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## **Antipoverty Transfers and Inclusive Growth in Brazil**

Armando Barrientos<sup>1</sup>, Dario Debowicz<sup>2</sup> and Ingrid Woolard<sup>3</sup>

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<sup>1</sup>The University of Manchester

<sup>2</sup>The University of Manchester

<sup>3</sup>University of Cape Town

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**International Research Initiative on Brazil and Africa (IRIBA)**

School of Environment, Education and Development, The University of Manchester,  
Oxford Rd, Manchester, M13 9PL

[iriba@manchester.ac.uk](mailto:iriba@manchester.ac.uk)

[www.brazil4africa.org](http://www.brazil4africa.org)

## **Abstract**

The paper examines the growth of antipoverty transfers in Brazil and their role in securing inclusive growth. Since the turn of the century, Brazil has managed to combine improvement in its growth performance, by the standards of recent decades, with substantial, and arguably unprecedented, reductions in poverty and inequality. There is considerable interest in the mix of economic and social policies responsible for inclusive growth in Brazil, including from countries in Africa.

Since the mid-1990s, the emergence of large scale programmes providing direct income transfers to household facing extreme poverty and vulnerability have provided a focus for poverty reduction strategies in Brazil. They include non-contributory pensions, like Previdência Social Rural and the Benefício de Prestação Continuada, and human development conditional transfer programmes like Bolsa Escola and Bolsa Família. Antipoverty transfers are credited with a sharp reduction in extreme poverty and with having contributed to a reduction in inequality and social exclusion. Arguably, they have also strengthened political support for pro-poor policies. This paper provides a comprehensive assessment of the role of antipoverty transfers in securing inclusive growth. It examines their design, implementation, outcomes, and sustainability. It also sketches their potential relevance to African countries.

There a growing literature covering recent developments in social assistance in Brazil. The paper contributes to the literature it in several respects. First, the huge interest in conditional cash transfers globally has concentrated attention on Bolsa Família, but the other components of social assistance are important too and are covered in the paper. Second, very little attention has been paid outside Brazil to the rich discussion and debate around the conceptual and normative frameworks supporting the development of social assistance, and social policy more broadly. The paper addresses this gap. Third, research into the effectiveness of social assistance in Brazil has produced a wealth of information on the aggregate impact of each of the component programmes. This paper assesses this literature while paying special attention to the distribution of the outcomes across municipalities in Brazil and the role socio-economic and capacity condition. Fourth, the paper will pay close attention to the sustainability of social assistance in Brazil, especially the budgetary and political sustainability issues. Fifth, the paper discusses the relevance of Brazil's antipoverty transfers to African countries, including South-South international cooperation.

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## 1. Introduction

In the new century, Brazil's has attracted considerable attention among low and middle income countries for the way it has successfully combined economic and social policies to reduce poverty, inequality, and social exclusion.<sup>1</sup> The emergence of large scale social assistance institutions addressing poverty and social exclusion is central to these achievements. Among them, Brazil's Bolsa Família, an antipoverty programme reaching 14 million households, including one third of all children in the country, has been particularly influential in countries in Asia and Africa. Less well known, but no less important, social pension schemes have pushed pension coverage of people aged 65 and over to just over 86 percent, among the highest in the region. Previdência Social Rural provides around 7.5 million transfers annually, largely old age pensions, to informal workers in rural areas. The Benefício de Prestação Continuada provides income transfers to 3.7 million older people and people with disabilities in extreme poverty. This paper provides a comprehensive examination of social assistance in Brazil, its main components, evolution, effectiveness and sustainability.

There a growing literature covering recent developments in social assistance in Brazil. The paper contributes to the literature it in four respects. First, the huge interest in conditional cash transfers globally has concentrated attention on Bolsa Família.<sup>2</sup> This is justified if we are interested in poverty reduction interventions, of which conditional cash transfers are an innovative type (Fiszbein and Schady 2009). Bolsa Família is the flagship of social assistance in Brazil, but other components are important too. The two social pensions in Brazil reach over 10 million people with a budget over two times greater than Bolsa Família's. It is important to consider all the components in the package. Second, the international development literature is primarily focused on the impact of Bolsa Família, and as a consequence very little attention has been paid outside Brazil to the rich discussion and debate around the conceptual and normative frameworks supporting the development of social assistance, and social policy more broadly. This is needed to make sense of the evolution of social assistance institutions over time. Third, research into the effectiveness of social assistance in Brazil has produced a wealth of information on the aggregate impact of each of the component programmes, this paper assesses this literature while paying special attention to the distribution of the outcomes across municipalities in Brazil and the role socio-economic and capacity condition. Fourth, the paper will pay close attention to the sustainability of social assistance in Brazil, especially the budgetary and political sustainability issues. It has long been recognised that social policies generate stratification effects with implications for their development and sustainability (Esping-Andersen 1990; Skocpol 1992; Pierson 1993). The sustainability of social assistance depends to an important extent on whether policies and institutions generate a broad consensus behind them. Fifth, the paper discusses the relevance of Brazil's antipoverty transfers to African countries, including South-South international cooperation.

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<sup>1</sup> During the first decade of the new century, the share of the Brazilian population in extreme poverty declined from 22% to 11%, while the Gini coefficient of per capita household income fell by 10%.

<sup>2</sup> Medeiros et al. (2008).examine Bolsa Família and Benefício de Prestação Continuada but not Previdência Social Rural.

The evolution of social assistance<sup>3</sup> in Brazil has been swift, but far from linear. The 1988 Constitution, following from 20 years of dictatorship, is the marker for the rapid expansion of social assistance programmes and policies in the years that followed. However, the policy instruments the Constitution supported, *Previdência Social Rural* and the *Benefício de Prestação Continuada*, were not especially innovative or farsighted. Their orientation was firmly rooted in conventional welfare policy, on a distinction between individuals with or without the ability to work (Jaccoud, Hadjab and Chaibub 2009). They focused on old age poverty and on disability, but failed to address child poverty (Barros and Carvalho 2003); and favoured pure income transfers which replicated the 'compensatory' approach of golden age European social assistance. *Bolsa Família* developed instead out of municipal experimentation with *Bolsa Escola*, rooted in a mix of guaranteed income proposals, multidimensional perspectives on poverty, and education interventions. *Bolsa Escola* provided transfers to households in extreme poverty conditional on children attending school. The spread of these programmes was sanctioned at the federal level in the 1997-2001 period. The *Programa de Erradicação do Trabalho Infantil PETI* emerged in 1996 as a human development conditional income transfer programme addressing hazardous child labour in high incidence areas. Several income transfer programmes emerged in 2001. The incoming Lula administration eventually consolidated income transfer programmes in *Bolsa Família* in 2003 and established the Ministry of Social Development in 2004 to provide overall leadership and management to social assistance. The Unified Social Assistance System has expanded to add ground level intermediation and referrals. Recent policy development include *Brasil Sem Miséria* focused on strengthening economic inclusion and *Brasil Carinhoso* which guarantees a floor to transfers with the objective of eradicating extreme poverty.

Two decades of rapid growth in social assistance institutions provide important lessons, but institutional development in Brazil is far from complete, with significant areas of uncertainty and challenges remaining. Three strategies for inclusion remain in place: co-opting informal workers into social insurance institutions; providing social assistance to those unable to work; and addressing intergenerational poverty persistence through human development income transfer programmes. The extent to which these three strategies combine will largely define the development of social assistance institutions in the future, but change and reform are restricted by differences in the legal status and sectoral location of existing programmes. The policy emphasis on social assistance has led to a welcomed re-balancing of public subsidies away from social insurance, but there is still a long way to go before this process has run its course.<sup>4</sup> There is growing awareness that intermediation is important as a means to address social exclusion, especially in view of the experience of *Chile Solidario*. Institutional innovation on this issue is bedding in. The exit routes from social assistance, especially as regards economic inclusion, are under construction and pose significant

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<sup>3</sup> Social assistance describes tax-financed public programmes and policies addressing poverty and vulnerability. Social insurance describes contributory schemes addressing life-cycle and work related contingencies. Together, social assistance and social insurance are the main components of social protection (Barrientos 2013b).

<sup>4</sup> Hunter and Borges, for example, argue that "public assistance represents an area of transformation and redesign. Yet the flagship program *Bolsa Família* entails a relatively small share of overall government spending and reinforces historic patterns of extending access while maintaining privileges for the select few" (Hunter and Sugiyama 2009: 33)

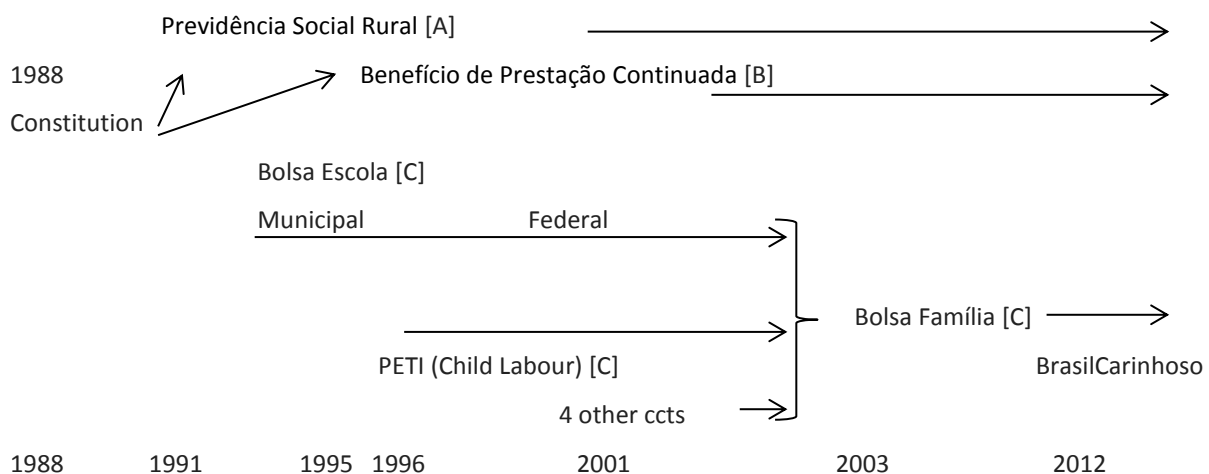
challenges. Research on the political feedback of social assistance, and its components, adds an important dimensions to a consideration of its future evolution.

The rest of the paper is organised as follows. Section 2 provides a summary of the main components of social assistance in Brazil. Section 3 examines design and implementation of the main components. Section 4 assesses the outcomes from these programmes as identified in available impact evaluation studies. Section 5 focuses on the distribution of outcomes across municipalities in Brazil. Section 6 discusses sustainability issues. Section 7 considers briefly the relevance of social assistance in Brazil to countries in Africa. A final section concludes.

## 2. The main components of social assistance in Brazil

The 1988 Constitution constituted a watershed in the development of social assistance in Brazil. It placed social inclusion at the top of the public policy agenda. The policy and institutional development which followed pursued three main inclusion strategies responsible for the current configuration of social assistance: (i) integrating informal workers in social insurance institutions through a special regime; (ii) providing income transfers to older and disabled people in poverty; and (iii) setting up human development income transfer programmes targeted on the population in extreme poverty. They led to the three main components of social assistance in place in Brazil today. Figure 1 provides a bird's eye view of these components. The following sections will examine in some detail the design and evolution.

**Figure 1:** Evolution of social assistance components and programmes in Brazil



Three routes to including disadvantaged groups into social protection in Brazil:

[A] Preferential inclusion of rural informal workers into the private sector social insurance fund (supported by government subsidies and commonly described as semi-contributory).

[B] Non-contributory pension for older and disabled people in households with per capita household income below 1/4 of minimum wage.

[C] Human development conditional income transfers: Bolsa Escola began in a few municipalities in 1995; then spread to other municipalities with federal government counterpart funding in 1997; becoming a federal programme in 2001. Together with other income transfer programmes from separate Ministries it was unified under Bolsa Família in 2003. Brasil Carinhoso provides a guaranteed minimum income floor at the extreme poverty line in 2012.

Number of Transfers/Public Subsidy in 2010: [A] 7.8m /1.4%GDP [B] 3.2 m/ 0.7%GDP [C] 13.2 m/ 0.6% GDP

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### **3. Design and implementation**

This section examines the evolution, design, and implementation of the main strategies/components of social assistance in Brazil.

#### **3.1 Previdência Social Rural as a special regime for informal rural workers**

The 1988 Constitution provided the basis for the rapid expansion of social assistance. Following 20 years of dictatorship, Brazil emerged in 1985 with a huge 'social debt', a commitment to address this debt, and a ferment of ideas on the way forward. The discussions of the constituent assembly led to far reaching change in the principles underpinning social policy. It established social assistance as a distinct policy dimension, based on citizenship and social rights. Responsibility for the provision of social assistance was placed with the state. This was a break with the past in which social protection entitlements were grounded squarely on a Bismarckian contributory principle, while state responsibility in social assistance had been limited to partial and residual support for provision of services by private and charitable bodies (Jaccoud, Hadjab and Chaibub 2009).

The aspiration in the Constitution to address the large inequalities existing between urban and rural areas in Brazil encouraged discussion on extending social insurance coverage to workers in agriculture. This led to Lei 8212/8213 in 1991 establishing Previdência Social Rural. The legislation created a special regime by which waged and own account workers (in family farms) could access social insurance benefits provided by the INPS with a minimum of 10 years contribution record. This is in recognition of the informal and irregular nature of employment in this sector. Crucially, the legislation delayed implementation of the contribution requirement for 10 years to enable workers to meet it and also to provide them with an incentive to start contributing (Delgado and Cardoso 2000b).

It is worth briefly tracing the institutional path of the Previdência Social Rural. Its earliest antecedents can be traced back to 1963, when the government established FUNRURAL (Fondo de Assistência e Previdência do Trabalhador Rural), a programme intended to provide health insurance and pensions for rural workers (Lewis and Lloyd-Sherlock 2009).<sup>5</sup> This was later re-launched as Pro-Rural (Programa de Assistência ao Trabalhador Rural) in 1971, providing an old age pension component under very restrictive conditions. It provided a basic pension of one half of the minimum wage to rural workers aged 65 and over, with entitlement restricted to one person per household. As can be seen from the titles of these initiatives, they fell between social assistance and social insurance.

Under the Previdência Social Rural, women aged 55 and over and men aged 60 and over who could demonstrate having worked in mining, agriculture or fishing qualify for a pension equivalent to one minimum wage.<sup>6</sup> Previdência Social Rural involved a significant scaling up of entitlements to workers in agriculture (Barbosa 2010), as can be seen the rise in the number of benefits during 1992 and 1993 shown in Figure 2. With the introduction of Previdência Social Rural in 1992, the number of transfers jumped from 4.1 million in 1992 to

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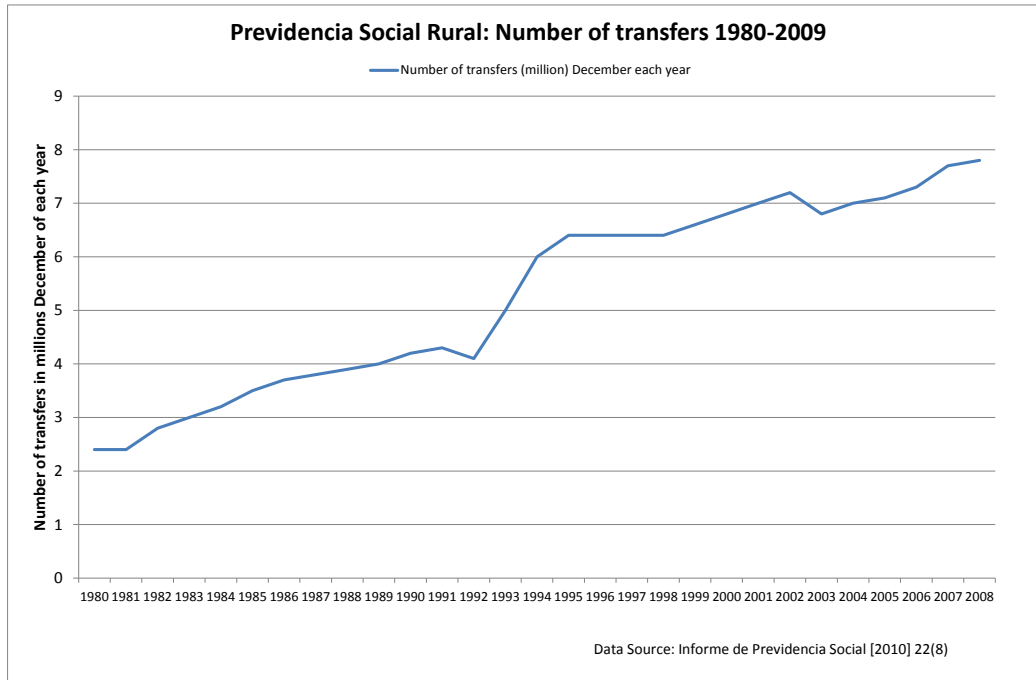
<sup>5</sup> Schwarzer and Querino (2002a) argue that motivation for these initiatives came from a mix of state security concerns by the military government and technocrats' concern with the impact of urban migration on rural areas.

<sup>6</sup> Initially, entitlement was restricted to workers in agriculture, an occupational restriction, but changes in the regulations in 2008 added a rural residence requirement.



six million in 1994. In 2009, Previdência Social Rural paid 5.3 million old age and 0.4 million disability pensions (Barbosa 2010). The remainder is accounted for by other maternity, sickness, and other benefits.

**Figure 2**



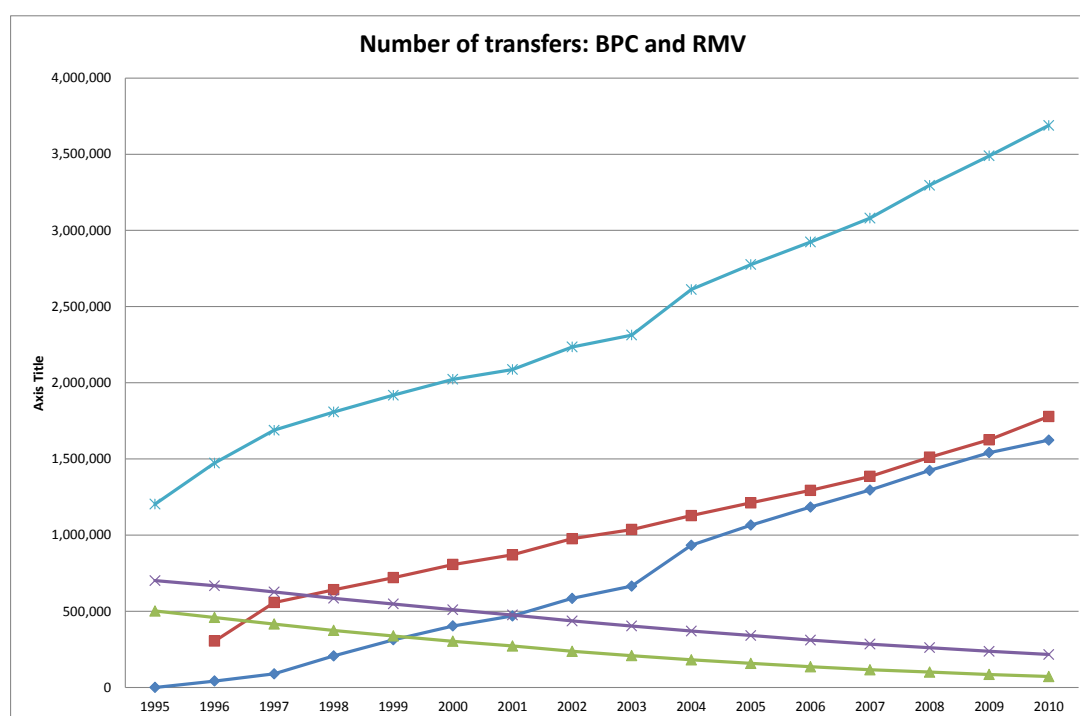
The introduction of the Previdência Social Rural is hugely significant because it provides a break with the Bismarckian contributory principle and a shift towards citizenship-based old age pension entitlements (Delgado and Cardoso 2000b). On paper, the financing modality is hybrid, as the Previdência Social Rural is assumed to be financed through a tax on sales of agricultural produce and contributions from waged and own account workers. In practice the tax on sales of agricultural produce amounts to around 10% of benefit expenditure, and the contribution requirement has only recently been implemented. Transfers are largely funded out of the public subsidies to the private sector social insurance fund (Schwarzer and Querino 2002a), and is described in official document as ‘semi-contributory’ (Mesquita, Jaccoud and dos Santos 2010). Previdência Social Rural is part of the Regime Geral de Previdência Social, the private sector pension fund under the management of the Ministério de Previdência Social managed.

There are two issues the discussion below will return to. First, in terms of its focus and financing, Previdência Social Rural is a social assistance scheme or programme. It is therefore important to consider it within the context of this paper. Second, in institutional terms, and in policy discussions and research in Brazil, Previdência Social Rural is often located within social insurance, as a special regime. For our purposes, it is helpful to take account of its hybrid nature. In debates on the future course of social protection in developing countries, Previdência Social Rural provides a rich experience on the strategy of incorporating informal and low income workers within social insurance. Many of the successes and failures associated with this approach can be studied in this context.

### 3.2 Benefício de Prestação Continuada and conventional social assistance

The new Constitution explicitly acknowledged the right of older people and people with disabilities to a minimum guaranteed income.<sup>7</sup> This was consolidated in the 1993 Lei Orgânica da Assistência Social (LOAS) defining the role of public agencies in the delivery of social assistance programmes under a Sistema Unico de Assistência Social (SUAS). LOAS also led to the implementation of the Benefício de Prestação Continuada, a non-contributory pension covering older and disabled people in extreme poverty. In practice, the Benefício de Prestação Continuada meant an extension of the Renda Mensal Vitalícia, a social assistance pension introduced in the 1970s by the military rulers.<sup>8</sup> The Benefício de Prestação Continuada began to be implemented in 1996, and provided a transfer of one minimum wage (as established in the Constitution) to people aged 70 (subsequently reduced to 67 and later to 65 in 2003) and over, or with disabilities, living in households with per capita income at a quarter of the minimum wage or less. The regulations include a review of entitlements every two years. The programme is now the responsibility of the Ministry of Social Development.

Figure 3



<sup>7</sup> Jaccoud et al. (2009) provide a detailed discussion on the evolution of proposals in the constituent assembly. Participation in deliberations involved government technocrats, politicians, civil society organisations, and attracted public petitions (one such petition was crucial in extending non-contributory pension entitlements to people with disabilities). A 'vulnerable groups' perspective dominated discussion of social assistance, two of the sub-committees discussing social assistance were titled 'Blacks, Indigenous, People with Disabilities and Minorities' and 'Family, Minors and Elderly'. Right of centre groups privileged contributory social insurance and aimed to restrict social assistance entitlements; while left of centre groups and technocrats advocated guaranteed minimum income for vulnerable groups.

<sup>8</sup> It provided one-half of the minimum wage to people aged 70 and over with at least 12 contributions to social insurance.

Figure 3 shows the number of transfers under the old age and disability components of RMV and Benefício de Prestação Continuada on an annual basis. The trend is a steady reduction in RMV transfers and a steady rise in Benefício de Prestação Continuada transfers. The jump in the number of old age beneficiaries of Benefício de Prestação Continuada in 2003 reflects the lowering of the minimum age of entitlement from 67 to 65 years. By 2010 there were 3.7 million beneficiaries, split evenly between old age and disability.

The Benefício de Prestação Continuada reflects a conventional approach to social assistance, based on a distinction between individuals who are considered able to work and earn an income, and those who are not considered to be in that position due to old age or disability. It is focused on extreme poverty as it is a requisite for entitlement that household income per capita is less than  $\frac{1}{4}$  of the minimum wage, but lacks an explicit inactivity test. Benefício de Prestação Continuada and Previdência Social Rural have transfers set at one minimum wage. Providing individuals meet eligibility requirements, transfers are a right or entitlement acknowledged in the Constitution. This has the implication that entitlements are not subject to budgetary restrictions. Whereas the Previdência Social Rural is restricted to rural residents, the Benefício de Prestação Continuada is available nationwide.

The minimum age of entitlement to the old age transfer has been lowered from 70 to 67 in 1998 and 65 in 2003. The rationale for the high minimum age of entitlement initially was crucial to overcoming strong opposition to social assistance from trade unions, employers and the social insurance bureaucracy, concerned that an expansion of social assistance would weaken workers' incentives to contribute to the social insurance scheme. The Benefício de Prestação Continuada is financed from the federal budget. Unfortunately, a majority of social insurance contributors only manage to retire with a guaranteed minimum pension, which is one minimum wage – the same as the transfer under the Benefício de Prestação Continuada. Concerns over contribution incentives have some justification in theory (Bonturi 2002), but in practice the growth in the reach of social pensions has not been accompanied by a reduction in the share of the labour force contributing to social insurance. More importantly, from a social protection and poverty reduction perspective, the core issue here is not the presence of tax-financed programmes, but the limitations of the contributory schemes, especially in the context of liberalised labour markets (Levy 2008; Ferreira and Robalino 2010).

The two social pension schemes, combined with social insurance pensions, have greatly extended the coverage of social protection among households with older people in urban and rural areas. In 2008, 86.2 percent of the population aged 65 and over were receiving a pension transfer. Among Latin American countries, Brazil has one of the highest rates of pension coverage among older (Gasparini, Alejo, Haimovich et al. 2007). The social pension schemes ensure that the rate of pension coverage of older people significantly exceeds the coverage of social insurance among the working population, estimated at 65.9 percent in 2008.

### **3.3 Human Development, Bolsa Escola to Bolsa Família**

Bolsa Família has a different origin. Its roots are in Bolsa Escola, a programme introduced in parallel in a handful of municipalities in 1995 as a means of addressing the impact of crises on poor households. Its intellectual origins are to be found in guaranteed income proposal and a growing realisation among policy makers and researchers that poverty is

multidimensional and persistent. A strand of proponents advocated Bolsa Escola type programmes as an education intervention.<sup>9</sup>

Discussion on a minimum guaranteed income in Brazil can be traced back to its longstanding advocacy by Eduardo Suplicy, the Workers Party's first elected Senator. Influenced by Milton Friedman's negative income tax proposals, Senator Suplicy introduced a bill in 1991 proposing to implement a negative income tax scheme.<sup>10</sup> The proposal was approved in the Senate, but was never implemented. Jose Marcio Camargo, an influential academic with a strong reputation for research on poverty, and also a member of the Workers Party, suggested that the guaranteed income was unlikely to have an impact on persistent poverty in Brazil if it was not linked to improvements in the productive capacity of households in poverty. Linking transfers to improvements in children's education gave the guaranteed income idea considerable political traction (Melo 2007b, a).

The Constitution did not change the basic political structures in Brazil, but gave an enormous impetus to decentralisation. In Brazil, municipalities are federal entities, with considerable room for experimentation. A handful of municipalities began experimenting with guaranteed income schemes linked to children's schooling and other interventions. Bolsa Escola emerged from municipal activism on poverty reduction.<sup>11</sup> The experimental programmes soon began to be replicated in other municipalities. In 1997 the federal government offered financial incentives to municipalities to support the adoption of Bolsa Escola.<sup>12</sup> Bolsa Escola became a federal programme in April 2001 under the responsibility of the Ministry of Education. Federal initiatives included the Programa de Erradicação do Trabalho Infantil (PETI) first introduced in 1996. Initially located in municipalities with high incidence of child labour in hazardous employment, the programme provided direct transfers to households as well as remedial education in after-school sessions. The programme was especially successful, in part because of the supplementary education provided (Brazilian Court of Audit 2003).<sup>13</sup>

The apparent success of Bolsa Escola and PETI, and especially their core idea of providing direct transfers to households in poverty, stimulated similar policy initiatives in other areas. The Ministry of Health introduced a Bolsa Alimentação in September 2001, aimed at expectant mothers and infants and with the objective of reducing malnutrition and infant mortality. In 2003, the Ministry of Mines and Energy began to implement a gas subsidy, Auxílio Gás, to compensate households in poverty for the phasing out of gas subsidies.<sup>14</sup> Agente Jovem was another transfer programmes directed at youths.

The arrival to government of Lula in 2002 did not seem auspicious for this policy agenda at first. His campaign emphasised giving priority to the fight against hunger (Hall 2006). His

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<sup>9</sup> Senator Cristovão Buarque in particular.

<sup>10</sup> The bill proposed taxing people above 2.5 times the minimum wage and paying a transfer to people below this threshold (Britto and Soares 2010).

<sup>11</sup> There are several 'fathers' of Bolsa Escola, including Cristovão Buarque in Brasília and Magalhães Texeira in Campinas.

<sup>12</sup> In 1998 60 municipalities had adopted the programme. Their number mushroomed to 1,115 by 2000.

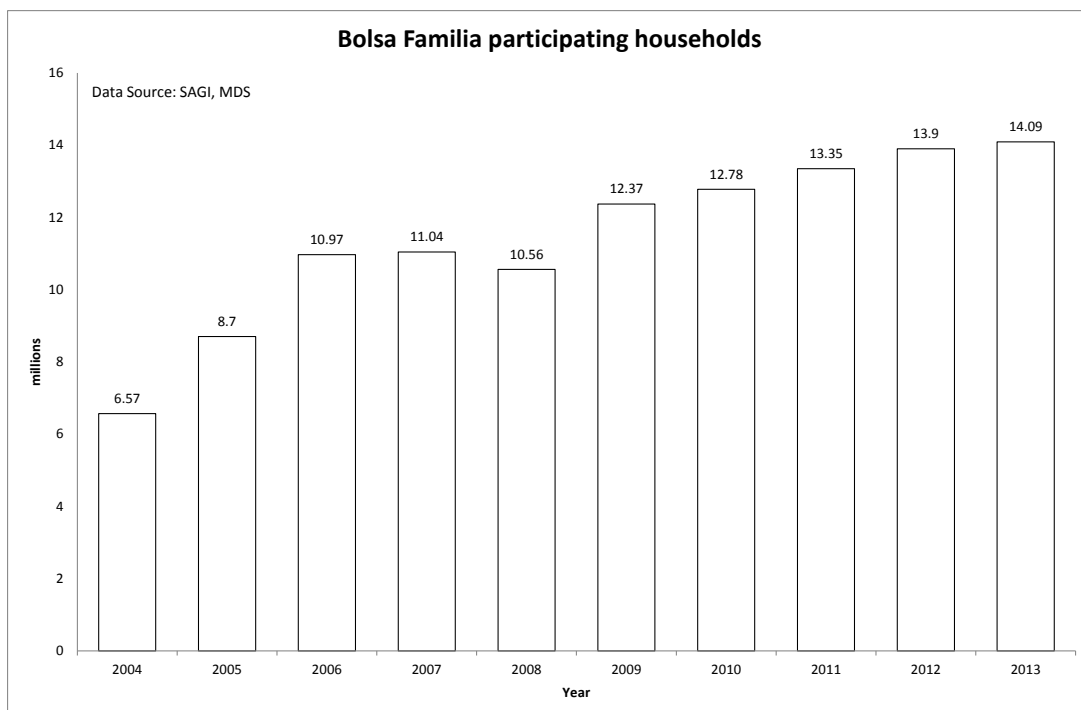
<sup>13</sup> Both federal Bolsa Escola and PETI played a role in the social development strategy of Presidente Cardoso and his social policy advisor Vilmar Faria. The latter describes the role of direct income transfer programmes, including the BPC, PRS and Bolsa Escola, in the overall development strategy (Faria 2002).

<sup>14</sup> Melo (2007b) argues that political competition between the Workers Party and the Partido Socialista Democrático Brasileiro (PSDB), and among politicians within them, was a contributory factor in the emergence of the subsidy programmes.

Fome Zero popularised the three meals a day guarantee, as opposed to a guaranteed income. In office he created an Extraordinary Ministry for Zero Hunger, which floated a raft of new interventions, including a new family subsidy, the Cartão Alimentação, providing in-kind and cash transfers. Very soon, opposition from experts, policy makers and beneficiaries themselves led to a change in policy. He announced the implementation of Bolsa Família as a single programme aiming to provide transfers to households in extreme poverty, and integrating all the existing subsidy programmes, which began in 2003. A new Ministry for Social Development and Zero Hunger was established to manage Bolsa Família in 2004.<sup>15</sup>

Bolsa Família greatly expanded the coverage of Bolsa Escola and the other income transfer programmes, as can be seen in Figure 4. The Figure shows the number of households participating in Bolsa Família, which increased from 6.5 million in 2004 to 14 million in 2013.

**Figure 4**



<sup>15</sup> Until 2004, social assistance was the responsibility of the Ministry of Labour and Social Assistance.

Table 1 summarises the main components of social assistance in Brazil, including the Previdência Social Rural.

<b>Table 1. Social Assistance in Brazil: main programmes</b>			
All values are for 2010 (US\$ PPP 1= R\$1.713)			
	Previdência Social Rural	Benefício de Prestação Continuada	Bolsa Família
Target population	Rural informal workers with low contribution capacity	Older and disabled people in households in extreme poverty	Households in extreme poverty and households in moderate poverty with children
Eligibility	Long-term rural informal workers (>15 years), subsistence agriculture, fishing, mining, limited land	Aged $\geq 65$ in households with per capita income $\leq \frac{1}{4}$ minimum wage	Households with per capita income $\leq$ R\$70 (US\$40) and households with children with per capita income $\leq$ R\$140 (US\$82)
Monthly benefits	Old age pension is one minimum wage R\$545 (US\$318)	One minimum wage R\$545 (US\$318)	Basic transfers=R\$70 (US\$40). Variable transfer=R\$32 (US\$18) per child (0-15) up to five; and R\$ 38 (US\$22) for each youth (16-17) up to two. Households with per capita income $>$ R\$70 and $\leq$ R\$140 receive child transfers only From 2012, the Benefício de Superação da Extrema Pobreza provides a 'top up' to households with incomes below R\$70 <u>after</u> transfers
Reach	7.8 million beneficiaries	3.7 million beneficiaries	14 million households
Budget as % GDP	1.4	0.7	0.6
Agencies responsible	Regime Geral de Previdência Social Ministério de Previdência Social	Ministério de Desenvolvimento Social Ministério de Previdência Social	Ministério de Desenvolvimento Social Caixa Econômica Federal
Source: Barrientos (2013a)			

### 3.4 Implementation

Benefício de Prestação Continuada and Previdência Social Rural are pure income transfers, they transfer income solely, with the implication that their implementation and management is relatively uncomplicated. With the Previdência Social Rural, once entitlements are established, the main administrative burden is associated with the payment of the transfers. This is managed by the INSS. The means test required for entitlement to the Benefício de Prestação Continuada poses an additional complication requiring management at the local level. On paper entitlement is subject to review every three years, but in practice review is less frequent. The Benefício de Prestação Continuada is now managed by the Ministry of Social Development together with all the other social assistance interventions.

Bolsa Família is by comparison a complex programme to implement and manage (Cotta and Paiva 2010; Paiva, Falcão and Bartholo 2013). It was introduced in 2003 with the objective of consolidating several direct transfer programmes: Bolsa Escola, Bolsa Alimentação, Cartão Alimentação, Auxílio-Gás and PETI, a transition which is in process. Establishing Bolsa Família involved coordination and negotiation with the agencies providing the component programmes. PETI was the last programme incorporated into Bolsa Família in 2005. Bolsa Família is under the management of the Secretaria Nacional de Renda de Cidadania (SENARC), established under the Ministry of Social Development. The Caixa Econômica Federal, a publicly owned savings bank, is responsible for maintaining the CadÚnico (Cadastro Único para Programa Sociais do Governo Federal, or Single Registry), and for disbursing the transfers. Bolsa Família is implemented jointly by the MINISTÉRIO DE DESENVOLVIMENTO SOCIAL and the Municipalities, which are responsible for the delivery of the programme at the local level.

The selection of beneficiaries is the outcome of several processes (Barros, Carvalho, Franco et al. 2008). The federal government sets a target number of participants and allocates quotas to the different municipalities. The quotas are identified from poverty profiles based on household survey data. The municipalities use their knowledge of the distribution of households in poverty, sometimes based on local poverty mappings, to disseminate information on the programme to potential beneficiaries. Potential beneficiary households are then registered in the CadÚnico; this involves households filling in a standard questionnaire. Municipalities have an incentive to reach potential beneficiary households and for this purpose engage with local institutions and organisations. The majority of registrations take place in schools, clinics, etc. The information provided on registration is then sent to the federal agency and used to perform a means test which determines eligibility and therefore selection. The federal agency notifies municipalities of selected households.<sup>16</sup>

Once selected for participation in the programme, households are provided with a monthly transfer. The transfer amounts depend on the income of the households and their

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<sup>16</sup> Bolsa Família's target was 12.7 million households in 2010. Is this the 'right' number? S. Soares, Ribas, & Soares (2009) compare eligible and recipient households using PNAD data for 2006. They find a large proportion of eligible households not receiving transfers, 6.6 million. They argue that volatility in incomes in Brazil means that the government's calculation that at a point in time in 2006 there were 11 million eligible households missed out on the fact that over a three months period, say, the number of eligible households is much larger. They estimate that to reach all households with per capita income below ¼ of the minimum wage at some point during 2006, the government should have included 15 million households in Bolsa Família.

composition (See Table 1).<sup>17</sup> Households with per capita incomes up to R\$70 are entitled to a fixed household transfer of R\$70 plus an additional amount of R\$32 for each child 0-15 years of age, up to a maximum of five, and an additional amount of R\$38 for each youth aged 16-17, up to a maximum of two. The maximum benefit amount for households in extreme poverty is therefore R\$242. Households with per capita incomes between R\$71 and R\$140 are entitled to the child and youth transfers, but not to household transfer, and their maximum transfer amount is therefore R\$172.<sup>18</sup> As a comparison, the Minimum Wage in April 2011 was R\$545.<sup>19</sup> From 2012, the Benefício de Superação da Extrema Pobreza provides a 'top up' to households with incomes below R\$70 after transfers. This makes sure no participant is in (income) extreme poverty.

Bolsa Família attaches several conditions to the continuation of transfer payments. They cover schooling, health and social services. Participating households commit to ensuring that children up to 15 years of age have an 85 percent record of school attendance, while youths aged 16-17 are required to complete 75 percent of school attendance. Health conditions include a full immunisation schedule, child development monitoring for children under seven years of age, pre-natal monitoring for pregnant women and monitoring for nursing mothers. Attendance of remedial education for children and youths at risk of child labour, which was a requirement under the PETI programme, is retained in Bolsa Família. The conditions have a diagnostic role. Failure to comply with conditions should lead to consideration of whether additional interventions are needed. Non-compliance can lead to suspension of payments and exclusion from the programme.<sup>20</sup> Compliance following suspension of a single payment can lead to restitution of payment with arrears. In a comparative context, conditions in Bolsa Família are described as 'soft conditions' (Cecchini and Martínez 2011).<sup>21</sup>

In March 2011, following the election of Dilma Rouseff to the Presidency, a new Plano Brasil Sem Miséria was announced. The aim of the Plan is to articulate public policy directed at eradicating extreme poverty.<sup>22</sup> It is a Plan and not a Programme, like Bolsa Família, and in many respects it constitutes another stage in the development of social assistance in Brazil (Paiva, Falcão and Bartholo 2013). Drawing a parallel between Fome Zero and PBSM - as an aspirational strategy involving multiple programmes, policies, and interventions - is superficially attractive but hopefully wide of the mark. Like Fome Zero, the Plano Brasil Sem Miséria involves around 120 interventions and programmes distributed in 22 Ministries and multiple agencies (Paes-Souza 2013). It shares the ambition to eradicate extreme poverty as well as a multidimensional perspective on poverty. But in its design and implementation it

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<sup>17</sup> The transfer values in the text are those applying in April 2011 in Reais. The exchange rate with the US\$ has been volatile recently; 2011 implied PPP exchange rate with international US\$ is 1.713.

<sup>18</sup> There is also a special variable transfer amount, calculated on a case-by-case basis, to households that were recipients of the component transfers of Bolsa Família and are affected financially by the migration to the new programme.

<sup>19</sup> Bolsa Família benefit levels have been upgraded by the government on four occasions, but there is no legal requirement for benefits to be indexed.

<sup>20</sup> To 2010, just over two million households received a warning, 0.7 million had a payment blocked; 0.3 million had a payment suspended; and 0.09 million were excluded (Castro and Modesto 2010b).

<sup>21</sup> See de Castro and Modesto (2010b) for a review of studies on conditions in Bolsa Família.

<sup>22</sup> Information from the 2010 Census estimates the population living on extreme poverty, R70 per capita or less, at 15 million or 7.8 percent of the population.



appears to have assimilated the lessons from the evolution of antipoverty policy in the country.

The evolution of antipoverty policy in Brazil as described in this paper suggests a shift in focus over time from the extension of social insurance to incorporate excluded sectors, to conventional social assistance directed at vulnerable groups, to human development focused income transfers. Plano Brasil Sem Miséria gathers together the main lessons from this evolution: the eradication of extreme poverty requires a coordinated effort directed at the population in extreme poverty aimed at improving income/consumption and improving access to basic services and facilitating productive employment. In this context, the Plano Brasil Sem Miséria is a framework for articulating public policy across these three dimensions in order to bring extreme poverty down to zero and keeping it there. Bolsa Família is at the core of the Plan as the instrument for ensuring a guaranteed minimum income, with additional transfers to guarantee an income floor. The Plano Brasil Sem Miséria includes a strengthening of basic services and their capacity to reach the target population. It also envisages an improved articulation with measures aimed at economic inclusion. Its implementation will be the responsibility of the Ministério de Desenvolvimento Social but with flexible approach to coordination with other agencies (Paes-Souza 2013). The PBSM aims for a gradual process of articulation and strengthening of existing public effort on extreme poverty eradication (Paiva, Falcão and Bartholo 2013).

Its nearest target, the eradication of income extreme poverty, depends to an important extent on the effectiveness of the Benefício de Superação da Extrema Pobreza in reaching the target population in full and on the improved service access and provision of schooling and health care, particularly directed at children, which is the aim of Brasil Carinhoso (Osório and de Souza 2013).

#### **4. Outcomes**

This section reviews the main findings from the literature on the outcomes of the different components of social assistance in Brazil.

##### **4.1 Previdência Social Rural**

Delgado and Cardoso (2000b) using a dedicated rural household survey track the effects of the Previdência Social Rural on the well-being and livelihoods of rural elders and their households. They establish that the incorporation of rural workers and their access to social insurance old age and disability pensions reached the target population and strengthened economic activity in rural areas. The reform is framed as a step towards the universalisation of the right to social insurance, with a focus on poverty reduction (Schwarzer and Querino 2002b).

Barbosa (2010) reports that rural headcount poverty in Brazil was estimated at 53.5 percent in 2008, while the rural indigence headcount rate was estimated at 26.1 percent.<sup>23</sup> Excluding the PRS transfers and recalculating these rates would have produced a 68.1 percent headcount poverty rate and a 41.3 percent indigence headcount rate. In this exercise,

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<sup>23</sup> The poverty line employed was one-half of the minimum wage, and the indigence line one-quarter of the minimum wage.

Previdência Social Rural transfers lift four million rural Brazilians off extreme poverty. The impact on poverty gaps is likely to be even more significant.

The implementation of Previdência Social Rural led to a large increase in the number of transfers in 1992/3 approximating the conditions of an exogenous policy change for the relevant population. Several studies have exploited this shift in transfer policy using cross-section household survey data from before and after 1992/3 in order to throw light on the impact of the change on variables of interest. Carvalho (2008a) finds that pension receipt was associated with a large drop in participation and hours of work among newly qualified rural pensioners, around 8% fall in participation and total hours of work by 22.5 compared to urban workers. He also investigates the income effect of the pension on co-resident children's work and school enrolments.<sup>24</sup> He finds a significant increase in school enrolments, especially among girls of around 20% of the rate of enrolment gap (Carvalho 2008b). This is consonant with a drop in child labour. The sex of the pensioner matters, girls benefit from co-residing with a female pensioner while boys benefit from co-residing with a male pensioner. Ponczek (2011) focuses on the role of household bargaining in decisions on schooling. He finds, in contrast to Carvalho, that the presence of an eligible male pensioner has significant effects on literacy and schooling. He finds no significant effects in households with eligible female pensioners.

#### **4.2 Benefício de Prestação Continuada**

Soares et al. (2006) use 2004 household survey data to study the effects of targeted transfer programmes in Brazil on poverty and inequality. Their analysis also includes minimum social insurance pension transfers, which in rural areas approximate the Previdência Social Rural transfers. The study compares incomes with and without these transfers. They find that the Benefício de Prestação Continuada and Bolsa Família together account for a 2 percentage point reduction in the poverty headcount, whilst minimum pensions are responsible for a 5 percentage point reduction. This applies equally to extreme and moderate poverty (which experienced a reduction from 18%, and 31%, to 12%, and 31% respectively). The strong effects of the Benefício de Prestação Continuada is explained by the fact that the minimum pensions are significantly large transfers than Bolsa Família.

Kassouf et al. (2011) reports on an impact evaluation of the Benefício de Prestação Continuada based on household survey data for the years 2004-2006. The programme had been in place since 1996, but they exploit the reduction in the age of entitlement from 67 to 64 in 2003 to identify the impact of transfers on this population. They find no changes in household composition following entitlement. Regarding labour supply effects, they find a reduction in the labour force participation of direct beneficiaries of around 2-3%, no significant effects on young co-residents aged 19-29, but small negative labour force participation effects on adult co-residents 30-49. The study identifies a reduction in child labour but no significant effects on school attendance.

The survey evidence suggests strongly that non-contributory pension benefits are shared within households, so that they have an impact on a larger population than simply the direct

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<sup>24</sup> Cortez Reis and Camargo (2007), using data from 2003, find that 15-21 year olds co-resident with a pensioner (social insurance and social assistance pensions) are more likely to be at school and less likely to be in work, than households without pension income.

beneficiaries (Barrientos 2008). Interestingly, non-contributory pension encourage livelihoods and productive investment, especially in rural areas (Delgado and Cardoso 2000a).

### 4.3 Bolsa Família

Bolsa Família was designed as an extension of existing human development conditional cash transfer programmes. Barrientos and Villa (2013) argue that the absence of strong political opposition to antipoverty transfer programme within government, or outside from political opponents, weakens the demand for rigorous impact evaluation. These two factors can explain why the design of Bolsa Família did not pay sufficient attention to collecting a baseline. In fact, evaluation surveys were only collected in 2005 (AIBF1) and 2009 (AIBF2), and the results from the analysis of the 2009 data were placed in the public domain only in 2012 (de Brauw, Gilligan, Hoddinott et al. 2012).<sup>25</sup>

The main findings include (de Brauw, Gilligan, Hoddinott et al. 2012; Januzzi and Pinto 2013): improvements in children's weight-for-height and body mass; as well as some immunisations; improvements in school attendance by 4 percentage points (C2 and C3), larger for girls and the North-East. Improvements in progression and a reduction in grade repetition; children's entry into the labour market is reduced by a year; increased pre-natal visits by participant expectant mothers (1.6 additional visits); improved influence of mothers in decisions over household budget and contraception. The analysis found no significant effects on labour supply, but it did note a reduction in formal sector hours by males and an increase in hours worked in the informal sector.

The vast majority of studies examining the impact of Bolsa Família rely on the analysis of cross-section observational data, from the national household survey Pesquisa Nacional por Amostra de Domicílios PNAD or the income and expenditure survey Pesquisa de Orçamentos Familiares POF. The PNAD survey data lacks direct identification of Bolsa Família beneficiaries, except for supplements in 2004 and 2006. For all other waves of the data, the identification of Bolsa Família participants is done through the unique monetary values reported under a question on residual income (Soares, Soares, Medeiros et al. 2006; Foguel and Paes de Barros 2008).<sup>26</sup> The POF data does include a question which permits direct identification of Bolsa Família participants, but it is collected every five years.

Surprisingly perhaps, there are few studies assessing the impact of Bolsa Família on poverty. This is in part explained by the difficulties involved in identifying beneficiaries of social programmes in Brazil's household survey data as well as the fact that the improved growth of the Brazilian economy and the expansion of a range of social policies make it harder to isolate the impact of Bolsa Família.<sup>27</sup> Soares et al (2010) estimate the poverty and extreme poverty headcounts with and without Bolsa Família transfers. This approach does not

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<sup>25</sup> The impact evaluation report identifies three main comparison groups: comparison 1 (C1) compares new participants in 2009 versus non-participants in 2009; comparison 2 (C2) compares all new participants regardless of whether registered for CU in 2005 against non-participants in 2009 who had either registered for CU or received benefits in 2005 but no longer in 2009; comparison 3 (C3) compares all participants in 2009 against non-participants in 2009 who had either registered for CU or received benefits in 2005 but no longer in 2009 (same as in C2).

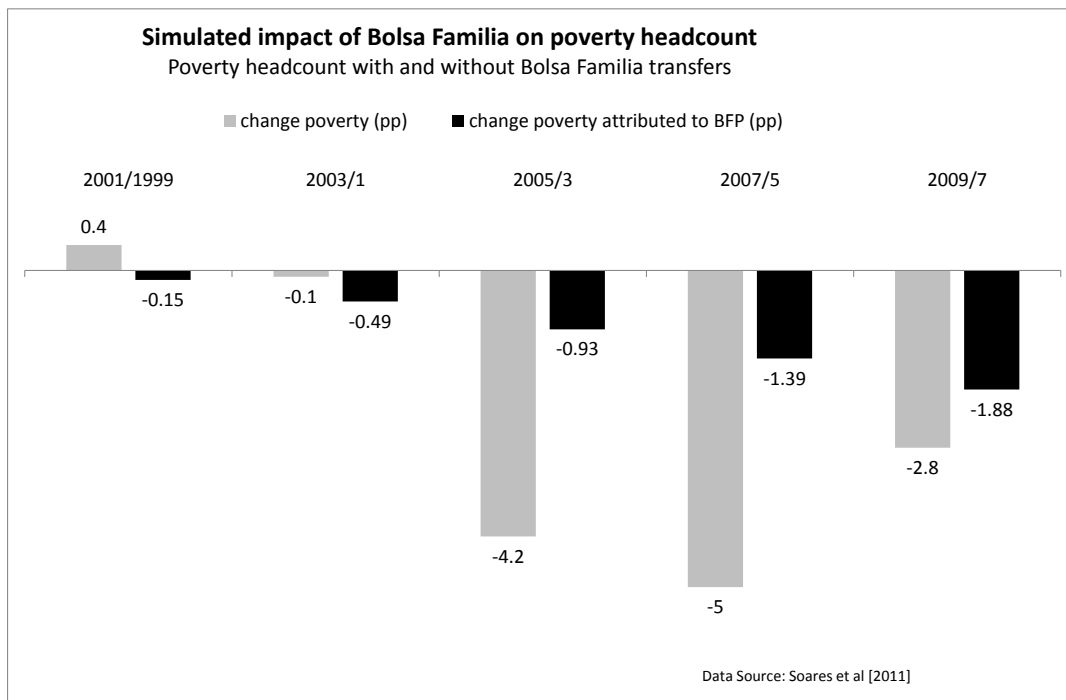
<sup>26</sup> For a detailed discussion of all data issues, see Soares et al (2006).

<sup>27</sup> Researchers have focused on studying the incidence of social programmes, as opposed to their impact.

account for behavioural responses to the transfers. It is also problematic that they focus on headcount measures, whereas perhaps the greatest impact of the transfers is on the poverty gap. They are able to establish that in the absence of Bolsa Família transfers, headcount rates would have been significantly higher. Their analysis of changes in poverty in the decade 1999 to 2009 suggests that Bolsa Família was responsible for one sixth of the reduction in poverty (2 percentage points of a period reduction from 26% to 14%) and around one third of the reduction in extreme poverty (1.6 percentage points of a period fall from 9.9% to 4.8%).

Their disaggregated findings emphasise the contribution of Bolsa Família to protecting the income of lowest income household from the variations in economic activity. This is shown in Figure 5. In the 2001/1999 and 2009/7 periods the reduction in poverty attributed to Bolsa Família transfers accounts for most of the reduction in poverty, whereas in the high growth period in mid-decade the larger part of poverty reduction could be attributed to the performance of the economy.

**Figure 5**



The potential contribution of Bolsa Família to the recent reduction of income inequality has been examined in some detail in Brazil (Soares, Soares, Medeiros et al. 2006; Barros, Carvalho and Franco 2007a; Soares, Ribas and Osório 2010; Soares, de Souza, Osório et al. 2010; Hoffmann 2013). Soares, de Souza, Osório et al. (2010) review the literature and findings. The methodological approach in most studies relies on a factor decomposition of per capita household income estimated with PNAD data for different periods. Barros, Carvalho and Franco (2007a) instead rely on microsimulation.

Their main finding is that Bolsa Família has made an important contribution to the reduction of household income inequality in Brazil. Estimates of the share of the reduction in

inequality explained by Bolsa Família, and other transfers, vary with the period under examination but it is significant. Soares, de Souza, Osório et al. (2010) focus on the period 1999-2009 and find that Bolsa Família accounted for 16% of the 10% decline in the Gini coefficient measure of inequality for that period. Benefício de Prestação Continuada accounts for a further 14% so that the programmes combined account for about one third of the reduction in households income inequality in the decade. Hoffmann (2013) confirms this finding for the 2001-2011 period.

Focusing on sub-periods suggests that the contribution of Bolsa Família to the reduction in inequality becomes more significant when economic growth is weaker. The regional concentration of transfers in Brazil suggests a role for transfers in reducing regional inequality too (Silveira Neto and Azzoni 2013). An international comparison of Bolsa Família with social assistance programmes in Mexico and Chile covering the 1994/5-2003/4 period finds comparable contributions to the reduction of inequality in the three countries (Soares, Ribas and Osorio 2007).

These findings are intriguing because Bolsa Família transfers account for a fraction of one percent of GDP. Their inequality reducing power is explained in the literature on the basis of their concentration on households at the bottom of the income distribution (Barros, Carvalho and Franco 2007a; Soares, de Souza, Osório et al. 2010).

Some studies have focused on the impact of Bolsa Família on schooling and health which are directly targeted by the conditions in the design of the programme. Magalhães and Lima (2013) review the findings from impact evaluation studies on the impact of the programme on basic education; while Craveiro and Ximenes (2013) do the same for health. Some of these impacts were explored in the impact evaluation discussed at the start of this section. In addition, Glewwe and Kassouf (2012) used a school census panel data for 1998-2005 to examine the effects from the expansion of Bolsa Escola in 2001 as a natural experiment. They find that Bolsa Escola raised enrolments by 5.5% in Grades 1-4 and by 6.5% in Grades 5-8. They also find a reduction in dropout rates and improvements in grade progression among Bolsa Escola/Bolsa Família participants. They simulate the longer term effects of the programme on the productive capacity of participant children and suggest that an 11% rise in labour earnings associated with a predicted additional 1.5 years of schooling is greater than the costs of the programme. In this simulation, Bolsa Escola/Bolsa Família pay for themselves in terms of improved productivity. A study focuses on the combined impact of the Family Health programme and Bolsa Família on child morbidity and mortality at the municipal level using data collected by the Health Ministry (Rosella, Aquino, Santos et al. 2013). The study finds strong impact from both programmes and especially from Bolsa Família in reducing child mortality and morbidity.

Finally, the impact of Bolsa Família on the labour supply of participants has been studied extensively. Oliveira and Soares (2012) summarise this literature. For the population as a whole, studies find a reduction in child labour consistent with a rise in school attendance (Ferro, Kassouf and Levison 2010). Few studies find any significant effects of the programme on adult labour at the extensive margin (Foguel and Paes de Barros 2008). Teixeira (2010) finds a small positive increase in the labour force participation of women, but no effect for men. The studies find small but significant effects at the intensive margin but, depending on the data and econometric model employed, the findings are mixed, with positive estimated effects as likely as negative ones. Whereas labour supply effects are likely to be marginal for the programme population, disaggregating the effects by gender and region often lead to

clearer and stronger findings. Ribas and Soares (2011) find stronger effects in urban areas, especially metropolitan areas, including a stronger reduction of labour force participation by women of around 4.4 percentage points, and an increase in hours of work in informal employment by males. The latter findings is likely to reflect the influence of the income test at the margins of eligibility (Firpo, Pieri, Pedroso et al. 2013).

The important fact to keep in mind is that labour force participation rates among adults in households eligible for, or participating in, Bolsa Família are high, at least as high as for the population as a whole (Castro, Sátyro, Ribeiro et al. 2010). Taking on board the design and reach of Bolsa Família and the conditions of Brazil's labour market suggest that concerns with labour market incentives are less significant than in high income countries (Atkinson 1995). The economics literature on labour supply (dis)incentives is dominated by the income maintenance perspective of 'classical' social assistance which assumes beneficiaries as either unemployed or inactive in a full employment (formal) economy. This approach requires adaptation to labour market conditions in Brazil. Nevertheless, the fact that currently adverse labour supply effects from social assistance programmes are marginal does not imply that future expansion of benefit coverage or levels might not have larger labour supply effects.

In sum, a review of the outcomes of social assistance programmes in Brazil suggests that they have had a strong measurable impact on the reduction of poverty and inequality. They have had some impact on strengthening the productive capacity of households in poverty, especially children. The review in this section has focused on aggregate outcomes from nationwide studies. A growing literature focuses on the impact of social programmes at the state level. The next section will throw light on the potential heterogeneity in these effects across municipalities. This dimension has not been sufficiently well examined in the literature, but it is essential to assessing possible lessons and implications for sub-Saharan African countries.

## **5. The distribution of social assistance outcomes**

The section focuses on the distribution of social assistance programme outcomes across municipalities in Brazil. The majority of evaluation studies have focused on estimating mean outcomes at the national level. A handful of studies have examined outcomes at the state level. This section will report on work in progress assessing the distribution of outcomes across municipalities.<sup>28</sup>

In the programme evaluation literature there are two main approaches to examining heterogeneity in outcomes. The first is to estimate outcomes for sub-samples of the data, say rural-urban or male-female. The second approach is to explore the distribution of outcomes with a quantile regression approach. A few studies have applied the first approach and have produced estimates of mean outcomes for categories of the population (Teixeira 2010; Ribas and Soares 2011). Their findings indicate the presence of significant heterogeneity in Bolsa Família outcomes, labour supply effects in particular. These findings

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<sup>28</sup> In the context of the research programme this work has been designed with two main objectives in mind: (i) to provide information on the distribution of outcomes and link these to variation in socio-economic and capacity conditions across municipalities; and (ii) to support a more detailed study of the relevance of Brazil's antipoverty transfers to countries in Africa, where socio-economic and capacity conditions vary significantly.

are consistent with information on the target population of social assistance programmes and their regional and municipal distribution. To our knowledge, no studies available have adopted the second approach, although quantile treatment effects have been estimated for human development income transfer programmes elsewhere in Latin America (Djebbari and Smith 2008; Dammert 2009).

Some outcome evaluation studies for Bolsa Família develop identification strategies for estimation of effects at the municipality level (Foguel and Paes de Barros 2008; Ribas and Soares 2011; Rosella, Aquino, Santos et al. 2013). In the absence of nationally representative panel data, their approach has significant advantages. It can take into account the indirect effects of the programme on beneficiaries and non-beneficiaries can control for time-invariant conditions at the municipality level, and can partially address the issue of assignment endogeneity. Their approach maps out an appropriate and reliable strategy for the use of cross-section household survey data which we extend to explore heterogeneity in the distribution of the response variables.

We explore Bolsa Família effects at the municipal level. We consider the effects of the programme on a series of outcomes, controlling for a set of covariates that are also expected to affect these outcomes. Specifically, we consider how outcomes  $y_{m,t}$  respond to  $x_{m,t} = [BF_{m,t}, XO_{m,0}, c_m]$ ,<sup>29</sup> where  $m$  stands for municipality,  $t$  for time (year),  $BF$  for the fraction of households who receive the benefit in the municipalities at each time,  $XO$  for pre-programme observables, and  $c_m$  for unobserved time-invariant characteristics (as explained below).

We report preliminary results for selected response variables examined by Foguel and Barros and Ribas and Soares,<sup>30</sup> including  $S_{m,t}$ ,  $LA_{m,t}$ ,  $LAO_{m,t}$ , and  $LAI_{m,t}$ , where  $S$  stands for school assistance rates in the 6-15 years old age group, reflecting the age group targeted by the school attendance condition of Bolsa Família during the period under consideration;  $LA$  stands for adult labour participation rate in the working-age population (18-64 years olds);  $LAO_{m,t}$  stands for the proportion of the working-age population in formal employment, where formality is defined as registered employment, contribution to social security, and/or employment in firms with more than five employees;  $LAI_{m,t}$  denotes the share of informal employment in the population of working age, where informality includes all those reporting having worked in the week previous to the survey but no in formal employment as.<sup>31</sup>

The selection of specific households to participate in Bolsa Família was done on the basis of their per capita household income, and therefore cannot be considered to be exogenous to the programme assignment. However, the assignment of programme places at the municipal level depended mainly on the pre-programme poverty level of the municipality, as described in Ribas and Soares (2011). Programme places were set on the basis of a

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<sup>29</sup> We are exploring the possibility of including municipal-level GDP, the share of agriculture, industry, public services and other services, and indirect taxes net of subsidies.

<sup>30</sup> We are also considering other response variables exploring different dimensions of employment and households demographics.

<sup>31</sup> This means in essence that their earnings cannot be even partially tracked by the government, facilitating the beneficiaries to remain eligible for the program.

poverty map based on the 2000 Population Census and the 2001 PNAD survey.<sup>32</sup> This is also reflected in our identification strategy discussed below. Bolsa Família was implemented in 2003 but incorporated households already participating in Bolsa Escola. Our focus is on the effects associated with increases in coverage at the municipality level between 2001 and 2006 (See Figure 4 above).

## 5.1 Econometric Model

The seminal study of Bitler et al (2005) and the study of Dammert (2009) for conditional transfers in Nicaragua show that quantile regressions are able to uncover significant heterogeneity in programme effects often missed by standard regressions focusing on the mean. Given our data consists of a short municipal panel data, we follow the approach in Abrevaya and Dahl (2008) who developed and estimated a panel quantile regression model to study the heterogeneous effects of birth inputs into birth weight. This approach has been applied recently by Gonzalez (2012) to the evaluation of microfinance in the Andhra Pradesh region of India. Under the, potentially strong, assumptions that (i) fixed effects are additively separable; and (ii) the covariates are strictly exogenous, their econometric model delivers consistent estimates for a large sample of individuals observed during a finite number of periods. Their model is also able to control for fixed effects at the level of the individual observations, municipalities in our case, a feature which is relevant in the case under analysis in this paper. Their model is particularly suitable for investigating changes in the distribution of the outcome (Powell 2013).<sup>33</sup> We also considered the unconditional quantiles model introduced by Fortin and Firpo (2009), but following Powell (2013) we found this model is less useful in the presence of fixed effects and for a short panel.

Following Abrevaya and Dahl, we regress

$$Q_{\tau}(y_{mt}|x_i) = x'_{mt}\beta_{\tau} + \psi_{\tau}^t + x'_{m1}\lambda_{\tau}^1 + \dots + x'_{mT}\lambda_{\tau}^T, \quad (1)$$

where  $Q_{\tau}(y_{mt}|x_m)$  are the conditional quantiles of the response variable  $y_{mt}$ ,  $x'_{mt}$  is a row vector of covariates of municipalities  $m$  at time  $t$ .  $\beta_{\tau}$  denotes a time-invariant effect column vector by which the covariates effect the conditional quantiles of the observables above and beyond the effects that work through the unobservables, the  $\beta_{\tau}$  corresponding to BF being our main focus of interest.  $\psi_{\tau}^t$  is a location shift in the conditional quantiles and the last generic term  $x'_{mt}\lambda_{\tau}^t$  captures the effects of the unobservables into the conditional quantiles at the different times  $t$ , with the unobservables being a linear projection onto the observables.<sup>34</sup> In contrast to conventional panel data analysis, as implemented by Foguel and Barros for example, in Abrevaya and Dahl's model there is no differencing of the observed variables either from their lagged values or from the average over time (time demeaning). In contrast to difference-in-difference models, as implemented by Ribas and Soares, this model can exploit information from the full period under consideration, instead of focusing on pairs of years.

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<sup>32</sup> Ribas and Soares (2011) also note that between "2004 and 2006, the program actually expanded in all types of areas, but this expansion happened mostly in rural communities, where the under-coverage rate was still the highest". See also (Barros, Carvalho, Franco et al. 2008).

<sup>33</sup> This is probably explained by the ranking invariance facilitated by the assumed additive fixed effects.

<sup>34</sup> This follows the line of (Chamberlain 1982).



Our preliminary analysis focused on 2001 and 2006. Work in progress examines a longer period  $t = \{2001, 2002, \dots, 2006\}$ ,<sup>35</sup> which for convenience will be referred to as  $t = \{1, 2, \dots, 6\}$ . The set of surveyed municipalities is the same for all periods as defined in the sampling strategy of PNAD. PNAD samples the same municipalities during the decade following the Census. Assignment at municipal level can be argued to be exogenous.

Abrevaya and Dahl (2008) propose to estimate a reduce form model, as in the following system of equations:

$$\begin{aligned}
 Q_{\tau}(y_{m1}|x_m) &= \psi_{\tau}^1 + x'_{m1}\beta_{\tau} + x'_{m1}\lambda_{\tau}^1 + x'_{m2}\lambda_{\tau}^2 + \dots + x'_{m6}\lambda_{\tau}^6 \\
 Q_{\tau}(y_{m2}|x_m) &= \psi_{\tau}^2 + x'_{m2}\beta_{\tau} + x'_{m1}\lambda_{\tau}^1 + x'_{m2}\lambda_{\tau}^2 + \dots + x'_{m6}\lambda_{\tau}^6 \\
 &\dots \\
 Q_{\tau}(y_{m6}|x_m) &= \psi_{\tau}^6 + x'_{m6}\beta_{\tau} + x'_{m1}\lambda_{\tau}^1 + x'_{m2}\lambda_{\tau}^2 + \dots + x'_{m6}\lambda_{\tau}^6 \quad (2)
 \end{aligned}$$

Based upon the equalities above, we run a pooled linear quantile regression in which the observations corresponding to given municipalities are stacked together. In particular, a quantile regression, using the estimator for the  $\tau^{\text{th}}$  quantile, is run using

$$\begin{bmatrix} y_{1,1} \\ y_{1,2} \\ \dots \\ y_{1,6} \\ y_{2,1} \\ y_{2,2} \\ \dots \\ y_{2,6} \\ \dots \\ y_{M,1} \\ y_{M,2} \\ \dots \\ y_{M,6} \end{bmatrix} \text{ and } \begin{bmatrix} 1 & 0 & \dots & 0 & x'_{1,1} & x'_{1,1} & x'_{1,2} & \dots & x'_{1,6} \\ 1 & 1 & \dots & 0 & x'_{1,2} & x'_{1,1} & x'_{1,2} & \dots & x'_{1,6} \\ 1 & 0 & \dots & 0 & \dots & \dots & \dots & \dots & \dots \\ 1 & 0 & \dots & 1 & x'_{1,6} & x'_{1,1} & x'_{1,2} & \dots & x'_{1,6} \\ 1 & 0 & \dots & 0 & x'_{2,1} & x'_{2,1} & x'_{2,2} & \dots & x'_{2,6} \\ 1 & 1 & \dots & 0 & x'_{2,2} & x'_{2,1} & x'_{2,2} & \dots & x'_{2,6} \\ \dots & 1 & 0 & \dots & 0 & \dots & \dots & \dots & \dots \\ 1 & 0 & \dots & 1 & x'_{2,6} & x'_{2,1} & x'_{2,2} & \dots & x'_{2,6} \\ \dots & \dots & \dots & \dots & \dots & \dots & \dots & \dots & \dots \\ 1 & 0 & \dots & 0 & x'_{M,1} & x'_{M,1} & x'_{M,2} & \dots & x'_{M,6} \\ 1 & 1 & \dots & 0 & x'_{M,2} & x'_{M,1} & x'_{M,2} & \dots & x'_{M,6} \\ \dots & 1 & 0 & \dots & 0 & \dots & \dots & \dots & \dots \\ 1 & 0 & \dots & 1 & x'_{M,6} & x'_{M,1} & x'_{M,2} & \dots & x'_{M,6} \end{bmatrix} \quad (3)$$

as the left-side and right-side variables, respectively. This pooled regression directly estimates  $\psi_{\tau}^1, \psi_{\tau}^2 - \psi_{\tau}^1, \dots, \psi_{\tau}^6 - \psi_{\tau}^1, \beta_{\tau}, \lambda_{\tau}^1, \lambda_{\tau}^2, \dots, \lambda_{\tau}^6$ . The difference  $\psi_{\tau}^t - \psi_{\tau}^1$  represents the “time effect”. Time-invariant variables  $XO_{m,0}$  are incorporated into the regression as additional columns in the right-side matrix. It is not possible to separately identify the direct effect from the indirect effects of time invariant variables.

The next step is to define  $x'_{m,t}$ , the row vector of covariates of municipalities  $m$  at time  $t$ ,<sup>36</sup> with  $x_{m,t} = [BF, XO, c_m]$ , as defined above. BF is the share of households participating in Bolsa Família, and it is identified for  $t = 6$  based on the Bolsa Familia indicator at household

<sup>35</sup> To avoid endogeneity of the covariates, we may restrict the response variables  $y_{m,t}$  and BF to  $t = \{2, \dots, 6\}$

<sup>36</sup> Abrevaya and Dahl (2013) simply incorporate gender of newborn, mother’s age, education and marital status; whether mother smoked, drank, and prenatal care.

level in PNAD (question v2403),<sup>37</sup> and for  $t = 1$ , using unique values reported as explained in Foguel and Barros (2010). For XO, other covariates, we included a sub-set of the arguments included in the generalized propensity score analysis of Ribas and Soares (2011). They include poverty, adult school level, structural poverty, area, employment sector, and gender. All variables defined in Appendix 2. There are potentially serious endogeneity issues with covariates in Foguel and Barros, such as labour income, unemployment rate, proportion in administrative, service, and commercial occupations, so they have been excluded. The validity of including a generalized propensity score (GPS) on covariates in the framework of quantile regression panel data, as Ribas and Soares do in the context of a Difference in Difference approach, needs to be assessed further. In principle, given that GPS considers the average dose-response function  $E\{Y_i(t)\}$  rather than the quantiles of the distribution of  $\{Y_i(t)\}$ , the validity of the GPS estimator is doubtful in our quantile regression framework (Bia and Mattei 2008).<sup>38</sup>

We built a municipal panel data set of PNAD cross-section household surveys for the years 2001 and 2006, where sampled municipalities remain invariant and the percentage of households who participate in given municipalities can be argued to be exogenous. Expansion factors for individuals, households and residences present in PNAD are used for the municipal-level aggregation.<sup>39</sup> As a data validation check, we checked that the individual weights sum to the country's population and, after generating the municipal-level variables using the same weights, we constructed national-level variables for comparison with national indicators generated out of PNAD by IBGE.

We calculate the estimated coefficients for quantiles .05<sup>th</sup> to 95<sup>th</sup>, in .05<sup>th</sup> steps. Because there is dependence between the observations of given municipalities, the standard asymptotic-variance formula (Koenker and Bassett 1978) and the standard bootstrap approach, which are both based upon independent observations, cannot be applied.<sup>40</sup> Instead, a bootstrap sample was created by repeatedly drawing, with replacement, from the sample of  $M$  municipalities, where the draws continue until the desired bootstrap sample size is reached. For a given bootstrap sample, the pooled quantile estimator is computed. After repeating this process for many bootstrap samples, we compute the original estimator's variance matrix with the empirical variance matrix of the bootstrap estimates.<sup>41</sup> Similarly, bootstrap percentile (95%) confidence envelopes for the parameters are constructed and graphed for Bolsa Familia.<sup>42</sup>

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<sup>37</sup> Also valid for  $t = 4$

<sup>38</sup> GPS is valid for a case where, as in Hirano and Imbens (2004), one is interested in getting the average effect of a continuous treatment adjusting for differing background characteristics.

<sup>39</sup> The Stata code used for the aggregation and the subsequent regression analysis is available from the authors.

<sup>40</sup> Ignoring the correlation among observations, due to repeated measures and also possibly State clustering, leads to over (under) estimate the P-values of within (between)- effects, making type II (I) errors more probable. Hence, the sign of the effect on the variance cannot be stated a priori.

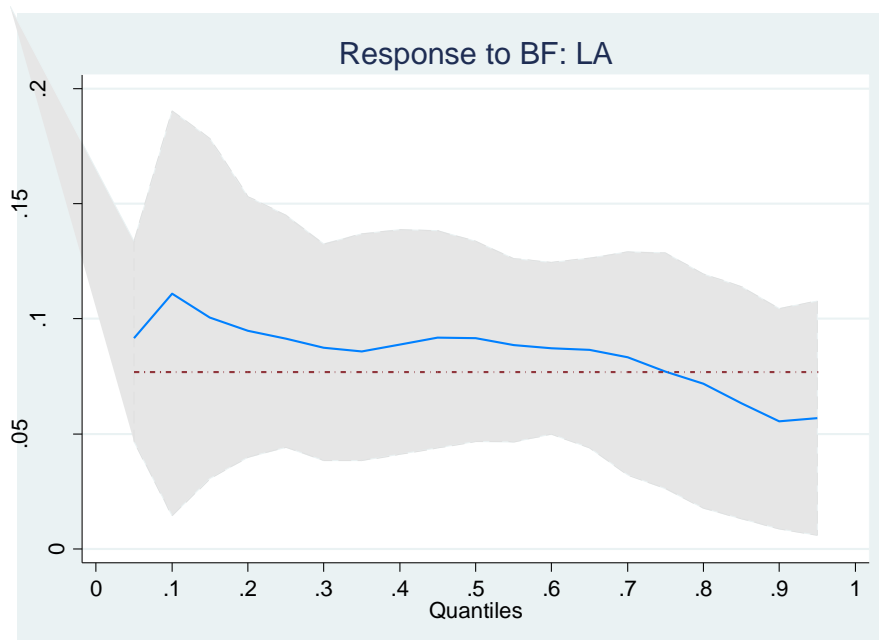
<sup>41</sup> Following Gonzalez (2012), i) our bootstrap sample size coincides with the size of the sample (but with replacement of the bootstrap-sampled municipalities), ii) the number of bootstrap replications is 500.

<sup>42</sup> We plan to program code to generate a covariance matrix for the estimated coefficients and a measure of goodness of fit.

## 5.2 Preliminary Results

We report on the estimated effects of municipality coverage of Bolsa Família on the distribution of labour outcome variables for the working-age population, the  $\beta_\tau$  associated with Bolsa Família coverage. Figure 6 below shows the estimates for the effects of Bolsa Família on adult labour force participation rates. To facilitate comparison of our results with those in Ribas and Soares (2011), we can look at the median in the distribution, both are measures of central tendency. In contrast to the non-statistically significant effects of Bolsa Família on adult labour supply found by Ribas and Soares, we observe a positive and statistically significant effect that for the municipality in the median of adult labour supply participation rate. The estimate suggests that adult labour supply increases by 0.09 percentage point for each percentage point increase in programme coverage. We also observe that above-median municipalities have lower effects.<sup>43</sup> Overall, we find that Bolsa Família tends to reduce the spread of labour participation rates among municipalities.

**Figure 6:** Adult labour force participation rate effects

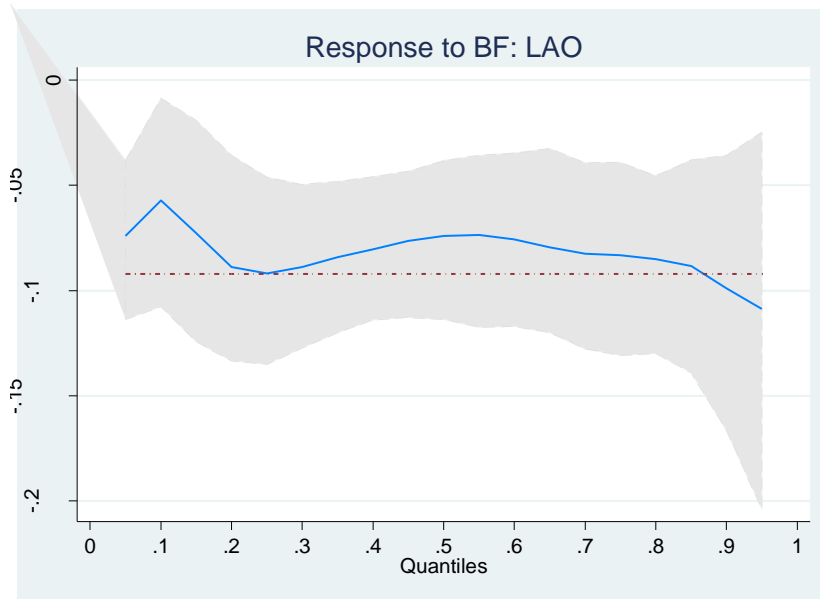


Source: Authors' panel data quantile regressions

If we now focus on Bolsa Família effects on the share of adults working in formal employment, Figure 7 shows that increases in the coverage of Bolsa Família are associated with a reduction in the share of adults who work in the formal sector. The reduction is relatively homogeneous across the outcome distribution.

<sup>43</sup> We plan to test this hypothesis formally.

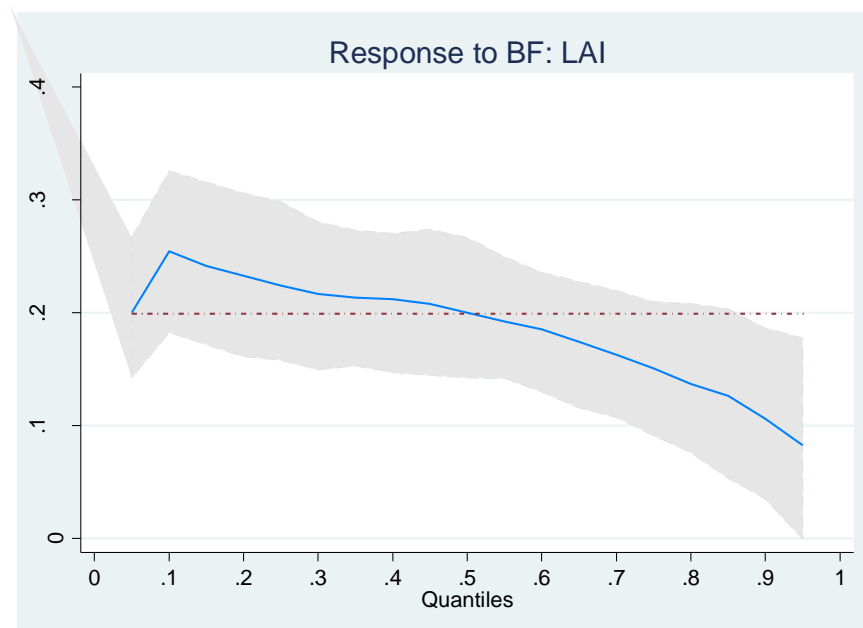
**Figure 7:** Formal adult labour force participation rate effects



Source: Authors' panel data quantile regressions

Figure 8 shows the effect of Bolsa Família the share of the working age group in informal employment. The effect is positive throughout the outcome distribution, but heterogeneous with effects that go from 0.254 for the 0.1<sup>th</sup> quantile to 0.083 for the 0.95<sup>th</sup> quantile. Rivas and Soares describe this effect as partial informalization because the aggregate rise in the share of formal employment in the economy in the 2000s.

**Figure 8:** Informal adult-labour force participation rate effects

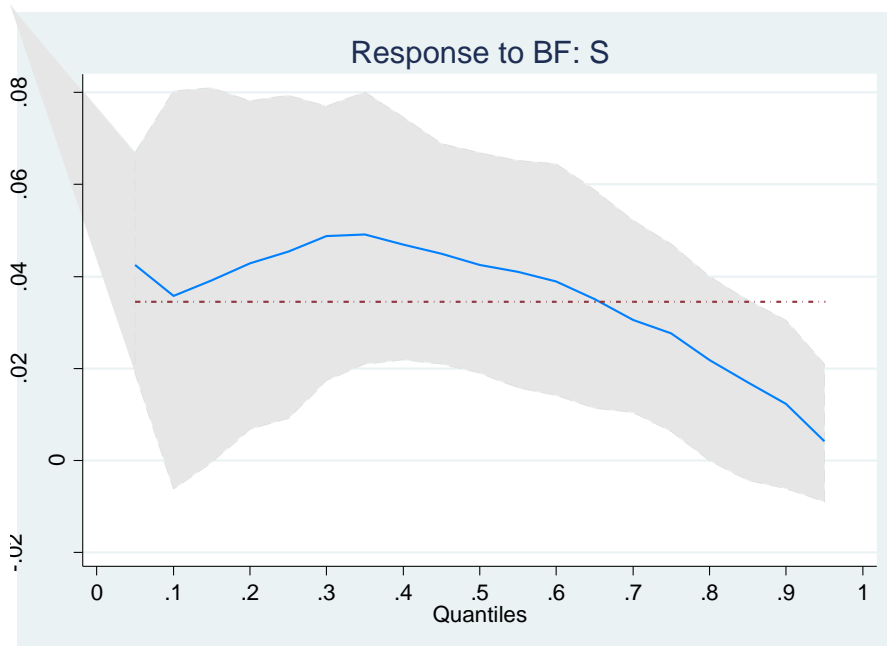


Source: Authors' panel data quantile regressions

While the studies conducted at the municipal level do not study Bolsa Família effects on school attendance, de Brauw, Gilligan et al (2014) use evaluation survey data from 2005 and 2009 to measure the simple difference between average school attendance of recipients and matched non-recipients. They find that Bolsa Família raises average school participation among all children age 6 to 14 years by 3.0 percentage points, but the relevant parameter is not statistically significant. Based on a quantile regression panel data method, we find that the effects of the programme on the school assistance of children aged 6 to 15 is positive, but significance vary across quantiles. See Figure 9. The effects are not significant in the beginning and in the end of the distribution of municipalities by school assistance, quantiles .10<sup>th</sup>, .15<sup>th</sup>, .85<sup>th</sup>, .90<sup>th</sup> and .95<sup>th</sup>, but we find a positive and statistically significant effect on all the other quantiles under consideration.<sup>44</sup>

Heterogeneity among municipalities is considerable in statistical terms: an increase of 1 percentage point in the coverage of the programme leads to a statistically significant 0.049 percentage point increase in quantiles 0.30 and 0.35, and a non-statistically significant 0.004 percentage point increase in quantile 0.95. The size of the effect on schooling, in the case where significant, is very small. The estimates suggest that in the municipalities where the conditional effect of programme incidence on school attendance is the highest, it would require a 20 ( $0.049^{-1}$ ) percentage point increase in programme coverage to raise school attendance by a single percentage point.

**Figure 9:** School attendance effects for 6-15 years old<sup>45</sup>



Source: Authors' panel data quantile regressions

<sup>44</sup> See Table 1 in Appendix 1. We tabulate only for quantiles .05, .25, .5, .75 and .95. Results for the remaining quantiles under consideration are available from the authors upon request.

<sup>45</sup> This reflects the age interval targeted by the school attendance condition during the period we consider.

In conclusion, our analysis identifies significant heterogeneity for some Bolsa Família outcomes across municipalities in Brazil. Taking Bolsa Família adult labour force participation rate effects for example, which have been examined intensively in the literature (Oliveira and Soares 2012), the quantile regression approach identifies significant variation across municipalities. Municipalities with lower baseline labour force participation rates exhibit the strongest effects when compared with municipalities with high labour force participation. These results indicate that Bolsa Família has had positive and stronger effects on the more disadvantaged municipalities (Castro, Sátyro, Ribeiro et al. 2010). They also show that Bolsa Família has contributed to reducing disparities in adult labour force participation rates among municipalities. For other labour outcome variables, the findings are more mixed. The effects of Bolsa Família on the share of formal employment appear to be homogeneous across municipalities; while the effects on attendance vary in significance across municipalities.

## **6. Sustainability**

This section considers the sustainability of social assistance in Brazil. It distinguishes four main dimensions of sustainability: conceptual, institutional, financial and political.

### **6.1. Conceptual**

The discussion on the emergence and evolution of social assistance in Brazil earlier in the paper identified three main strategies: the universalisation of social insurance (Previdência Social Rural); the protection of vulnerable groups (Benefício de Prestação Continuada); and human development focused guaranteed minimum income (Bolsa Família and other transfer programmes). They point to three different perspectives on the role and scope of social assistance in Brazil (Barrientos 2013a). The conceptual sustainability of social assistance, and social protection, in Brazil lies in the interplay of these different perspectives. There are different forms of interplay, ranging from competition to compromise and integration. The discussion which follows departs from the premise that the sustainability of welfare institutions requires an underlying consensus on their scope and role.

The 1988 Constitution advanced the principle that governments have a responsibility to ensure a minimum income security to all citizens independently of their capacity to contribute to social insurance. Agreement on this point provided the basis for the expansion of social assistance in the following two decades. Previdência Social Rural extended this principle to informal workers in rural areas. This was initially articulated as a means to equalise access to social protection for urban and rural workers through the temporary suspension of contributory requirements, a provision which became permanent. The main aim of Previdência Social Rural was to universalise social insurance by paying special attention to the specific nature of rural work and employment. To some extent, the step taken here to move beyond the contributory principle was significant but limited. Under the Previdência Social Rural, the scope of welfare provision remained wedded to work and to workers as the main right holder. Schwarzer and Querino (2002b) argue that Previdência Social Rural, for the first time in Brazil, proposed the replacement of the contributory principle with a citizenship principle. However, this is limited in time to the suspension of

contributory requirements. The design of the policy changed suggested a return to the dominance of the contributory principle in time.

The Benefício de Prestação Continuada was developed as an instrument for extending the right to social protection to those unable to work, older people and people with disabilities. Here the scope of social assistance is defined according to 'classical' social assistance as supporting citizens who are unable to earn an income (Atkinson 1995). In the European 'golden age' income maintenance approach, and assuming standard families and full employment, the only groups which need the support of social assistance are the very old without social insurance pensions and people with disabilities. Children are the responsibility of their parents.

Bolsa Família, on the other hand, has its origins in guaranteed minimum income proposals, complemented by schooling and health interventions. Bolsa Escola evolved from a compromise between different perspectives: proposals for a guaranteed income, education interventions, and human capital accumulation. The 1997 federal programme which later became Bolsa Escola was entitled Programa de Garantia de Renda Mínima Vinculada a Educação (PGRM). Proponents of a guaranteed minimum income saw Bolsa Escola as its early incarnation while proponents of education interventions saw it as a tool to guarantee the universalisation of access to education. In many ways the overlapping consensus around Bolsa Família can still be sustained, although its later evolution appears to imply movement away from the guaranteed minimum income. Some common ground exists between a guaranteed minimum income and Bolsa Família, but the latter and an unconditional basic income are two very different projects (Britto and Soares 2010).

Digging deeper into the grounding of these approaches, a basic distinction needs to be made between basic income proposals as a citizenship transfer and social assistance focused on poverty reduction and prevention. Proponents of a basic income wish to recognise, through the means of a monetary transfer, the status of recipients as citizens. The transfer is also meant to provide the resources required to ensure full and active political participation. A basic income, which is set at a level at or above the poverty line, will also eliminate income poverty, but this is contingent on the level of the benefit. Social assistance, on the other hand, is focused on poverty reduction and prevention. There is much sense in the view that full participation in political life is an important component of an antipoverty strategy, and some evidence that well designed transfer programmes will advance inclusion. But one of the main lessons from antipoverty programmes in Latin America is that income transfers, though important, are not sufficient to overcome intergenerational poverty persistence. Acknowledging common ground does not do away with the core differences in the underlying perspectives.<sup>46</sup>

In recent social policy discussions in Brazil, whether taking stock of the growth of social assistance over the two decades since the Constitution (Diretoría de Estudos e Políticas Sociais 2009) or assessing the future of Bolsa Família (Soares and Sátyro 2009; Castro and Modesto 2010b, a; Cohn 2010; Cotta and Paíva 2010; Sposati 2010), the tensions around the direction of travel of social assistance are never far from the surface. Jaccoud et al contrast a rights approach which "implies the immediate or progressive establishment of certain guarantees" (2010: 22), such as those attached to the Benefício de Prestação Continuada or

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<sup>46</sup> There might be gains from advancing both a citizenship basic income and social assistance, but there are losses from confusing the two.

Previdência Social Rural, on the one hand, with the government's discretion over Bolsa Família entitlements, on the other. Their conclusion is that there is still some way to go before social assistance fully meets a rights-based agenda. Supporters of a basic income suggest that many of the areas of concern with Bolsa Família, relating to targeting errors, conditions, and work disincentives, could be minimised by moving to an unconditional and universal transfer. Sposati (2010) discusses the merits of a more limited move towards a basic income through unifying and consolidating transfers to children. Examining the evolution of Bolsa Família, as well as legislative initiatives in Congress, Britto and Soares (2011) conclude that the direction of travel is away from basic income proposals, but find that the 'hybrid' nature of Bolsa Família has facilitated an overlapping consensus.

Assessing the evolution of social assistance in Brazil, the view that its role and scope are increasingly being defined around human development objectives has some support (Barrientos 2013c). The lack of visibility of Previdência Social Rural as a social assistance instrument has drawn attention away from the project of universalising social insurance. Economic change has undermined this project, including the liberalisation of the labour market, persistent deficits in social insurance funds, and export-led growth strategies (Guimarães, Costanzi and Ansillero 2013). Social assistance is no longer seen as a competitor to social insurance but instead increasingly as a complement. It is unclear whether potential linkages and integration could be part of a common future.<sup>47</sup> There is growing understanding, and an emerging consensus, around the view that the vulnerable groups approach, based on life course risks, is in urgent need of adaptation to current conditions defined by social and economic transformation and globalisation. It is questionable how well matched a vulnerable group approach is to the current pattern of social risks. Bolsa Família and Plano Brasil Sem Miséria, with a combination of income transfers, human development, and economic inclusion is likely to define the future course of social assistance in Brazil. The main challenge is whether this strategy can sustain the overlapping consensus which has ensured its support to date.

## 6.2 Institutional

The establishment of Bolsa Família in October 2003 and its evolution over a decade reflect a process of growing institutionalisation of anti-poverty policy/social assistance in Brazil. Bolsa Família itself emerged from a process of consolidation of the different federal programmes providing direct transfers: Bolsa Escola, Programa de Erradicação do Trabalho Infantil, Bolsa Renda, Bolsa Qualificação, Bolsa Alimentação, Cartão Alimentação, Auxílio-Gás and Agente Jovem. These initiatives developed from different agencies over the period 1995–2003 but shared a focus on direct transfers as a response to poverty and vulnerability. Cotta and Paiva (2010) provide an insight into the process by which these transfer programmes were consolidated within a human development income transfer model. In addition to the horizontal integration of transfer programmes at the federal level, integration of these programmes at the municipal and state levels and consolidation of municipal initiatives has

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<sup>47</sup> In their overview of this issue for Latin America, Ferreira and Robalino (2010) cannot find evolutionary proposals.



proceeded apace.<sup>48</sup> The single registry (CadÚnico) played an important role in facilitating the integration of transfer programmes into Bolsa Família.

The establishment of the Ministry of Social Development and Zero Hunger in January 2004 provided a firm institutional base and leadership to anti-poverty policy. Within the new ministry, several measures were taken to strengthen Bolsa Família, including operational improvements and a significant expansion of its coverage (Cotta and Paiva 2010; Guerreiro Osório and Souza 2013). The Secretaria Nacional de Renda de Cidadania (SENARC) oversees the institutionalisation of Bolsa Família as a lead programme within the ministry.

There has been growing awareness among agencies delivering human development income transfer programmes of the need to consider the role of intermediation, an issue highlighted by Chile's Chile Solidario. To an important extent, the influence of Bolsa Família as a flagship programme and its capacity to drive forward the institutionalisation of anti-poverty policy stems from its large and comprehensive target population, but also from its multidimensional approach to poverty and focus on social exclusion. Acute deficits or vulnerabilities and/or social exclusion could limit the effectiveness of income transfers alone. This is evident for households unable to comply with programme conditions. Intermediation might be necessary to reinforce and complement participation in the programme. The Sistema Unico de Assistência Social is an important step forward in devising an institutional and policy framework for intermediation service provision alongside transfers (Jaccoud, Hadjab and Chaibub 2009). Under this initiative, Proteção Social Básica engages and provides services aimed at poverty prevention through CRAS, while more complex cases come under Proteção Social Especial. Complementary interventions under Plano Brasil sem Miséria aim to strengthen economic inclusion and active labour market policies linked to Bolsa Família (Barros, Mendonça and Tsukada 2011). Intermediation and complementary interventions strengthen and extend Bolsa Família, and contribute to growing institutionalisation and improved effectiveness.

These developments demonstrate important steps towards an effective institutionalisation of anti-poverty policy in Brazil, and suggest that the progression towards permanent and stable institutions ensuring zero poverty is underway. There remain some challenges to address, and the road ahead is more complex. The focus of anti-poverty policy following the 1988 Constitution was on old age and disability, through the establishment of the Benefício de Prestação Continuada and the Previdência Social Rural. The two social pension schemes have greatly extended the coverage of social protection among households with older people and people with disabilities in urban and rural areas. These programmes have been shown to be effective in reducing poverty, but arguably this is despite their design and orientation, not because of them. Transfers to older people in deprived urban and rural settings have strong effects on poverty because they are shared within households, they smooth out the impact of economic transformation, and they stimulate economic activity in rural areas with declining populations (Delgado and Cardoso 2000b; Barrientos and Mase 2012).

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<sup>48</sup> Diversity at the municipal level has reduced but has not disappeared altogether. The mechanism used for vertical integration — agreements between the federal agencies and municipalities — sets a minimum standard which municipalities are entitled to complement with specific services or transfers (Lindert, Linder, Hobbs et al. 2007). It is important that vertical integration does not discourage this kind of municipal experimentation.

The legal basis of the Benefício de Prestação Continuada and Previdência Social Rural in the Constitution explains their stronger institutionalisation, especially when compared to Bolsa Família.<sup>49</sup> Integrating categorical pure income transfers such as the Benefício de Prestação Continuada with human development income transfers such as Bolsa Família is not straightforward due to their different orientation and institutionalisation. In practice, there is very little overlap in the coverage of these programmes, especially as transfer levels under the Benefício de Prestação Continuada effectively rule out entitlement to Bolsa Família (Medeiros, Britto and Soares 2008).

A downside of the stronger institutional base of non-contributory pension programmes is that they are difficult to reform. By contrast, Bolsa Família is under-institutionalised, insofar as the government has a large measure of discretion to alter the parameters of the programme. An advantage of Bolsa Família's comparatively weaker institutionalisation is its capacity to adapt to an enhanced role within social assistance. This suggests a tension between the need to ensure that entitlements are legally enforceable and the need to make social assistance responsive to political preferences and adaptable to social and economic conditions. With regards to a progression from flagship programmes to permanent and stable institutions ensuring zero poverty, growing institutionalisation led by Bolsa Família is the more likely route.

In sum, continued improvement in the scope and implementation of Bolsa Família will strengthen the institutionalisation of social assistance and improve its effectiveness.

### **6.3 Financial**

The expansion of social assistance in Brazil has been made possible in part by a significant rise in the tax/GDP ratio, which is now at a level comparable to that of some OECD countries. Perhaps more importantly, the growth of social assistance reflects government efforts to shift the balance of public subsidies from social insurance to social assistance, an exercise in switching expenditure. This is a very welcomed confirmation of government accepting responsibility for poverty reduction. Public subsidies to social insurance in Latin America are large and regressive, in so far they primarily benefit better off sections of the population (Skoufias, Lindert and Shapiro 2010). Brazil is no exception to this rule, and therefore a rebalancing of public subsidies to the different components of social protection is bound to bring about an improvement in social welfare.

Whilst the emergence of social assistance provides an indication of a step forward, the imbalance remains large (Barrientos 2013a). Public subsidies to the public sector social insurance fund are roughly equal to of the sum of all public subsidies to social assistance. Public subsidies to the private sector social insurance fund are marginal once the rural component of this fund is separated out, with the implication that Previdência Social Rural is almost fully tax-financed. There are concerns over the balance of public subsidies to Benefício de Prestação Continuada and to Bolsa Família, especially taking into account the size of their target populations.

Studies on the distributional effects of social protection transfers demonstrate that social assistance transfers are strongly progressive, whilst social insurance transfers are essentially

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<sup>49</sup> For example, the transfer levels are not indexed to price levels in the economy, although they have been upgraded in line with the price index (Soares, Soares, Medeiros et al. 2006).

regressive (Barros, Carvalho and Franco 2007b; Soares, de Souza, Osório et al. 2010; Hoffmann 2013). As noted in the previous section, studies show that Bolsa Família and social assistance transfers might have contributed to the recent reduction in inequality in Brazil. However, caution should be exercised, as the studies focus only on the impact of transfers on the distribution of income, but do not pay attention to the tax side. A full picture of the distributional effects of social assistance transfers needs to take account of the contribution of the target population of social assistance to government revenues. In theory, if the value of the transfers from social assistance is equal to the tax collected from households in poverty, the tax-transfer scheme will not have redistributed income towards households in poverty. The handful of tax-transfer studies for Brazil suggest that, overall, the distributional effects of taxes and transfers together is muted (Immervoll, Levy, Nogueira et al. 2006; Silveira 2008). An important implication from this is the fact that given the progressivity of social assistance, its relatively low level of public subsidies, and the contribution of low income groups to tax revenues, there are few concerns with the sustainability of current financial arrangements.

#### **6.4 Political**

Pierson (1993) was one of the first to indicate that policies can have feedback effects on political processes and institutions, a point which is central to Esping-Andersen's (1999) conceptualisation of welfare regimes. In the latter, welfare institutions generate stratification effects which strengthen path dependence in the very same institutions. Has the expansion of social assistance in Brazil generated feedback effects on political processes and institutions? And if yes, in what ways if any do these potential feedback effects influence the sustainability of social assistance? This is an important piece in the puzzle.

In a Latin American context, concerns over the extent to which social assistance can facilitate clientelistic practices could hardly be misplaced. To the extent that social assistance provides an instrument for clientelistic political practices, for example through particularistic exchanges between beneficiaries and politicians, feedback effects strengthen discretionary and fragmented social assistance provision (Stokes 2004). Borges Sugiyama and Hunter (2013) and Hall (2008) raise this concern with regards to Bolsa Família. These concerns were also raised in the context of the rapid expansion of Previdência Social Rural in the early 1990s, especially as establishing eligibility required documenting informal work could be done through a letter from informal workers associations or faith organisations. The rules-based approach to the registration of Benefício de Prestação Continuada beneficiaries, and regular reviews, make political manipulation harder.

Despite these concerns there are few studies providing evidence of large scale clientelistic practices in social assistance programmes in Brazil. Using Bolsa Família coverage and electoral data at the municipal levels, Fried (2012) finds that while the coverage of Bolsa Família across municipalities is explained by socio-economic factors, it does not match with core-voter or swing PT municipalities. In fact, he finds that 'over-coverage' of Bolsa Família was inversely related to potential electoral gains for the PT. Borges Sugiyama and Hunter (2013) employ a dedicated survey, interviews and focus groups to assess the potential for programme manipulation and clientelism in the implementation of the Bolsa Família. They find that while there is broad based awareness of the linkages existing between social

programmes and expected electoral support, this appears not to apply to Bolsa Família which is perceived as a rules-based federal programme.

The potential for large scale electoral feedback effects from social assistance components has attracted considerable attention in Brazil. In particular, the re-election of President Lula in 2006 stimulated a growing literature attempting to establish potential electoral effects from Bolsa Família. Hunter and Power (2007) argued Bolsa Família provided a strong pocketbook justification for his growing support among low income households. Zucco (2008) relied on municipal data around the 2006 election to argue that Bolsa Família provided Lula with a strong constituency in the North East, precisely the areas where the programme had a stronger impact on poverty and the economy. Bohn (2011) analyses attitudinal survey data and concludes that the changes in support for Lula from 1998-2002 show trends which preceded Bolsa Família. Interestingly, she finds that support for Lula among older persons was disappointing until the 2006 election, suggesting muted political feedback effects from social pensions.

The main findings from this literature is that social assistance, and especially Bolsa Família, have political feedback effects, but that these are mostly benign in so far as they reward politicians who reduce poverty and make poverty reduction through redistribution a ‘formidable short run strategy’ (Zucco 2008: 45).<sup>50</sup> Effective social assistance has the potential to generate political feedback effects which strengthen its institutional basis, as suggested by Esping-Andersen in a different context. Wide consensus around Bolsa Família was confirmed by the fact that it was supported by all four candidates in the 2008 Presidential elections.

## **7. Brazil’s social assistance and countries in Africa**

This section provides a brief discussion on the relevance of social assistance in Brazil to countries in sub-Saharan Africa. It begins with a discussion of Brazil-Africa cooperation in social policy. This is followed by a discussion of key areas identified in this paper which can be of relevance to antipoverty strategies in the Africa region.

### **7.1 Brazil-Africa and South-South cooperation**

The evolution and growth of social assistance in Brazil have opened up opportunities for international development cooperation in antipoverty strategies and social protection. Brazil’s participation in the G20 shaped a leadership role within low and middle income countries, together with India, China and South Africa (Roett 2010). The perceived impact and effectiveness of Bolsa Escola and Bolsa Família encouraged considerable interest among countries in Latin America and Africa. The Lula administration placed special emphasis on growing engagement with countries in Africa, leading to the doubling of the number of embassies in the region from 17 to 34. Brazil international cooperation projects with Africa had focused on food and nutrition security, HIV/Aids, and education, but the main focus had concentrated on Latin American countries. A collaboration between the UK Government’s

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<sup>50</sup> It is not clear whether there are long run political feedback effects, but research on the impact of Bolsa Família on medium term political processes and institutions raises many productive lines of enquiry (Borges 2011).

Department for International Development, the International Policy Centre for Inclusive Growth and the Ministry of Social Development led to the Brazil-Africa Programme of Cooperation in Social Protection which began in 2008 (Andrade 2009).

The Programme developed out of an earlier collaboration to facilitate a Study Tour of six African countries (Ghana, Guinea Bissau, Mozambique, Nigeria, South Africa and Zambia) focused on the implementation of Bolsa Família. This in turn led to a project providing technical assistance to Ghana in the design and implementation of the LEAP Programme. The Programme itself was agreed at the end of 2007 and was implemented from beginning of 2008. It included four main activities (Andrade 2009): technical assistance to four countries in Africa; high-level participation of the Ministério de Desenvolvimento Social at a Regional meeting on Social Protection in Namibia in 2008; a continuation of Study Tours; and a website to disseminate information on social protection.

The Programme came to an end in 2010, but the Ministério de Desenvolvimento Social has continued to support Study Tours and technical assistance to countries in Africa. In fact the PSM explicitly includes international cooperation as part of the Plano (Paes-Souza 2013).

The Programme provides an example of South-South cooperation in social protection. It demonstrates the significant gains from this approach. A balanced assessment of the programme would also need to acknowledge the difficulties involved in ensuring coordination across different country stakeholders as well as matching ‘vision with action and efficiency’ (Andrade 2009). The workload faced by the officers of the Ministério de Desenvolvimento Social and their counterparts in Africa make it hard to meet the demands for international assistance and cooperation.<sup>51</sup>

On March 21<sup>st</sup> 2014, the Ministry of Social Development (MDS) in Brazil launched a new platform to share lessons on poverty reduction among low and middle income countries. Mundo sem Miséria is an initiative supported by IPEA (the Brazilian government’s think tank), the UNDP’s International Policy Centre for Inclusive Growth in Brasilia, and the World Bank. Mundo sem Miséria forms part of the current poverty strategy reduction adopted by the Brazilian Government Brazil in June 2011, Brazil without poverty. The strategy has four main policy areas: economic inclusion, guaranteed minimum income, access to services, and a pro-active approach by public agencies to connect to families in poverty. The strategy also includes support for South to South cooperation and learning as part of a commitment to support global poverty reduction. Mundo sem Misséria focuses on disseminating the instruments, policies, and lessons from the implementation of antipoverty policies in Brazil to other countries, including countries in Africa.

## **7.2 Lessons for Africa?**

The evolution and growth of social assistance in Brazil identifies some critical lessons of relevance to countries in Africa.

Human development. One of the key lessons is associated with the role of human development. In Brazil, the understanding behind Bolsa Escola was that without strengthening human development, especially among children, income transfers are

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<sup>51</sup> Initiatives like the Red Inter-Americana de Protección Social (RIPSO) have a narrower focus on knowledge dissemination and a regional focus (see <http://socialprotectionet.org/about> ).

unlikely to have sustained effects on the targeted households. This approach feeds through to programme design options, especially whether or not to include or not human development conditions. Independently of the issue whether conditions are designed as 'hard' or 'soft' (Cecchini and Madariaga 2011), the point is that programme designers pay attention to the role of incentives associated with income transfers. The fact that in Brazil, and Latin America, the main objective of human development income transfers is to reduce the intergenerational persistence of poverty ensured an appropriate balance between reducing 'poverty today' as opposed to 'reducing poverty today and tomorrow'.

Implementation capacity limitations in African low income countries are binding. This is an additional justification for not pursuing human development objectives alongside improvements in consumption. However, baseline conditions might not be hugely different from those present in the most disadvantaged municipalities in Brazil.

The main question is: How far should human development objectives dominate the design and implementation of social assistance in countries sub-Saharan Africa?

Productivism. Bolsa Família is more strongly productivist than the majority of existing antipoverty transfer programmes in Africa. This applies to all three components of social assistance in Brazil, social pensions in Brazil are more strongly productivist in rural areas of declining economic significance, but especially to Bolsa Família. In Africa, on the other hand, the weight of support goes to households with no labour capacity. This is the case in Zambia, Uganda, Mozambique, and Zimbabwe. In sub-Saharan Africa, the weight of social assistance can be associated with 'classical' or conventional social assistance models. The main question is to what extent the conceptual and operational approaches in Brazil can help bring about a paradigm shift in African countries.

In sum, we noted the existing channels for policy diffusion from Brazil to Africa in the context of antipoverty policy and especially social assistance. The key areas where lessons from social assistance in Brazil can be relevant to countries in Africa include human development and productivism.

## **6 Conclusions**

The 1988 Constitution is the marker for the rapid expansion of social assistance programmes and policies since. It is possible to identify three main strategies for inclusion: (i) the incorporation of informal workers as a special regime under social insurance; (ii) conventional social assistance transfers to older and disabled people in poverty; (iii) human development income transfer programmes focused on extreme poverty. Their evolution over time has improved their focus and scope. Their expansion in coverage has been effective in supporting social and economic inclusion and as such they have made an important contribution to inclusive growth in Brazil.

Social assistance programmes have been effective in reducing poverty, and perhaps against all expectations, inequality. They have also contributed to improvements in human development, through their contribution to universalising basic education and primary health care. In addition they have had some success in achieving more specific outcomes relating to child development: immunisation, nutrition, reduction in mortality and child labour, and increased school enrolments and attendance.

The bulk of the relevant studies conclude that antipoverty programmes reduce labour force participation among children and older adults, but have marginal labour supply effects among adults of working age. There is a significant knowledge gap associated with the distribution of these outcomes. The paper reported on an analysis of Bolsa Família labour market outcomes across municipalities. The main finding points to the presence of significant heterogeneity for some labour outcomes, adult labour force participation rates for example. This analysis has the potential to throw light on the impact of Bolsa Família in areas facing significant disadvantage in Brazil, of greater relevance to countries in Africa.

Antipoverty programmes in Brazil are sustainable along several dimensions. However, their institutionalisation and integration has further to go.

One outcome of the development of social assistance in Brazil with implications for countries in sub-Saharan Africa is the development of Brazil's international cooperation, for example through the Brazil-Africa Programme of Cooperation in Social Protection, and more recently through the newly established Mundo sem Miséria.

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## Appendix 1 Quantile regression results

Table 1 Quantile Regression of Adult Labour Participation on Bolsa Familia and covariates 2001-2006

	Quantile					OLS
	0.05	0.25	0.5	0.75	0.95	
BF	0.091 (0.022)	0.091 (0.025)	0.091 (0.022)	0.077 (0.025)	0.057 (0.027)	0.077 (0.019)
t_6	0.013 ▾(0.004)▾	0.013 ▾(0.005)▾	0.013 ▾(0.004)▾	0.014 ▾(0.004)▾	0.011 ▾(0.005)▾	0.013 (0.003)
poverty	-0.162 ▾(0.033)▾	-0.154 ▾(0.04)▾	-0.162 ▾(0.033)▾	-0.151 ▾(0.03)▾	-0.118 ▾(0.034)▾	-0.127 (0.024)
illiterate	-0.075 ▾(0.046)▾	-0.058 ▾(0.052)▾	-0.075 ▾(0.046)▾	-0.093 ▾(0.05)▾	-0.067 ▾(0.05)▾	-0.082 (0.039)
element	0.025 ▾(0.061)▾	0.017 ▾(0.07)▾	0.025 ▾(0.061)▾	-0.024 ▾(0.057)▾	0.013 ▾(0.063)▾	0.025 (0.048)
middle	0.112 ▾(0.057)▾	0.127 ▾(0.064)▾	0.112 ▾(0.057)▾	0.116 ▾(0.05)▾	0.041 ▾(0.069)▾	0.085 (0.045)
highsch	0.008 ▾(0.056)▾	0.075 ▾(0.066)▾	0.008 ▾(0.056)▾	0.016 ▾(0.063)▾	0.069 ▾(0.065)▾	0.052 (0.05)
college	0.015 ▾(0.095)▾	-0.044 ▾(0.132)▾	0.015 ▾(0.095)▾	-0.027 ▾(0.087)▾	-0.087 ▾(0.116)▾	-0.049 (0.1)
walls	-0.022 ▾(0.014)▾	-0.020 ▾(0.018)▾	-0.022 ▾(0.014)▾	-0.021 ▾(0.014)▾	-0.023 ▾(0.019)▾	-0.021 (0.012)
roof	-0.017 ▾(0.011)▾	-0.022 ▾(0.015)▾	-0.017 ▾(0.011)▾	-0.015 ▾(0.011)▾	-0.004 ▾(0.016)▾	-0.022 (0.01)
overcrowded	-0.002 ▾(0.03)▾	-0.040 ▾(0.038)▾	-0.002 ▾(0.03)▾	-0.004 ▾(0.029)▾	-0.007 ▾(0.04)▾	-0.021 (0.025)
water	0.008 ▾(0.013)▾	0.003 ▾(0.014)▾	0.008 ▾(0.013)▾	0.003 ▾(0.013)▾	0.003 ▾(0.018)▾	0.003 (0.01)
sewerage	0.000 (0.01)	-0.006 (0.012)	0.000 (0.01)	-0.005 (0.011)	-0.008 (0.012)	-0.003 (0.008)
light	-0.047 (0.028)	-0.039 (0.033)	-0.047 (0.028)	-0.057 (0.036)	-0.071 (0.034)	-0.056 (0.022)
agriculture	0.250 (0.032)	0.270 (0.034)	0.250 (0.032)	0.240 (0.035)	0.213 (0.05)	0.249 (0.027)
industry	0.134 (0.035)	0.169 (0.041)	0.134 (0.035)	0.115 (0.033)	0.119 (0.043)	0.149 (0.03)
commerce	0.051 (0.053)	0.107 (0.058)	0.051 (0.053)	0.047 (0.061)	0.078 (0.072)	0.085 (0.043)
head_female	0.136 (0.074)	0.246 (0.104)	0.136 (0.074)	-0.001 (0.083)	-0.108 (0.143)	0.069 (0.075)
head_single	-0.079 (0.079)	-0.190 (0.107)	-0.079 (0.079)	0.052 (0.087)	0.121 (0.153)	-0.008 (0.081)
rural	0.005 (0.025)	-0.006 (0.021)	0.005 (0.025)	0.007 (0.023)	0.027 (0.034)	0.006 (0.016)
N	0.008 (0.01)	0.003 (0.013)	0.008 (0.01)	0.006 (0.013)	0.009 (0.014)	0.004 (0.008)
NE	-0.015 (0.011)	-0.017 (0.014)	-0.015 (0.011)	-0.014 (0.01)	-0.007 (0.012)	-0.019 (0.008)
SE	-0.012 (0.009)	-0.014 (0.013)	-0.012 (0.009)	-0.009 (0.01)	-0.002 (0.01)	-0.013 (0.007)
CW	-0.004 (0.008)	0.001 (0.011)	-0.004 (0.008)	-0.009 (0.009)	-0.003 (0.013)	-0.004 (0.007)
metrop	0.013 (0.007)	0.017 (0.007)	0.013 (0.007)	0.014 (0.007)	0.016 (0.011)	0.017 (0.006)
city	0.023 (0.005)	0.031 (0.007)	0.023 (0.005)	0.015 (0.006)	-0.001 (0.007)	0.021 (0.005)
cons	0.686 (0.05)	0.622 (0.053)	0.686 (0.05)	0.772 (0.058)	0.829 (0.061)	0.700 (0.039)

Source: Authors' panel data quantile regressions

**Table 2 Quantile Regression of Informal Adult Labour on Bolsa Familia and covariates 2001-2006**

	Quantile					OLS
	0.05	0.25	0.5	0.75	0.95	
BF	0.200 (0.031)	0.224 (0.036)	0.200 (0.031)	0.151 (0.03)	0.083 (0.044)	0.199 (0.024)
t_6	-0.033 (0.006)	-0.035 (0.007)	-0.033 (0.006)	-0.029 (0.006)	-0.027 (0.009)	-0.039 (0.004)
poverty	0.024 (0.041)	0.083 (0.047)	0.024 (0.041)	0.024 (0.04)	0.045 (0.065)	0.045 (0.032)
illiterate	0.088 (0.076)	0.007 (0.074)	0.088 (0.076)	0.113 (0.058)	0.122 (0.094)	0.011 (0.056)
element	-0.074 (0.088)	-0.091 (0.083)	-0.074 (0.088)	-0.012 (0.086)	0.138 (0.118)	-0.028 (0.071)
middle	0.093 (0.08)	0.126 (0.078)	0.093 (0.08)	0.052 (0.083)	-0.048 (0.118)	0.075 (0.068)
highsch	-0.012 (0.077)	-0.010 (0.078)	-0.012 (0.077)	-0.033 (0.075)	-0.172 (0.114)	-0.048 (0.065)
college	-0.162 (0.098)	-0.043 (0.101)	-0.162 (0.098)	-0.183 (0.12)	0.044 (0.184)	-0.069 (0.092)
walls	-0.008 (0.021)	-0.026 (0.019)	-0.008 (0.021)	-0.010 (0.018)	-0.026 (0.037)	-0.022 (0.016)
roof	-0.026 (0.014)	-0.026 (0.017)	-0.026 (0.014)	-0.017 (0.016)	0.011 (0.024)	-0.021 (0.012)
overcrowded	0.047 (0.04)	0.000 (0.049)	0.047 (0.04)	0.039 (0.043)	-0.043 (0.06)	-0.021 (0.038)
water	-0.014 (0.019)	-0.012 (0.019)	-0.014 (0.019)	-0.026 (0.017)	-0.028 (0.031)	-0.005 (0.016)
sewerage	-0.031 (0.013)	-0.027 (0.014)	-0.031 (0.013)	-0.038 (0.012)	-0.051 (0.019)	-0.043 (0.01)
light	-0.091 (0.04)	-0.156 (0.047)	-0.091 (0.04)	-0.065 (0.045)	-0.067 (0.061)	-0.122 (0.032)
agriculture	0.411 (0.043)	0.364 (0.049)	0.411 (0.043)	0.406 (0.048)	0.424 (0.073)	0.416 (0.038)
industry	-0.048 (0.044)	-0.021 (0.047)	-0.048 (0.044)	-0.070 (0.046)	-0.036 (0.079)	-0.026 (0.038)
commerce	0.273 (0.087)	0.294 (0.073)	0.273 (0.087)	0.242 (0.077)	0.182 (0.119)	0.294 (0.063)
head_female	0.055 ▾(0.103)▾	0.090 ▾(0.148)▾	0.055 ▾(0.103)▾	-0.060 ▾(0.109)▾	-0.039 ▾(0.211)▾	-0.004 ▾(0.093)▾
head_single	-0.011 (0.112)	-0.041 (0.175)	-0.011 (0.112)	0.101 (0.115)	0.076 (0.248)	0.102 (0.104)
rural	0.007 ▾(0.028)▾	0.016 ▾(0.031)▾	0.007 ▾(0.028)▾	0.020 ▾(0.03)▾	0.014 ▾(0.047)▾	0.019 ▾(0.024)▾
N	0.073 ▾(0.018)▾	0.080 ▾(0.016)▾	0.073 ▾(0.018)▾	0.079 ▾(0.016)▾	0.124 ▾(0.031)▾	0.096 ▾(0.013)▾
NE	0.016 ▾(0.015)▾	0.025 ▾(0.014)▾	0.016 ▾(0.015)▾	0.020 ▾(0.014)▾	0.051 ▾(0.022)▾	0.030 ▾(0.011)▾
SE	0.006 ▾(0.013)▾	0.019 ▾(0.013)▾	0.006 ▾(0.013)▾	0.003 ▾(0.012)▾	0.018 ▾(0.019)▾	0.018 ▾(0.011)▾
CW	0.033 ▾(0.012)▾	0.051 ▾(0.012)▾	0.033 ▾(0.012)▾	0.027 ▾(0.012)▾	0.040 ▾(0.021)▾	0.047 ▾(0.009)▾
metrop	0.001 ▾(0.009)▾	0.008 ▾(0.009)▾	0.001 ▾(0.009)▾	-0.009 ▾(0.008)▾	-0.013 ▾(0.016)▾	0.005 ▾(0.007)▾
city	0.008 (0.008)	0.011 (0.008)	0.008 (0.008)	-0.002 (0.008)	-0.016 (0.013)	0.005 (0.006)
cons	0.321 (0.075)	0.327 (0.07)	0.321 (0.075)	0.351 (0.071)	0.391 (0.102)	0.328 (0.055)

Source: Authors' panel data quantile regressions



**Table 3 Quantile Regression of Formal Adult Labour on Bolsa Familia and covariates 2001-2006**

	Quantile					OLS
	0.05	0.25	0.5	0.75	0.95	
BF	-0.074 (0.019)	-0.092 (0.023)	-0.074 (0.019)	-0.083 (0.021)	-0.109 (0.044)	-0.092 (0.017)
t_6	0.048 ▾(0.005)▾	0.045 ▾(0.005)▾	0.048 ▾(0.005)▾	0.054 ▾(0.005)▾	0.061 ▾(0.009)▾	0.052 (0.004)
poverty	-0.226 ▾(0.03)▾	-0.195 ▾(0.033)▾	-0.226 ▾(0.03)▾	-0.265 ▾(0.032)▾	-0.282 ▾(0.054)▾	-0.230 (0.027)
illiterate	0.014 ▾(0.044)▾	-0.019 ▾(0.047)▾	0.014 ▾(0.044)▾	0.021 ▾(0.046)▾	0.013 ▾(0.088)▾	-0.005 (0.041)
element	0.145 ▾(0.067)▾	0.083 ▾(0.07)▾	0.145 ▾(0.067)▾	0.169 ▾(0.07)▾	0.123 ▾(0.133)▾	0.116 (0.059)
middle	-0.006 ▾(0.073)▾	0.010 ▾(0.071)▾	-0.006 ▾(0.073)▾	-0.043 ▾(0.079)▾	-0.097 ▾(0.103)▾	-0.030 (0.061)
highsch	0.075 ▾(0.063)▾	0.097 ▾(0.073)▾	0.075 ▾(0.063)▾	0.060 ▾(0.077)▾	0.277 ▾(0.122)▾	0.120 (0.062)
college	0.221 ▾(0.109)▾	0.199 ▾(0.134)▾	0.221 ▾(0.109)▾	0.219 ▾(0.095)▾	-0.058 ▾(0.18)▾	0.096 (0.129)
walls	-0.022 ▾(0.016)▾	-0.019 ▾(0.019)▾	-0.022 ▾(0.016)▾	-0.008 ▾(0.017)▾	-0.003 ▾(0.03)▾	-0.009 (0.014)
roof	0.003 ▾(0.016)▾	-0.007 ▾(0.013)▾	0.003 ▾(0.016)▾	0.003 ▾(0.015)▾	0.026 ▾(0.018)▾	0.006 (0.011)
overcrowded	-0.064 ▾(0.034)▾	-0.055 ▾(0.033)▾	-0.064 ▾(0.034)▾	-0.024 ▾(0.037)▾	0.043 ▾(0.057)▾	-0.032 (0.028)
water	0.024 ▾(0.012)▾	0.016 ▾(0.013)▾	0.024 ▾(0.012)▾	0.009 ▾(0.014)▾	-0.047 ▾(0.035)▾	0.006 (0.012)
sewerage	0.027 ▾(0.011)▾	0.032 ▾(0.011)▾	0.027 ▾(0.011)▾	0.033 ▾(0.012)▾	0.034 ▾(0.018)▾	0.032 (0.01)
light	0.040 (0.023)	0.002 (0.027)	0.040 (0.023)	0.078 (0.027)	0.184 (0.051)	0.048 (0.021)
agriculture	-0.117 ▾(0.031)▾	-0.117 ▾(0.038)▾	-0.117 ▾(0.031)▾	-0.062 ▾(0.036)▾	0.070 ▾(0.065)▾	-0.081 (0.031)
industry	0.201 ▾(0.044)▾	0.187 ▾(0.043)▾	0.201 ▾(0.044)▾	0.262 ▾(0.043)▾	0.272 ▾(0.057)▾	0.230 (0.036)
commerce	-0.178 ▾(0.05)▾	-0.136 ▾(0.059)▾	-0.178 ▾(0.05)▾	-0.180 ▾(0.061)▾	-0.117 ▾(0.116)▾	-0.148 (0.05)
head_female	-0.086 ▾(0.094)▾	0.033 ▾(0.114)▾	-0.086 ▾(0.094)▾	-0.035 ▾(0.122)▾	0.112 ▾(0.21)▾	-0.020 (0.092)
head_single	0.027 (0.098)	-0.053 (0.126)	0.027 (0.098)	-0.035 (0.131)	-0.235 (0.23)	-0.029 (0.099)
rural	-0.005 ▾(0.022)▾	-0.004 ▾(0.024)▾	-0.005 ▾(0.022)▾	-0.021 ▾(0.021)▾	-0.040 ▾(0.03)▾	-0.014 (0.019)
N	-0.062 ▾(0.011)▾	-0.077 ▾(0.017)▾	-0.062 ▾(0.011)▾	-0.070 ▾(0.014)▾	-0.089 ▾(0.018)▾	-0.079 (0.011)
NE	-0.052 ▾(0.01)▾	-0.052 ▾(0.01)▾	-0.052 ▾(0.01)▾	-0.062 ▾(0.012)▾	-0.077 ▾(0.018)▾	-0.060 (0.009)
SE	-0.030 ▾(0.01)▾	-0.034 ▾(0.01)▾	-0.030 ▾(0.01)▾	-0.040 ▾(0.012)▾	-0.049 ▾(0.019)▾	-0.036 (0.009)
CW	-0.039 ▾(0.01)▾	-0.041 ▾(0.009)▾	-0.039 ▾(0.01)▾	-0.053 ▾(0.011)▾	-0.081 ▾(0.015)▾	-0.050 (0.008)
metrop	-0.003 ▾(0.007)▾	0.010 ▾(0.008)▾	-0.003 ▾(0.007)▾	-0.016 ▾(0.007)▾	-0.001 ▾(0.013)▾	-0.003 (0.007)
city	0.012 (0.008)	0.021 (0.008)	0.012 (0.008)	0.004 (0.007)	0.007 (0.008)	0.013 (0.006)
cons	0.291 (0.041)	0.311 (0.052)	0.291 (0.041)	0.289 (0.051)	0.274 (0.094)	0.296 (0.043)

Source: Authors' panel data quantile regressions

**Table 4 Quantile Regression of School Attendance on Bolsa Familia and covariates 2001-2006**

	Quantile					OLS
	0.05	0.25	0.5	0.75	0.95	
BF	0.043 (0.012)	0.045 (0.018)	0.043 (0.012)	0.028 (0.011)	0.004 (0.007)	0.034 (0.01)
t_6	0.012 (0.002)	0.018 (0.003)	0.012 (0.002)	0.010 (0.002)	0.001 (0.001)	0.015 (0.002)
poverty	-0.008 (0.018)	0.007 (0.021)	-0.008 (0.018)	-0.022 (0.015)	-0.004 (0.007)	-0.007 (0.016)
illiterate	-0.077 (0.027)	-0.097 (0.029)	-0.077 (0.027)	-0.046 (0.021)	-0.016 (0.016)	-0.073 (0.021)
element	0.044 (0.035)	0.082 (0.039)	0.044 (0.035)	0.021 (0.027)	-0.002 (0.008)	0.061 (0.028)
middle	-0.132 (0.033)	-0.189 (0.044)	-0.132 (0.033)	-0.067 (0.029)	-0.008 (0.01)	-0.144 (0.031)
highsch	0.168 (0.036)	0.204 (0.039)	0.168 (0.036)	0.094 (0.032)	0.012 (0.013)	0.183 (0.028)
college	-0.052 (0.044)	-0.054 (0.059)	-0.052 (0.044)	-0.030 (0.038)	-0.013 (0.015)	-0.060 (0.038)
walls	0.008 (0.011)	0.008 (0.011)	0.008 (0.011)	0.011 (0.008)	0.003 (0.004)	0.014 (0.008)
roof	-0.001 (0.007)	0.002 (0.01)	-0.001 (0.007)	-0.001 (0.006)	0.002 (0.002)	-0.001 (0.006)
overcrowded	-0.005 (0.018)	-0.009 (0.022)	-0.005 (0.018)	-0.001 (0.016)	-0.004 (0.006)	-0.008 (0.015)
water	0.007 (0.007)	0.011 (0.009)	0.007 (0.007)	0.007 (0.007)	0.002 (0.004)	0.009 (0.006)
sewerage	-0.012 (0.005)	-0.004 (0.005)	-0.012 (0.005)	-0.007 (0.005)	-0.002 (0.002)	-0.011 (0.004)
light	-0.003 (0.022)	0.003 (0.021)	-0.003 (0.022)	-0.004 (0.016)	0.003 (0.012)	-0.004 (0.014)
agriculture	-0.018 (0.019)	-0.008 (0.023)	-0.018 (0.019)	-0.022 (0.015)	-0.003 (0.006)	-0.018 (0.016)
industry	0.023 (0.016)	0.026 (0.022)	0.023 (0.016)	-0.010 (0.017)	-0.006 (0.006)	0.017 (0.016)
commerce	0.002 (0.029)	-0.024 (0.041)	0.002 (0.029)	-0.034 (0.027)	-0.016 (0.016)	-0.035 (0.027)
head_female	-0.090 (0.051)	-0.106 (0.069)	-0.090 (0.051)	-0.111 (0.056)	-0.008 (0.022)	-0.086 (0.061)
head_single	0.083 (0.057)	0.097 (0.073)	0.083 (0.057)	0.094 (0.063)	0.003 (0.024)	0.077 (0.063)
rural	0.015 (0.012)	0.002 (0.016)	0.015 (0.012)	0.014 (0.009)	0.000 (0.005)	0.008 (0.01)
N	-0.012 (0.006)	-0.007 (0.008)	-0.012 (0.006)	-0.014 (0.005)	-0.012 (0.006)	-0.005 (0.005)
NE	0.004 (0.005)	0.011 (0.006)	0.004 (0.005)	-0.003 (0.005)	-0.003 (0.004)	0.009 (0.005)
SE	0.007 (0.005)	0.004 (0.006)	0.007 (0.005)	-0.001 (0.005)	0.001 (0.001)	0.003 (0.005)
CW	0.005 (0.006)	0.013 (0.007)	0.005 (0.006)	-0.003 (0.005)	0.000 (0.001)	0.005 (0.005)
metrop	-0.005 (0.004)	-0.002 (0.005)	-0.005 (0.004)	-0.002 (0.003)	0.001 (0.001)	-0.005 (0.003)
city	-0.007 (0.003)	-0.002 (0.004)	-0.007 (0.003)	-0.006 (0.003)	-0.002 (0.002)	-0.006 (0.003)
cons	0.972 (0.031)	0.932 (0.031)	0.972 (0.031)	1.002 (0.024)	1.003 (0.015)	0.963 (0.023)

Source: Authors' panel data quantile regressions

## Appendix 2. List of variables and description ( $XO_{m,0}$ , proxied by $XO_{m,1}$ )<sup>52</sup>

Variable	Description
hhnfam	Households per residence (mean)
hhwap	Working-age (18-60 years-ol) people per household (mean)
hhkids	0-14 age kids per household (mean)
hhyouth	15-18 age youths per household (mean)
hhelderly	Over-60 age people per household (mean)
hhpeople	Members per household (mean)
head_age	Age of household heads (mean)
head_female	Female household heads (rate)
head_married	Married household heads (rate)
head_single	Single and female household heads (rate)
women	Working-age people who are female (rate)
Age	Age of working-age people (mean)
White	Adults who are either white or Asian (rate)
Black	Adults who are black (rate)
married	Adults who are married (rate) SURVEY ONLY IDENTIFIES IF HH HEAD IS MARRIED, AND HIS/HER AGE, WHICH WE GET IN head_married. SO, THIS VARIABLE ABSENT IN DATABASE.
hometown	Adults living in their hometown (rate)
homestate	Adults living in their home state (rate)
migrant	Adults living less than 5 years in the same town (rate)
illiterate	Adults who are illiterate (rate)
element	Adults who completed at least elementary school (rate)
middle	Adults who completed at least middle school (rate)
highsch	Adults who completed at least high school (rate)
college	Adults who have college degree (rate)
gendergap	Difference in schooling years between adult (mean) and women (mean) (mean)
agriculture	Workers in agriculture (rate)
industry	Workers in industry (rate)
commerce	Workers in commerce (rate)
formal	Documented employees (rate)
Public	Public servants (rate)
informal	Undocumented employees (rate)
domestic	Domestic workers (rate)
self_emp	Self-employed (rate)
twojobs	Workers with at least two jobs (rate)
insured	Workers who contribute to social welfare (rate)
tenure	Time in the same job (mean)
union	Union workers (rate)
begin_age	Age in which working-age group started working (mean)
hhpcinc	Per capita household income (mean)
hhlaborinc	Participation of labour earning in the household income (mean)
poverty	Poverty headcount (poverty line = half of minimum wage <sup>53</sup> )

<sup>52</sup> Working-age: as in RS, 18-60 years-old.

<sup>53</sup> The monthly minimum wage for 2001 is 180 Rs/month

([http://www.gazetadeitauna.com.br/valores\\_do\\_salario\\_minimo\\_desde\\_.htm](http://www.gazetadeitauna.com.br/valores_do_salario_minimo_desde_.htm))

<b>Variable</b>	<b>Description</b>
Kinderg	Kindergarten assistance (net rate)
att_lem	Elementary school assistance (net rate)
att_middle	Middle school assistance (net rate)
att_high	High school assistance (net rate)
sch_public	7-14 age students in public schools (rate)
behind_child	8-15 children at least 2 years behind at school (rate)
sch_hours	7-14 children who stay less than 4 hours at school (rate)
daily_att	7-14 children who missed school more than 5 days a month
child_death	Child mortality rate
child_labor	10-14 age children working (rate)
youth_labor	15-17 age youths working (rate)
elderly_labor	Over-60 age people working (rate)
walls	Residences with masonry walls (rate)
roof	Residences with roof tile (rate)
rooms	Rooms per residence (mean)
density	Residents per bedroom (mean)
overcrowded	Residences with more than 2 residents by bedroom (rate)
own_house	Households that own their residences (rate)
rent	Home rental price (mean)
water	Residences with piped water (rate)
sewerage	Residences with sewerage (rate)
cesspit	Residences with cesspit (rate)
garbage	Residences with garbage collection (rate)
light	Residences with electricity (rate)
phone	Households with home phone (rate)
cellphone	Households with cell phone (rate)
stove	Households with stove (rate)
filter	Households with water filter (rate)
tv	Households with TV (rate)
refrigerator	Households with refrigerator (rate)
washing	Households with washing machine (rate)
rural	Rural (1 for yes)
N	North region (1 for yes)
NE	Northeast region (1 for yes)
SE	Southeast region (1 for yes)
SOUTH	South region (1 for yes)
CW	Central-west region (1 for yes)
metrop	Metropolitan area (1 for yes)
city	Self-representative (bigger) municipality
municapa	Municipal capacity