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Recent History, Perspectives and Challenges to Social Insurance: the Brazilian Case.

Marcelo Abi-Ramia Caetano[1]

Summary

The paper's aim is to describe the general background of pension policy and reform in Brazil. In order to provide the reader with an in-depth comprehension of the Brazilian pension system, this article starts by depicting the normative fundamentals of the three regimes of the Brazilian pension system: the Regime Geral de Previdência Social (RGPS), which is related to private sector workers; the Regime Próprio de Previdência Social (RPPS), where public sector employees are affiliated; and, finally, the optional complementary pension funds for high income workers in the RGPS. Besides these three regimes, there are means-tested and age-tested non-contributory social pensions. The paper then examines the contradictions and tradeoffs between the regime's fiscal costs, equity enhancement and poverty reduction. Most of the recent reforms in social insurance were motivated by the goal of reducing the total amount of pension expenditure. Nevertheless, the pension system presents a very complex structure regarding equity issues. Social security in Brazil is one of the most important policies for reducing poverty, especially for the elderly; however, depending on the analytical point of view, it can be classified as either progressive or regressive. For instance, from a geographical perspective, social insurance reduces regional inequalities as it transfers income from richer cities to poorer ones. However, it is regressive as it reallocates resources from the whole society to well-off public servants.

With this background in mind, it is possible to understand the continuous process of reforming social insurance in Brazil. The objectives of pension reform are threefold: enhancing equity, reducing fiscal and actuarial imbalance, and/or achieving more efficiency for the economy as a whole—for example, by establishing contributions less distortive to labour markets or by allowing the savings generated by pension funds to increase the investments in the economy. In Brazil, social security reforms are mostly motivated by fiscal issues and, to a lesser but not negligible degree, by equity perspectives. In fact,

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pension reforms in Brazil affected the middle class more than the poor. This redistribution from the middle strata to the poor was one the objectives of the pension reform.

Finally, it has to be recognized that although Brazil has gone through a number of reforms, many efforts and changes are still needed. Three main issues emerge: coverage expansion, reducing differences between public and private sector schemes and facing the future of an ageing population in a country that to date displays a young demographic profile, but where social insurance already represents a large fiscal burden. These are key matters to be debated in future reforms.

List of acronyms

DB	Defined Benefit
DC	Defined Contribution
IBGE	Instituto Brasileiro de Geografia e Estatística (Brazilian Institute of Geography and Statistics)
MPOG	Ministério do Planejamento, Orçamento e Gestão (Ministry of Planning, Budget and Management)
MPS	Ministério da Previdência Social (Ministry of Social Insurance)
LOAS	Lei Orgânica da Assistência Social (Brazilian non-contributory social pensions)
PAYG	pay-as-you-go.
RGPS	Regime Geral de Previdência Social (Social insurance regime for private sector workers)
RPPS	Regime Próprio de Previdência Social (Social insurance regime for public employees)
RMV	Renda Mensal Vitalícia (a type of Brazilian non-contributory social pensions that is being gradually replaced by LOAS)

I. Introduction.

Brazil has been passing through a number of social insurance reforms since the end of hyperinflation in the mid-90s. Two main objectives are evident in these reforms: equality, specifically through the harmonization of the pension rules for private sector workers and public servants (the latter group had more benevolent norms than the former); and alleviating the actuarial and fiscal imbalances of the Brazilian pension system, since its huge annual cost of more than 11 per cent of Gross Domestic Product (GDP) imposes a great fiscal burden in a relatively young country whose demographic dependency ratio is 9 per cent.[2]

Brazil has approved three constitutional amendments on its pension systems. The first one was in 1998, and the last two in 2003 and 2005. A law in 1999 changed the benefit formula into something that exhibits some similarity to a notional account.[3] Some basic features remained unchallenged like the earnings-related characteristics of the benefit formula, as well as its pay-as-you-go (PAYG) way of financing.

Great concern on the fiscal side is one of the main reasons that Brazil, unlike many other Latin American countries, has not embraced a transition from a PAYG to a funded pension scheme since the transition costs are seen as too high for a country deeply in need of fiscal equilibrium.[4]

Social insurance in Brazil is considered an important tool to reduce poverty, especially for the elderly. Regarding equity issues, it exhibits both progressive and regressive properties depending on the evaluation criteria. Hence, social insurance policy in Brazil deals with the difficult task of reducing actuarial-financial imbalances as well as the system's regressive aspects, while still aiming at reducing poverty. These are crucial issues for a country known for its huge inequalities.

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[2] Demographic dependency ratio is the ratio of people aged 65 or older to the number of people aged 15-64.

[3] Notional accounts were implemented in Sweden, Italy and a number of Eastern and Central European nations in the 1990s. Concerning the benefit formula, notional accounts mimic a defined contribution pension scheme, where pension benefits are calculated on a strictly actuarial basis (with regard to life expectancy, gender, family size etc.) and depend on accumulated funds and current market interest rates; however the pension system is still financed in a PAYG way.

[4] Transition cost is the cost incurred by a country that changes its way of financing social insurance from PAYG to a funded system. It consists of the loss of revenue of the PAYG system once insured pay their contributions to the funded pillar or private pension fund.

The paper's aim is to provide an in-depth analysis of the reasons and results of the Brazilian pension reform's recent history. For this purpose, in addition to this introduction, the paper will be divided into five sections.

The starting point for a better understanding of a pension system is to know the fundamentals of its design. It concerns questions such as the system's target population, contribution rates, financing mechanisms, eligibility criteria to pensions, benefit formula and indexation rules. This is the purpose of the next section, where the different treatment regarding civil servants and private sector workers is emphasized.

Following the normative description, there is an analysis of the social and economic implications of the pension system. The Brazilian pension system faces the challenge of finding equilibrium between fiscal sustainability and social equity. This is the third section's theme. There will be an explanation of the reasons for the high expenditure level in the Brazilian system. The equity aspects are examined by analyzing where the system is progressive and where it is regressive.

With this background in mind, it is easier to understand the continuous process of reforming social insurance in Brazil. Section IV explores how recent reforms focused on equity and fiscal balance aspects, whereas efficiency considerations were not of major concern.

In spite of the many reforms, challenges remain. The final section presents some of these challenges. Social insurance policy in Brazil must still address problems concerning coverage expansion, the improvement of equity, and diminishing expenditure.

II. Overview on the Structure of the Brazilian Pension System

The Brazilian pension system is divided into three regimes. The first one is the Regime Geral de Previdência Social (RGPS) which covers private sector workers. The second is the Regime Próprio de Previdência Social (RPPS) where public sector employees are affiliated. Finally, there are optional complementary pension funds for high income workers in the RGPS. Besides these three regimes, there are means-tested and non-contributory social pensions which also require a minimum age of 65.[5]

In this section, there will be a description of each one of the three regimes regarding the fundamentals of its design. Due to the aims of this paper, the analysis for the first two regimes will be more detailed than the third. In this text, "design" means the rules concerning financing mechanisms, the beneficiaries and contributors of the regime, contribution rates, eligibility criteria, benefit formula, and pension indexation rules. In addition, the section presents data on the different regimes and short comments on non-contributory social pensions. Table 1 summarizes the main characteristics of theses schemes. Details are presented in the subsections below.

Table 1

Main Characteristics of Brazilian Pension Schemes

Programme	Qualifying Conditions	Benefit formula	Pension indexation
Pension Scheme for Private Sector Workers (RGPS)	Length of contribution: 35 years of contribution for men, and 30 for women. No age limits required. Old-age: 65 years old for men, and 60 for women. Years of contribution also required, and they are phasing in to 15 years for both genders in 2011. Special rules apply to	Length of contribution: Wage average from July 1994 onwards times the social security factor. Old age: wage average from July 1994 onwards times social security factor only if it is bigger than 1. Otherwise, it is simply the wage average. Rural workers: Minimum wage to	Minimum wage if the benefit is equal to it; Price inflation otherwise.

[5] In Brazil these benefits are better known as social assistance.

	rural workers, teachers, and workers exposed to dangerous conditions.	almost all of them. Others: Average wage from July 1994 onwards.	
Pension Scheme for Public Employees (RPPS)	Phasing in to minimum age of 60 for men and 55 for women. Phasing in to 35 years of contribution for men, and 30 years of contribution for women.	Phasing out from 100 per cent last wage to 100 per cent average wage.	Phasing out from wage to price indexation.
Private Complementary Pension Funds	Variable	Variable	Variable
Non-Contributory Social Pensions	Targeted either to the poor and disabled or to the poor and old (65 years or more).	Benefit is equal to the minimum wage.	Benefit is readjusted at the same time and at the same amount as the minimum wage.

Source: Own elaboration.

The pension scheme for private sector workers - RGPS

The pension scheme for private sector workers is a national mandatory PAYG pension scheme, administered by the State. It has a contribution wage ceiling which is at around 2.7 times the Brazilian average wage. This cap applies solely to the employee, not to the employer. The contribution rate for the employee varies from 8 per cent of the minimum wage up to 11 per cent of the ceiling. The contribution rate for the employer is 20 per cent over the full employee wage plus an additional rate depending on the firm's record of workers' injuries. There is no wage ceiling for the employer's contribution. This puts Brazil among those countries with the highest contribution rates for social insurance in the world, especially when its old age demographic dependency ratio of 9 per cent is taken into account. Special contribution rates apply to domestic and self-employed workers where total contribution rates are close to 20 per cent over the wage.

Moreover, a distinct contribution policy is also given to rural workers which are not obliged to contribute. For this reason, the boundary between social insurance and social assistance for rural benefits is not clear since there is no need of prior contribution payments in order to qualify for a benefit. Indeed, many people in Brazil consider it as social assistance, although by law it is defined as social insurance.

There are ten different kinds of benefits. Three of them are programmed: old age, length of contribution, and special retirement. Concerning risk benefits, besides the traditional disability and survivor benefits, one can receive a sickness benefit, workers' compensation, jail benefit, as well as family and maternity allowances.[6] Table 2 summarizes the main numbers related to the quantity of benefits.

Table 2

Number of Benefits - December 2007

Quantities in Thousands of Benefits

	Urban	**Rural**
Old Age	2,235	4,948
Length of Contribution & Special Retirement	3,932	11
Disabled	2,323	430
Survivor	4,154	1,937
Sickness Benefit	1,254	129
Others	672	43
Total	14,569	7,497

Source: Minstério da Previdência Social (2007a).

In December 2007, the total amount of old age benefits was being paid to 7.2 million people, of which 2.2 million were urban and 5 million rural. With regards to qualifying conditions for programmed benefits, the pension scheme for private sector workers has special treatment for women, teachers, and rural workers. The age limits are 65 years for urban men, and 60 years for urban women. Rural workers have a five year bonus: 60 years for men and 55 for women. These age limits are established in the Brazilian Constitution which makes the case for reforming social insurance a delicate political matter.

From 2011 onwards, urban workers will have to prove they have made180 monthly contributions (15 years) in order to get the old age benefit. Currently, the requirement is only 162 monthly contributions (13.5 years). Rural workers do not need to contribute to the pension scheme for private sector workers in order to claim for a pension. However, they

[6] Programmed benefits are those where someone is eligible to a pension when s/he completes a certain age and/or length of contribution. The most common programmed benefit is old age. Risk benefits are those where we do not know if and when something will happen. The most common forms of these are disability and survivor benefit

must prove that they have worked in rural activities for 180 months from 2011 onwards, and 162 months at the present time.

The length of contribution and special retirement programmes are typically urban as shown by Table 2 numbers. There are no age limits for them, and workers do not have to quit their jobs in order to receive a pension. According to the Brazilian Constitution, men can retire with 35 years of contribution, and women with 30. As a constitutional clause, teachers get a five years bonus; hence a male teacher needs 30 years of contribution, while the female condition is 25 years. These rules enable people in Brazil to retire at early ages. The average retirement age for new retirees in 2006 under the length of contribution scheme was 54 years for male and 51 for female insured. This is a cause of great concern, since currently the male life expectancy rate in Brazil is 78 years, and the female life expectancy is 81 years, which means that a woman will live past her retirement roughly the same amount of years that she was required to work for her length of contribution pension. In addition, there exists special retirement programmes for workers exposed to dangerous conditions. In this case, retirement can be with 15, 20 or 25 years of contribution, depending on the sort of danger exposure.

Disability benefits are granted to those who, due to illness or accident, cannot execute any activity. The contribution vesting is a minimum 12 months for illness, but no contribution requirements exist in the case of an accident, although the employee must have been affiliated with the social security programme prior to the accident.

Brazil has very peculiar qualifying conditions for survivor benefits. There is no requirement for previous contributions, although the deceased should be affiliated with social insurance. Non-married and same gender couples are also able to obtain the survivor benefit. The benefit is paid for life in the case of disabled orphans, widows, and widowers regardless of their age, although they are limited to age 21 for non-disabled orphans. There is no means, income, asset or remarriage test.

Sickness benefits are conceded to those affiliated that are unable to work for more than 15 days due to either illness or accident. The contribution requirement is 12 months in the case of illness, but it does not exist in the case of accident. The benefits cease when one regains normal health conditions or when the benefit is transformed into a disability benefit. When the beneficiary recovers the capacity to work but some disability still remains, the sickness benefit is transformed into a workers' compensation that lasts until the time the beneficiary receives a programmed retirement.

Jail benefits are granted to the family of a prisoner during his confinement. It is an income-tested benefit. Family allowances are an income-tested benefit given to families whose children are younger than 14 years old. The maternity allowance is 120 days paid leave from work for the mother of a newborn.

Benefit formulas for the pension scheme for private sector workers underwent significant changes at the turn of century. The benefit basis up to 1999 was the last 36 monthly contributions. From December 1999 on, the benefit basis was extended to the average wage from July 1994 up to the time of benefit requirement. This period is to be counted from July 1994 since Brazilian hyperinflation ended in that month. In this sense, the principle regarding the change of the benefit formula was the replacement of the last 3 years average wage to the average lifetime wage in the long run. All wages that compose the benefit basis are price indexed. To be more precise, the benefit formula picks the 80 per cent highest price inflation indexed wages from July 1994 afterwards and then it takes their average. This benefit formula is also subject to a constitutional rule that establishes that no benefit can be lower than the minimum wage.

The exceptions to this rule are the maternity and family allowances. Family allowances are fixed amount value benefits paid monthly. This principle also does not apply to maternity allowances where mothers receive their total wage during the benefit period. The cap to this benefit is equal to the salary of a Supreme Court Judge which is much higher than the ceiling of the pension scheme for private sector workers.

Special retirement and disability benefits receive a 100 per cent replacement rate over the average wage formula described above. Jail benefit also obtains a 100 per cent replacement, although there is an income test. Sickness benefit has 91 per cent replacement rate over the same average. Workers' compensation amounts to ½ of the original sickness benefit.

The benefit formula for the survivor benefit is always a 100 per cent of the total pension value, regardless of the total number of beneficiaries and their ages. In the case of more than one beneficiary the pension is equally divided between them, but its total amount is always equal to the pension value of the deceased. In the case of death before a programmed benefit retirement, the survivor benefit's value is a 100 per cent over the average of the highest 80 per cent contribution wages from July 1994 up until death.

Finally, length of contribution and old age benefits have more complex benefit formulas. Considering length of service, the pension value is equal to the average wage, as described before, times the social security factor, whose formula is equal to:

$$SocialSecurityFactor = \frac{0.31 * LC}{LE} * \left(1 + \frac{Age + 0.31 * LC}{100}\right)$$

Where:

LC = Length of contribution at retirement

LE = Life expectancy at retirement

Age = Age of retirement

Female and male teachers have a five years bonus on LC; while female teachers obtain a 10 years bonus on LC. University teachers do not get a bonus on the social security factor. Life expectancy is revised yearly. The social security factor is only applied at the moment of retirement. Once awarded the benefit, its value is revised only due to indexation mechanisms, but not due to the yearly adjustment of the social security factor.

The social security factor only applies to the old age benefit if its value is greater than one. Otherwise, the pension value is 100 per cent of the average wage. The rationale behind the factor is to create a stricter link between contribution and benefit and to establish incentives to postpone retirement. As stated before, no benefit can be lower than the minimum wage.

Pension indexation in Brazil is mixed as it depends on the benefit value. By the Brazilian Constitution, no benefit can be lower than the minimum wage. This has been putting a huge fiscal strain on social insurance accounts, as there is a minimum wage policy of giving real gains to it, and indexing it by more than the overall economy productivity gains. In the mid 90s, its value was lower than 1/5 of Brazilian average wage; however, in 2008, it represented approximately 1/3. Since 61 per cent of beneficiaries receive a minimum wage—although its share on the total expenditures is 38 per cent—the fiscal cost of this way of indexation is evident. On the other hand, benefits higher than the minimum wage are yearly indexed to consumer price inflation.

The scheme for public employees - RPPS

The pension scheme for public employees is a social insurance regime for public employees. As a federative country, Brazil is divided into federal government, 26 states, a federal district, and 5,562 municipalities. Small municipalities are not used to having their own pension scheme, and they affiliate their employees in the pension scheme for private sector workers. In fact, just 39 per cent of the local governments have their own pension scheme for public employees. This number has to be analysed with caution since the 39 per cent are the richest, biggest and have the most inhabitants. Anyway, if these governments have a pension scheme for public employees, each federation entity is financially responsible for its own pension scheme for public employees. In this sense, a deficit in the federal pension scheme for public employees is not covered by a surplus of pension schemes of a state or local government.

The pension scheme for public employees is smaller in quantities of beneficiaries and in total expenditure than the pension scheme for private sector workers. It is natural for this to happen since the former is for public servants and the latter for the private sector. However, the size of the pension scheme for public employees is not negligible at all. There are 2 millions retirees and one million survivor benefits. Although it lacks data from local government expenditure on pensions, total pension expenditure for federal and state governments amounts to 4 per cent of Brazilian GDP.

Regardless of the fact that there is a diversity of pension schemes for public employees, the basic rules are established in the federal constitution. The constitution was promulgated in 1988, but it has undergone three amendments regarding social security issues since then. The first one was in 1998, a second one in 2003 and the last one in 2005. All of them changed some characteristics of the pension scheme for public employees.

The ceiling for contributions and benefits is considerably high by Brazilian standards: more than 20 times larger than the average wage of the overall economy. States and local governments must have a contribution rate at least as big as that applied for federal employees whose contribution rate is currently at 11 per cent of their entire wages without a cap. Retirees and survivors must pay contributions at the same rate as active employees for their pension scheme. Nevertheless, it is a marginal contribution rate for the value of the benefits which exceeds the ceiling of the pension scheme for private sector workers. In other words, their average contribution rate is smaller than that applied to active civil servants. The contribution of retirees and survivors was created in the constitutional amendment of 2003.

The Constitution guarantees five kinds of benefits. Three of them are programmed: old age, length of contribution, and compulsory retirement. There are also the traditional benefits covering disability and survivorship.

The following highlights how the permanent rules for programmed benefits are set up. Old age benefits are granted to men 65 years old and to women 60 years old. Length of contribution has eligibility rules of 60 years old and 35 years of contribution for men, and 55 years old and 30 years of contribution for women. Concerning the length of contribution benefit, teachers for elementary and secondary schools get a 5 years bonus both in age and in years of contribution limits. Both old age and length of contribution benefits require a minimum of 10 years in the public sector and 5 years in the career. There is also a compulsory retirement at the age of 70 for both genders. Besides, these permanent rules, there are a plethora of transitional rules which permit one to retire at a younger age. Moreover, special qualifying conditions apply to employees in the military and security branches. Before these constitutional amendments there was no age limit for the length of contribution retirement and it was possible for one to retire at age 40 or in their early 50s.

The eligibility rules for disabled and survivor benefits in the pension scheme for public sector workers are basically the same as those applied in the pension scheme for private sector workers, although there can be some variants on each state or local government.

The benefit formula's permanent rule for length of contribution benefits since the constitutional amendment of 2003 is simply the average of the 80 per cent highest wages from July 1994 onwards. It will imply a hundred per cent replacement rate over the lifetime average wage in the long run. In the meantime, there are many transitional rules that allow one to receive a benefit equal to their last wage. Old age and compulsory retirement have a replacement rate that is a pro-rata of the average wage as stated in this paragraph.

Disability benefits recipients can receive a pension that is either proportional to the length of service or the total amount of the average of the 80 per cent highest contribution wages depending on the reason of incapacity. The survivor benefit has a replacement rate of one hundred per cent of the deceased benefit up to the ceiling of the pension scheme for private sector workers plus a marginal 70 per cent replacement rate over the value of the pension that exceeds that ceiling. Before the constitutional amendments, the benefit was based on the last wage, and not on its lifetime average, and the replacement rate for survivors' and orphans' benefit was always the full pension of the deceased.

Pensions, as a permanent rule, are indexed to price inflation, but previous to the reform in 2003 they were wage indexed. In this sense, there is a phasing out process in which pension indexation to price inflation will gradually replace indexation to wage.

In the future there is a possibility of instituting a complementary pension fund for public employees. In this case, the benefit of the pension scheme for public employees in the long run will be capped at the same amount as the pension scheme for private sector workers. In addition, the Constitution mandates that the complementary pension will have to be a funded defined contribution pension scheme. At this moment, there is a law proposal creating the complementary pension fund, but it will have to go through many debates in the legislature's lower and upper houses. If such a law is approved the benefit for the new entrants will become separated into two parts. The first one, up to the ceiling established for the pension scheme for private sector workers, will follow the rules described formerly in this section. The second one, which is above the ceiling established for the pension scheme for private sector workers ceiling, will conform to the rules of a defined-contribution.

In short, the constitutional amendments had the aim of imposing age limits, changing the benefit formula from last wage to average lifetime wage, replacing wage to price indexation and, finally, creating a defined contribution complementary pension fund that will impose a cap on the benefits of the pension scheme for public employees equal to the pension scheme for private sector workers. In addition, there was a reduction in the replacement rate for survivors' benefits of high income earners and the introduction of contributions of retirees' and survivors' benefits.

Private Complementary Pension Funds

Higher-income workers can optionally affiliate with a complementary private pension fund, named "Previdência Complementar", which can be either defined-benefit

(DB) or defined-contribution (DC), although more recently there is a tendency towards DC. These pension schemes are fully funded and can either be closed firm-related schemes in which only employees of the enterprise can join or it can be an open fund with more flexible rules for being associated with it. The basic aim of this complementary pension fund is to replace income above the ceiling set for the pension scheme for private sector workers. As complementary pension funds are private and optional, the design of their plans is much more flexible than those applied to the pension schemes for private and public sector workers.

Data from the Ministério da Previdência Social (2007b) indicates that 608,000 people receive some benefit from closed complementary pension funds which shows that they cover a small fraction of Brazilian population. This low coverage is partially due to the high cap of the pension scheme for private sector workers, which prevents many people from affiliating with a complementary pension fund.

These pension funds have a total asset accumulation of 16 per cent of Brazilian GDP. 61 per cent of their assets are invested in fixed income, especially government bonds, 33 per cent in variable income, especially in shares, 3 per cent in real estate, and the remaining 2 per cent are loans to its members.

Means-tested benefits (non-contributory social pensions)

Lei Orgânica da Assistência Social (LOAS Social Assistance Law) or Renda Mensal Vitalícia (RMV Monthly life insurance), is granted to people either older than 65 or disabled whose average household income is lower than 25 percent of the minimum wage. One cannot accumulate the means-tested benefit with a social insurance pension. These benefits are different from the rural ones. In December 2007, there were 3.1 million people receiving it, of which 1.4 million were elderly and the remaining 1.7 million were disabled.

The LOAS and the minimum pension values are equal to the minimum wage. This fact creates low incentives to contribute. It is widely known that in many cases one's own contributions will make no difference to the benefit value. However, social insurance benefits require lower ages or simply no minimum age at all. In addition, social insurance benefits have 13 payments per year while LOAS recipients get only 12 payments.

III. Brazil's Pension System's Main Challenge: Reconciling Fiscal Sustainability and Social Equity

Brazil's pension system is known for its great fiscal cost. Actually, most of the recent reforms in social insurance were motivated by the aim of reducing the total amount of pension expenditure. Nevertheless, it also has a very complex structure regarding equity issues. Social security in Brazil is one of the most important policies for reducing poverty, especially for the elderly. However, depending on the point of view of analysis, it can be classified either as progressive or regressive. For instance, from a geographical perspective, social insurance reduces regional inequalities as it transfers income from richer cities to poorer ones. However, it is regressive as it reallocates resources from the whole of society to well-off public servants.

Examining social insurance from a fiscal perspective is a much simpler task than formulating considerations on equity issues. Little data, like the ratio of total pension expenditure to GDP, can be a sufficient statistic for a systematic study on fiscal aspects of social insurance. Nevertheless equity analysis has a lot of dimensions and can be studied from a vertical (redistribution between income groups) or horizontal (redistribution between groups: gender, regional, sectoral) perspective. One related, but different, matter is the effect of social insurance on poverty alleviation.

Fiscal and equity aspects are crucial for an in-depth analysis of the pension system. Poverty alleviation and income replacement due to a loss of labour capacity are the first principles of any social insurance scheme. However, the design of the system must guarantee its own economic sustainability, maintain the incentives to work, and not redistribute the public resources in such a way that could inhibit growth.

The next subsections will provide some comments on these subjects.

Brazilian Social Insurance from a Fiscal Perspective.

As it is shown in the table below, expenditure on the pension scheme for private sector workers alone currently accounts for 7 per cent of Brazilian GDP, while spending on public sector pension schemes for federal and state governments amount to 4 per cent of Brazilian GDP. Regarding the pension scheme for private sector workers, not only are total numbers high, but it is increasing. Indeed, in one decade, its total share in GDP increased 2 per cent.

Table 3

Brazilian Total Pension Expenditure as Share of GDP

Values in per cent

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Pension Scheme for Private Sector Workers	5,0	5,5	5,5	5,6	5,8	6,0	6,3	6,5	6,8	7,1	7,2
Pension Scheme for Public Employees Federal and States	NA	NA	NA	NA	4,1	4,2	3,9	3,8	3,7	3,8	NA
Non-contributory pensions (LOAS and RMV)	0,1	0,1	0,1	0,2	0,2	0,2	0,3	0,4	0,4	0,5	0,6

NA: Not available.

Source: Secretaria do Tesouro Nacional (2008) and Schwarzer (2007b).

This evidence shows that the recent history of reforms in Brazilian social security, although important for reducing the expenditure's upward trend, was by no means enough to stabilize the ratio of pensions' outlays to GDP.

These numbers are more remarkable when some demographic statistics are taken into account. The demographic dependence ratio is defined as the total number of people beyond 65 years old divided by the total quantity of people aged between 15 and 64. Brazil has a demographic dependence ratio of 9 per cent, but the Brazilian share of total social insurance expenditure to GDP is comparable with countries with a larger percentage of older people. In fact, Brazil's expenditure on social security is three times greater than countries with a similar demographic profile.

Rocha and Caetano (2008) indicate that the reason for such huge numbers lies in the design features of the Brazilian social security system. In short, they point out that redistributive programmes such as rural pensions and LOAS are too small in size to be blamed for the discrepancies in Brazilian pension expenditures. Using econometric techniques, Rocha and Caetano (2008) aimed to determine what makes Brazil an outlier for the total value of social insurance outlays. They decomposed the difference between Brazil and international standards in total social insurance spending into two factors. Firstly, what amount is due to redistributive reasons, and secondly, what amount is due to pension formulas, qualifying conditions, and benefit indexation characteristics. The conclusion is that social insurance distributive properties are responsible for 25 percent, while the remaining 75 percent is explained by failures in the design of the plan. This is a very strong conclusion since many politicians in Brazil assert that the social security fiscal burden is due to redistributive programs. Following the politicians' reasoning, a social insurance reform would damage the poor. Data does seem to corroborate this view since most of the high value is determined by pension formulas, qualifying conditions, and benefit indexation features.

The structural design failures are mostly explained by three factors: i) low retirement ages, ii) indexation for the minimum benefits in the pension scheme for private sector workers and most of the public sector retirees in the pension scheme for public employees, and iii) benefit formulas and eligibility requirements for survivors' benefits.

Considering their life expectancies, Brazilians retire at lower ages as indicated by the table below. In some instances the contribution period is equal to or even smaller than life expectancy at retirement age. For example, on average an urban female retires at 51 years old by the programme of length of contribution. At this age, her continued life expectancy of 30 years equals her years of contribution. Urban workers contribute on average 15 years, whether male or female, in order to receive an old age benefit. However, at effective retirement age, continued life expectancy for an old age urban male is 16 and for a woman it is 21. These numbers are even more delicate when one considers that the expected benefit duration is greater than life expectancy since the probability of its extension due to a survivor benefit is not null. Even for public sector servants where continued life expectancy is less than previous contribution years, the balance is not achieved because replacement rates are too high. Although recent reforms in the pension scheme for public employees changed the final wage benefit formula to average lifetime wage, this is a long run phasing out process, and most of the public servants have retired and can still retire having final wages as their pensions.

Table 4

Average Effective Retirement Age and Life Expectancy

	Effective Retirement Age	Life Expectancy at Retirement
Pension Scheme for Private Sector Workers Length of Contribution (Male)	54	24
Pension Scheme for Private Sector Workers Length of Contribution (Female)	51	30
Pension Scheme for Private Sector Workers Urban Old Age (Male)	66	16
Pension Scheme for Private Sector Workers Urban Old Age (Female)	62	21
Pension Scheme for Private Sector Workers Rural Old Age (Male)	61	19
Pension Scheme for Private Sector Workers Rural Old Age (Female)	58	24
Pension Scheme for Public Employees Programmed Retirement (Male)	60	19
Pension Scheme for Public Employees Programmed Retirement (Female)	58	24

Source: Instituto Brasileiro de Geografia e Estatística (2007), Ministério do Planejamento, Orçamento e Gestão (2008) and Ministério da Previdência Social (2007a).

Benefit indexation is another main reason for high spending in social security. Basically, there are three kinds of indexation in Brazil. Beneficiaries of the pension scheme for private sector workers who receive a minimum pension have their benefits equal to minimum wage; those who earn more than minimum wage have their benefits adjusted yearly by price inflation. Concerning the pension scheme for public employees, the great majority of benefits are completely wage indexed. Although there is a slow phasing out process that will gradually change indexation from wages to prices, most new retirees of the pension scheme for public employees can still get a wage inflation pension adjustment.

This arrangement is very problematic from a fiscal perspective. The recent trend in social insurance reforms around the world has been changing pension's indexation from wage to price inflation. This parametric reform is mostly motivated by fiscal relief expectations. From a public finance point of view, the equalization of minimum pension and minimum wage is the social insurance's Achilles' heel. In the last decade, minimum wage was over-wage-indexed since its value went up from less than one-fifth of the average wage in the mid 90s to about one-third in the middle of this decade. As 61 per cent of pensioners receive the minimum wage, there is a tendency for the average pension to grow faster than the average wage. Besides, indexing pensions for high income public sector retirees to wage brings no help in the fiscal framework, since there is a transmission of the active workers productivity gains to pensions. Considering that, because of aging, the number of pensioners tends to grow faster than the total population. Indexing pension to productivity growth as in the pension scheme for public employees or more than the overall economy productivity growth as for the case of minimum pension will only put pressure on the upward tendency of social insurance's spending.

The third aspect that leads to high expenditures is the benefit formula and eligibility criteria for survivors' benefits. Some features are common to both pension schemes for private and public sector workers. The qualifying conditions do not require a minimum number of contributions. There is no exigency of a formal marriage to the deceased; even the remarriage does not alter the benefit. The survivor benefit can be granted at any age and its benefit formula is not age-related, in addition the benefit is for a lifetime for a widow or widower regardless of her or his age. The survivor benefit can be accumulated with a pension with no reductions or limits either on its value or on the pension's value.

The point where pension scheme for private and public sector workers differ is on the replacement rate. For the pension scheme for private sector workers the family replacement rate is always 100 per cent, that is, regardless of the number of survivors, the survivors' benefit is exactly the same value of the deceased's pension. For the pension scheme for public employees this rule is slightly different. The family replacement rate is a hundred per cent up to the cap of the pension scheme for private sector workers; above it, the marginal replacement rate is 70 per cent. Due to these rules, Brazilian spending for survivors' benefits amounts to 3.4 per cent of GDP, almost four times the average spending of OECD countries (0.9 per cent) which are more advanced in their ageing process.

The best evidence of the failures in the design of the Brazilian plan is shown by official estimates. Schwarzer (2007a) and Schwarzer et al. (2007) claim that an increase in the coverage rate during the contribution phase would have different impacts on system finances depending on the time horizon. In the short run, growth in coverage would imply smaller deficits since more contributions would be collected. Nevertheless, in the long run, increase in coverage would imply higher social security deficits as more people would be receiving their benefits. This is clear evidence that the design of the plan of social insurance allows a person to retire early with considerable replacement rates, which implies that the system under its present design is not actuarially balanced. Otherwise, an increase in coverage would diminish deficit or at least would not affect its tendency in the long run. Of course no one in the running administration claims that coverage should be decreased in order to reduce the system deficit. However, emphasis is given on a clear distinction between the need to increase coverage as a policy of social inclusion on one hand, and the requirement of actuarial balance in social security on the other. This means that pension policy should have coverage expansion as one of its objectives in order to extend protection to the population. There is a need to change some features of the pension system in a way that it becomes actuarially balanced. Otherwise, coverage extension will be so expensive that it will be unfeasible.

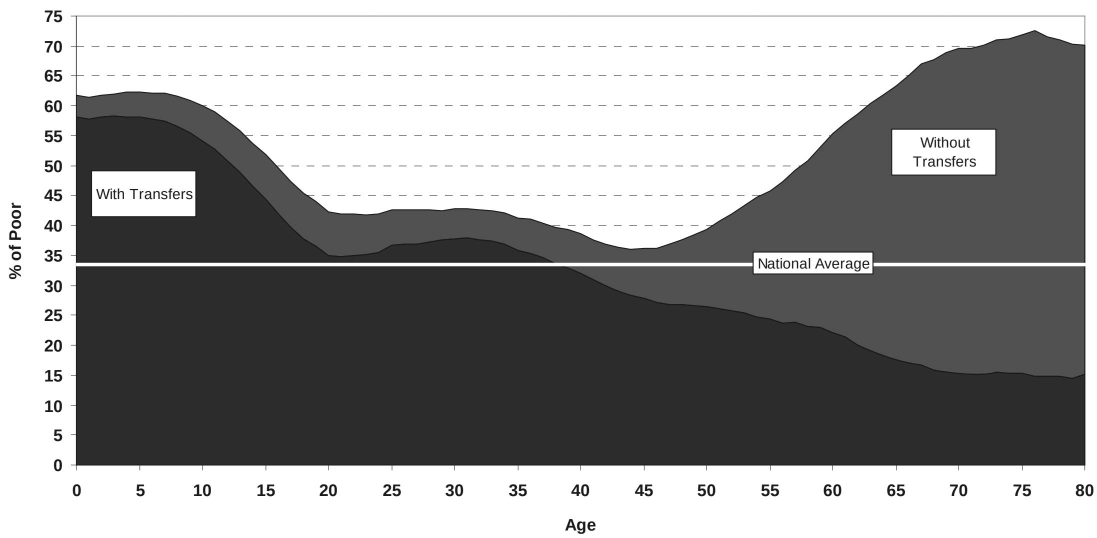
Brazilian Social Security from a Social Equity Perspective: Evidence of Progressive Characteristics.

Contradictory evidence arises from the examination of the Brazilian social security impact on social equity. Depending on the point of view that one chooses, there is data supporting either progressive or regressive effects. For this reason, the analyses on social equity will be divided into two subsections. In the first section, there will be a presentation of evidence that shows the progressive side of Brazilian social security. This will be done in two steps. Firstly, it will present some data on how social pensions affect poverty rates. Secondly, it will display considerations on how social security helps to redistribute income in a progressive way. Afterwards, in the next subsection, evidence will be presented on the regressive characteristics of social security in Brazil.

Social security in Brazil plays an important role in poverty reduction of the elderly. In particular, Barros and Carvalho (2006) provides statistical evidence that point out how income transfers from programmes such as rural pensions and non-contributory pensions (named in Brazil either as LOAS or RMV) contribute to old age poverty reduction as shown in the figure below.

FIGURE 1

POVERTY DISTRIBUTION BY AGE WITH AND WITHOUT GOVERNMENT TRANSFERS



Source: Barros & Carvalho (2006)

Poverty in Brazil is unevenly distributed among ages, affecting more infants than elderly. Approximately one-third of the Brazilian population is below the poverty line. Nevertheless, poverty reaches almost 60 per cent of people at younger ages, but no more than 15 per cent of the elderly population. On the one hand, without government transfers, poverty in old age could be almost 5 times higher. On the other hand, the impact of government transfers to poverty reduction is much less impressive for the young. In fact, more than half of children and young people remain poor even with government transfers.

The 5 per cent reduction in child poverty, although important, is not comparable to the result achieved for the elderly.

Wodon et al. (2002) present different numbers, but they confirm the evidence of the peculiar poverty distribution by age in Brazil in comparison with other Latin American countries. For instance, Brazil is the only country in the sample where less than one-fifth of its old age population is below the poverty line. In addition, it is the sole country where the poverty line is always decreasing by age. In no other nation in the sample is the oldest group the least affected by poverty.

Table 5

Poverty ratio by Age Groups

Brazil and Latin America

	Total Population	0-14	15-39	40-64	65+
Brazil	**24.6**	**33.4**	**22.3**	**18.7**	**18.5**
Bolivia	30.5	34.4	24.1	31.0	47.5
Chile	20.8	24.4	19.2	18.5	23.9
Colombia	24.0	27.1	20.6	23.8	32.9
Costa Rica	21.7	23.6	19.4	21.0	29.1
Guatemala	19.1	21.6	16.6	15.0	27.1
El Salvador	27.4	31.3	22.8	26.5	38.0
Mexico	22.1	27.4	18.3	19.6	37.6
Average	**23.8**	**27.9**	**20.4**	**21.8**	**31.8**

Source: Wodon et al. (2002)

As Brazil's total poverty rate is above the Latin American average this means that poverty has a greater impact on the younger population. Indeed, only in Brazil and Bolivia more than one-third of the population younger than 15 is poor.

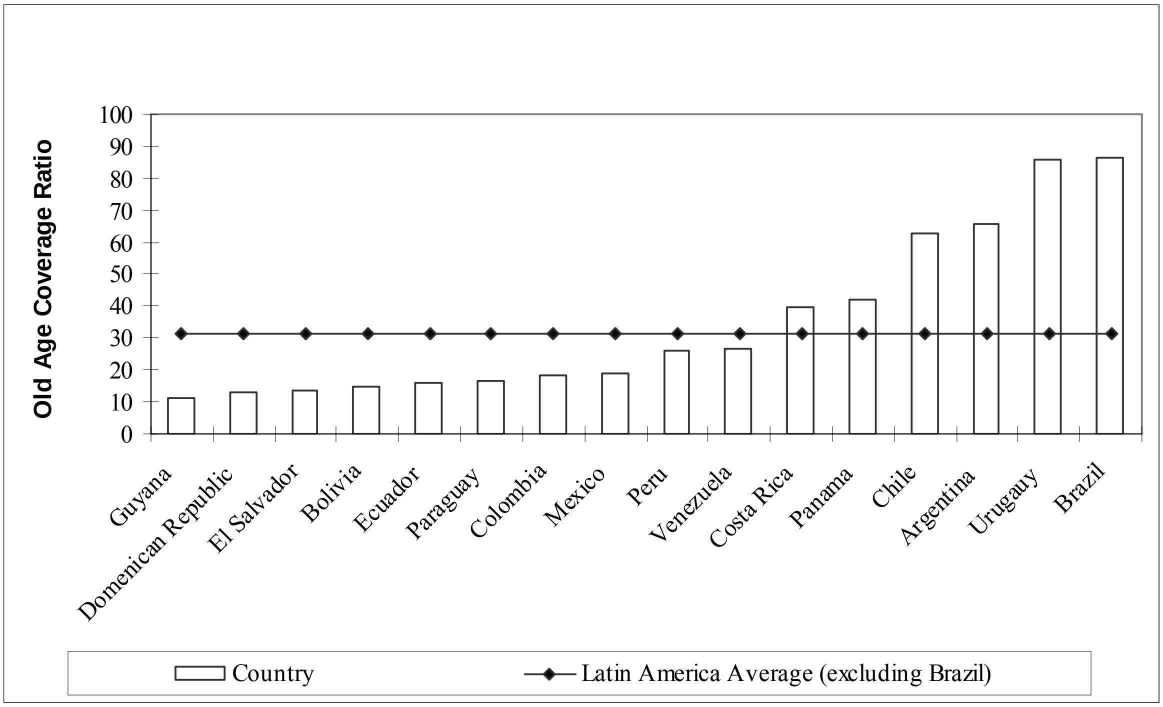
In short, social policy in Brazil favours the elderly more so than children and youth. One can argue that this sort of policy is not the best oriented to promote growth since it improves the social and economic situation of those that are not in condition to improve growth in the future since they no longer work. Given the scarcity of resources, the allocation of public money to the old generates an opportunity cost of not allocating it to the young, which could enhance productivity and sustain growth. The efficiency debate aside, no one denies that the social insurance impact on poverty reduction for the old aged is a positive development.

In another intra-regional comparison, Rofman and Lucchetti (2006) show that Brazil has a high coverage ratio in the benefit phase. Approximately 90 per cent of the Brazilian population older than 65 is covered by at least one social security regime.

Figure 2

Old Age Coverage Ratio in Latin America - Early 2000's

Beneficiaries/Population 65 years old or more



Source: Rofman & Lucchetti (2006).

Regarding income distribution, there are some studies that show the progressive properties of the Brazilian pension system. Classifying a social insurance scheme as either progressive or regressive can lead to some traps since there are many dimensions to analyze equality and distribution. In fact, even for the same dimension there are empirical studies that show contradictory results.

Brazil is known by its great inequalities, whether examining it by distributional patterns according to gender, race, and regions (horizontal) or by income (vertical). Hence one of the main goals of social policy is to reduce it. Besides alleviating poverty, social security in Brazil contributes to reduce income inequalities as well, at least for some dimensions of the uneven distribution.

Caetano (2008) claims that social insurance provided by the pension scheme for private sector workers is one of the main sources for reducing Brazilian regional differences of income. An econometric study that computed the total number of local governments and that controlled the demographics profile of each Brazilian municipality, shows that an increase in 1 per cent of a municipality's average per capita GDP enlarges the ratio of social insurance revenue to expenditure in that city by 0.62 per cent. This indicates that the richer a locality is, the higher the probability of enlarging its contributions to a pension scheme for private sector workers in relation to the pensions transferred to that area.[7] In addition, the Gini index for cities per capita GDP is 0.44, while it amounts to 0.12 considering the average pension benefit for each city. In other words, the disparity in income regarding cities average GDP is almost four times bigger than the one observed in the cities' average pensions.

The role of social security in reducing income differences among distinct groups of people is disputed. Moura et al. (2007) argue that despite reducing poverty, the system does not redistribute income to the poor. This sort of reasoning has to be analysed with caution. Generally, the studies that reach this conclusion estimate the Gini index among the beneficiaries or generate some similar statistic.

Nevertheless, when one considers a benefit formula that is earnings-related, it is natural to conclude that better wages imply higher pensions, and hence the social security system should partially reproduce society's income inequalities, especially in countries like Brazil where the benefit ceiling is high in relation to average wage. Caetano (2006) proposes another approach in order to examine this topic. His methodology consists of calculating the actuarial internal rate of return for distinct cohorts given by gender, levels of income, urban or rural, and length of contribution or old age retirement. For these calculations, Caetano (2006) considered the expected lifetime flow of benefits and contributions. The basic conclusion is that social security by the pension scheme for private

[7] This is because smaller municipalities have proportionally more beneficiaries receiving rural and old age pensions, and a lesser amount of length of service, and the former benefit uses to have a smaller rate of return than the latter. Besides, the cap on benefits and the inexistence of ceiling to employer contributions also explain these regional distributional effects.

sector workers distributes income from urban to rural, men to women, high income to low income, and from length of service to old age. The worst actuarial internal rate of return was found in high income males who retire by length of contribution. These calculations were done solely on the scheme for private workers.

Brazilian Social Security from a Social Equity Perspective: Evidence of Regressive Characteristics

Brazilian public sector pensioners receive benefits that are more than triple those of their private counterparts. Official data indicates that a civil servant retired from the executive branch of the federal government received on average R$ 3,665 per month in 2007. A worker with similar income and educational level in the private sector usually retires by length of service with an average benefit value of R$ 1,001 in 2007. In addition, one-third of public pensioners receive more than the cap of the pension scheme for private sector workers.[8]

This is a piece of evidence that the pension scheme for public employees transfers income from the whole society to well-off public servants. The fact that states' and federal pension schemes for public employees run a deficit where total contributions represent less than half of expenditures only reinforces this point. Other elements that the pension scheme for public employees still guarantees for much of its members, such as last wage benefit formulas and wage indexation, strengthen the regressiveness of the system. A public defined benefit pension scheme directed to middle and upper middle class that is in deficit is regressive in two aspects. First, society as a whole pays the deficit through taxes. Secondly, society also bears the financial and biometric regime's risks since the system operates in a defined benefit way. These features support the aim of reforming social insurance by harmonizing the rules of the pension schemes for private and public sector workers.

A second aspect that one could classify as regressive is the pressure put on labour markets by large contribution rates on the wage bill. The contribution rate of the pension scheme for private sector workers contribution rates can reach 1/3 of their total wages. This

[8] Data for private sector was extracted from Ministério da Previdência Social (2007a) and for public sector from Ministério do Planejamento, Orçamento e Gestão (2008). Average pension is even greater in the military (R$5,751), legislative (R$14,675), and judiciary (R$13,397) branches.

distorts the labor market. On the one hand, the fiscal edge between the wage paid by the employer and received by the employee harms labor. If labor supply is elastic, it reduces employment significantly; otherwise, the wage received by the worker diminishes in an expressive way. Hence, whatever the specific labor market properties, it is undeniable that if affects labor negatively. On the other hand, it penalizes more labor intensive sectors. However, fiscal prudence discourages the government from proposing an aggressive reduction in labor taxes. No one knows what the exact effect on revenues will be. This is worrisome for a country whose fiscal policy is based on achieving a primary budget surplus at around 4 per cent of GDP.

IV. Features of the Brazilian Pension System Recent Reforms

The objectives of pension reform are threefold: enhancing equity, reducing fiscal and actuarial imbalance, and/or achieving more efficient resource allocation. In Brazil, social security reforms were mostly motivated by fiscal issues and to a lesser, but not negligible, degree by equity perspectives. Efficiency considerations like labor market deadweight loss caused by high taxation, the fiscal wedge between the wage paid by the employer and the one received by the worker, as well as better savings allocations for investments were not even present at the reform discussions; neither were issues regarding the efficiency within the pension system itself.

At the beginning of the 90's—in a context of Brazilian hyperinflation—the inflation rate reached more than 80 per cent a month. In Brazil, the debates on social security reform started after the end of hyperinflation in July 1994. This is not a mere coincidence. The Brazilian 1988 Constitution, which originated at the end of the military dictatorship, introduced rules that resulted in a significant impact on spending on social insurance in the following decade.[9] In a high-inflation environment, if benefits are adjusted at a slower pace than inflation, they will loose their real value quickly. In this sense, under-indexation of benefits could solve even cash flow disequilibria. Nevertheless, the ending of hyperinflation with "Plano Real" in July 1994 precluded fast expenditure adjustments by under-indexing pension benefits.

A reform was needed and contrary to other Latin American experiences, Brazil has not embraced a change from a Pay as You Go (PAYG) to a funded system. The main reason is the huge transitional cost that a structural reform would imply. This aspect was essential in the mid 1990s for a highly indebted country viewed as risky and with low credit ratings. At that time, in order to ensure a macroeconomic policy that would allow for debt reduction, Brazil started using fiscal surplus targets. A change to a funded system would have made the proposed fiscal policy unfeasible. Social insurance outlays would remain the same in the medium run, as the government would maintain the payments to those already retired or near retirement. However, social insurance revenues would diminish virtually overnight as active workers' contributions would finance their own pension funds, but not

[9] For instance, rural benefits and minimum wage guarantee were introduced in this Constitution.

the current spending on pensioners. The firm commitment to the fiscal surplus rule impeded Brazil even to propose a structural reform. In this sense, social insurance reforms in Brazil were solely parametric, that is, they focused on changes in contribution rates, eligibility conditions, benefit and pension indexation formulas.[10]

From 1998 onwards, Brazil approved three reforms on social security. Two of them were Constitutional Amendments. The table below summarizes the main measures of the reform.

Table 6

Summary of the Measures Introduced by Social Insurance Reforms

Legal Changes	**Main Measures**
Constitutional Amendment number 20, December 1998.	Pension Scheme for Private Sector Workers 1. Increase in contribution ceiling; 2. Phasing-out of early retirement; 3. Benefit formula was removed from Constitution; Pension Scheme for Public Employees 1. Phasing-in to age limits of 60 years old for men and 55 for women with many transitional rules.
Law 9,876, December 1999	Pension Scheme for Private Sector Workers 1. Benefit formula considers average wage from July 1994 onwards. Previously, it was a 100 per cent of the last 36 wages' average. 2. It created the social security factor, where benefit value increases with age of retirement and length of contribution. Pension Scheme for Public Employees 1. Not affected.
Constitutional Amendment number 41, December 2003, and number 47, July 2005.	Pension Scheme for Private Sector Workers 1. Increase in contribution ceiling. Pension Scheme for Public Employees 1. Introduction of social security contributions on pensioners and survivors' benefits; 2. Reduction in the replacement rate for survivors' benefit; 3. Benefit formula is phasing out from last wage to average wage; 4. Pension indexation is phasing out from wage inflation to price inflation; 5. Possibility of introducing a funded defined contribution complementary pension scheme for new entrants; 6. Stricter transitional rules.

Source: Author's own elaboration.

[10] To be more precise, there is a proposal to create a defined contribution funded complementary pension scheme to new entrants in the public sector. But it still has a long way to go in order to be regulated. This proposal will be commented on below.

The first reform round culminated in Constitutional Amendment No. 20 in December 1998. Although in its original proposal there was an intention to implement minimum age limits for retirement as of 55 years old to women and 60 to men, the Brazilian Congress only approved these limits for the pension scheme for public employees. In the pension scheme for private sector workers, one can still retire at any age. Thirty years of contribution for women and thirty-five for men are still enough. One point that was approved was the removal from the Constitution of the benefit formula of the pension scheme for private sector workers. Previously, pensions were set by Constitution to be equal to the average of the last 36 wages. In addition, the Constitutional Amendment phased out an early retirement plan which allowed men to retire with 30 years of contribution and women with 25, although they could receive smaller pensions. The amendment also increased the contribution cap for the pension scheme for private sector workers.

In this first round of reform, the fiscal perspective dominated. Neither distributive nor efficiency aspects were presented as aims of the changes proposed. Some essential differences between public and private sector pension schemes were maintained in this reform. Public employees had the guarantee of receiving their last wage as their pensions. Besides, the pensions for public employees continued to be wage indexed.

As the changes in the pension scheme for private sector workers were seen as very timid, the second round of reforms followed just some months after the first one. It is usual in Brazil to have the Constitution establishing the main characteristics of the pension plan design. Proposing another Constitutional Amendment in this interim on such a polemic matter as social insurance would create an unwanted political cost.

All crucial aspects of the design of the plan of the pension scheme for public employees were Constitutional. Since the benefit formula for the pension scheme for private sector workers was the only relevant subject that was removed from the Constitution, the second reform round focused on it. Just a law was necessary to make significant changes on the benefit formula. The new law introduced two main changes. Firstly, the pension value is calculated considering the average wage from July 1994 onwards. The main motivation behind this was that social insurance should replace not the final wage, but the average wage that one received during his life.[11] The reason for choosing July 1994 as the beginning of the average period was the end of hyperinflation in that month, as it could make historic wages easier to index and compose. Secondly, there was the introduction of a social security factor, whose formula was presented in section II. It was based on notional accounts, although it cannot be considered as such. The social security factor increases the pension as one retires at an older age and with more years of contribution. Previously in the pension scheme for private sector workers, one would receive the full mean of the last 36 wages limited to the cap. Today, the average wage from July 1994 onwards is multiplied by the social security factor. For instance, a man who retires at 53 with 35 years of contribution has his average wage from July 1994 multiplied by 0.68. Before the introduction of the social security factor, this man would receive 100 per cent of the average of the last 36 wages. Social security factor implied a significant reduction in replacement rate.

Besides the fiscal motivation for the implementation of the social security factor, distributive reasons also played a major role. In its intent to mimic the notional accounts principals, the social security factor attempts to equalize the present value of benefits and contributions. It is an equity measure in the sense that someone gets what he paid. It is also a persuasive argument for changing replacement rates, since the reform justification is not purely fiscal, but rather a just cause of equalizing benefits to contributions. In addition, the guarantee of a minimum pension implied that the real poor would be less affected by the reform.

In the course of these two reforms, the differences between the social insurance regimes remained. The pension scheme for public employees is more generous in terms of replacement rates and indexation mechanism, whereas the pension scheme for private sector workers is more benevolent on qualifying conditions. The pension scheme for public employees has a 100 per cent replacement rate over the last wage. The benefit formula of the pension scheme for private sector workers is average wage multiplied by the social security factor, which is hardly above one. The pension scheme for public employees is

[11] From an incentive scheme perspective, final wage average creates motivations to underreport wages since underreporting could not influence pension value, but could alleviate contributions to social insurance. On the contrary, underreporting wages in lifetime average wage would reduce pension value to be received in the future.

wage inflation indexed while the pension scheme for private sector workers is price inflation adjusted.[12] The pension scheme for public employees has age limits and length of contributions while the pension scheme for private sector workers only requires length of contributions.

Although the aim of reducing pension expenditures was evident, three distributive tendencies characterized the third round of social insurance reform: the harmonization between the pension scheme for private and public sector workers, the introduction of contribution rates for public servant pensioners with higher benefits, and the many transitional rules in which the reform affects more heavily the new generation than the old one. All these measures were introduced in Constitutional Amendment 41 on December 2003 and Constitutional Amendment 47 on July 2005, which primarily affected public employees.[13]

The perspective of unifying the pension scheme for private and public sector workers proved unfeasible given the political resistance from local and state governments that it was likely to create. The reason was that the two regimes' merger would force these governments to stop collecting the contributions of their employees and start paying contributions to the pension scheme for private sector workers, representing an expressive fiscal drain to them. Since the unification was not viable politically and fiscally, the reform proposals emphasized the harmonization of the rules between pension scheme for private and public sector workers. In this sense, the reform objective was twofold. From a stabilization perspective, it permitted the reduction of the fiscal burden of the pension scheme on public employees. From an equity point of view, it diminished the differences between the social insurance of private and public sector employees. This is very progressive: since pension expenditure should be reduced, the reform should more greatly affect the group that had the more generous rules and also the highest benefits.

[12] Remember that the pension scheme for private sector workers has a mixed indexation rule where the minimum pension is equal to minimum wage, while pensions above the minimum value are price indexed. Anyway, if a public servant receives a minimum wage his/her pension will also be equal to the minimum wage. Hence, the difference between private and public sector pension schemes is limited to the indexation of pensions above the minimum.

[13] The only measure for the pension scheme for private sector workers was the increase in the contribution cap.

Although in a phasing-out way, in the tendency towards harmonization, one could emphasize the change of benefit formula from last wage to average wage, and the substitution from wage inflation indexation to price inflation indexation.

Even with these changes, one important difference remains since there is a benefit cap in the pension scheme for private sector workers that is, in practice, absent in the pension scheme for public employees.[14] Two measures regarding benefits above the cap of the pension scheme for private sector workers were approved, and a third one has still a long way to go until it is regulated.

Firstly, benefits in the pension scheme for public employees are marginally taxed according to the amount above the cap on the private sector workers' pension scheme. This alleviates public finances since it is another source of social insurance revenue. It also makes sense in an efficiency analysis since it creates incentive for postponing pensions as retirement would reduce the worker income. In a distributive approach, someone who earns more pays proportionally more.

Secondly, the reform introduced a change in the replacement rate for survivors' benefits. It replaces 100 per cent of the deceased's benefit under the cap, and, for the part above the ceiling, there is a 70 per cent replacement rate. For example, a deceased person with a pension equal to double the cap would generate a survivors' benefit of 1.7 times the value of the cap. At the same time that it reduces the imbalances of the pension scheme for public employees, it diminishes the differences with the pension scheme for private sector workers as well.

For these two changes, it is clear that the pension scheme for public employees is still more generous than its private counterpart. This is a regressive feature since public employees are not the Brazilian poor—they belong to the middle and upper middle classes. Nevertheless, no one can deny that the reforms are pointed towards harmonization. Although the regressive side continues, it was reduced and it alleviated public finances.

The third step will be the launching of a complementary pension fund. It needs Legislative approval to be put into practice. At the moment, it is only a law project in debate at Congress. This pension scheme will be defined contribution and fully funded.

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[14] There is a legal cap for the pension scheme for public employees, but its value is so high that it applies to almost no one.

New entrants to the labour market are the target public. They will have their benefits divided into two parts. The first one, which will be at maximum the pension scheme for private sector workers ceiling, will be a defined benefit pension equal to lifetime average wage and yearly price inflation indexed. The second part, which is optional, will be paid by the defined contribution pension fund. This is an important step towards equal treatment for public and private workers, since the pension of an employee in the private sector is limited to the cap of the pension scheme for private sector workers, while a similar person in the pension scheme for public employees can receive much more than the cap of the pension scheme for private sector workers. More details on this fund will be presented in the next section.

One last point common to almost all social insurance reforms around the world is the uneven burden distribution among generations. Generally, there is a creation of transitional rules in which permanent tougher rules apply to younger generations: those who still have many years in order to fulfill the eligibility criteria, whereas older people—those who are nearer to qualify for a pension—can retire with softer transitional rules. In some instances, not even transitional rules are pertinent to them. The reasons come from a formal respect of acquired rights to a cynical view that future generations do not vote and are not able to complain right now. Whatever the logical basis for it might be, the probability of approving a reform is considerably increased when it affects the current young or future generations. The last Brazilian pension reform did not escape this pattern. Indeed, many people who were already public employees at the moment of the Constitutional Amendment's approval will continue to be able to retire with last wage and their pensions will be wage indexed. In contrast, one must cite as notable exceptions the contribution rates on the stock of pensioners and the modified replacement rate for the inflow of survivors' benefits.[15] Both of them were quickly regulated and they are applicable to everyone whether a new generation or already retired.

It is worth noting that all of these measures had the intention of reducing the fiscal and actuarial imbalance of the pension scheme for public employees, but this was done with an explicit objective of reducing the differences between public and private sector

[15] These two rules only apply for those public servants who earn more than the ceiling of the pension scheme for private sector workers.

pension systems. The third round of reforms made the pension schemes for private and public sector workers closer to each other.

V. Remaining Challenges

Although Brazil has gone through a number of reforms, many efforts and changes are still needed. Three main issues emerge: first, coverage expansion; second, reducing differences between the pension schemes for private and public sector workers by harmonizing their rules; and finally, facing future population ageing in a still young country, but where social insurance already represents a large fiscal burden.

Coverage enlargement promotes benefits to the whole society meaning that its citizens are protected from misfortunes from the labor market, old age, disability, sickness etc. Hence, social insurance becomes more effective as it achieves the aim of protecting people against these hazards. However, there are three limitations to a coverage expansion policy in Brazil.

First, in the Brazilian case, the system does not generate many incentives to contribute to social insurance schemes. Contribution rates are high: amounting to up to one third of the wage bill. Such high rates in an emerging economy create incentives to move into informality. In addition to high contribution rates, a complex tax system, difficulty in doing business, and bureaucratic procedures restrain larger coverage. Nevertheless, fiscal conservatism will be an obstruction to ambitious modification in the tax base because there is always a fear that government will loose revenue if it makes such a change in the tax structure.

Regarding poor people, one further aspect is that both means tested benefits – such as social assistance LOAS—and minimum social insurance pension receive exactly the same monthly payment, which is the minimum wage. For low-income earners, the incentives to join the system are low since it is onerous for them to pay contributions and they will receive the same amount in their old age through social assistance if they decide to evade social insurance. Changing this would imply lowering the social assistance allowances to a level below minimum wage which is unlikely to be politically approved.[16]

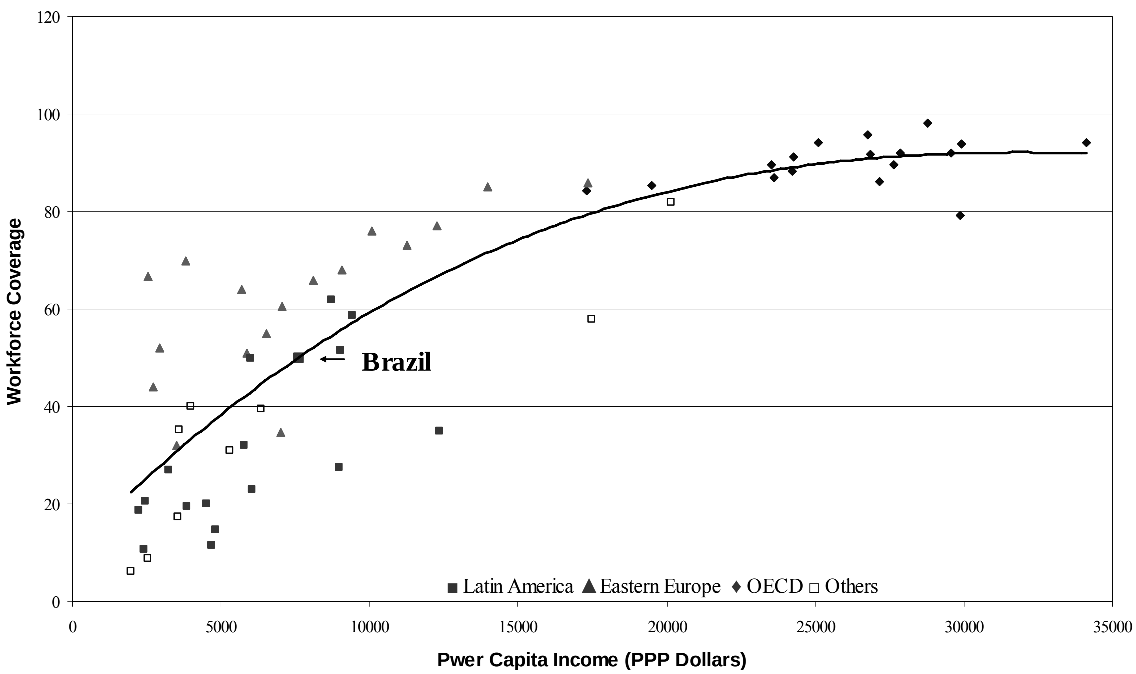
The second factor that imposes limits to coverage expansion is that coverage rates in Brazil during the contribution phase are compatible with its development level, measured by per capita income. Figure 3 below shows that Brazil fits the regression line for a large

[16] In Brazil, it is relatively difficult to create other incentives to contribute, since many programmes, as public health, are universal. In other words, the access to public health cannot be denied if someone is not affiliated to a pension scheme.

sample of countries and that its coverage is in accordance to Latin American standards. Countries with higher workforce coverage are richer OECD members. The nations that present similar income levels but bigger coverage are Eastern Europeans countries. Transition economies aside, their common socialist history is a factor that explains why they are above the regression curve.

Figure 3

Workforce Coverage and Per Capita Income (Purchasing Power Parity Dollars)



Source: Rocha and Caetano (2008).

One cannot interpret these statistics with a deterministic approach and claim that nothing can be done to increase coverage since it is mostly determined by average income levels. However, the relation between per capita income and contribution coverage imposes limits that have to be taken into consideration in formulating a coverage expansion policy.

Finally, in its current design of the plan, an increase in coverage will raise the fiscal burden in the long run, although it can result in some relief in the short run. This is caused by the failures in the design of the plan of social insurance as stated in previous sections. Expansion in coverage will cause distinct effects depending on the time horizon. In the short run, there will be gain in contributions without putting much pressure on the expenditure side. However, as time goes by, people retire, become disabled, die and generate a survivors' benefit, pension outlays will rise. The dominance of these contradictory effects depends on the combination of effective retirement ages and replacement rates. The Brazilian case gives more strength to the second effect as is postulated by Schwarzer (2007a) and Schwarzer et al. (2007). As the system is currently in deficit, an increase of its coverage will result in larger deficits in the long run, ceteris paribus.

The second challenge is diminishing the remaining differences between the pension schemes for private and public sector workers. Although the last Constitutional Amendments brought more harmonization, there are still significant differences. One distinction that the government is currently addressing is that the benefit cap for the pension scheme for public employees is so high that in practice it does not represent a constraint. Simply capping benefits to the ceiling of the pension scheme for private sector workers would be unfair since "well-off" workers in the private sector have access to complementary pension funds. For now, there is a proposed law being debated in Congress regarding this issue. The basic aim is creating a fully funded defined contribution complementary pension scheme for new entrants.

As a transitional rule, current public civil servants who earn more than the cap of the pension scheme for private sector workers will be able to opt into the complementary pension fund. In this case, the pension benefit will be divided into three parts. First, up to the cap of the pension scheme for private sector workers, the benefit will be paid with current rules in a PAYG financing scheme. Second, there will be a vesting benefit regarding the past contribution years for the part of the pension above the cap of the pension scheme for private sector workers which will be financed as PAYG. Third, there will be the creation of a funded defined contribution pension plan for the part of the wage above the ceiling of the pension scheme for private sector workers. Civil servants and the government will pay a contribution rate of 7.5 per cent each. For those current civil servants who opt out of the complementary pension scheme, the benefit will follow the rules in existence now.[17]

Permanent rules will apply only to new entrants. Since complementary pension is optional in Brazil, they will either opt out of the fund and their pension benefit will be limited to the cap of the pension scheme for private sector workers, or they will opt in and their benefit will be separated into two parts.

The first one will be at maximum equal to the ceiling of the pension scheme for private sector workers. It will follow the running rules on indexation, eligibility criteria and benefit formula up to the cap of the pension scheme for private sector workers. It can be either PAYG or funded depending on each local government and state choice, although most of them will opt to maintain it as PAYG. Those new entrants who opt out the complementary pension fund will only receive this first part as their pension.

The second part will be necessarily funded and defined contribution. In an equity perspective, the great advantages are increasing harmonization between civil servants and private sector employees and also releasing the government budget from pension outlays to well-off public retirees and survivors. Equity analysis regarding this complementary pension fund does not restrict itself to questions on who will pay the benefits for high-wage public servants, but also on who will bear the biometric and financial risks for pensions above the cap of the pension scheme for private sector workers. Considering the defined contribution nature, it is clear that employees will take the risks. However, it is reasonable to classify it as fair, since the complementary pension only relates to the wage above the ceiling of the pension scheme for private sector workers and also because the government will put 7.5 per cent of contributions over the wage on the public servants' pension account.

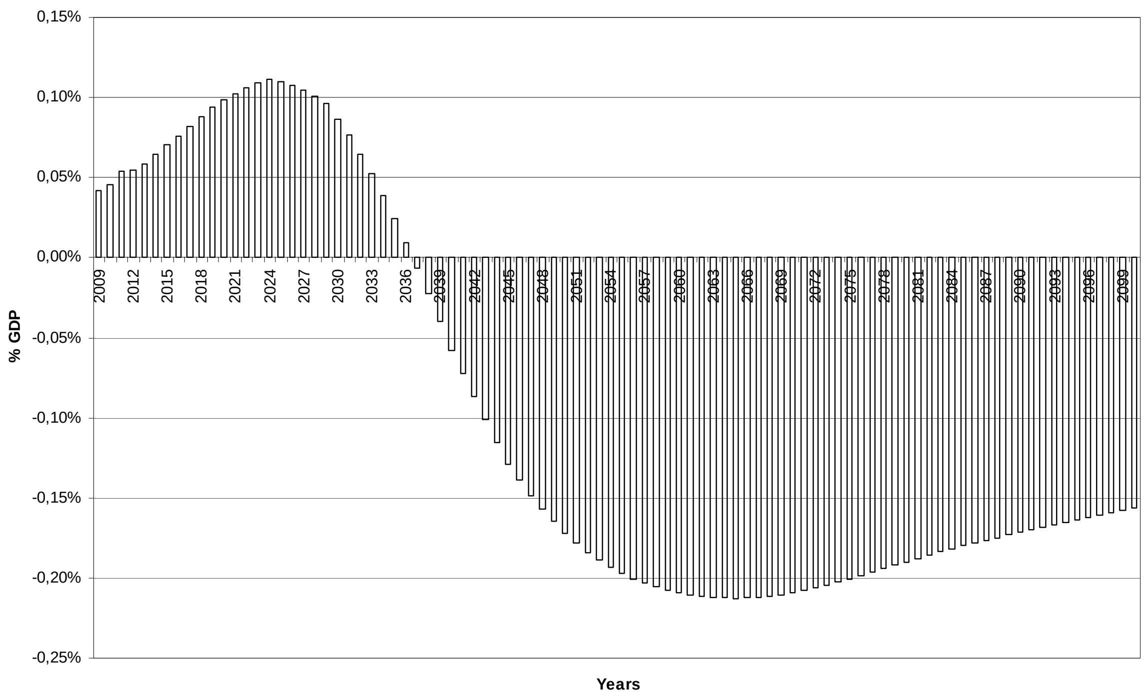
From a fiscal point of view, this new pension scheme imposes costs in the short run, but it will bring alleviation to public finances in the long run. The reasons are common to any transition from a PAYG to a funded system. In the short run, government loses contribution revenue as it starts going to the employees own accounts. In addition, it does not finance the pension expenditures on current retirees. Nevertheless, in the long run, the government will not need to disburse money on pensions above the cap of the pension

[17] Government is expecting low adhesion to complementary pension scheme based in a similar US experience in the beginning of the 80s. The expectation is that no more than 2 per cent of current public employees will affiliate to the complementary pension fund.

scheme for private sector workers, as it will be paid from the amount accumulated by each public servant. The fact that the funded scheme is targeted towards new entrants and that it will apply for their wages above the ceiling of the pension scheme for private sector workers helps to diminish the transition cost. The figure below shows an expected path for the transition cost.

Figure 4

Transition Cost of the Complementary Pension Fund for Federal Civil Servants as share of GDP



Source: Author's calculations, based on the data from SIAPE, which is the payroll system for federal public civil servants in Brazil.

It will take almost three decades for the complementary pension plan to start to bring savings to public finances. The reason is that it will take this time in order to have people commencing their retirement. At its peak, the transition cost is estimated to be at around 0.1 per cent of GDP. But some decades from now it can bring savings of around 0.2 per cent of GDP. Considering the benefits on equity and on public accounts in the long run, it seems reasonable to pay the price of creating a complementary pension fund for high-income civil servants.

There are topics concerning complementary pensions for the public sector that will be subject to considerable debate. Firstly, the defined contribution treatment to risk benefits such as disabled and survivors. Secondly, for purposes of economies of scale, the government wishes one primary pension fund. However, well-organized public employees from the judiciary and legislative branches are putting pressure on the government in order to create their own pension fund.

The third challenge is population aging. Paradoxically this should not be a theme of great concern for a relatively young country. However, the population will grow older. The fertility ratio which was above 6 in the middle of the last century now approaches the replacement rate of 2.1 children per woman. Today, 6 per cent of the Brazilian population is over 65 years old; this percentage is expected to increase to 19 per cent in 2050. The demographic old age dependence ratio which is currently at 9 per cent is estimated to reach 30 per cent in 2050.[18] In other words, in relative terms, the old age population will triple in the next four decades.

At the same time, although the Brazilian population is young, expenditure on pensions is large. As presented in section III, social insurance expenditures, including non-contributory pensions, amount to more than 11 per cent of Brazilian GDP. Aging by itself will make these numbers go up.

PAYG dynamic fundamentals indicate that two variables are the determinants of social insurance's future path: replacement rate and social insurance dependence ratio. The replacement rate is the amount of average benefit with respect to average contribution wage, while the social insurance dependence ratio is the quotient of beneficiaries divided by contributors. As the population ages at this pace—which implies that the social insurance dependence ratio will increase—and as the current pension expenditure to GDP is already large, something has to be done in order to keep social insurance alive and affordable. This should entail reductions in either the replacement rate or the dependence

[18] Demographic dependence rate is defined as the total number of people beyond 65 years old divided by the total amount of people between 15 to 64 years old.

ratio. Unfortunately, such measures are unpopular since they imply stricter eligibility rules, benefit formulas and indexation mechanisms.

All of this means that there is not much room for postponing reforms. The later a country implements reform, the more abrupt they will be. Finally, a balance should be found between fiscal objectives and equity constraints.

VI. Conclusion.

This section summarizes the main conclusions of the paper and presents policy lessons from the Brazilian case. Social insurance systems present contradictions. Understanding these antagonisms helps in offering better policy advice to adjust social security towards a more sustainable path in political, actuarial, economic and social terms.

Considering first equity and distribution, poverty reduction for the elderly is one of the most important achievements of Brazilian social security. Actually, without these transfers, the poverty rate among the elderly would be as high as 75 per cent of the old age population. With these transfers, the poverty rate for the elderly goes down to less than 15 per cent of the old age population. Poverty reduction for the elderly is a consequence of two factors. Firstly, the coverage rate in the benefit phase is high, reaching 90 per cent of people older than 65. Secondly, the average income that these people receive from social insurance is enough to leave poverty behind.

Positive effects on equity are not confined to poverty reduction. Social security, although not meant to be a regional policy, redistributes income from richer cities to poorer ones where an increase in 1 per cent of a municipality's average per capita GDP enlarges the ratio of social insurance revenue to expenditure in that city by 0.62 per cent. Besides, social insurance for private sector workers redistributes income from high income to low income groups. The actuarial internal rate of return indicates that the pension system distributes income from urban to rural, men to women, high income to low income, and from length of service to old age. Nevertheless, there is evidence that the whole society redistributes income to the pension system of well-off public servants.

The positive policy lesson from the Brazilian case regarding equity issues is that social security can be seen as a powerful instrument to reduce poverty and redistribute income both in vertical and horizontal terms. This is a very positive result for an emerging economy known for its inequalities. However, the drawback is that social insurance is subject to rent-seeking as illustrated in the pension plan for public servants. Another potential negative effect is that although social insurance alleviates poverty, it reallocates resources that could instead be used for children rather than older people. This creates an uncomfortable policy choice on where to allocate the scarce resources: if it will favor the young or the elderly. This choice is not only restricted to equity, but also to efficiency, since public spending on education and children has more potential to promote growth. Nonetheless, an aging population that does vote creates a tendency to funnel the resources towards the elderly.

Brazil also presents negative lessons concerning the fiscal burden of its pension system. Although the demographic dependence ratio is 9 per cent, total expenditures on pensions amount to more than 11 per cent of Brazilian GDP. This is incompatible with international standards and reforms are needed to bring expenses down especially when the aging population is taken into account. There remains the question then on how to reform the system. Different from other Latin American experiences, Brazil soundly rejected the possibility of reforming social insurance through the transition from a PAYG to a funded system because the transition cost was seen as too expensive for a country who would like to be known for its fiscal discipline. In this sense, reforms were parametric with changes on qualifying conditions, benefit formulas, indexation rules, and contributions rates.

Considering the positive equity effects and the negative fiscal burden, one fundamental question is how much of the former is caused by the latter. The answer: very little. Indeed, empirical decomposition shows that distributive properties are responsible for one-fourth of the difference between Brazil and international expenditures standards, while the remaining three-fourths is explained by failures in the design of the plan. Hence, the notion that equity gains are the main cause for the fiscal losses is a myth. This is good news for other emerging and poor countries. The Brazilian experience shows that a nation can use social insurance to reduce poverty and redistribute income without much fiscal cost.[19] In fact, what make the Brazilian pension system expensive are the flaws in its qualifying conditions, benefit formulas, and indexation rules.

Additionally, since expenditures should be brought down, it was necessary to determine which group should be most affected by pension reforms. Brazil chose high income people and public servants. The objectives were twofold: to enhance equity, since lower income people are less affected, and to reduce the fiscal cost of the system. Actually, many reforms were done in order to harmonize the rules between private and public sector pension schemes. Also, some changes have reduced the replacement rate for pensions in

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[19] One piece of caution in this sentence is that although social security is effective in the sense that it helps to reduce poverty and redistribute income, it cannot be efficient in the sense that there could be alternative policies that could achieve even better results with less resources.

benefits usually received by the middle class. Another point is that reforms affect generations differently. In general, stricter rules apply to younger generations, while the rules for older generations have changed less or have not changed at all.

Efficiency can be a major issue in future reforms, although it was almost absent up till now. Debates on how social insurance affects labour supply and demand, and on how it can provide better allocation from savings to investment and, hence, promote growth should be welcome, not simply forgotten as seems to be the case.

Challenges also exhibit contradictions. No one denies that coverage expansion is an objective on its own since it protects people from hazards in the labour market, illness or death. But if a system presents an actuarial imbalance, simply bringing more people into it can lead to unwanted effects in the long run. In the future, these people will retire and it will make total expenditure on social insurance rise.

These contradictions should not be considered as an expression of confusion and desperation. They should be treated as a guideline for new reforms that could bring social insurance accounts down in accordance with the Brazilian demographic profile, but they should respect the objectives of a social insurance system which includes poverty reduction and income replacement during times of reduced labor capacity.

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