CENTRE for ECONOMIC PERFORMANCE

Occasional paper

32

Social Policies and Labor Market Outcomes in Latin America and the Caribbean: A Review of the Existing Evidence

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December 2012

Abstract
Latin America and the Caribbean have become in the last decade or so a formidable laboratory for the design and implementation of innovative social policies. In the face of an unprecedented surge in the number of non-contributory social assistance benefit programs in the region, there is a renewed interest - among policy makers and academics alike - as to whether such programs have "perverse" labor market effects, in particular discouraging participation and formal employment. After having revisited the theoretical arguments behind this concern, this paper reviews the existing quasi experimental empirical evidence for the region. Our reading of the evidence suggests that, consistent with zero income elasticity of leisure among the poor, social assistance has no large significant effects on participation and overall employment, other than possibly among the elderly. Some particular policies are, however, generating a substitution away from formal to informal employment.

Keywords: Social policies, labor markets, Latin America, Caribbean
JEL Classifications: J08, J32, J38

This paper was produced as part of the Centre's Labour Markets Programme. The Centre for Economic Performance is financed by the Economic and Social Research Council.

Acknowledgements
The authors are grateful to Anna Popova for outstanding research assistance.

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Published by
Centre for Economic Performance
London School of Economics and Political Science
Houghton Street
London WC2A 2AE

Introduction

Latin America and the Caribbean have become in the last decade or so a formidable laboratory for the design and implementation of innovative social policies. Compared to OECD countries, countries in the region have traditionally been characterized by low unemployment rates. However, not only are earnings and income inequality particularly high in the region, but roughly fifty percent of workers are informal, meaning that they do not contribute to social security in their job. As most countries in the region have adopted a Bismarkian system, whereby access to welfare and social insurance is conditional on participation in the formal labor market, the result is that these workers and their families are typically uninsured against a variety of risks, including the ones arising from poor health, employment loss or survival into old age, and they are at particular risk of falling into poverty. These high rates of informality are driven by high costs of employment - and possibly low returns - in the formal sector together with poor enforcement of labor laws.

Widespread poverty and lack of access to insurance coverage among the more disadvantaged in LAC is of concern not only regarding equity but also efficiency. In the presence of credit constraints, poverty is likely to lead to suboptimal investment in the next generation's human capital, while lack of insurance might push individuals into low-risk but low return activities, eventually dampening growth.

In response to both the equity and efficiency issues arising from such unequal distribution of resources and access to risk-coping mechanisms, in the last ten to fifteen years policy makers across the region have engaged in major overhauls of the benefit and insurance systems. Pioneered in Chile in the 1980s and spurred by the success of Mexican *Programa de Educación, Salud y Alimentación* (*PROGRESA*) in the late 1990s, conditional cash transfers (CCTs) have rapidly expanded throughout the region. By making program receipt conditional on counterpart activities - typically investment in children's health and schooling - these programs have relaxed poor households' credit constraints while at the same time creating incentives for investment in the next generation's human capital. Today, nineteen of the twenty-six countries in the region have some kind of CCT program in place (see Figure 1).[1] In addition, countries like Mexico and Colombia, where access to health care has traditionally

[1] These twenty-six countries in the region refer to the Inter-American Development Bank's borrowing member countries. Exceptions include the Bahamas, Barbados, Belize, Guyana, Haiti, Suriname, and Venezuela, of which Belize and Suriname are currently preparing CCT programs.
[2] The reasoning behind this argument is that in an attempt to conceal informal workers firms will be deterred from growing, hampering innovation and productivity growth.
[3] Although conditionalities are almost universal features of cash transfer programs in the region, some programs,

been contingent on formal employment, have started instituting parallel non-contributory health systems for millions of uninsured. Similarly, with various degrees of generosity and different targeting criteria, twelve countries in the region have by now some sort of non-contributory pension system in place (see Figure 2).

The results of these efforts have been staggering. CCTs have led to unprecedented falls in poverty rates and improvements in education, nutrition and health (for all, see Fiszbein and Schady, 2009). While Mexico is in the final stages of reaching universal health coverage (planned for 2013), non-contributory pensions in Bolivia, (rural) Brazil, Argentina and Chile have achieved coverage rates of between eighty-five and one hundred percent, drastically reducing old age poverty among the population with very low social security contribution rates.

While these policies have led to major redistribution and possibly to efficiency gains, they have also sometimes led to undesirable fragmentation in the provision of social protection and, what some observers fear, negative efficiency consequences in terms of reduced labor supply and lower rates of labor market formalization.

Indeed, simple economic reasoning suggests that subsidies to the poor tend to have negative labor supply effects via an income effect if, as typically assumed, leisure is a normal good. In addition, income means testing, which is typically used for the purpose of targeting, imposes an implicit tax on labor earnings. By reducing the price of leisure, this induces a substitution effect away from work, further reducing participation and leading to welfare losses. Contrary to a large body of research from more developed economies, in particular from the USA (see Moffitt, 2002, 2003 and Ben-Shalom, Moffitt, and Scholz, 2011), convincing empirical evidence on the labor market effects of social assistance in scarce. For middle income countries, and in particular those in Latin America and the Caribbean, there is very little empirical evidence and for those that exist results are mixed.

A related concern is that subsidies to the poor or the uninsured might create incentives for labor market informality, as individuals might prefer to hold unofficial unregistered jobs in order to escape taxation and access non-contributory social assistance (for all see Levy, 2008).[2] Again, despite the appeal of this argument, empirical evidence for the region is scarce and results are mixed.

The aim of this paper is to take stock of the existing non-contributory social programs in the region and critically review the empirical evidence on their effects on labor market

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outcomes. To guide the discussion, a simple static model of labor supply with three sectors (inactivity, formal employment and informal employment) is presented which allows us to discuss the contemporaneous effects of non-contributory benefits on these different margins of participation.

The paper is structured as follows. Section 1 describes the most important non- (and semi-) contributory social programs in the region. Section 2 presents a static labor supply model with three sectors. Section 3 reviews the existing empirical evidence on the effect of non-contributory policies on labor supply in the region. Section 4 finally concludes and offers some hints for future research.

1. Non-contributory social programs in Latin America and the Caribbean

Recent years have seen governments in Latin America and the Caribbean launch social protection policies aimed at filling the gaps left by Bismarkian systems, which condition coverage against income and other shocks such as health, unemployment and old age survival, to social security contributions accumulated through formal employment.

While social security system typically offer a bundle of benefits, recent non-contributory programs that have emerged in the region offer unbundled benefits, typically focusing on one of the following specific objectives: relaxing households' budget constraints and offering protection against income shocks, offering coverage against poor health or against low income in old age. These correspond to three major classes of programs: conditional cash transfers, health insurance and social pensions. Tables 1A, 1B and 1C provide a list of the major programs in force in the region as of 2011 in each of these categories.

1.a Conditional Cash Transfers

Cash transfers account for the majority of the recent surge in welfare transfers in the region (see Table 1A and Figure 1). These programs provide monetary transfers to poor households on the condition that they engage in some counterpart activities, typically investment in children's human capital (for an excellent review of the existing programs, the economics behind them and their effects, see Fiszbein and Schady, 2009). Not only has the number of

CCT-like programs in the region over the last 15 years increased very rapidly, reaching twenty-five programs in nineteen countries by 2010, these programs have also increased in the number of beneficiaries and, in some countries, in the generosity of the transfer.

The most popular type of program comprises a combination of education, health and nutrition objectives following Mexico's *Programa de Educación, Salud y Alimentación* (*PROGRESA*), the first large-scale CCT in the region, which now covers 25% of the population after expanding to urban areas in 2002 and changing its name to *Oportunidades* (Barrientos, Nino-Zarazua and Maitrot, 2010). Among the most studied programs in the region are Brazil's *Bolsa Familia*, Colombia's *Familias en Acción*, Honduras' *Programa de Asignación Familiar,* (or *PRAF*), Ecuador's *Bono de Desarollo Humano* (or *BDH*), Nicaragua's *Red de Protección Social*, or (*RDS*), and Uruguay's *Plan de Atención Nacional a la Emergencia Social,* or *(PANES*). [3]

CCTs simultaneously address current and long-term poverty. The first aim is achieved through the benefit component that relaxes the household budget constraint, increases living standards and possibly, via this, leads to greater investment in children's human capital. Meanwhile, by conditioning benefits on children's school attendance and health visits, these programs create direct incentives for parental investment in children's human capital, in practice reducing the relative price of such investment.

Conditionalities also feature in workfare programs, such as Argentina's *Plan Jefes y Jefas de Hogar,* which offer assistance during periods of joblessness conditional on counterpart work activities. As conditionalities are costly, an additional rationale for their existence is that they provide ordeal mechanisms that make individuals with a sufficiently low opportunity cost of time (the truly unemployed or those with low labor earnings capacity) self-select into the program (see Besley and Coate 1992, who also suggest a deterrent rationale for the existence of these programs).

Indeed, in low- and middle-income countries, targeting of social programs is complicated by the fact that potential beneficiaries tend not to appear in official (e.g. tax and social security) records, making it hard to ascertain their actual income level. Because of this, many cash transfer programs in the region identify beneficiaries via proxy-means testing and/or categorical targeting, although a few also condition participation on the recipient households' actual level of income, as in the case of the Uruguayan *PANES* and *Asignación Familiar* programs (see Table 1A).

[3] Although conditionalities are almost universal features of cash transfer programs in the region, some programs, like *PANES,* are *de facto* unconditional (see Manacorda, Miguel and Vigorito 2011).

A related issue pertains to the conditions required to maintain eligibility and possibly graduate from these programs. Although in several of these programs eligibility depends specifically on age criteria or is limited to specific periods of time, some of these programs fail to embody very clear graduation or exit criteria (see Johanssen, Tejerina and Glassman, 2008). In some instances, these criteria are contingent, depending on budgetary limits or political cycles.

In closing, it must be emphasized that, while the mainstay of the programs listed in Table 1A is a cash transfer component, some of these include additional ingredients, for example in-kind transfers (as in the case of *PANES,* which also provided beneficiaries with a food card) and supply side interventions (as in the case of *PROGRESA*, which established schools and clinics in program villages). The existence of these additional components will need to be taken into account in predicting and assessing the impact of these programs on labor market outcomes.

1.b Social Pensions

A second form of welfare transfer programs that has recently expanded in the region is that of non-contributory pensions, which attempt to fill the coverage gaps left among the elderly who were once informal and are currently poor, as well as, sometimes, among very vulnerable populations (e.g. disabled). These policies, which are summarized in Table 1B and Figure 2, vary widely in terms of eligibility as well as generosity. Most policies select beneficiaries according to their income level - as in the case of Brazil's *Benefício de Prestação Continuada*, or Chile's *Pensiones Solidarias*, or make the transfer an inverse function of income, such as Bolivia's *Renta Dignidad* that is universal in coverage but makes differentiated transfers to those with and without other sources of pension income. Because of the difficulties related to ascertaining beneficiaries' true income level, these programs typically assess eligibility based on official income sources, such as pension and benefit income. In some cases, coverage is universal among specific subpopulations and targeting is categorical, such as in the case of Argentina's *Pensiones Asistenciales* or Mexico's *70 y más*, which target all elderly individuals in given municipalities, or Brazil's *Previdência Rural*, which is accessible to all rural workers with no contributory history.

A related category of programs also presented in Table 1B subsidizes a minimum pension for workers who have not accumulated sufficient social security contributions to guarantee themselves the minimum legislated pension, as in the case of Chile's *Pensión*

Mínima Garantizada por el Estado and Colombia's *Subsidio de Aporte a Pensión*.

1.c Non-contributory health insurance schemes

Finally, a parallel but smaller scale development in the region has been the emergence of non-contributory health insurance schemes (see Table 1C). In addition to (rare) universal health care systems, such as that attempted for by Brazil's *Sistema Único de Saúde* (*SUS*), a few countries in the region have started offering health insurance to individuals and households uncovered by contributive regimes. Mexico's *Seguro Popular* regime, for example, offers virtually free health insurance to everybody who is not a formal employee, i.e. affiliated with the Mexican Institute of Social Security (*IMSS*) or the Institute of Social Security and Services for Public Sector Workers (*ISSSTE*). Initiated in 2002, the program currently covers 95% of self-employed and informal salaried workers (Bosch and Campos-Vázquez, 2010). Colombia's 1993 health insurance reform institutionalized both a Contributive (CR) and a Subsidized Regime (SR). The former is mandatory for those employed with income above a certain threshold, regardless of occupation, whilst eligibility for the latter is determined by a poverty index score.[4]

2. A model of labor supply with income tested subsidies and three sectors

Having discussed the main features of the non-contributory benefits in the region, in this section we present a stylized static model of labor supply with three sectors: inactivity, formal employment and informal employment, that allows us to model the effect of non-contributory benefits on these different margins of labor market participation. We are in particular interested in shedding light on the conditions under which non-contributory benefits can discourage participation in the formal labor market.

To keep things simple, we assume that workers are price takers in the labor market and that both formal and informal labor contracts are at given hours H^*, so there is no labor supply adjustment at the intensive margin. We also assume that $T/2<H^*\leq T$, where T is the

[4] In counter-tendency with respect to the rest of the region, Uruguay has recently reduced the incentives to labor market informality by extending the coverage of employer-provided health insurance to spouses and children of formal workers (see Bérgolo and Cruces, 2010).

time endowment, so that workers cannot combine formal and informal work. We denote earnings in the formal sector net of social security contributions by W_F and earnings in the informal sector by W_I, while G is the amount of benefits.

2.a Means-tested social assistance

As said, most CCT programs in the region encompass some form of means testing. Similarly, most social pension programs condition program receipt on workers' low levels of income. As earnings from informal employment typically escape taxation, it seems reasonable to assume that only formal earnings count for the purpose of income testing. We also assume, for simplicity and with loss of generality, that $Y<K<Y+W_F$ where Y is unearned income and K is the income eligibility threshold, meaning that we restrict our analysis to individuals with low income ($Y<K$) who are disqualified from social benefits if and only if they hold a formal employment ($Y+W_F>K$). As subsidies are contingent on zero formal labor income, the model accounts not only for income tested social assistance but also for assistance that makes eligibility conditional on not being in formal employment (as, for example, in the case of the Mexican *Seguro Popular*).[5]

Let D_F (D_I) be a dummy equal to one if the individual chooses the formal (informal) sector. We assume that individuals maximize the utility function, which depends on consumption (C) and the attributes of the sector of employment (S):

$$Max\ U(C, S)$$

$$\text{St.} \qquad C=Y+W_F D_F+W_I D_I+G(1-D_F), \qquad S=A(1-D_F-D_I)+B D_F$$

Where, A and B denote respectively the worker's marginal valuation of the attributes of leisure and formal employment (relative to the attributes of informal sector jobs).[6]

Figure 3 presents the equilibrium in the space $a0b$ where we have set $a=exp(A)$ and $b=exp(B)$, and we have assumed, for tractability, a Stone-Geary utility function. The derivation is obtained in the Appendix. Informality arises in this model as some individuals have a relatively low valuation of formal benefits (B) coupled with a relatively low disutility

[5] As a way to keep things simple, there is no uncertainly in the model. For simplicity, we also ignore the household dimension of labor supply.

[6] The model can also be used to characterize the labor market equilibrium with no informality (as in welathier countries) by simply setting $W_I=0$.

of work (A). Individuals with high valuation of leisure (A) and low valuation of the attributes of formal employment (B) will chose inactivity. The residual share of the population will chose formal employment.

Figure 4 presents the new equilibrium associated with a rise in the generosity of non-contributory benefits, G. This leads to an unequivocal rise in inactivity and a fall in employment. This is the classical result induced by the combination of a negative income effect and the substitution effect induced by means testing (for all see Moffitt, 2002). The effect on informality though is ambiguous. On the one hand, an increase in G, by acting as a subsidy to informality, pushes individuals away from formal towards informal employment. On the other hand, among infra-marginal informal workers, the transfer has a pure income effect, reducing participation and pushing these workers into inactivity. While the share of formal workers in the population unequivocally falls, the share of informal workers in the population will either fall or rise, depending on the relative strength of the substitution and income effects. Equally ambiguous is the effect of the program on informality expressed as a fraction of the employed (as opposed to total) population.[7]

3.b Zero income elasticity of leisure

Only if the elasticity of leisure with respect to income is zero (and continuing to assume income testing), a sensible assumption of the poor population under study, does theory predict that informality will unequivocally rise both among the employed and the working age population. In this case, the increase in transfer generosity among infra-marginal informal workers will not create any incentive to increase leisure consumption and hence will not push these individuals into inactivity. The equilibrium for the model with zero income elasticity of leisure is also derived in the Appendix (using a linear utility function) and the comparative static is presented in Figure 5.

2.c The role of income testing

The model in the previous subsections is derived under the assumption that individuals are targeted based on their formal income or their formal labor status. It is precisely this

[7] Interestingly, most empirical papers emphasize exclusively the substitution effect, concluding that social assistance will unambiguously lead to an increase in informality.

condition that induces a substitution effect away from formal employment into either inactivity or informal employment.

As previously mentioned, some programs in the region, typically CCTs, use proxy-means testing as opposed to income testing. Other programs, typically social pensions, use categorical or even universal targeting. Even among the programs that use income testing to ascertain initial eligibility, re-assessment of these conditions is rare. In these cases - other than because of an income effect - one will not expect either informality or participation to be affected by social assistance.[8] It is worth emphasizing that a rationale for categorical targeting/proxy means testing is precisely to avoid these distortions (may be at the cost of some mis-targeting).

2.d The role of other program components and conditionalities

A final caveat regards the variety of ingredients and possible counterpart activities associated with non-contributory programs in the region that might have independent effects on labor supply.

An argument that is often heard (e.g. Alzua, Cruces and Ripani, 2010) is that by increasing households' expenditure on school fees or other costs associated with children's school attendance (transport costs, uniforms, books, etc.) for the purpose of fulfilling the conditionalities, CCTs might have limited effects on household disposable income and hence on the consumption of leisure. A similar concern is that, by increasing children's school attendance, these programs might reduce their involvement in work and hence reduce household's disposable income, with an ensuing rise in adults' labor force participation. This effect is further reinforced if children's and adults' time are substitutes in the household's production or utility function.

Additional program ingredients, such as training programs or components that increase individuals' health care utilization or improve health outcomes, could also possibly enhance employability and increase participation via increased productivity. Similar concerns arise when programs encompass community-level interventions, such as in the case of *PROGRESA*, which might have independent and additional effects on adult labor supply. In kind-transfers, which are sometimes associated with such programs, also have the potential to increase labor supply if work is a complement to the subsidized good (Skoufias, Unar and

[8] Indeed, this can be easily verified by looking at the model (A2) in the appendix, assuming that consumption while in formal employment is W_F+G+Y.

González-Cossí, 2008). Finally, general equilibrium effects of the programs (such as changes in local market wages) might further mute the effect of non-contributory programs on adult labor supply.

3. A review of the existing evidence

In this section we present a review of the existing econometric studies on the impact of non-contributory social assistance on labor supply. Particular attention will be paid to the potential role played by differences in the definitions of variables and reference populations, specificities of program design, assignment and evaluation strategies in order to highlight and understand the evidence.

In the following, we review both studies that examine effects on employment, participation and, in some cases, hours worked, as well studies that focus on the choice between formal and informal employment. Although all these programs, and in particular CCTs, might affect children's time use and labor supply (for all see the Edmonds, 2008), an investigation of these effects is beyond the scope of this review and in the following we restrict our analysis only to the effects on adult labor supply.

3.a Effects on labor supply and hours of work

A first set of studies analyzes the effect of conditional cash transfer programs on participation, employment and hours. These studies, which are summarized in Table 2A, cover five countries: Argentina, Brazil, Colombia, Honduras, Mexico and Nicaragua.

A cursory analysis of the results in the table leads us to conclude that the estimated effects of social assistance on participation and hours of work are generally small in magnitude and statistically insignificant. When effects are statistically significant, these are not only small, but there is no clear pattern regarding their sign.

One limitation of these studies is that, with the exception of Galasso and Ravallion's (2004) study of Argentina's workfare program *Plan Jefes y Jefas*, effects are identified based on difference-in-difference estimators that compare changes in work involvement across treatment and control communities before and after program implementation. One possible

concern is that program estimates are biased by omitted local variables that happen to be correlated with both program exposure and outcomes.

In particular, this concern arises in relation to studies that exploit the gradual incorporation of communities in the program, such as Attanasio and Gómez's (2004) study of the Colombian *Familias en Acción* and Foguel and Paes de Barros' (2010) analysis of Brazil's *Bolsa Familia*. Estimates that can and do rely on random assignment of communities to the treatment and control groups, like those of *PROGRESA* (Alzúa, Cruces and Ripani, 2010, Parker and Skoufias, 2000, Skoufias and Di Maro, 2008), *PAL* (Skoufias, Unar and González-Cossío, 2008), *PRAF* (Alzúa, Cruces and Ripani, 2010) and *RPS* (Alzúa, Cruces and Ripani, 2010, Maluccio, 2007), are clearly more credible in this respect.[9]

As in all these studies, assignment is at the community level. One question is whether positive general equilibrium effects or effects of community level interventions offset negative direct program effects on labor supply, explaining net small and insignificant estimates of program impact on participation. Results for *PROGRESA*, which allows ineligible households to be identified in both treatment and control communities, and hence estimating indirect program effects, suggest though that the latter are small (Souflas and Di Maro, 2008).

Among the programs studied, eligibility is typically based on baseline household characteristics, such as measures of the quality of housing, possession of durables or other characteristics. Or when eligibility depends explicitly on income (as in the case of Brazil's *Bolsa Familia* for example), this is normally self-reported and is not typically re-assessed over time. This implies that the substitution effect of these programs on labor supply is possibly negligible. One interpretation of the small and insignificant program effects found is that the income elasticity of leisure among beneficiaries of CCTs is on average close to zero, although clearly we cannot rule out offsetting employment effects of other program ingredients, including conditionalities, or even biases in program estimates stemming from violations of the identification assumptions underlying the consistency of the proposed estimators.

In Table 2B we focus on the contemporaneous effect of non-contributory pensions on labor force participation. Because eligibility for these programs typically depends (among

[9] Estimates of program impact that additionally account for household or individual fixed effects (as in Alzúa, Cruces and Ripani 2010) also control for potential differential changes in the composition of the evaluation sample across treatment and control communities. This is a clearly an advantage relative to studies that ignore this dimension, although the inclusion of household or individual fixed effects is unable to account for endogenous compositional changes that might lead to biased estimates of program impact.

other things) on age, program estimates are usually derived based on double or triple differences that exploit changes in age eligibility criteria over time (and area) (see for example Carvalho Filho, 2008) or they rely on discontinuities in eligibility by age using a regression discontinuity design (Bosch and Popova, 2012).

As the Brazilian rural pension program is not means tested, the large negative and statistically significant effects on participation found in the literature suggest a non-negligible negative income elasticity of leisure among the elderly in the region.

Evidence for other countries is mixed. In Mexico, were several independent non-contributory programs are in place for adults over 70s there is no clear pattern in the results. While Juarez (2009) finds no effect on labor supply of a program implemented in the *Distrito Federal* and Galiani and Getler (2009) find no effect of the program *70 y mas* (except what appears some substitution away from paid to unpaid family work), early results from a randomized program in two cities in Yucatan show significant negative labor supply effects among the elderly (Aguila, Kapteyn, Robles and Weidmer, 2011)

One final consideration is that while the modeling section III is used to understand contemporaneous (i.e. static) effects of social assistance on labor supply, it is not appropriate to analyze the dynamic incentives of social assistance on labor supply decisions. In particular, this model is unable to capture the disincentives to formalize among workers in expectation that non-contributory social assistance will serve as a safety net in old age. This is clearly an important issue but given the paucity of empirical evidence on this topic we prefer to ignore it in the present discussion. The only evidence we are aware of is a recent paper by Attanasio, Meghir and Otero (2011) that analyzes the 2008 Chilean Pension reform. They argue that the reform decreased participation in the formal labor market by around 0.4% among workers older than 40 years of age.

3.b Effects on formality and informality

A number of recent studies analyze the effect of non-contributory social assistance on the choice between formal and informal employment. Tables 3A and 3B summarize existing evaluations of the impact of conditional cash transfer programs and non-contributory social insurance, respectively.

These studies differ along a number of dimensions. Definitions of informality, for example, vary from study to study. This only in part reflects the fact that there is no single and unanimous definition of informality in the literature (see Perry, Maloney, Fajnzylber,

Mason and Saavedra-Chanduvi, 2007). Most studies classify workers affiliated with social security as formal. For example, Gasparini, Haimovich and Olivieri (2007) for Argentina include in this category all workers with a right to a pension while studies of Mexico's *Seguro Popular* typically classify as formal those with health insurance in their current job. There is also some ambiguity as to whether the self-employed should be included among the informal, as for example in Azuara and Marinescu (2010), or should not be included, as appears to be the case in Camacho, Conover and Hoyos (2010) who use a definition of informality that accounts for "employees […] who do not contribute to health insurance through employment" (p.4). This raises an additional point which concerns differences across studies in the reference population; Some studies focus on share of formal workers over the working age population (as in Aterido, Hallward-Driemeier and Pagés, 2011, Azuara and Marinescu, 2010), while other studies focus on the level of total formal employment (as in Bosch and Campos-Vasquez, 2010). Results from these studies are not strictly comparable as individuals can also be out of employment, implying that formality and informality are not exhaustive states of employment. Nor is recommended to restrict to only those individuals in employment, that is pursued by some authors (e.g. Barros, 2011), as clearly employment itself could possibly be affected by program participation.

Additional differences pertain to the sources of data. While the majority of studies use household survey data, a few studies, notably Amarante, Manacorda, Vigorito and Zerpa (2011) for Uruguay's *PANES* and Bosch and Campos-Vasquez (2010) for Mexico's *Seguro Popular,* use social security data. One advantage of household survey data is that they typically collect sufficient information on individuals' labor market status to identify all three margins of participation (formal employment, informal employment and non-employment). One drawback of these data is that these variables are self-reported, and hence potentially affected by measurement error. This might lead to estimates of program impact that are imprecise or even biased if measurement error is systematic. Although administrative data identify workers affiliated with social security with no error, a major drawback is that the residual category mixes informal and not-employed individuals. Hence, one cannot differentiate whether a fall in formal employment in response to program participation corresponds to an increase in informality or in non-employment.

With these caveats in mind, the most carefully executed and convincing papers are summarized in Table 3B. The table shows that, consistent with the model in Section III, non-contributory insurance schemes tend to boost informal employment at the expense of formal employment. This appears to be the case for both Colombia's *Regimen Subsidiado en Salud*

(Camacho, Conover and Hoyos, 2010) and Mexico's *Seguro Popular* (Aterido, Hallward-Driemeier and Pagés, 2011, Bosch and Campos-Vázquez, 2010). As these programs are accessible only to those who are not in formal employment, this implies a significant substitution effect induced by the eligibility criteria. Note, however, that results on *Seguro Popular* are not completely undisputed. A number of studies using household survey data find negligible negative impacts of the *Seguro Popular* on the share of formal employment (Campos-Vázquez and Knox, 2008, Barros, 2011, Azuara and Marinescu, 2010). A possible explanation for this is provided by Bosch and Campos-Vázquez, 2010. Using social security data they show that the negative effects are mainly found in small firms in relatively small municipalities which are grossly underrepresented in household surveys.

There is also some evidence, summarized in Table 3A, of an effect of CCTs on labor market informality. Although (consistent with their results on *Seguro Popular*) Azuara and Marinescu (2010) find no effect of *Oportunidades* on informal employment, Gasparini, Haimovich and Olivieri (2007) find a negative effect of the *Plan Jefes y Jefas* on the transitions out of unemployment and into formal employment. One limitation of this study, however, is that program estimates are based on propensity score matching, hence essentially attempt to control for non-random program assignment based on observables. Gonzalez-Rozada and Pinto (2011) also focus on transition rates. Their analysis points to a negative effect among beneficiaries of the Ecuadorean *BDH* on transitions out of unemployment and a positive effect of separations from formal employment. To come to this conclusion they use a regression discontinuity estimator in an underlying poverty score, itself a function of a set of baseline variables. A drawback of their approach, though, is that they do not have information on either the poverty score or the variables that determine it at baseline, so they estimate a propensity score based on characteristics measured during the treatment period. This clearly raises the issue of endogenous behavioral responses that might affect the consistency of their program estimates. Another study that uses a regression discontinuity estimator in an underlying poverty score is Amarante, Manacorda, Vigorito and Zerpa (2011), which analyzes the Uruguayan *PANES*. Their results show a clear negative and large effect of program participation on employment in the formal sector. One explanation for such a large effect is that *PANES,* contrary to most programs in the region, enforced strict income conditionalities leading to a strong substitution effect away from formal employment.

4. Lessons learnt and recommendations

In this paper we have documented the rapid spread of non-contributory social assistance programs in the region over the last ten to fifteen years and provided a classification of these programs and a summary of their main features. We have used this information together with the implications of a simple theoretical model of labor supply to summarize and critically review the existing evidence on the causal effects of social assistance on participation, employment, hours of work and informality in the region. A comparison across studies helps identify some common trends, although this task is complicated not only by differences across studies in the programs under study but also the type of data, the identification strategies and the definitions of formal and informal employment used.

The results of this review can be tentatively summarized as follows:

1. There is little evidence that conditional cash transfer programs reduce adult labor supply at both the intensive and the extensive margin. One reason why this might be the case is that, with few exceptions, these programs are not income tested and, if they are, testing tends not to be enforced. Low income elasticity of leisure among the poor and very poor is likely to explain the lack of significant effects found.
2. There is evidence of negative labor supply effects of social pensions among the elderly, which is potentially attributable to non-negligible income elasticity of leisure in this population.
3. We find clear evidence of subsidized insurance schemes increasing the share of informal workers and reducing the share of formal workers in the labor force. As the schemes analyzed exclude formal workers, this is consistent with such schemes creating an incentive towards informality through a substitution effect.
4. We also find evidence that some conditional cash transfer programs appear to reduce the fraction of formal workers in the population, although this seems to be particularly true among the few programs that enforce income means testing.

Some lessons emerge for future research. This is particularly important if the aim is to accumulate comparable knowledge across countries and programs in order to guide the policy discussion.

1. Program description must be as accurate as possible in order to identify all different channels behind the estimated effects. Particular attention will need to be paid to the criteria used to acquire and, if applicable, to maintain eligibility (i.e. means testing or

proxy-means testing). The discussion will need to include both program rules and actual implementation.

2. It is of paramount importance that the definition of informality is made clear at the outset and that it is consistent with the most widely used definitions in the literature. If possible, multiple definitions of informality should be used. This is relevant as social policies might themselves make the definitions of informality fuzzier. For instance, access to health insurance has been traditionally used to separate formal and informal workers in Mexico. With the appearance of non-contributory schemes (like *Seguro Popular*), it is participation to the contributory system that defines formality not access to health care services per se.
3. It is equally important that all margins of participation: formal employment, informal employment and non-employment (the latter possibly split into unemployment and inactivity) are analyzed if the data allow.
4. In all cases, researchers will have to make sufficiently clear whether their samples refer to the population, the labor force, or the employed; although in the latter case appropriate attention should be paid to potential endogenous employment responses.
5. Investigations of effects on hours of work must necessarily take into account margins of endogenous selection and compositional effects. These seem largely ignored in the literature.

When possible and reasonable, researchers must focus on levels before modeling transition rates.

Table 1A – List of non-contributory social programs in LAC – Conditional Cash Transfers

Country	Policy Name (Year Started)	Beneficiaries	Targeting Mechanism	Conditions	Cost as % of GDP	Transfers to the poorest quintile as % of their income (2010)
Argentina	*Programa Familias* (2002)	Poor women and mothers without the capacity to work, and households with beneficiary members of *Jefes y Jefas de Hogar Desocupados*, with at least two children and household head with incomplete secondary school	Categorical targeting	Health check-ups and school attendance	0.14% [2007]	44.3%
Argentina	*Plan Jefes y Jefas de Hogar Desocupados* (2001)	Unemployed household heads with at least one dependent under 18. pregnant women, and disabled children	Categorical targeting plus unemployment test	Job training or community work	1% [2003]	
Argentina	*Asignación Familiar por Hijo* (2009)	Children under 18 years of age, who belong to a household with an unemployed or informally employed head, whose income is less than the minimum wage	Categorical targeting plus means testing	Health check-ups and school attendance	0.08% [2009]	
Bolivia	*Bono Juancito Pinto* (2006)	Households with children in public school up to eighth grade	Categorical targeting	School attendance	0.2% [2008]	4.7%
Bolivia	*Bono Madre Niño and Bono Juana Azurduy de Padilla* (2009)	Women and their households without medical insurance or access to the breastfeeding grant, nationwide in 327 municipalities	Categorical targeting	Health check-ups	0.22% [2009]	
Brazil	*Bolsa Família* (2003)	Extremely poor households - with PCI up to $60 (1/4 minimum wage) - and poor families - with PCI of R$60 to R$120. in targeted municipalities	Categorical targeting plus means testing	Health check-ups and school attendance	0.3% [2008]	18.0%

Country	Policy Name (Year Started)	Beneficiaries	Targeting Mechanism	Conditions	Cost as % of GDP	Transfers to the poorest quintile as % of their income (2010)
Chile	*Subsidio Unitario Familiar* (1981)	Poor households in the bottom 40% of the income distribution, as measured by proxy-means test, with pregnant women, school-age children or disabled members	Proxy-means testing	Health check-ups and school attendance	0.09% [1998]	
Chile	*Chile Solidario* (2002)	Households in extreme poverty	Proxy-means testing (*Ficha CAS*)	Health check-ups, school attendance, employment and additional participation in personal assistance programs in the areas of housing, income, family life, and legal documentation.	0.1% [2005]	
Colombia	*Familias en Acción* (2002)	Extremely poor households in selected municipalities, with children aged 0-6 who are not benefitting from other programs, or aged 7-17 enrolled in school	Geographic targeting plus proxy-means testing (*Sistema de Identificación de Beneficiarios - SISBEN*)	Health check-ups and school attendance		30.4%
Costa Rica	*Avancemos* (2006)	Children aged 0–14 and pregnant women in extreme poverty	Geographic targeting plus proxy-means testing (*Sistema de Información de la Población Objetivo* - SIPO)	Health check-ups and school attendance	0.02% [2005]	
Dominican Republic	*Solidaridad* (2005)	Household within priority areas in moderate to extreme poverty, with children aged 0-5 for health services, 6-16 for school attendance	Geographic targeting plus proxy-means testing (*SIUBEN*)	Health check-ups, school attendance and training	0.34% [2006]	13.4%
Ecuador	*Bono de Desarrollo Humano* (2003)	Households with children aged 0–16 in the poorest 2 quintiles and poor households with elderly and/or disabled members	Proxy-means testing (*Sistema de Identificacion y Selección de Beneficiarios de Programas Sociales - SELBEN*)	Health check-ups and school attendance	0.7I% [2008]	30.8%
El Salvador	*Red Solidaria* (2005)	Extremely poor rural households with children aged 0–15	Geographic targeting plus proxy-means testing	Health check-ups, school attendance and training sessions. Transfer must be spent on food		

Country	Policy Name (Year Started)	Beneficiaries	Targeting Mechanism	Conditions	Cost as % of GDP	Transfers to the poorest quintile as % of their income (2010)
Guatemala	*Mi Familia Progresa* (2008)	Extremely poor households with children aged 0–15, living in the 130 most vulnerable municipalities	Geographic targeting plus proxy-means testing	Health check-ups and school attendance	0.06% [2008]	24.9%
Honduras	*Programa de Asignación Familiar* (1998)	Poor households with children aged 6–12 who have not completed grade 4 of primary school (education), and poor households with pregnant women and/or children less than 3 years old (health)	Geographic targeting plus proxy-means testing Random assignment across municipalities	Health check-ups and school attendance	0.3% [2005]	
Jamaica	*Program of Advancement through Health and Education* (2001)	Children aged 0-19 (or until they graduate from secondary school); poor people aged 60 and older; pregnant or lactating women up to 6 months after delivery; people with disabilities; poor adults - within the selected vulnerable groups (not just those below the poverty line)	Proxy-means testing	Health check-ups and school attendance	0.32% [2010]	
Mexico	*Oportunidades* (formerly *PROGRESA)* (1997)	Extremely poor households with children younger than 21 enrolled in school between the third grade of primary and the third grade of high school (education), and with children aged 4 months-2 years, malnourished children aged 2-4. and pregnant and lactating women (health)	Geographic targeting plus proxy-means testing (Random assignment across municipalities)	Health check-ups, school attendance, and education	0.32% [2009]	45.1%
Mexico	*Programa de Apoyo Alimentario* (2009)	Households with children below 5 years of age or lactating women, living in targeted rural localities of up to 2,500 inhabitants which suffer from high-very high deprivation, and who do not receive support from other federal programs with a nutritional component	Geographic and categorical targeting Random assignment across communities	Education		
Nicaragua	*Red de Protección Social* (2000, now stopped)	Poor households with children aged 7–13 enrolled in primary school grades 1–4 (education), or aged 0-5 (health)	Geographic targeting plus proxy-means testing Random assignment across municipalities	Health check-ups, school attendance and education		

Country	Policy Name (Year Started)	Beneficiaries	Targeting Mechanism	Conditions	Cost as % of GDP	Transfers to the poorest quintile as % of their income (2010)
Panama	*Red de Oportunidades* (2006)	Households living in extreme poverty - as identified by proxy-means testing - with children aged 4-17 attending school (education), and pregnant women or children less than 5 years of age (health)	Geographic targeting plus proxy-means testing	Health check-ups and school attendance		
Paraguay	*Tekoporã/PROPAIS II* (2005)	Extremely and moderately poor households with children aged 0–14 and pregnant women, in rural areas only	Geographic targeting plus proxy-means testing (*Índice de Calidad de Vida - ICV*)	Health check-ups and school attendance	0.08% [2007]	
Peru	*Juntos* (2005)	Poor households with children aged 0-14	Geographic targeting, *Sistema de Focalización de Hogares - SISFOH*)	Health check-ups, school attendance, and education	0.1% [2006]	25.3%
Trinidad and Tobago	*Target Conditional Cash Transfer Programme* (2006)	Poor households	Proxy-means testing	Training and job search		
Uruguay	*Asignación Familiar* (formerly *Plan de Atención Nacional a la Emergencia Social - PANES)* (2008)	The poorest 20% of households among those below the national poverty line, with children aged 0-18	Proxy-means testing (*Índice de Carencias Críticas - ICC*)	Health check-ups and school attendance	0.41% [until 2010]	26.7%

Notes: The table summarizes all CCT programs instituted in the region (as defined by the Inter-American Bank's borrowing member countries) since Chile's *Subsidio Unitario Familiar* in 1981, and which remain active today, albeit in some cases under a different name or with alterations in program design. Sources: All information comes from Barrientos, Nino-Zarazua and Maitrot (2010) except for the following notable exceptions: *Chile Solidario*: Fiszbein and Schady (2009); *Bono de Desarrollo Humano*: Gonzalez-Rozada and Pinto (2011); *Mi Familia Progresa*: Fiszbein and Schady (2009); *Programa de Asignación Familiar*: Fiszbein and Schady (2009); *Oportunidades*: Parker and Skoufias (2000); *Programa de Apoyo Alimentario:* Skoufias et al. (2008); *Red de Protección Social:* Maluccio (2007) and Fiszbein and Schady (2009); *Red de Oportunidades:* Arráiz and Rozo (2010); *Target Conditional Cash Transfer Programme:* Hailu and Pemberton (2007); *Asignación Familiar*: Amarante, Manacorda, Vigorito and Zerpa (2011); transfers to the poorest quintile as % of their income (2010): Robles (2011).

Table 1B – List of non-contributory social programs in LAC – Non-contributory Pensions

Country	Policy Name	Policy type	Beneficiaries	Targeting Mechanism	Cost as % of GDP	Average Monthly Benefit US$	Average Benefit as % of Average Salary	Average Benefit as % of Minimum Wage
Argentina	*Pensiones Asistenciales* (2004)	Universal restricted	Individuals above 70 years of age, living in towns of up to 30,000 inhabitants, who are not beneficiaries of *Desarrollo Humano Oportunidades*	Geographic targeting	0.23% [2010]	96 [2010]		
Bahamas	*Old Age Non-contributory Pension* (1956)	Targeted	Individuals above 65 years of age, assessed as being needy based on the Test-of-Resources, who do not meet contribution conditions for Retirement Benefit	Means tested plus contribution requirements		230 [2010]		
Barbados	*Non-contributory Old Age Pension* (1937)	Targeted	Individuals over 65 years and 6 months of age, who do not receive any other government pension or insurance	Means tested		262 [2010]		
Belize	*Non Contributory Pension Program* (2003)	Targeted	Poor men and women aged above 67 and 65 respectively	Means tested	0.18% [2010]	51		
Bolivia	*Renta Dignidad* (1997 as *Bonosol*)	Universal	Individuals above 60 years of age, with two different benefit levels for individuals receiving no government pension/income, and for those receiving some sort of government income	Universal. Level of benefits depends on income	1.7% [2008]	29 (22 for individuals with other government income)[2009]	5.71%[2003-6]	30.8% [2003-6]

Country	Policy Name	Policy type	Beneficiaries	Targeting Mechanism	Cost as % of GDP	Average Monthly Benefit US$	Average Benefit as % of Average Salary	Average Benefit as % of Minimum Wage
Bolivia	*Pensión Mínima* (2007)	Complementary	Individuals above 60 years of age who have contributed to the *Sistema Social Obligatorio* or the *Sistema de Reparto* for at least 180 periods, and have a pension lower than the minimum wage	Means tested plus contribution requirements	1.09% [2010]	97.08 [2010]		100%
Brazil	*Benefício de Prestação Continuada* (1974 as *Renda Mensal Vitalicia - RMV)*	Targeted	Poor individuals - with per household income below 1/4 minimum wage - above 65 years of age, with family members receiving no social security benefit or unemployment insurance	Means tested	0.45% [2007]	112.93 [2002-6]	35.72% [2002-6]	100%
Brazil	*Previdência Rural* (1991)	Targeted	Individuals in rural areas above 60 (men) or 55 years of age (women), without any documented work/contribution history	Categorical targeting	1.5% [2008]			
Chile	*Pensión Mínima Garantizada por el Estado*	Complementary	Men and women above 65 and 60 years of age, respectively, with a total income below 11.14 minimum wages, who have contributed for at least 20 years	Means tested plus contribution requirements	0.54% [2006]	116 [2002-6]	22.48% [2002-6]	51.81% [2002-6]
Chile	*Sistema de Pensiones Solidarias* (1975 as *Pensiones Asistenciales - PASIS*)	Targeted	Individuals above 65 years of age or disabled aged 18 and over, belonging to the poorest 60% of the population (from July 2011)	Means tested	0.9% [2009]	118 [2009]		

Country	Policy Name	Policy type	Beneficiaries	Targeting Mechanism	Cost as % of GDP	Average Monthly Benefit US$	Average Benefit as % of Average Salary	Average Benefit as % of Minimum Wage
Colombia	*La Garantía de Pensión Mínima* (1993)	Complementary	Men and women above 62 and 57 years of age respectively, who have contributed for at least 1,150 weeks without reaching the minimum legislated pension, and disabled individuals counting with at least 26 weeks of contributions	Means tested plus contribution requirements		156 [2002-6]	63.37% [2002-6]	100%
Colombia	*El Programa de Subsidio de Aporte a Pensión* (1993)	Complementary	Men and women earning a maximum of 1 minimum wage, above 55 and 65 years of age, respectively, if covered by Social Security, or above 58 years of age if covered by RAI but with insufficient funds to finance a minimum pension, and must have health coverage under the General System of Social Security	Means tested	0.029% [2006]	14 [2003-6]	5.84% [2003-6]	9.22% [2003-6]
Colombia	*El Programa de Protección Social al Adulto Mayor* (2003)	Targeted	Individuals aged at least 3 years less than the minimum pension age for affiliates of the General Pension System, who are living in moderate or extreme poverty	Proxy-means tested (*SISBEN*)	0.019% [2003]	22 [2003-6]	8.93% [2003-6]	14.09% [2003-6]

Country	Policy Name	Policy type	Beneficiaries	Targeting Mechanism	Cost as % of GDP	Average Monthly Benefit US$	Average Benefit as % of Average Salary	Average Benefit as % of Minimum Wage
Costa Rica	*Régimen No Contributivo* (1974)	Targeted	Poor individuals above 65 years of age, the disabled and unable to work aged 18-64. orphans under age 18, widows between 55 and 65 in poverty, or with children under the age 18 or 21 if students or unemployed; youngsters between age 18 and 21 who are studying or unemployed; homeless people who meet the requirements	Means-tested	0.01% 2006	43 2002-6	7.67% 2002-6	13.83% 2002-6
Costa Rica	*Pensión Mínima* (2005)	Complementary	Poor individuals above 65 years of age with 20 years of contributions or 240 monthly contributions	Means tested plus contribution requirements	0.21% 2006	99 2002-6	21.55% 2002-6	38.89% 2002-6
Dominican Republic	*Programa Nonagenarios* (1985)	Targeted	Poor individuals above 60 years of age	Means tested		43 2010		

Country	Policy Name	Policy type	Beneficiaries	Targeting Mechanism	Cost as % of GDP	Average Monthly Benefit US$	Average Benefit as % of Average Salary	Average Benefit as % of Minimum Wage
Dominican Republic	*Pensión Mínima Garantizada* (2001)	Complementary	Low-income individuals above 65 years of age, with low incomes, who have contributed for at least 300 months	Means tested plus contribution requirements				70 - 100%
Dominican Republic	*Pensión Solidaria del Régimen Subsidiado* (not yet active)	Targeted	Individuals above 65 years of age with insufficient resources to satisfy their basic needs, severely disabled people of any age, or unemployed single mothers unable to afford the basic needs and education of their children	Categorical targeting plus means testing				60%
El Salvador	*Pensión Mínima* (1996)	Complementary	Men and women over 60 and 55 years of age, respectively, who have completed a minimum of 25 years of contributions without reaching the minimum pension level, and whose income is less than the minimum wage	Means tested plus contribution requirements				
El Salvador	*Pensiones Asistenciales* (2009)	Universal restricted	Individuals above 70 years of age in the 100 municipalities with the highest poverty incidence in the country	Geographic targeting		50 [2009]		

Country	Policy Name	Policy type	Beneficiaries	Targeting Mechanism	Cost as % of GDP	Average Monthly Benefit US$	Average Benefit as % of Average Salary	Average Benefit as % of Minimum Wage
Mexico	*Pensión Mínima Garantizada* (1997)	Complementary	Individuals who have contributed to Social Security for at least 1,250 weeks or 24 years but have not accumulated sufficient resources for a pension	Means tested plus contribution requirements		128 [2009]		100%
Mexico	*Programa de Atención a los Adultos Mayores en Zonas Rurales* (2003)	Targeted	Individuals above 60 years of age living in conditions of malnutrition in rural localities with fewer than 2,500 inhabitants and very high marginalization, and who do not receive support from other programs	Geographic targeting		13.58 [2009]		
Mexico	*Pensión Alimentaria para Adultos Mayores* (2001)	Universal restricted	People above 70 years of age with at least 3 years of residence in the part of Mexico city that belongs to the Distrito Federal (DF) state	Geographic targeting	0..04% [2010]	66 [2010]		

Country	Policy Name	Policy type	Beneficiaries	Targeting Mechanism	Cost as % of GDP	Average Monthly Benefit US$	Average Benefit as % of Average Salary	Average Benefit as % of Minimum Wage
Mexico	*70 y más* (2007)	Universal restricted	Individuals above 70 years of age, living in towns of up to 30,000 inhabitants (increased from the earlier limits of localities of up to 20,000 inhabitants in 2008 and rural localities of up 2,500 inhabitants in 2007) who are not beneficiaries of recipients of the *Elderly Support* program of the *Oportunidades* Program	Geographic targeting	0.11% 2010	40 2009		
Panama	*100 a los 70* (2009)	Targeted	Individuals above 70 years of age who do not receive a pension	Means tested		100		
Peru	*Pensión Mínima* (2002)	Complementary	Individuals above 65 years of age, born after 1945, with at least 20 years of contributions to either the Private or the National Pension System	Contribution requirements		167 2009		
Trinidad and Tobago	*Means-tested Old-age pension* (1939)	Targeted	Poor individuals over 65 years of age	Means tested		396		
Uruguay	*Programa de Pensiones No-Contributivas* (1995)	Targeted	Individuals people above 70 years of age who are excluded from formal social insurance	Means tested		92 2002-6	19.5% 2002-6	103.38% 2002-6

Notes: The table summarizes all non-contributory pension programs instituted in the region (as defined by the Inter-American Bank's borrowing member countries), which remain active today, albeit in some cases under a different name or with alterations in program design. Source: Barrientos, Nino-Zarazua and Maitrot (2010), FIAP (2011) and Pension watch (2011) Cost as % GDP and Average Monthly Benefit in US$ from Pension watch (2011) for the following programs: *Pensiones Asistenciales* (Argentina); *Old Age Non-contributory Pension* (Bahamas); *Non-contributory Old Age Pension* (Barbados)*; Non Contributory Pension Program* (Belize); *Pensión Mínima* (Bolivia); *Pensiones Asistenciales* (El Salvador); *Pension Alimentaria para Adultos Mayores* (Mexico). Policy and beneficiary information from SSA (2010) for the following programs: *Old Age Non-contributory Pension* (Bahamas); *Non-contributory Old Age Pension* (Barbados)*; Non Contributory Pension Program* (Belize); *Means-tested Old-age pension* (Trinidad and Tobago), and from Schwarzer and Querino (2002) for both Brazilian programs.

Table 1C – List of non-contributory social program in LAC - Selected non-contributory health insurance schemes

Country	Policy Name	Beneficiaries
Colombia	*Régimen Subsidiado en Salud*	Poor individuals - as identified by poverty index score - not covered by the Contributive Regime (CR)
Mexico	*Programa de Servicios Médicos y Medicamentos Gratuitos* (*PSMMG*)	Individuals over 18 years old (legal working age in Mexico), with at least 3 years of residence in part of Mexico city belonging to *Distrito Federal*, who are uncovered by other health insurance
Mexico	*Seguro Popular*	Individuals not covered by social security. Extends to household and not only to nuclear family

Notes: The table summarizes selected non-contributory health insurance schemes in the region. Sources: *Régimen Subsidiado en Salud* - Camacho, Conover and Hoyos (2010); *Programa de Servicios Médicos y Medicamentos Gratuitos* - Juárez (2011); *Seguro Popular* - Bosch and Campos-Vázquez (2010).

Table 2A – Impact evaluation of non-contributory social program on participation/hours– Conditional Cash Transfers

Country	Program	Source	Data (time period)	Identification strategy	Effect on Employment/ participation	Effect on hours
Argentina	*Plan Jefes y Jefas de Hogar Desocupados*	Galasso and Ravallion (2004)	EPH (2001-02)	D among successful/unsuccessful applicants with matching (+ DD over time)	No effect on employment	Negative effect on hours of work
Brazil	*Bolsa Familia*	Foguel and Paes de Barros (2010)	PNAD (2001-05)	DD by municipality and time	Small positive effect on participation (significant only for men)	Small insignificant effects on hours of work
Colombia	*Familias en Acción*	Attanasio and Gómez (2004)	(2002-03)	DD by municipality and time	Positive effect on participation (for men in rural areas and women in urban areas)	Positive effect on hours of work (for men in rural areas and women in urban areas)
Honduras	*Programa de Asignación Familiar*	Alzua, Cruces and Ripani (2010)	(2000-02)	DD by municipality and time (with individual/household fixed effects)	Small insignificant negative effect on employment	Small positive insignificant (among those with positive hours)
Mexico	PROGRESA	Alzua, Cruces and Ripani (2010)	ENCEL (1997-99)	DD by municipality and time, eligible households only (with individual/household fixed effects)	Small insignificant negative effect on employment	No effect (among those with positive hours)
Mexico	PROGRESA	Parker and Skoufias (2000)	ENCEL (1997-99)	DD by municipality and time	No effect	
Mexico	PROGRESA	Skoufias and Di Maro (2008)	ENCEL (1997-99)	DD by municipality and time	Small insignificant negative effect	
Mexico	*Programa de Apoyo Alimentario*	Skoufias, Unar and González-Cossí (2008)	(2003-05)	DD by municipality and time	No effect on participation	
Nicaragua	*Red de Protección Social*	Alzua, Cruces and Ripani (2010)	(2000-01)	DD by municipality and time (with individual/household fixed effects)	Small insignificant negative effect on employment	Negative but insignificant (among those with positive hours)
Nicaragua	*Red de Protección Social*	Maluccio (2007)	(2001-04)	D by municipality (with household random effects)	Negative significant effect	

Table 2B – Impact evaluation of non-contributory social program on participation/hours – Non-contributory Pensions

Country	Program	Source	Data (time period)	Identification strategy	Effect on employment/ participation
Brazil	*Previdência Rural*	de Carvalho Filho (2008)		DDD by age, time, occupation/location	Negative significant effect on participation for men
Brazil	*Previdência Rural*	Bosch and Popova (2012)	1980-2000	RD, age eligibility	Negative significant effect on participation for both men and women
Mexico	*Experimental Program in Yucatan*	Aguila et al.(2011)	2009-2010 (6 months treatment)	Experimental	Large effects on participation
Mexico	*70 y más*	Galiani and Gerlter (2009)	(2007-08)	DD by age/ municipality and time	No effect on employment (substitution away from paid to unpaid family work)
Mexico	*Pension Alimentaria para Adultos Mayores*	Juárez (2007)	ENEU (2002-04)	DDD by age, municipality and time	No effect on participation (but some negative effects among participants' household members)

Table 3A – Impact evaluation of non-contributory social program on informality – Conditional cash Transfers

Country	Program	Source	Data (time period)	Identification strategy	Effect on informality	Definition of formal employment
Argentina	*Plan Jefes y Jefas de Hogar desocupados*	Gasparini, Haimovich and Olivieri (2007)	EPH (2003-2005)	D with PS matching	Negative significant effect on (transition into) formal employment	Employees with right to pension
Ecuador	*Bono de Desarollo Humano*	Gonzalez-Rozada and Pinto (2011)	ENEMDU (2004-10)	RD on predicted SELBEN index	Positive significant effect on duration of unemployment and separation from formal employment	
Mexico	*Oportunidades*	Azuara and Marinescu (2010)	ENE (1994-04) ENOE (2005-09)	DD by municipality and time	No effect on informal employment (unclear if conditional or not on employment)	Employees in job providing health insurance
Uruguay	*Plan de Atención Nacional a la Emergencia Social*	Amarante, Manacorda, Vigorito and Zerpa (2011)	BPS data (2004-10)	RD based on poverty score (with individual fixed effect)	Negative significant effect on formal employment	

Table 3B – Impact evaluation of non-contributory social program on informality– Selected Non-contributory Health insurance Schemes

Country	Program	Source	Data (time period)	Identification strategy	Effect of informality	Definition of formal employment
Colombia	*Regimen Subsidiado en Salud*	Camacho, Conover and Hoyos (2010)	(1986-05)	DD(D) by municipality and time (and eligibility for SR) RD	Positive significant effect on informal employment	In job providing health
Mexico	*Seguro Popular*	Aterido, Hallward-Driemeier and Pagés (2011)	ENE (2002-04) ENOE (2004-09)	DD by municipality and time (with individual/household fixed effects)	Positive significant effect on informal employment	In job providing health insurance
Mexico	*Seguro Popular*	Azuara and Marinescu (2010)	ENE (1994- 04) ENOE (2005-09)	DD by municipality and time	No effect on informality (other than for positive effect among specific groups e.g. low education) (Unclear if conditional or not on employment)	In job providing health insurance
Mexico	*Seguro Popular*	Bosch and Campos-Vasquez (2010)	IMS data, 2002-09	DD by municipality and time	Negative significant effect on formal employment, (especially in small and medium size firms)	Contributing to social security in current job
Mexico	*Seguro Popular*	Barros (2011)	ENSA (2000) ENSANUT (2006) ENIGH (2000-06)	DD(D) by state, time (and SS affiliation)	Positive insignificant effect on formal employment (conditional on employment)	In job providing health insurance

Country	Program	Source	Data (time period)	Identification strategy	Effect of informality	Definition of formal employment
Mexico	*Seguro Popular*	Campos-Vasquez and Knox (2008)	ENE (2002-04)	DD by municipality and time	No effect on informality	In job providing health insurance
Mexico	*Seguro Popular*	Duval-Hernández and Smith-Ramírez (2011)	ENE (2002-04), ENOE (2004-09)	DD by state and time	Negative significant effect on probability of applying for formal job	In job providing health insurance
Mexico	*Programa de Servicios Médicos y Medicamentos Gratuitos* (*PSMMG*)	Juárez (2011)	ENEU (2001-04)	DD across municipalities and time	Positive significant effect (low education women)	In job providing social security coverage

Notes. Includes all programs in the region except a few Non-contributory Pensions introduced in the Caribbean between 1937 and the 1970s.

Figure 1: The spread of non-contributory programs in LAC – Numner of CCTs

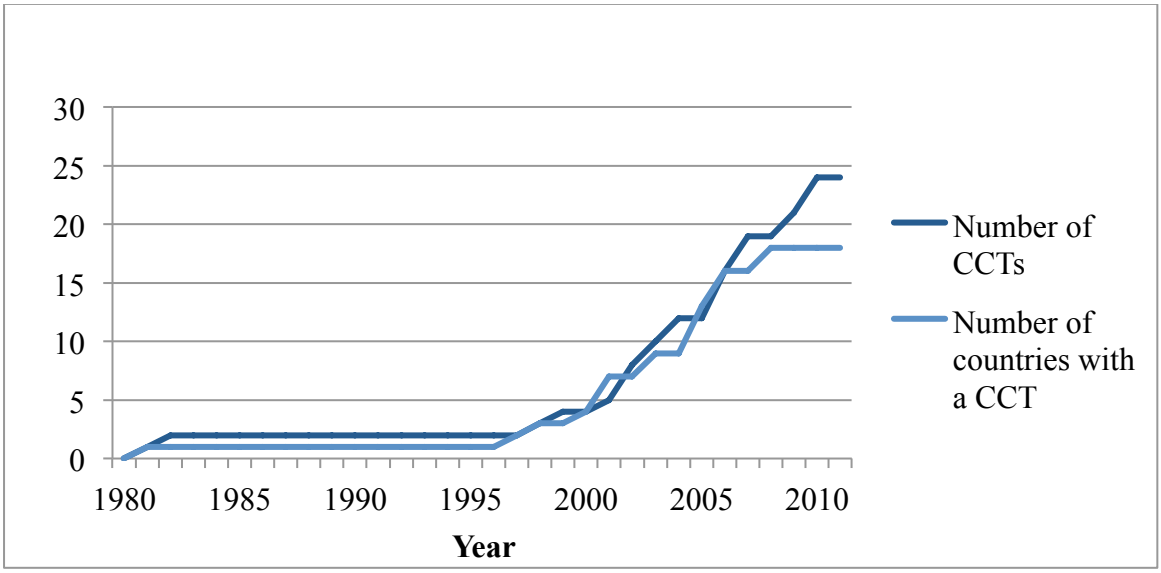


Figure 2: The spread of non-contributory programs in LAC – Social pension schemes

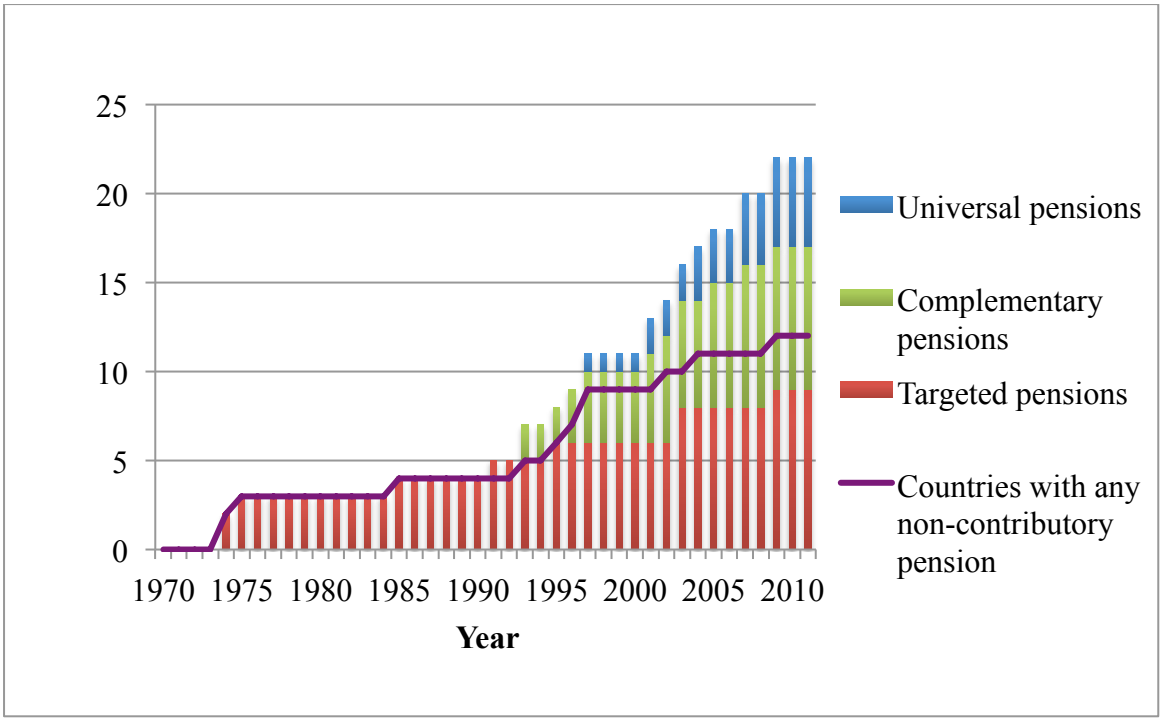


Figure 3. The distribution of workers among sectors - Stone Geary utility function

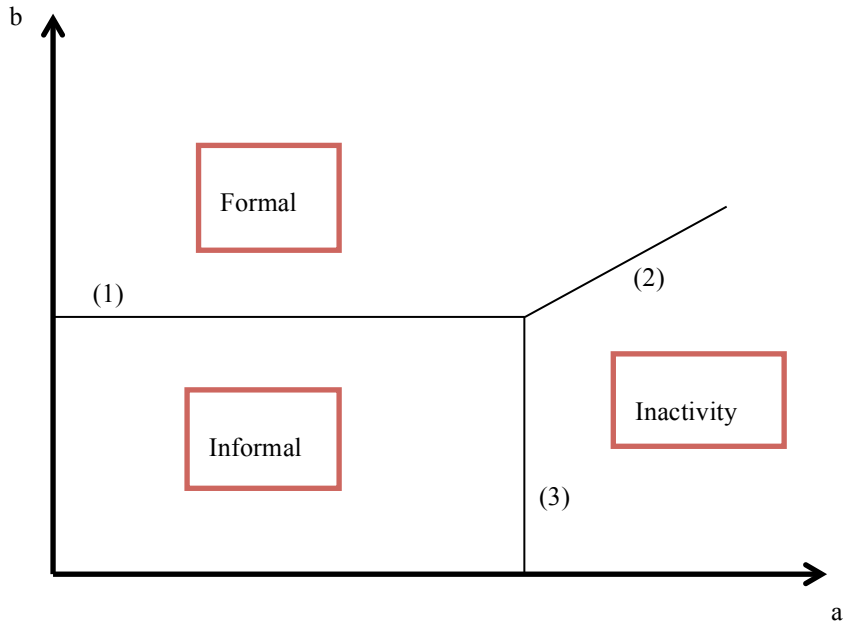


Figure 4. The distribution of workers among sectors following a rise in the generosity of means-tested non-contributory social assistance - Stone Geary utility function

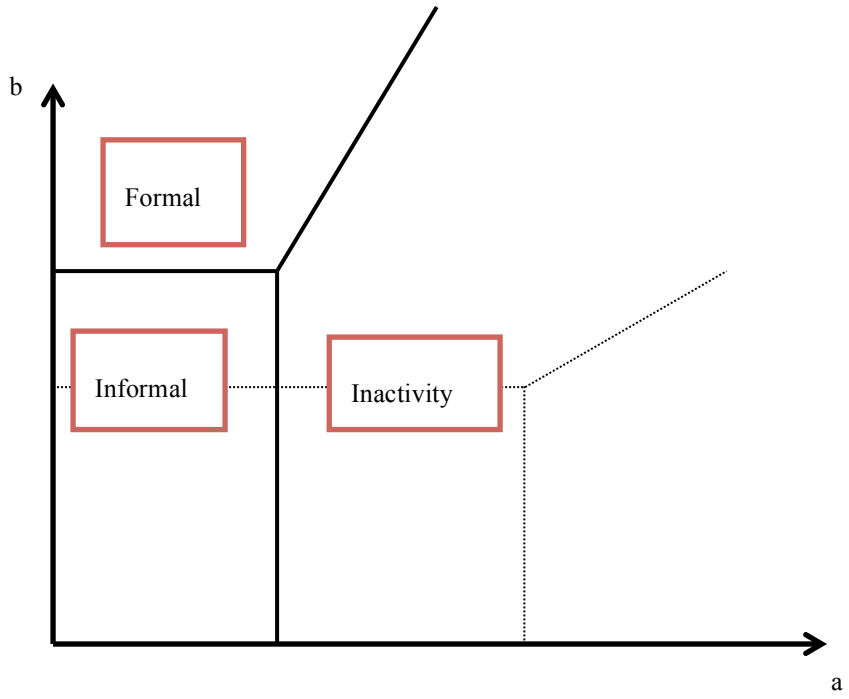
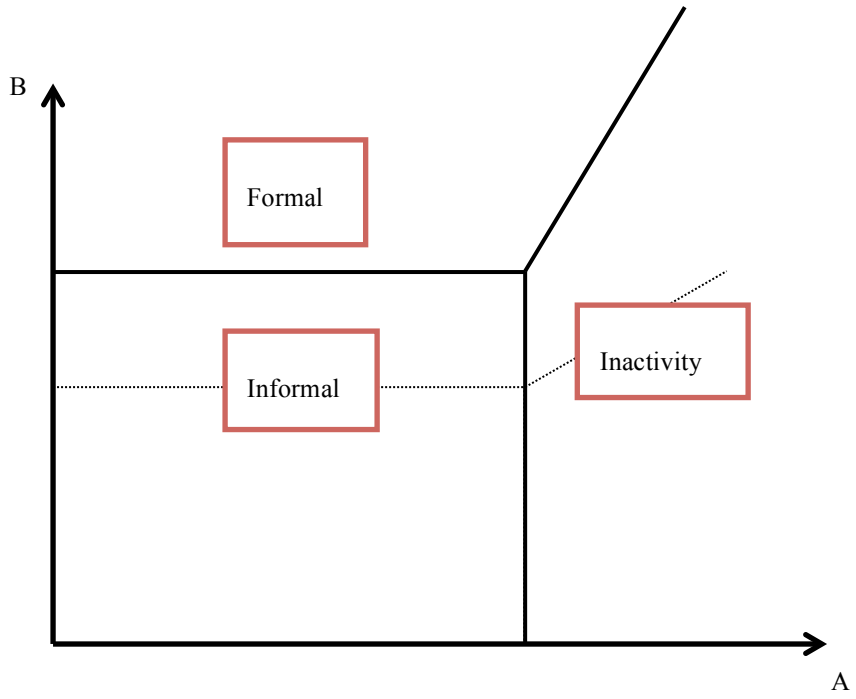


Figure 5. The distribution of workers among sectors following a rise in the generosity of means-tested non-contributory social assistance - linear utility function



Appendix

A1. Stone Geary utility function

$U(formal)=ln(Y+W_F)+\ln(b)$
$U(informal)=ln(Y+W_I+G)$
$U(non\text{-}employed)=ln(Y+G)+ln(a)$

where $b>1$ is the workers' marginal valuation of formal benefits and $a>1$ the marginal utility of leisure. In equilibrium (see Figure 3) individuals will chose formal employment if:

$$b>(Y+W_I+G)/(Y+W_F)=k_1 \quad \text{(A1)}$$
$$b>a(Y+G)/(Y+W_F)=a\,k_2 \quad \text{(A2)}$$

Individuals will choose informal employment if:

$$b<(Y+W_I+G)/(Y+W_F)=k_1$$
$$a<(Y+W_I+G)/(Y+G)=k_3 \quad \text{(A3)}$$

The conditions that determine inactivity are defined residually. As long as $W_I>W_F$, (which seems reasonable, otherwise, assuming $b>1$, nobody will be in informal work), a rise in G will leads to a rise in k_1 and k_2 and a fall in k_3. The new equilibrium is depicted in Figure 4.

A2. Linear utility function

$U(formal)= Y+W_F+B$
$U(informal)= Y+W_I+G$
$U(non\text{-}employed)= Y+ G+A$

In equilibrium, individuals will chose formal employment if:

$$B>W_I-W_F+G=l_1 \quad \text{(A4)}$$
$$B> A-W_I+G=l_2 \quad \text{(A5)}$$

Individuals will chose informal employment if:

$$B < W_I - W_F + G = l_1$$
$$A < W_I = l_3 \qquad \text{(A6)}$$

A rise in G will lead to a rise in l_1 and l_2. The equilibrium is depicted in Figure 5. The share of formal workers in both the working age and employed population falls.

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