

Intergenerational Transfers and Socioeconomic Inequality in Brazil: a First Look

Cassio M. Turra¹
Bernardo L. Queiroz²

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¹Office of Population Research, Princeton University, Princeton, NJ.

² Department of Demography, University of California at Berkeley, Berkeley, CA.

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ABSTRACT

There is an increasing concern of how demographic changes, especially population aging, might affect intergenerational transfers, macroeconomic variables and the public fiscal balance. However, there is little research discussing whether intergenerational transfers, private and public, are equally distributed across different socioeconomic groups and whether they contribute to the reduction of income inequality and poverty, especially in less developed economies. This paper examines the interactions between demographic changes, intergenerational transfers and socioeconomic inequality in Brazil. Our results indicate that family transfers have greater importance for children, especially those in wealthier families. Children of poorer families rely more heavily on public transfers. This is not true, however, for the elderly. We show that elderly consumption, for all socioeconomic groups, depends largely on public transfers. The paper shows that poor children receive the least amount of public and private transfers, at least in the cross section perspective. We argue that differences in political power across age groups and socioeconomic status as well as which socioeconomic groups benefit from the same programs might help explain those outcomes. The paper provides important insights into how differences in intergenerational transfers across socioeconomic groups help explain the perverse cycle of inequality and poverty in Brazil.

INTRODUCTION

Over the past decades, social scientists have devoted increasing attention to examining interactions between population changes and intergenerational transfers. Much of this interest stems from a concern of how changes in population age distribution affect intergenerational transfers and, in turn, macroeconomic variables (Lee, 1997). In contemporary societies, intergenerational transfers play an important role in redistributing resources from the working age population to children and the elderly. Whereas the elderly receive substantial support through social insurance programs, family transfers are the main support for children (Lee, 1997a, Lee, 2003). Changes in population age distribution, particularly increases in the number of elderly, may impose severe fiscal pressures on the public sector and can represent an economic burden for future working age populations, if not buffered by changes in labor supply, saving behavior and public pensions (Gruber and Wise, 2001; Lee, 2000; Lee, 2003).

A second and related question that has been examined mostly in the U.S is the relation between public sector transfers and the relative well-being of children and the elderly. Preston (1984) points out that the expansion of the social security system in the U.S. has been responsible for the reduction in poverty among the elderly to the detriment of children's welfare. Preston's widely cited thesis argues that demographic variables operating in different arenas (i.e. family, industry and politics) have played an important role in determining the relative status of American dependents. For example, the increasing number of adults augmented the political power of these groups relative to children, favoring the expansion of Medicare and social security benefits. Alternatives to Preston's thesis have emerged in the debate on intergenerational equity. Most notably, Becker and Murphy's (1988) theory argues that the development of pension and health care programs to the elderly compensates the financial efforts that adults contributed earlier for the development of public education, following what they called a efficiency-raising state intervention in the family. Recent empirical studies that are based on longitudinal data on transfers are consistent with Becker and Murphy's theory in showing that generations who are blamed for benefiting from the social security and Medicare expansion have indeed paid much larger transfers to the development of public education (Bommier et al., 2004). It remains unclear, however, to what extent public transfers to children, particularly those of poorer families, are at efficient levels, a question that might help reconcile the results of recent studies with Preston's thesis.

Despite unabated interest among researchers in issues pertaining to intergenerational transfers in developed countries, surprisingly little is known about these issues in emerging economies. Brazil is one example of an important context for elaborating linkages among intergenerational transfers, aging and socioeconomic inequality that has not been fully examined yet. Compared to other emerging economies, Brazil is distinct for combining a relatively large public sector with rapidly aging population and amidst of the most extreme income inequalities in the world. Vast literatures document investigations of the determinants of poverty and patterns of income inequality in Brazil (Henriques, 2000). Fewer studies directly examines intergenerational transfers in the country and even fewer focus on the association of family and public sector transfers with inequality, although research in this area has been increasing. In a comprehensive study of intergenerational transfers in Brazil that combines several age schedules of public and

family transfers, Turra (2000) shows that the direction of public transfers is strongly upward, from younger to older people. On average, total expenditures on the elderly are about five times as large as expenditures on children, which show a striking contrast to many other developing countries where public transfers are markedly downward (Lee, 2003). In addition, recent analyses that compare poverty rates by age in Brazil show that poverty rates are higher among children than the elderly, what could be explained by disproportionately larger public transfers to the elderly (Barros and Carvalho, 2003; Camargo, 2004).

Despite the growing literature on this area, earlier studies on Brazil have several limitations. Research on intergenerational transfers, for example, has failed to recognize the existence of differences by socioeconomic status. On the other hand, studies that have focused on the relation between public transfers and income inequality have been largely limited to public cash transfers, and have excluded taxes, public in-kind transfers and private inter vivos transfers. Also, we are not aware of any study that reconciles issues of intergenerational equity with the historical patterns of inequality and poverty. Although we recognize that most of these issues can only be addressed with longitudinal measures calculated from historical data, in the present study we try to strengthen the debate by providing a first look at socioeconomic differences in intergenerational transfers using cross-sectional data for Brazil. We attempt to link our findings to early discussions on transfers and well-being of dependent age groups, and to gain insights into how age and SES interact to create the large inequality in Brazil.

The remainder of the paper is organized as follows. The next section provides a short discussion about poverty and inequality patterns in the country. In addition, we go over the main aspects of selected public transfers included in our analysis: social security, health and education. Section 3 presents some theoretical and methodological considerations on estimating the age schedules of economic flows. Section 4 discusses our main results with particular emphasis in interpretation, and potential caveats of our analysis. Section 5 concludes.

POVERTY AND INEQUALITY IN BRAZIL

Brazil is not a poor country. Yet it is a country with millions of poor people and high income concentration. Although GDP per capita - about \$7,000 in 2002 measured at PPP value - ranks 56th in the world, Brazil has a much higher Gini coefficient (0.6) than the average coefficient for Latin America (0.4). In addition, Brazil accounts for a large share of the poor population in the region: poverty levels in the country range from 23 to 45 percent depending on the definition of the poverty line and the population subgroup examined (Ferreira et al. 2003).

Despite structural changes, economic inequality has persisted in Brazil over the decades (Barros et al. 2000). Recent research has pointed to a number of factors that might help explain this pattern. These factors include, for example, inequalities in the distribution of education, increases in unemployment and informality (Barros and Ferreira 1999), high rates of return to education and high variance in schooling (Lam and Levison 1992; Menezes-Filho 2001). Although the labor market is not per se a generator of income inequality, it also plays an important role by transforming worker's differences, such as education and experience into income inequality (Barros and Mendonça 1995).

Potentially, inequality levels could be higher if the government had not controlled inflation in the 1990s, which eliminated the implicit inflationary tax benefiting especially low-income groups (Rocha, 1996). In addition, while changes in age distribution have favored increases in income inequality (Wajnman and Menezes-Filho 2001), demographic changes, including changes in age distribution and family size, have helped reduce poverty levels in most regions of the country (Barros et al., 2000).

One important aspect of poverty in Brazil is its high prevalence among the children. Barros and Carvalho (1999) using nationally representative household data, show that poverty rates among children (about 50 percent) are more than three times higher than among the elderly (about 15 percent). Moreover, counterfactual simulations demonstrate that poverty rates would be similar for the two dependent groups if public transfers (cash) were eliminated, which underscores the importance of the public sector to reduce poverty at older ages.

SOCIAL INSURANCE PROGRAMS IN BRAZIL

Over the last century, most industrialized countries and some developing nations have established universal social insurance programs. Social insurance programs provide public welfare support for the population through in-kind and cash transfers. These programs guarantee both the well-being of the elderly and the development of the young generations and can help reduce inequality and promote economic growth (Lee and Mason, 2004). In Brazil, public welfare support reached about 21 percent of GDP in 2002, considering all government levels (Brasil 2003), an amount that is comparable to social expenditures in most developed countries. While social security benefits and other forms of elderly support represented about 12 percent of GDP, public spending on education and health amounted to 5.5 percent and 3.5 percent of GDP in 2002, respectively (Camargo, 2004).

Social Security System

The pension system in Brazil consists of three main segments: the general system (private workers), the civil servants system, and other several private funded systems; most pension systems are based on the PAYGO scheme. The country also has a large non-contributory system with means-tested eligibility that provides benefits for low-income elderly.

The Social Security system for private workers (general system) is an unfunded defined-benefit program. There is still debate regarding when it began. In 1888 some measures were taken to provide pension benefits to postal workers and employees of the national press. In the following years, retirement benefits were extended to railroad workers, employees of the Ministry of Finance and the Mint, and army forces. In 1923, the Lei Eloi Chaves (legislation) was approved to regulate social security for both civil servants and private workers. This law decentralized the pension system, as each company was responsible for its own employees. The first reform happened in 1933 when the pension funds became structured by professional category (Leite 1983). The general pension system was centralized only in 1966, when the House of Representatives approved the Social Security Ordinary Law. The National Social Security Administration, INPS, incorporated all the revenues and expenditures from sector-specific programs as well as

its assets and liabilities. Another major change during this time was in the scheme of the program, which changed from a capitalization system to a PAYGO (Leite 1983).

The last major change in regulation happened with the 1988 Constitution, which extended mandatory social security coverage to most of the excluded groups, including rural workers, without requiring equivalent increases in revenues from contributions. Other measures made the system more generous than before: establishing the minimum wage as the lowest benefit paid by the system, indexing all pensions to the minimum wage, and reducing the minimum age of retirement (Stephanes 1998).

Until 1998, full pension benefits were granted to all workers who have contributed for 10 years to the system, have reached normal retirement age through the Old-Age Pension Benefit (65 for men and 60 for women), or could prove that they have been working for a certain number of years with the Length of Service Pension Benefit (35 for men and 30 for women, but without requirement of contribution for the same period of time). In addition, special retirement schemes existed that granted proportional retirement benefits for individuals who had worked for 30 and 25 years, for men and women respectively. The benefits were computed based on the last 36 months of activity (Brasil, 2002). The level of benefits is relatively high: old-age benefits recipients receive, on average, 3 times the minimum wage, and length of service benefits is 2.5 times higher than old-age benefits (Queiroz, 2005).

In 1998, after years of political debate, a significant reform was approved in order to help solve the program's fiscal imbalance. The main change was the introduction of a new methodology to calculate pension benefits based on an actuarial rule. The new benefit computation is based on the Swedish Notional Defined Benefit Program and takes into account longer earnings history, the life expectancy at age of retirement, and a coefficient that creates disincentives to early retirement. A minimum retirement age has not yet been approved for workers in the private sector (Brasil, 2002).

The general system was conceived when rapid population growth and low life expectancy combined to sustain the program. In recent years, however, the system has been facing budget shortfalls, which have gradually increased after the new regulations were implemented in the early 1990s. In 1996, the deficit was equal to 0.1 percent of the GDP, but it increased to 1.7 percent in 2004 (Giambiagi et al., 2004). The implicit debt, a long term measure of the system's financial adequacy, is also large and amounts to about two times the GDP (Bravo, 2001).

Alongside the general pension system, civil servants have their own pension program, which is also an unfunded PAYGO defined benefit program. Although smaller in absolute numbers when compared to the general program, expenditures with the civil servants program are not trivial, reaching 4.7 percent of GDP in 2002 (Medici, 2004). According to Medici, the program is a complex chain of federal, state and local systems, including special programs to different civil servant categories. Benefits are more generous in the civil servant system than in the general system: replacement rates are higher and time of contribution to receive full pension benefits is shorter. The program deficit is high and has been increasing over the past decade, having reached about 3.6 percent of the GDP in 2004 (Giambiagi et al., 2004).

Public Spending on Health

The health system was created in 1923 under the same law that created the social security system for urban workers in the private sector (Lei Eloi Chaves). For most of its history, health care coverage was restricted to workers in the formal sector of the economy, the same group covered by the social security system. The program was largely funded by contributions to the social security system and was centralized in the Ministry of Health (Almeida et al., 2000; Medici, 1997; Negri & Giovanni, 2001; Elias and Cohn, 2003).

The health sector reform in Brazil has its landmark in 1988 when the new Constitution institutionalized a universal, comprehensive and free health care system, known as *Sistema Unico de Saude*. The reform proposed several changes, including increases in financial resources, improvement of supply and delivery of services, and decentralization of services to state and local governments (Almeida et al., 2000).

The financing of the program comes from general revenues since 1993, the year in which social security stopped providing funds to healthcare. Currently, the Brazilian healthcare system is a complex network of public and private providers that are simultaneously interrelated, complementary and competitive, being funded by public resources. The system, which is now 17 years old, combines events of success with others of failures, and its effectiveness varies across geographic regions and within regions. The main failure of the universal program is that provision of healthcare remains unequal across the country. Individuals in the lower income groups and less developed areas face more difficulty in obtain services and receive a treatment of lower quality (Almeida et al. 2000; Alves and Timmins 2001)

Public Spending on Education

Education is certainly the most effective program to reduce inequality and improve the life standard of a population. The 1988 Constitution determined that the Federal government should spend 18 percent of its budget on education, while the states and municipalities should spend 25 percent. In general, primary education is provided by the municipalities (3.6 percent of GDP), while state level government is responsible for secondary education (0.8 percent of GDP) and the central government funds most of the public higher education (0.5 percent of GDP) (Camargo, 2004; Schwartzman, 2003; Almeida, 2001). Since 1971, 8 years of primary education has been mandatory. Since 2000, almost all children aged 7 to 14 have been enrolled in school, but many problems have persisted including grade retention and school drop-out after age 15.

Although the Brazilian government spends similar percentage of GDP on education than other countries, the pattern of expenditures per pupil is dramatically different. For example, while in Brazil per pupil expenditures on higher education are about 14 times larger than on primary education, in OECD countries the ratio is only 2.7, emphasizing the unequal distribution of public resources by level of education in Brazil (Almeida, 2001).

In recent years some programs have been created to improve the quality and coverage of basic education. For example, the FUNDEF is an educational fund that was created to (1) increase investments on basic/primary education, (2) guarantee a minimum amount of

expenditures per pupil in primary education, and (3) allocate resources from richer areas to poorer ones. In addition, the 'bolsa-escola', a means-tested conditional cash transfer, was implemented to incentive families to keep children aged 7 to 14 in school. Finally, the federal government has developed new curricular guidelines and established a system of performance evaluation for school and students (Schwartzman, 2003).

ESTIMATION OF TRANSFERS BY SOCIOECONOMIC STATUS

Some Theoretical Considerations

Our analysis is based on the theoretical framework developed by Lee and colleagues (Lee, 1980; Lee, 1994; Lee, 2000; Bommier and Lee, 2003). The Lee transfer framework combines estimates of economic flows across ages with demographic variables to examine, at the aggregate level, how the distribution of resources from working age groups to less productive age groups varies across societies. The model is constructed of a main accounting identity (Mason et al., 2005):

$$C - y^l = (rA - S) + (t_g^+ - t_g^-) + (t_f^+ - t_f^-);$$

that is, the lifecycle deficit, expressed by the excess of consumption C over labor income y^l , must be financed through net public transfers (t_g), net family transfers (t_f), and asset reallocations, defined as the difference between returns to assets (rA) and savings (S). Transfers are distinguished from the other types of transaction by the absence of an exchange motive. All aggregates are allocated by age, using the individual as the primary unit of analysis.

In more complex applications of the model, the age profiles of reallocations systems have been integrated with population models (e.g. stable age distributions) while assuming certain economic conditions (e.g. golden rule, closed economy) to address questions related to intergenerational equity, population aging and changes in public policy and private support systems (Turra 2000; Lee 1994; Stecklov 1997). Here, since our goal is to provide only a first look at SES differentials in intergenerational transfers, we use a simplified version of the model. We start by comparing lifecycle deficits by SES using age schedules of labor income and consumption. Next, we examine how the deficits are financed through the family (inter-household and intra-household transfers) and the public sector (education, health and social security) by SES¹. We then document the implied transfer flows across SES categories through the public sector. Although Lee's framework encompasses both population and individual lifecycle perspectives (Lee and Mason 2004), we refrain from estimating lifecycle measures since there is no permanence of individuals to each SES category, either over time or across generations, what could bias our estimates.

Some Methodological Considerations

We make extensive use of the Living and Standards Measurement Survey of Brazil (PPV) to estimate age schedules of economic flows. The PPV was carried out between 1996 and 1997 by the Brazilian census bureau in a joint project with the World Bank.

¹ Paucity of data on credit and asset transactions has prevented us from examining a complete set of accounting estimates by SES. We believe, however, that the transfer systems included in the analysis account for most of the intergenerational flows; this is particularly true among persons of low SES who usually do not have access to capital markets in Brazil.

With a sample size of 4,940 households, the PPV is representative of 70 percent of the national population and of about 75 percent of GDP (Turra 2000). Although some regions of Brazil were excluded from the survey, it is unlikely that our age profiles will be biased since the population surveyed is a fair approximation of the national population. The survey contains a comprehensive and comparable set of demographic and economic variables, including detailed information on household budget. We also make use of administrative records, which provide us with information on taxes and public spending on education, health care and social security in 1996. More information about the data sources can be found elsewhere (Turra 2000; Turra and Rios-Neto 2001).

We estimate age profiles of labor income from information on income collected in the PPV for all respondents ages 10 and older who worked for pay during the survey's reference week. The estimates include income before taxes and fringe benefits from all jobs held during the reference week. We include both employment and self-employment income. To estimate age profiles of consumption we apply different rules depending on how data on expenditures were collected in the survey (i.e. individual or household data). Out-of-pocket expenditures on education and health were reported for all respondents and thus, are drawn directly from the survey. Expenditures on cigarettes are allocated proportionally among adults aged 15 and older in the household. Expenditures on children and adult apparel are distributed proportionally among persons between ages 0 and 15 and persons aged 15+, respectively. Residual expenditures are allocated by age using equivalence scales based on Engel's method (Deaton 1997). Following the Lee transfer framework, the age consumption profile also includes (1) the mean value of public consumption by age (e.g. public spending on education and health), which is described below, and (2) the value of services provided by consumer durables and housing, which are allocated by age using Engel's equivalence scales.

Public spending on health is assigned based on health care utilization rates taken from the PPV. The survey tells us whether individuals reported that they used in-patient and out-patient care provided by the public sector during the period of reference. Since the public sector can also pay a third party to provide health care services, we include individuals who were not covered by health insurance and reported that used in-patient and out-patient care without paying for the service. We assume that all users generate the same amount of costs by type of service (in-patient vs. out-patient), so we equally divide the total public expenditures on health among individuals within these two broad categories. However, to the extent that average costs are a function of health status, and in turn, of SES, as well as of age, our estimates might be biased; and thus we should exercise caution when analyzing results for public spending on health.

Public expenditures on education are assigned based on enrollment rates for children and adults who reported in the survey that were enrolled in public schools. In allocating the expenditures we take into account the variation in per student costs by level of education and the distribution of students across levels.

The age profiles of social security benefits were estimated based on responses to the PPV about amounts of benefits received during the survey's month of reference. Unfortunately, the question does not distinguish between types of benefits (i.e. survivor and old-age benefits), neither between social security systems (i.e. general pension

system and civil servants program). To account for discrepancies between the weighted sum of benefits in the PPV and the actual costs of these programs, we adjust all responses by the same percentage to yield the aggregate numbers.

We follow several steps to estimate the age profiles of taxes paid by each socioeconomic group. First, we assume that (1) national government expenditures are funded by income and social security taxes; (2) state government expenditures are funded by sales taxes and (3) that expenditures made by local governments are funded by property taxes. Based on information about the share of each sphere of government of the revenue raised to fund public expenditures on education, health and social security, we determine how outflows are divided by type of tax. Next, we use information on taxes reported in the PPV (income, social security, and property taxes) and our estimates for consumption as a proxy for sales taxes, to allocate the aggregate budget numbers by SES. We then assign these amounts by age according to the age profiles of earnings (income and sales taxes), labor income (social security taxes), and property taxes (property taxes), estimated from the PPV.

In order to estimate transfers flows across SES categories through the public sector, we construct hypothetically balanced budgets for each program by multiplicatively raising or lowering the level of taxes at every age and SES category to yield weighted aggregated taxes consistent with the actual aggregate costs.

Both outflows and inflows of inter-household transfers are calculated directly from the survey and include gifts, alimony and donations. Differences in the flows are adjusted to insure aggregate consistency. To estimate intra-household transfers we use the agent method (Lee and Mason 2004). The method assumes that non-head household members use their earnings (i.e. labor income and public cash transfers net of taxes) only to consume goods and services. Non-head household members do not accumulate assets and neither receive nor make inter-household transfers. The difference between earnings and consumption are equal to transfers made to (if the difference is positive) or received from (if the difference is negative) the household head.

We measure SES by educational attainment of the household head. This measure is highly correlated with the general socioeconomic status in the household and is preferred to other measures of SES (e.g. income or wealth) in this study since it offers better comparability among age groups. Education attainment is classified into four categories: 0-4 years, 5-8 years, 9-11 years, and 12 or more years. Also, since a relatively large number of observations are needed to reduce the stochastic errors in the estimates we calculate all economic flows by ten-year age groups.

RESULTS

In assessing intergenerational transfers among socioeconomic groups, it is helpful to start by examining broad features of the reallocation system for the total population in Brazil (Figure1). These results are extracted from Turra and Rios-Neto (2001) and show that the lifecycle pattern in Brazil is quite similar to the patterns found in developed nations (see for example, Mason et al. 2005). Like in most industrialized populations today, where retirement emerges as an important stage of the lifecycle, old-age economic dependence

starts at around age 60 in Brazil. One striking finding is the role played by the public sector in supporting the elderly, which guarantees about 86 percent of the consumption at ages 70 and older. In contrast, children depend mostly on private inter vivos transfers (mainly intra-household transfers), which pay for 60 percent of their consumption.

The contrasting roles played by public sector and family suggest the need to disaggregate the economic lifecycle by SES. Figure 2 shows the lifecycle deficit for each socioeconomic group. To standardize for differences in production levels, we divide the lifecycle deficit by the average level of consumption for individuals between ages 30 and 50 in each socioeconomic group. By and large, the Brazilian lifecycle pattern discussed above is found for all SES groups. Some disparities should be emphasized, however. First, the patterns reflect wage differentials by education level: lifecycle surplus is much larger for high-SES working age populations. In addition, age patterns of lifecycle deficit are older for individuals with more years of education, reflecting the fact that high-SES individuals stay longer in school, start working later, and probably have jobs that reward more for tenure and experience.

The broad features of reallocation systems for each level of education are shown next, in Figure 3. The results are presented in the standardized form. With regard to children, we see that among individuals of low SES, the costs of consumption are shared between family and public sector. In contrast, reallocations made through the family are dominant among those with more years of education. Among the elderly, public sector transfers are quite substantial, and dominate for all levels of education. Although we exclude asset reallocations in our analysis, we can be reasonably confident that consumption at older ages for all socioeconomic groups depends largely on public support. At first glance these patterns seem to provide further support for the idea that the public sector favors the elderly in Brazil, at least in the cross-sectional perspective.

To get a more complete picture, we examine public transfers received by each socioeconomic group through education, health and social security. Figure 4 displays per-capita expenditures on education both in nominal values and standardized for differences in production levels. In nominal terms, individuals of higher SES receive twice as much public transfers in education than those in the lower SES groups, a pattern that has been described before (see for example, Camargo and Ferreira, 2002). Also, a closer look at the age profiles reveals that individuals of higher SES receive transfers at older ages than children of lower SES. This pattern is explained by a perverse mechanism of distribution of public resources in Brazil. Low-SES children have to rely on public basic education, which is generally lower in quality compared with private schools. High-SES children, on the other hand, usually attend private middle and high schools and therefore, are more likely to go to public universities, which following a system that promotes efficiency, select candidates based on competitive examinations. Add to this the fact that per student costs by level of education varies considerably, and are about 14 times higher for higher education than basic education. As suggested in Figure 3, however, public education transfers make a larger chunk of consumption for individuals of low SES (lower panel in Figure 4), revealing that any change in public policy that benefits the elderly in detriment to children is more likely to affect the wellbeing of poor children than wealthy children.

With regard to public spending on health, a different picture emerges (Figure 5). Since public spending on health is under universal coverage and the government cannot provide high quality services for all, children and elderly of higher SES usually seek private care and therefore, receive less in public expenditures. Private medical services for high SES dependents are funded mainly by intra-household transfers (results not shown). Children and elderly of low SES, on the other hand, have to rely mostly in the public system. Not surprisingly, transfers are not distributed equally among them, however. Transfers are twice as large for poorly educated elderly than children, suggesting that upward public transfers dominate in the health sector among the poor. Caution is necessary when analyzing these results since we are not able to account for differences in per patient costs by SES and age. To the extent that individuals of high SES might demand more expensive treatment from the public sector than persons of low SES (for discussion on this issue, see Medici 1997a), expenditures may be underestimated for the former. For the same reason, however, we speculate that transfers to the elderly might be underestimated, which corroborates our main finding that public spending on health to the elderly dominate among all socioeconomic groups.

Figure 6 again contrasts nominal and standardized values for public transfers across socioeconomic groups; this time we compare social security payments from the general and civil servants programs added together. The graphs reveal that early retirement is a common behavior among all socioeconomic groups: benefits are received as early as age 55, confirming the generosity of the PAYGO systems in Brazil. In nominal terms, benefits are almost ten times larger for the elderly in the highest SES group than for the elderly in the lowest SES group, revealing striking inequalities within the old age groups. Although the ratio between groups reduces to two when expenditures are standardized, the advantage for high-SES elderly is still substantial. These differences might be explained by the larger lifetime income of high-SES individuals and higher prevalence of civil servants among this group.

In Figure 7 attention is turned to the age profiles of private inter vivos transfers (i.e. net inter- and intra- household transfers added together). As emphasized before, intra-household transfers have greater importance for high-SES children, who rely less on public support. One important similarity among socioeconomic groups though, is the low volume of private inter vivos transfers to the elderly in both nominal and relative terms. This pattern is explained by a crowding-out effect, in which social security substitutes for what would have been private transfers in the past.

So far, we have talked mostly about differences in the age schedules of reallocation systems. Next, we quantify the extent to which each SES group has negative or positive net public transfers. Table 1 shows the implied transfer flows (total and per capita) across education classes through each public system. Not surprisingly, since public transfers need to balance every year, higher SES groups pay larger total flows in taxes than lower SES groups. The population with more years of education (9-11 and 12+) have negative net public transfers, and pay for about 53 percent of total transfers received by lower SES groups (0-4 and 5-8 years of education). Among the public programs, net transfers across SES groups are proportionally higher for health care - 65 percent of total transfers received by lower SES groups come from higher SES groups - followed by social security (52 percent), and education (44 percent). While in the cross sectional

perspective, more educated people transfer resources to less educated people, the regressive pattern of public spending is evident as we have discussed before, and have been responsible, at least in part, for poverty levels in Brazil (Barros and Carvalho 2003; Camargo and Ferreira 2002).

DISCUSSION

Discussions about the relation between intergenerational transfers and poverty in the U.S. date back to the 1980s, but only very recently the topic has attracted attention in Brazil. In this paper we have provided a first look at these issues using a comprehensive intergenerational framework that combines cash and in-kind public transfers with private transfers. Our results indicate that private inter vivos transfers have greater importance for children, especially those in wealthier families. Children of poorer families rely more heavily on public transfers. This is not true, however, for the elderly. We show that elderly consumption, for all educational groups, depends largely on public transfers. The paper shows that poor children receive the least amount of public and private transfers, at least in a cross-sectional perspective. Our results are consistent with recent literature in Brazil that has blamed transfers to the elderly for causing higher poverty rates among children than the elderly. We believe, however, that some issues need further discussion.

One might genuinely argue, for example, that our analysis is hindered by not using longitudinal measures. As stressed by Bommier et al. (2004), longitudinal measures are preferable to cross sectional measures because they account for mortality and timing in the lifecycle. Since elderly receive transfers at much older ages than children, and are exposed to higher risk of dying before receiving benefits, a dollar of transfers received at young ages is worth much more than a dollar received at older ages, what could yield higher rates of return for transfers to children than for transfers to the elderly. Nevertheless, even if it is true that public education pays a higher rate of return than social security, particularly among the poor, it is indisputable that transfers to children are much lower (about 4 times) than those to the elderly, limiting investments in human capital. Empirical evidence support the view that public resources are not put to their best use: children are three times more likely to be poor than the elderly, and public education has not been effective in reducing inequality. We believe therefore that one cannot discuss actuarial aspects of public transfers in Brazil without underscoring the distributional issues that permeate the public programs.

One might then ask why resources are not redistributed from social security to public education and other in-cash transfers to children in order to reduce poverty levels and mitigate the intergenerational transmission of inequality. In an attempt to explain this pattern, we put forth an extension of Preston's thesis. We propose that political power coming from both age and socioeconomic status is the reason why public resources keep flowing to the elderly, especially to the wealthier. Imagine for a while that the population in Brazil could be split in four groups: low and high SES children, and low and high SES adults. Among these groups, high SES adults are those that have the most ability to influence political decisions and therefore, are more likely to obtain public resources. Their power comes from both age and socioeconomic status. For them, increasing public transfers to children is water over the dam, not only because they themselves cannot benefit from larger transfers to younger ages, but also because consumption of their

children depends largely on private transfers. On the other hand, low SES adults are in disadvantage compared to high SES adults simply for being poor voters and thus, less able to lobby. But they are in advantage compared to low SES children: they are older (they can vote!) and they benefit from participating with higher SES adults in the same social security system. Although a social security program under universal coverage does not guarantee an equitable distribution of benefits between low and high SES adults, disadvantaged adults gain (in relation to disadvantage children) from the incentives that high SES adults have to lobby for higher social security benefits. Under these circumstances, it is much harder for low SES children to lobby for resources: they cannot vote, they are poor and thus, their families exercise less political influence than the rich, and they are usually left alone in public programs that are often used only by the poor. We should emphasize, however, that it is very unlikely that creating programs under universal coverage to the young would reduce socioeconomic inequality and increase efficiency. Although low SES children would be in better position to compete for resources with low SES adults, both groups would still remain in disadvantage compared to the rich. Future research based on historical data will provide further insights into how intergenerational transfers and socioeconomic inequality have interacted over time to create the perverse cycle of poverty and inequality in Brazil.

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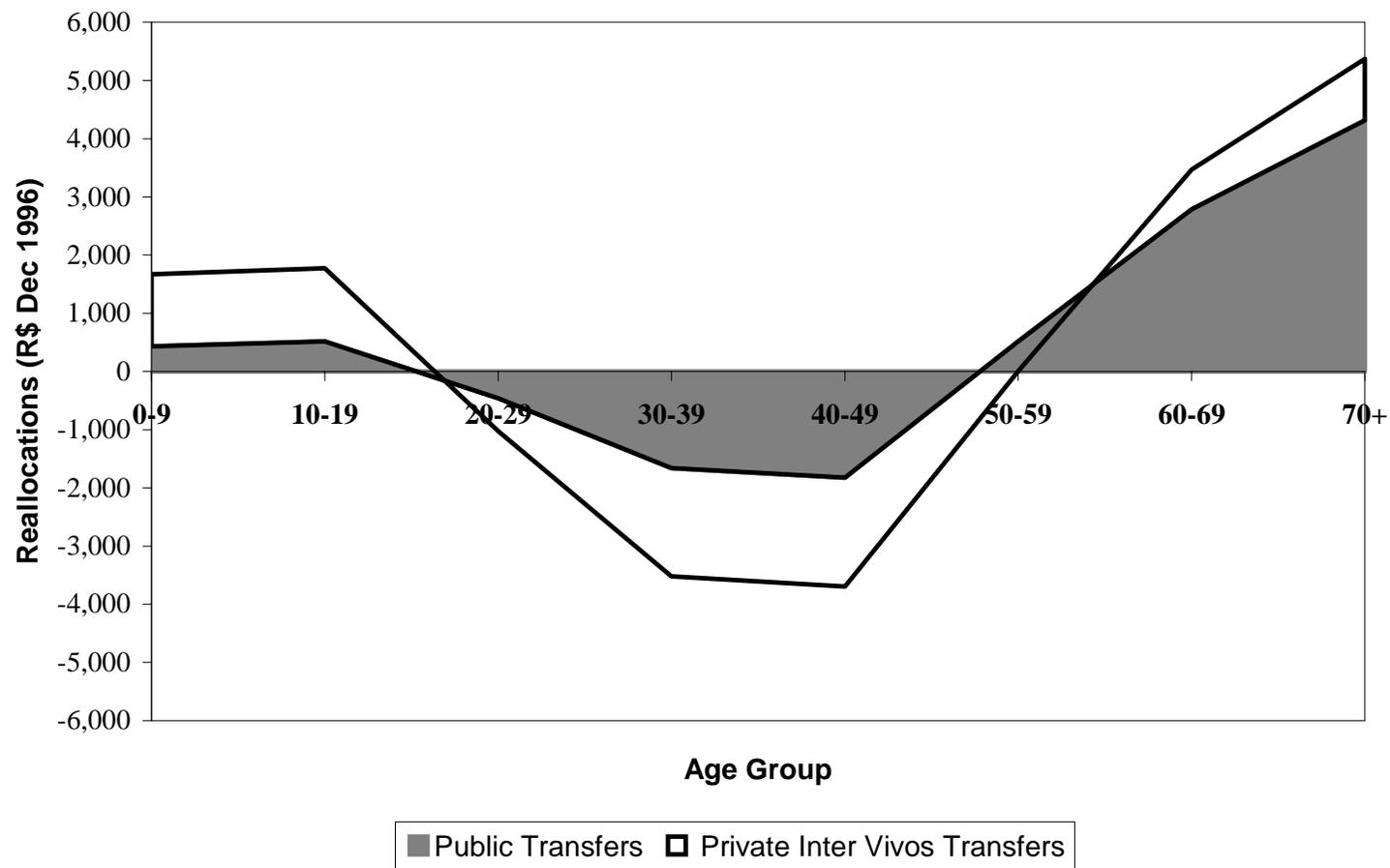
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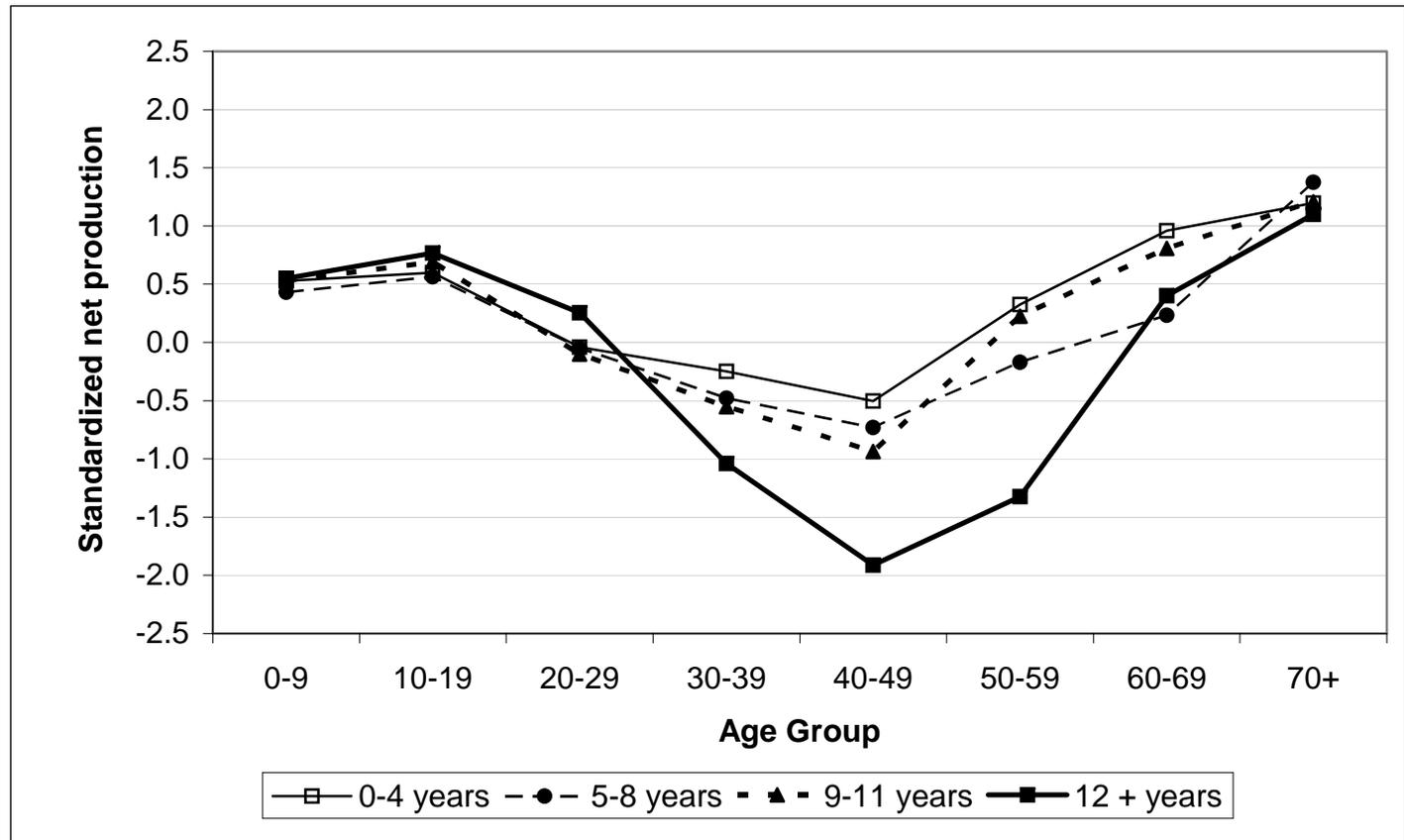
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Figure 1. Components of Age Reallocations, Per Capita Values, Brazil 1996



Source: Turra (2000); Turra and Rios-Neto (2001)

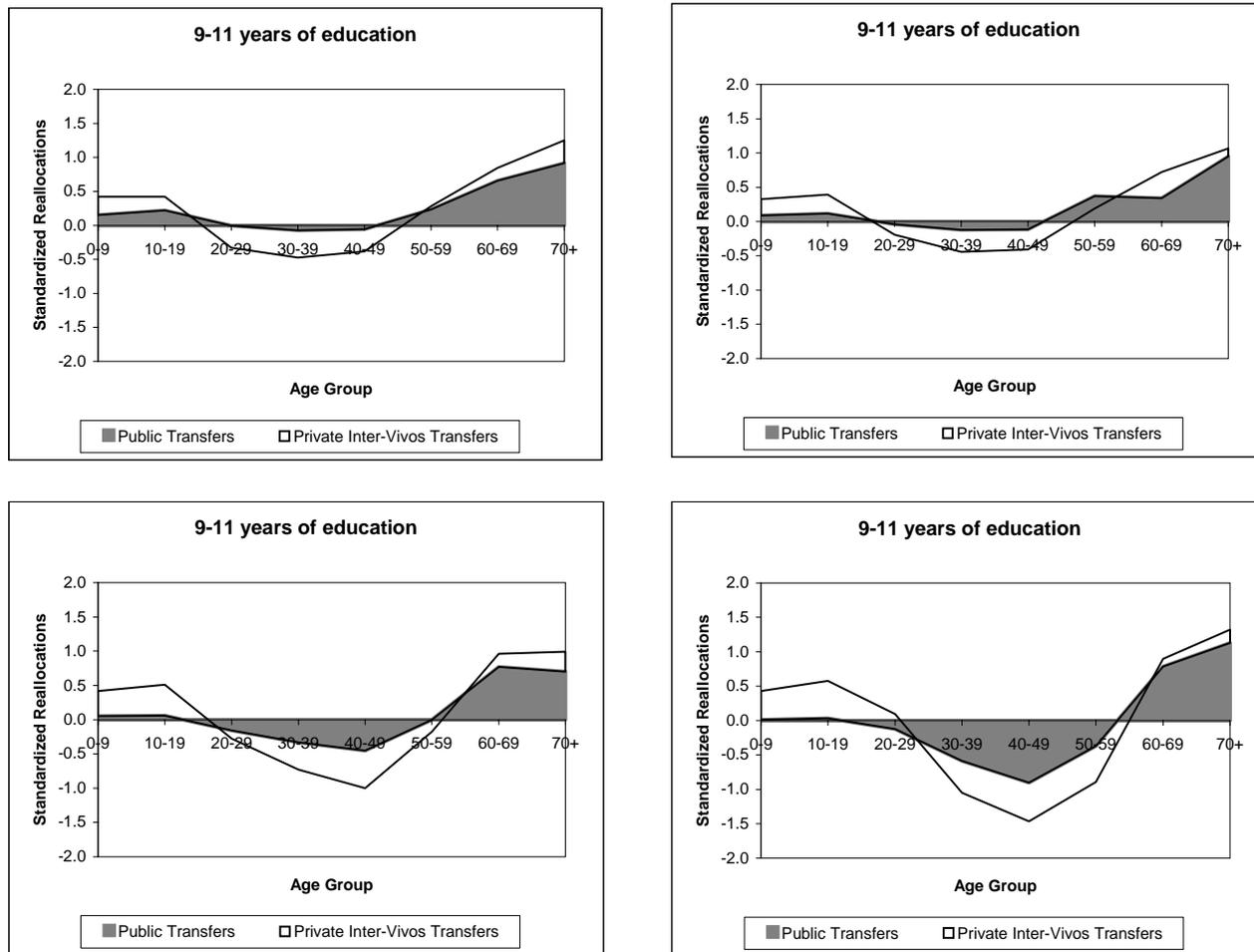
Figure 2. Standardized ^a Lifecycle Deficit by Level of Education ^b, Brazil 1996



^a Profiles were standardized by dividing by the average level of consumption between ages 30 and 50 for each education class.

^b Level of education of household head

Figure 3. Standardized ^a Age Reallocations by Level of Education ^b, Brazil 1996

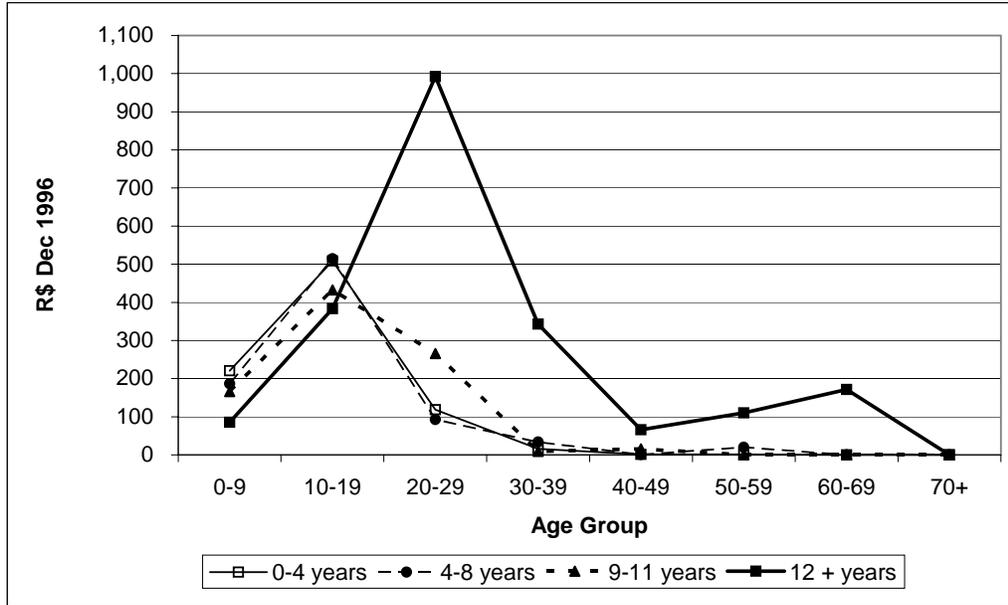


^a Profiles were standardized by dividing by the average level of consumption between ages 30 and 50 for each education class.

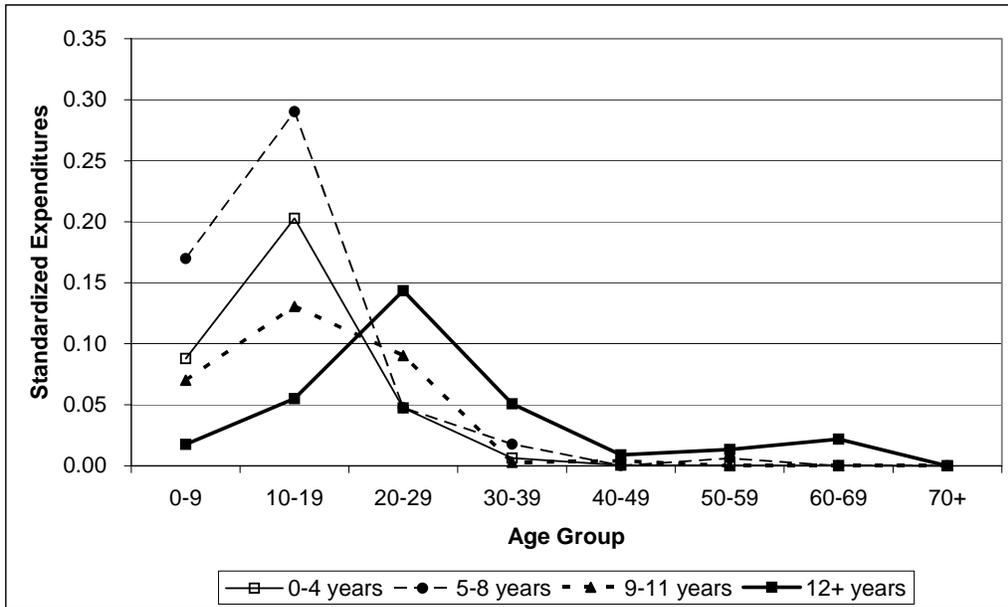
^b Level of education of household head.

Figure 4. Per-Capita Public Expenditures on Education by Age and Level of Education ^a, Brazil 1996

Nominal



Standardized Public Expenditures on Education ^b

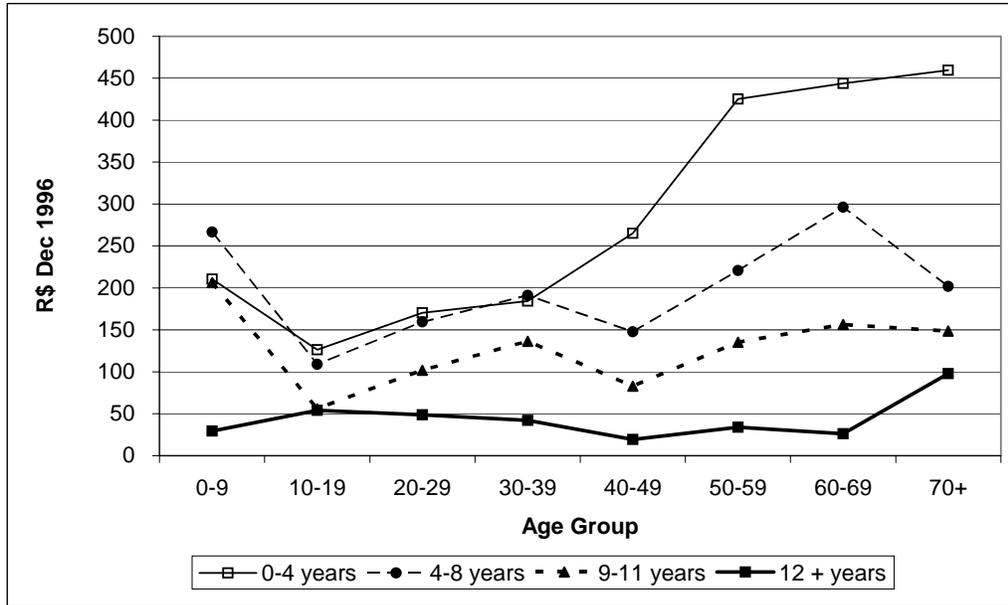


^a Level of education of household head

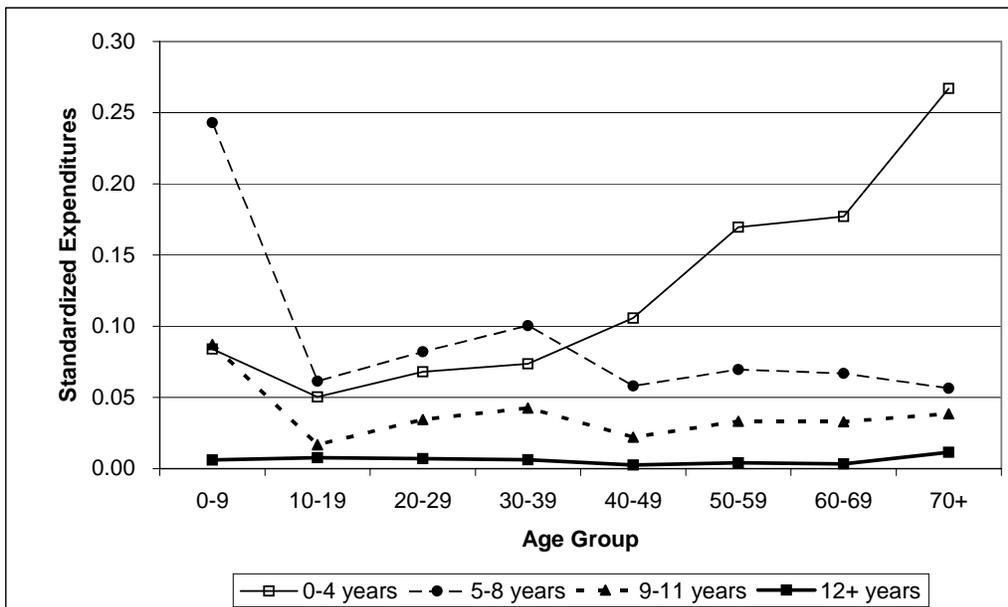
^b Profiles were standardized by dividing by the average level of consumption between ages 30 and 50 for each education class.

Figure 5. Per-Capita Public Expenditures on Health by Age and Level of Education ^a, Brazil 1996

Nominal



Standardized Public Expenditures on Health ^b

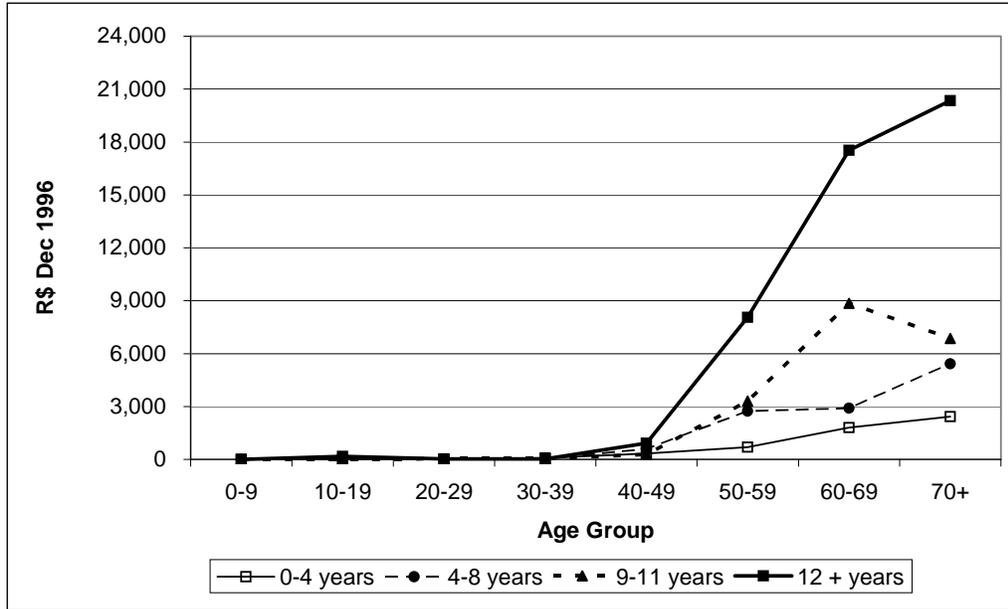


^a Level of education of household head

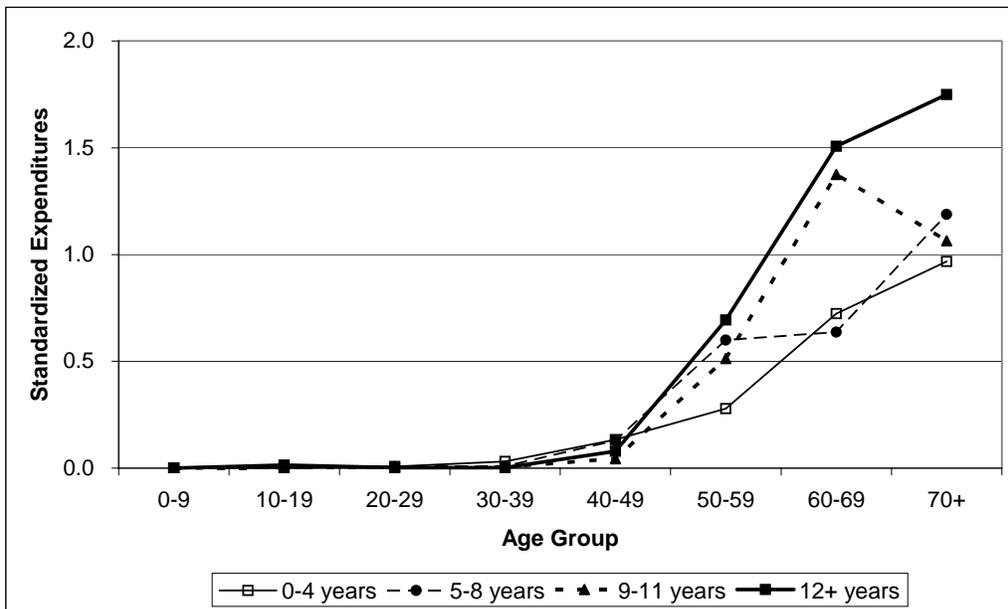
^b Profiles were standardized by dividing by the average level of consumption between ages 30 and 50 for each education class.

Figure 6. Per-Capita Social Security Expenditures by Age and Level of Education ^a, Brazil 1996

Nominal



Standardized Social Security Expenditures ^b

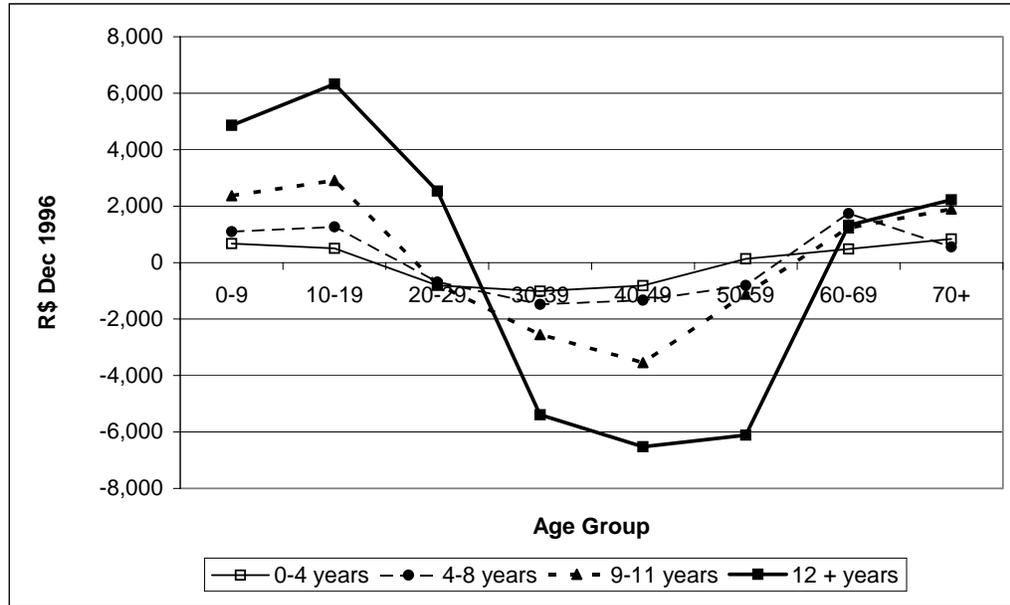


^a Level of education of household head

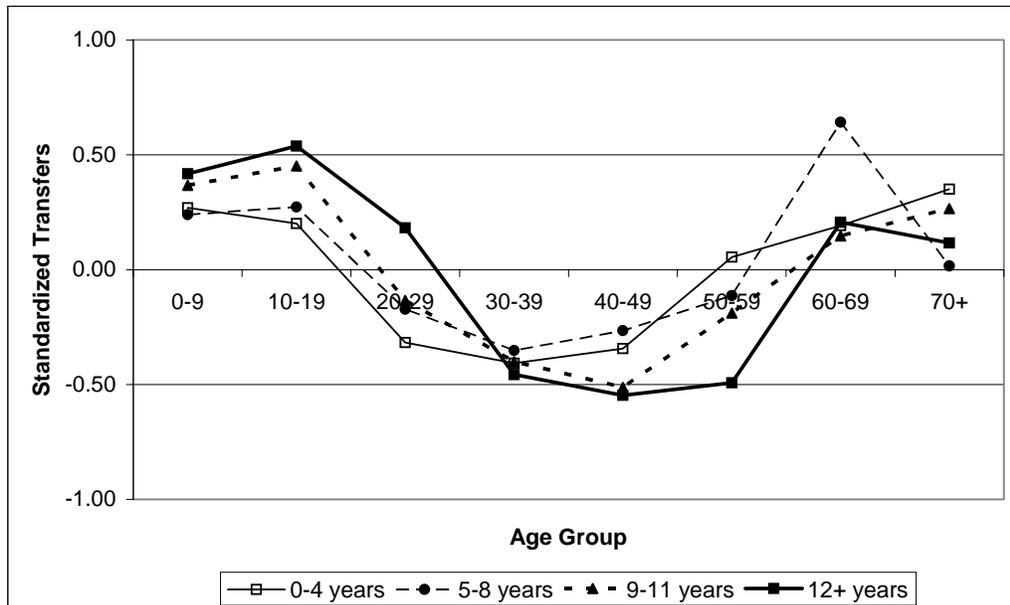
^b Profiles were standardized by dividing by the average level of consumption between ages 30 and 50 for each education class.

Figure 7. Net Per Capita Private Inter-Vivos Transfers by Age and Level of Education, Brazil 1996

Nominal



Standardized Private Inter-Vivos Transfers ^b



^a Level of education of household head

^b Profiles were standardized by dividing by the average level of consumption between ages 30 and 50 for each education class.

Table 1. Public Transfers Across Socioeconomic Groups ^a, Brazil 1996

Public Transfer System & Level of Education	Total Flows (R\$ M)			Per Capita Flows ^b (R\$)	
	Taxes Paid	Transfers Received	Difference	Taxes Paid	Transfers Received
Education					
0-4 years	8,084	16,891	8,807	285	313
5-8 years	3,867	4,392	525	493	267
9-11 years	6,513	3,332	(3,181)	878	297
12+ years	9,504	3,354	(6,150)	2,178	637
Health ^c					
0-4 years	4,621	16,053	11,432	163	226
5-8 years	2,245	3,574	1,330	286	195
9-11 years	5,350	1,801	(3,549)	721	137
12+ years	9,523	310	(9,213)	2,183	47
Social Security					
0-4 years	11,751	28,410	16,658	414	1,682
5-8 years	5,607	8,041	2,433	715	4,241
9-11 years	16,514	11,031	(5,484)	2,226	5,742
12+ years	31,695	18,087	(13,608)	7,264	14,087

^a Measured according to the level of education of the household head.

^b To estimate per capita flows of taxes paid, total flows were divided by the population between ages 30 and 60 in each education class. To estimate per capita flows for transfers received, total flows for education were divided by the population below age 30 in each education class; for health, total flows were divided by the sum of the populations below age 30 and above age 60; and for social security the flows were divided by the population above age 60 in each education class.

^c Caution is necessary when analysing the results for health care, because our estimates do not account for differences in price by education class.

**Appendix - Table 1. Labor Income and Consumption by Age and Level of Education ^a,
Brazil 1996**

Age Group	Labor Income				Consumption			
	0-4	5-8	9-11	12+	0-4	5-8	9-11	12+
0-9	-	1	-	-	1,268	1,902	3,367	6,360
10-19	418	517	430	554	1,880	3,070	4,858	9,410
20-29	1,975	3,184	5,205	7,463	1,827	2,865	4,522	10,389
30-39	2,636	5,301	8,296	22,044	1,922	3,027	4,673	9,933
40-49	3,735	7,237	11,553	33,183	2,365	3,815	5,431	10,925
50-59	2,107	5,954	6,183	28,526	2,758	4,974	7,546	13,107
60-69	971	4,285	4,077	8,103	3,171	5,107	9,197	12,729
70+	258	121	596	1,353	3,059	6,342	8,211	14,018

^a Level of education of household head