job-search effort. The next section provides some guidelines for an effective implementation of an integrated social insurance system.

**BOX 3: THE TRADE-OFFS BETWEEN UNIVERSAL SOCIAL INSURANCE AND INCREASING FORMAL WORK**

Despite the equity and efficiency arguments in favor of extending social insurance to informal workers, legitimate concerns arise around the potentially distorting effects on labor supply and labor demand.

Social insurance programs can affect labor supply and demand decisions when they are linked to the labor market, either through eligibility requirements or financing mechanisms. When social insurance is financed through payroll taxes (paid by employers) and workers' contributions, the wedge between the cost of labor and take-home pay increases. This could reduce formal employment, especially in low and middle income countries with low enforcement capacity.

The magnitude of the impact on formal labor demand and supply will depend on the *perceived* size of this wedge, not just the actual size of the wedge. Perceived tax-wedges are larger when people do not value the benefits offered by the scheme and thereby would prefer not to participate in the program, or prefer to contribute less. These perceptions regarding the value of a social insurance program are partially driven by a rational and informed process, such as when individuals do not value the systematic and often implicit redistribution mechanisms included in risk-pooling arrangements. The perceived wedge may also increase if the services provided are of poor quality, if there is excessive "bundling" of benefits that many participants do not value, and if contributions are not linked to the expected benefits. The perceived wedge is also driven by myopia. Myopia includes cases where individuals face information, awareness and/or psychological barriers, or lack the financial skills for long-term planning.

A large tax-wedge may provide incentives for employers to hire workers informally or to hire fewer workers, because it becomes more difficult to pass on the cost of insurance to workers in the form of lower wages. A large tax-wedge – perceived or real – can also provide incentives for workers to take informal jobs. Moreover, it can interact with implicit or explicit subsidies offered by social insurance to informal workers. Explicit subsidies given to workers in the informal sector in the form of non-contributory benefits may provide incentives to work informally, because whereas formal workers pay for these benefits, informal workers get them for free. Implicit subsidies – in the form of "above market" rates of return on contributions, minimum pension guarantees, minimum unemployment benefits, or early retirement provisions that are not actuarially fair – can also distort incentives and encourage early retirement, shorter enrollment periods in social security or reduce job-search effort.

The literature provides significant evidence that extending social insurance to informal workers distorts labor supply decisions and labor outcomes in the aggregate (see Frölich et al. 2014). It is nevertheless important to recognize that it is impossible to design social insurance mechanisms and protect workers without changing economic incentives (Barr and Diamond, 2006). The potentially distortive effects of extending social insurance to informal workers must be weighed against the associated welfare and economic benefits.

Source: Pages, Rigolini and Robalino (2014)

# 3. DESIGN, IMPLEMENTATION AND POLICY OPTIONS

Introducing a social insurance system for informal workers is fraught with challenges, ranging from practical issues of enrolling and registering participants, to getting the incentives right to contribute or save, and not exacerbating labor market distortions (see Box 3). Identifying eligible participants is complicated by the fact that informal work is mainly unorganized and takes place in a variety of sometimes changing locations or within homes. In the case of self-employed or seasonal workers, maintaining up-to-date and accurate records is administratively complicated due to intermittent and irregular work for different employers, and irregularity of incomes. And given workers' myopia and time preferences for spending versus saving or self-insuring, incentivizing informal workers to contribute voluntarily is difficult. These factors are obstacles for registering beneficiaries, attracting enrollees and collecting contributions (Van Ginneken, 1999, Holmes and Scott, 2016). Furthermore, establishing the level of benefits as a replacement rate of income cannot be easily determined in most cases. And unlike health status, employment status is not directly verifiable as individuals cannot easily prove that they are unemployed when they might be out of the labor force or working informally.

To overcome these challenges, it is critical to delink access to social insurance programs from the labor contract. All workers would have access to the same social insurance program regardless of work status or sector. Within a single integrated system, rather than in two parallel systems, contributions would remain mandatory for formal workers (and their employers, when available), and the system would be open to informal workers on a voluntary basis. To this end, informal workers would need to be identified and enrolled, and there would be a system of financial and non-financial incentives to promote contributions and savings. Within this broad framework, this note summarizes some of the main issues related to design and implementation (see summary in Table 2 below).

## 3.1 REGISTERING AND ENROLLING WORKERS

A key factor driving workers into informality are the burdensome requirements for participating in social insurance systems. In addition to the high cost, payment processes and bureaucratic procedures can be very complex. Advances in technology can be effective in spurring the enrollment of informal workers, starting with robust ID systems.

### 3.1.1 Digital ID systems

Identifying informal workers is a pre-condition for enrollment in social insurance programs. New IT-based systems can greatly facilitate the process. For instance, India's massive Aadhaar program, which has so far enrolled over 830 million people, replaced the physical ID card altogether (World Bank, 2016). Other countries developing digital ID systems include Bangladesh, Kenya and Guinea.

Digital IDs are in principle universal and thereby cover both formal and informal workers. In addition to facilitating service delivery, digital ID systems were effective in reducing leakages in benefits for social protection programs, health insurance and pension schemes stemming from, for example, duplicate claims, ghost-workers, quasi-ghosts, and corruption (World Bank, 2016).

Digital technologies can also help improve coordination and consistency across concurrent social protection systems. Since 2005, the main social security institutions in the Philippines relied on a unified *smart card* that can store information and perform transactions in all these institutions. The system enables authorities to identify participants, and facilitates and streamlines implementation of procedures and monitoring (Duran-Valverde et al., 2013).

### 3.1.2 Facilitating enrollment and financial transactions

Reducing the time required to enroll in a social insurance scheme is an important way to expand coverage to informal workers, for whom time away from work can mean significant foregone earnings. Nicaragua introduced a program in 2007 that highlights the importance of time to informal workers. This program extended voluntary health insurance to informal workers by randomly allocating monetary subsidies for enrollment, implementing an aggressive dissemination strategy and reducing the time required to enroll by allowing enrollment on the spot. The results indicate that time and convenience costs matter almost as much as monetary subsidies (Hatt et al. 2009). Whereas these factors were successful in promoting take-up, they did not contribute to long-term retention. Other factors such as the inconvenience of making payments, the pricing of premiums and the higher perceived quality and convenience of private medical providers were key reasons behind low retention rates. Addressing these considerations will be crucial for sustaining participation over time.

New advances in technology can also help firms formalize their workers. For instance, the Mbao micro-pension scheme in Kenya, which covers small- and medium-sized firms, uses mobile transfer services such as M-PESA and Airtel to facilitate payments (Holmes and Scott, 2016).

Encouraging the enrollment of informal workers may require establishing new institutions and infrastructure, but relying on existing infrastructure to the extent possible is likely to be both more effective and less costly. Hu and Stewart (2009) cite the case of India, where the government planned to extend the existing mandatory pension scheme for government officials into a new National Pension Scheme (NPS) that would be voluntary for informal workers. The financial sector infrastructure related to the NPS was designed to be as wide-ranging as possible by utilizing existing infrastructure (banks, post offices, etc.), to facilitate access by informal workers, particularly in remote rural areas.

Given the differences in characteristics of informal and formal workers and their distinct earning patterns, any attempt to foster the enrollment of informal workers will require new institutional arrangements (Ribe, Robalino and Walker, 2012). In the first place, because mandatory contributions cannot be imposed or enforced on most informal workers, participation must be voluntary and therefore attractive. Secondly, governments introducing new social insurance schemes will need to be proactive in marketing and in collecting contributions, such as through using mobile agencies operating in street markets or remote areas. Thirdly, transaction costs must be low given the limited resources of informal workers. Some of these problems could be addressed, in part, by operating through facilitating

agencies that aggregate the contributions of low-income workers in the informal sector. Explicit financial incentives might be required to attract individuals with limited disposable income or saving capacity.

Relying on financial agencies such as microfinance institutions (MFIs) which are more focused on the informal sector, could be a good strategy. For example, the Grameen Bank in Bangladesh started to offer a product for old-age protection beginning in 2000, whereby borrowers were required to make a small deposit each month into a personal savings account. A similar plan was introduced in the Philippines, where individuals can make contributions at a level as low as USD 0.12 per week. Counter evidence comes from a program in Nicaragua that aimed to extend health insurance to informal workers using subsidies and MFIs; it showed that the latter were less successful than the central agency at encouraging enrollment (Hatt et al. 2009).[4]

## 3.2 LINKING CONTRIBUTIONS TO BENEFITS

The level of contributions and benefits will vary across countries, reflecting social preferences regarding the balance between individuals' and governments' responsibilities (i.e., the social contract). Three essential criteria for setting benefits are: *adequacy, efficiency,* and *affordability* (Ribe et al. 2012). More specifically, benefits would be high enough to allow a decent standard of living and prevent individuals from falling into poverty (*adequacy*). However, they would not be set so high that individuals would be discouraged from saving, working or looking for a job (*efficiency*), or that would place an unsustainable strain on public finances (*sustainability*).

These levels are difficult to define and will depend on certain key factors such as the level of economic development, demographic structure, labor productivity, income distribution, efficiency of the tax system, and level of informality. In the case of pensions and unemployment insurance, the key parameters for defining the level of benefits are the replacement rate, the minimum benefit level (a way to increase the replacement rate for low income workers), and a ceiling on covered earnings (to reduce the replacement rate for high earners). In the case of health insurance, it is important to find the balance between the goal of improving health outcomes and protecting people against the financial consequences of illness. The main parameters to be defined are the list of health interventions that are covered and not covered by the system, and the level of cost-sharing through health plan deductibles and copayments for treatments to be paid by the individual. These cost-share ratios could vary by the level of the beneficiary's income.

[4] Hatt et al. (2009) suggest that people had doubts about the expertise of MFIs to deal with health-related issues, and others were suspicious that the MFIs would try to profit from the arrangement.

**Table 1**

**Key parameters of old-age and unemployment insurance systems**

| Type of benefits | Parameters |
|---|---|
| Old-age | Replacement rates: in a risk-pooling scheme, pensions would be higher than 40 to 50 percent of previous earnings after 30 years of contributions (ILO, 2012). The minimum would be between 20 to 25 percent of economy-wide average earnings. The ceiling would be 60 percent of earnings for the system to be financially viable (Holzmann and Hinz, 2005), or 2 to 2.5 times the economy-wide average earnings. |
| Unemployment | Replacement rates: 50 to 70 percent of covered earnings. The minimum could be equal to the minimum wage. The ceiling could be equal to 2.5 to 3.5 times the economy-wide average earnings (Robalino and Weber, 2013; Kuddo et al., 2015) |

It is also important to reduce uncertainty about how benefits will evolve over time (Ribe et al. 2012). To avoid any distortionary impacts of inflation, for instance, minimum pensions and contribution ceilings can be established as a fraction of economy-wide average earnings, and benefits can be automatically indexed to inflation. Per capita benefits need to have an explicit financing mechanism; a combination of individual contributions (or contributions from employers when available) and government transfers financed from general taxation.

In the case of pensions, the contribution rate (expressed as a share of covered earnings) needs to be linked to the accrual rate and life expectancy at retirement. For unemployment benefits the contribution rate is usually set at a level where it generates sufficient revenues to pay benefits during a given period (e.g., a year).[5] For health insurance, contrary to standard practice, the contribution would take the form of a premium that reflects the expected cost of the health insurance package.

## 3.3 DESIGNING REDISTRIBUTIVE ARRANGEMENTS

Redistribution is critical within the social insurance system to fund contributions and/or top up benefits (e.g., minimum pension) of low income individuals. A proper redistributive arrangement involves explicit subsidies/transfers and an eligibility criteria, as well as dedicated taxes. Subsidies would be based on earnings or savings capacity, and not on workers' occupation, economic sector, or employment in the formal or informal sector (Ribe et al, 2012). The amount of the subsidy would be kept below a certain threshold to avoid any adverse behavioral effects such as early retirement or low job effort.

Eligibility for subsidies can be universal or means-tested. Universal benefits have more predictable costs, and are less expensive to administer. On the other hand, given the magnitude of informal employment in developing countries, extending social insurance through universal benefits risks unsustainable fiscal costs, or benefit levels that are too low to make a significant dent in poverty (Grosh and Leite, 2009).

[5] Robalino et al. (2009)

The experience of Bolivia's universal income transfer illustrates the potential for unintended negative consequences. The program is expensive and benefits many middle- or high-income individuals, since no restrictions were imposed on those already receiving benefits from the contributory pension system, while many of the poorest individuals are excluded due to administrative problems. Another downside of universal benefits is the potential to crowd out contributions by individuals with saving capacity. The total costs of means-tested benefits may be lower initially, but they could increase in the face of political pressure for less stringent eligibility criteria or more generous benefits. Even means-tested benefits can affect incentives for workers close to the eligibility threshold who may decide to work informally or work fewer hours to avoid the contribution and/or retain the subsidy.

Ribe, Robalino and Walker (2012) recommend means-testing for any subsidies within a social insurance system, and downward adjustment to subsidy levels as beneficiary income rises, with the subsidy component financed by general tax revenues. To minimize the potential distortionary effects of means-tested benefits, it would be important to keep the size of the transfer modest and avoid setting the income threshold for eligibility too high (to minimize the number of potential beneficiaries). This arrangement would lead to a more progressive income redistribution and avoid distorting the incentives facing workers and employers.

In terms of financing mechanisms, it is recommended not to rely on labor taxes that can reduce incentives to create or take formal jobs. The alternative is to rely on general revenues funded out of income taxes, consumption taxes, or property taxes. Minimum pensions, for instance, would have a separate funding mechanism; their cost would not be included in the calculation of the contribution rate described in the previous section. The same applies to the share of the health insurance premium that is subsidize for a given category of workers.

In the case of unemployment benefits things can be more complicated. In traditional unemployment insurance systems redistribution is financed, implicitly, through taxes on the savings of "low risk" workers; i.e. those who are at a low risk of unemployment (Robalino and Weber, 2013). If this tax was eliminated, the UI system would become a pure unemployment savings account system (UISA) where redistribution would need to be funded out of general revenues. Essentially, these would be transfers to top-up the contributions of "high-risk" workers who are unable to save enough on their own to fund the benefits they receive. In practice, the optimal financing arrangements are likely to involve both taxes on savings and general revenues.

## 3.4 PROVIDING INFORMATION AND INCENTIVES TO CONTRIBUTE/SAVE

When social insurance systems have a voluntary component, it is crucial to remove information barriers and strengthen the incentives to contribute. These goals can be achieved through communications campaigns, financial literacy programs, and by introducing financial and non-financial incentives to contribute.

### 3.4.1 Communications campaigns and financial literacy

Low levels of education or literacy can be a fundamental barrier to participation in a social insurance system. In Ghana, for example, educational attainment is a significant determinant of enrollment in the expanded health insurance program. This suggests that program information would have to be disseminated in a variety of ways that can reach those with little or no education (Holmes and Scott, 2016). The Self-Employed Women's Association (SEWA) in India has adopted several innovative approaches to help members submit claims, which is a challenge for poor individuals with low education or where submission requires travel to another city (Holmes and Scott, 2016). These innovations include the use of extension agents as well as a barcode scanner system that allows illiterate members to make a claim by attaching a sticker to a prepaid envelope and sending it to the micro-insurer. Education-related barriers can be large in developed countries as well. In the United States, information and administrative costs are estimated to be significant obstacles to enrollment in the public health insurance system (Medicaid), especially for Hispanics and Asians (Aizer, 2007), implying the need for targeted outreach.

Targeting the population of interest can have large impacts on coverage. This strategy was key for Cape Verde to increase the social security coverage of independent workers from zero to 9 percent in about a year (Duran-Valverde, 2013). The government took a pro-active approach consisting of targeted communications campaigns, together with a set of education and awareness-raising activities at the local level, both in urban and rural areas. To get closer to independent workers, the social security institute opened service centers in locations with a high concentration of independent workers.

Bhargava and Manoli (2012) provide empirical evidence that better dissemination of information on eligibility – such as through improving the explanation of potential benefits – can have a positive impact on take-up. Simplification is another approach that has been successfully applied to increase coverage and contribution levels; Madrian (2014) suggests that reducing the number of program options (e.g., set contribution levels, limited choice of investment vehicles), and incorporating decision aids, personalized information and standardized options would help encourage the participation of informal workers in voluntary social insurance programs.

### 3.4.2 Financial incentives

Transfers to subsidize workers with limited saving capacity can take the form of ex ante matching contributions or of additional ex post noncontributory benefits. Social pensions are an example of an ex post benefit. Unemployment insurance can take the form of an ex ante transfer (if government matches individual contributions to a savings account) or ex post (if the government pays subsidized unemployment benefits when the savings account runs out). The costs of services would be pre-paid rather than reimbursed to the user, to encourage contributions.

Ex-ante transfers tend to produce better incentives to contribute and may cost less than ex post transfers, at least in the case of unemployment insurance and pensions (Ribe et al., 2012). The main advantage of matching contributions for unemployment insurance is that it gives workers an incentive to work. While there is empirical evidence for the United States on the effectiveness of matching pension contributions, there is no solid evidence for developing economies.

### 3.4.3 Non-financial incentives

Non-financial nudges such as sending personal reminders can be effective in incentivizing saving behavior. In a recent example from Kenya, Akbas et al. (2016) implemented an experiment among participants of the Mbao Savings Plan, which resembles a regular bank account with a commitment device, that is, a three-year restriction on withdrawals after registering. Among other interventions, they randomly sent a "coin" to the treated group at the start of the intervention and each week, and participants were asked to keep track of their own weekly deposits to the savings account. The results show that this intervention incentivized the most savings, at levels double those in the control group. This type of intervention was also the least costly, especially when compared to a less effective alternative involving matching contributions. Kast et al. (2012) find that simply announcing a savings goal and then regularly reporting to peers the levels of achieved savings also increase saving rates. This evidence highlights the potential for interventions based on behavioral economics to promote individuals' contributions at a lower cost compared to financial incentives.

## 3.5 MONITORING AND ENFORCEMENT

Adequate monitoring and enforcement capacity is crucial for successful implementation of a social insurance program. In some cases, poor capacity meant that relatively complex program components do not get implemented, often leading to the exclusion of the poorest households. For instance, Ghana's health insurance program exempts poor people from paying premiums, but administrators face challenges in implementing the means test, such that in practice, they set the premium at a flat rate at the district level, which may exceed the level affordable by the poorest (Alatinga and Williams, 2014 and Brugiavini and Pace, 2016, cited in Holmes and Scott, 2016).

Increasing enforcement may improve the incentives for firms and individuals to contribute to the system. However, it may also have some unintended consequences by raising the incentives for workers to be in the informal sector if earnings are too low to afford contributions to the system (Almeida and Carneiro, 2012). Moreover, if inspections are inefficient or affected by corruption, firms and independent contractors may find new ways to remain undetected by authorities. Lessons from transition economies indicate that making the labor inspectorates and tax authorities more efficient and professional can foster higher contributions to the system (Cordova-Novion and Sahovic, 2010). This can be achieved through, for example, making inspectors more accountable, increasing the transparency of inspections (by establishing time limits on visits and requiring written visit summaries), and randomizing the assignment of inspectors to firms. This could be complemented by efforts to improve the hiring process of inspectors, and investing in training to develop a more client-oriented service mindset, which would enhance firms' willingness to cooperate.

**Table 2**

**Summary of Design Options for Social Insurance System Parameters**

| Design Options | Opportunities | Risks |
|---|---|---|
| Registering workers and facilitating payments | | |
| Digital technologies | - Improve access and administrative efficiency | - Greater exclusion if the system requires digital literacy |
| Streamlining registration procedures | - Encouraging take-up among workers whose time away from work means foregone earnings<br>- Cost savings when compared to other methods (e.g., matching contributions) | - Too much focus on registration may distract from retention efforts. |
| Relying on non-government agencies for outreach or payment collection | - More take-up among hard-to-reach groups | - Higher monitoring costs<br>- Not effective if potential beneficiaries mistrust these organizations |
| Defining Benefits and Costs | | |
| Level of benefits and costs | - Find the right balance between adequacy, efficiency and sustainability<br>- Benefits would be linked to contributions | - Excessively high benefits can add distortions and make the system unsustainable<br>- Too low benefits may not prevent poverty |
| Designing Subsidies | | |
| Universal benefits | - More predictable costs and less expensive to administer | - Risks of leakage to richer households |
| Mean-tested benefits | - More progressive redistribution and less distortive incentives | - Political pressure to expand coverage could result in fiscal pressures<br>- Higher distortive effects if the transfer and thresholds are high |
| Implicit subsidies | | - Labor market distortions |
| Providing Information and Incentives to Contribute/Save | | |
| Communications campaigns and financial literacy | - Greater awareness about the costs and benefits of take-up<br>- Improving take-up among hard-to-reach groups | - The costs and benefits of targeted outreach to small groups of potential beneficiaries should be weighed against those of universal outreach. |
| Financial incentives | - Promote contributions among lower income groups | - Financially unsustainable |
| Non-financial incentives | - Improving take-up<br>- Cost savings when compared to financial incentives | |
| Monitoring and Enforcement | | |
| Better monitoring | - Increasing inclusion and efficiency | |
| Greater enforcement | - Increasing registration and retention | - Increased incentives for firms to remain in the shadows, if inspections are corrupt or inefficient; or if they are unable to afford contributions. |

# 4 CONCLUSIONS

Social insurance can be an effective tool for addressing income shocks to workers by providing for consumption smoothing through a risk-pooling approach. Whereas most countries have some type of social insurance system in place, few are efficient or equitable because of their partial coverage of the labor force. This is particularly true in developing countries with a large shadow economy. The traditional contributory design of these programs was appropriate fifty years ago in the highly industrialized middle- and upper-income economies where most workers were formally employed. But this is not the reality in developing economies today. Moreover, the ongoing transformation of labor markets in advanced economies where occupational mobility and informality are both rising means that traditional social insurance programs are losing relevance.

As policymakers consider how to extend the coverage of social insurance to informal workers, there are key lessons to be drawn from experience. Integrated social insurance systems (such as Chile's pension system) that combine an actuarially fair contributory system with explicit subsidies for the poor and informal seem to be more financially sustainable than universal non-contributory systems, and less distortionary than fragmented parallel schemes. Within an integrated system, there are key choice parameters to minimize unintended impacts of social insurance on labor supply and demand, provide an adequate level of benefits and improve financial sustainability. These parameters include the eligibility criteria, the level of contributions and benefits, and the mix of funding sources (contributions vs. general taxation).

To promote take-up and efficiency, contributions would be linked to the individual and not to the job. Beneficiaries need to be aware of the contribution requirements for each benefit level. And if social insurance includes any redistribution mechanism, it would be transparent; that is, the program would make clear the amount of the subsidy, the eligibility criteria, and how it is financed. Finally, it will be important to adapt this general framework to the specific needs of a country's informal workers to ensure a social insurance system that is inclusive, fair, efficient and effectively implemented.

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