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REFORMING SOCIAL SECURITY: LESSONS FROM INTERNATIONAL EXPERIENCE AND PRIORITIES FOR BRAZIL*

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I. INTRODUCTION

1. This note presents, in summary form, the main points of the first two sessions of a seminar on social security held in April, 1997, at the *Senado Federal* in Brasilia, organized jointly by the Senate team on Social Security Reforms, and *Instituto de Pesquisa Economica Aplicada* (IPEA). The seminar had three sessions. The first session, which was chaired by Mr. Antonio Carlos Magalhaes, President of the Senate, consisted of an overview of international experience with social security reforms and the analyses of the rationale for and nature of these reforms in three countries (Argentina, Hungary, and USA), which are at different stages in reform. The second session, which was chaired by Mr. Reinhold Stephanes, Minister for Social Security, consisted of diagnoses of Brazil's own private and public pension systems, from the viewpoint of actuarial disequilibria, labor market inefficiency, and inequality. The third session, chaired by Mr. Bernardo Cabral, President of the Senate Justice and Constitution Committee, consisted of a panel discussion by Senator Beni Veras, the *relator* of the social security reform bill, senior officials from the Ministry of Social Security in Brazil and Argentina, Brazilian researchers, and World Bank staff.

2. This note is not a complete summary of the presentations and discussions during the seminar. Also, it does not discuss the merits of the current senate proposals, and their adequacy in responding to the problems facing Brazil. It also does not discuss the problem of company or "closed" pension funds, since this was not discussed in detail at the seminar. Nevertheless, it does provide the main messages emerging from the seminar, both in terms of the urgency of the social security crisis in Brazil, and the ways in which other countries are dealing with similar problems. We hope this will be useful to policy makers and other observers in discussing and designing remedies.

II. INTERNATIONAL EXPERIENCE

II.1 Overview of Social Security Reforms

3. Countries all over the world are reforming their social security systems. The old systems were generally publicly managed, payroll tax financed, defined benefit, pay-as-you-go schemes. The main factors prompting these reforms are unsustainable fiscal imbalances, the need to reduce distortions and evasion, the desire to increase savings rates, and the desire to mitigate generational or socioeconomic conflicts. The overall objectives of the reforms are to protect the old and unfortunate ***and*** promote growth.

4. Instead of relying solely on a intergenerational redistribution scheme for providing for old age, countries are diversifying their old age and disability pension provision by providing some public benefits (e.g., as a fixed universal benefit, or means-tested transfers to ensure a minimum pension level) but supplementing them with mandatory privately managed savings scheme ("sistema de capitalizacao"). Most countries already have voluntary pension plans managed either by companies or individuals themselves. In pension terminology, these different sources of pension finance and provision are termed "pillars of old age income security". A multi-pillar system has three pillars: a tax-financed mandatory publicly-managed pillar, a mandatory, fully-funded, regulated privately-managed pillar, and a voluntary privately-managed fully-funded pillar (see Figure 1).

5. From the experience of reforming countries, three models of social security reform can be broadly identified (at the risk of oversimplifying a more complex pattern):

II.1.a The Latin American Model

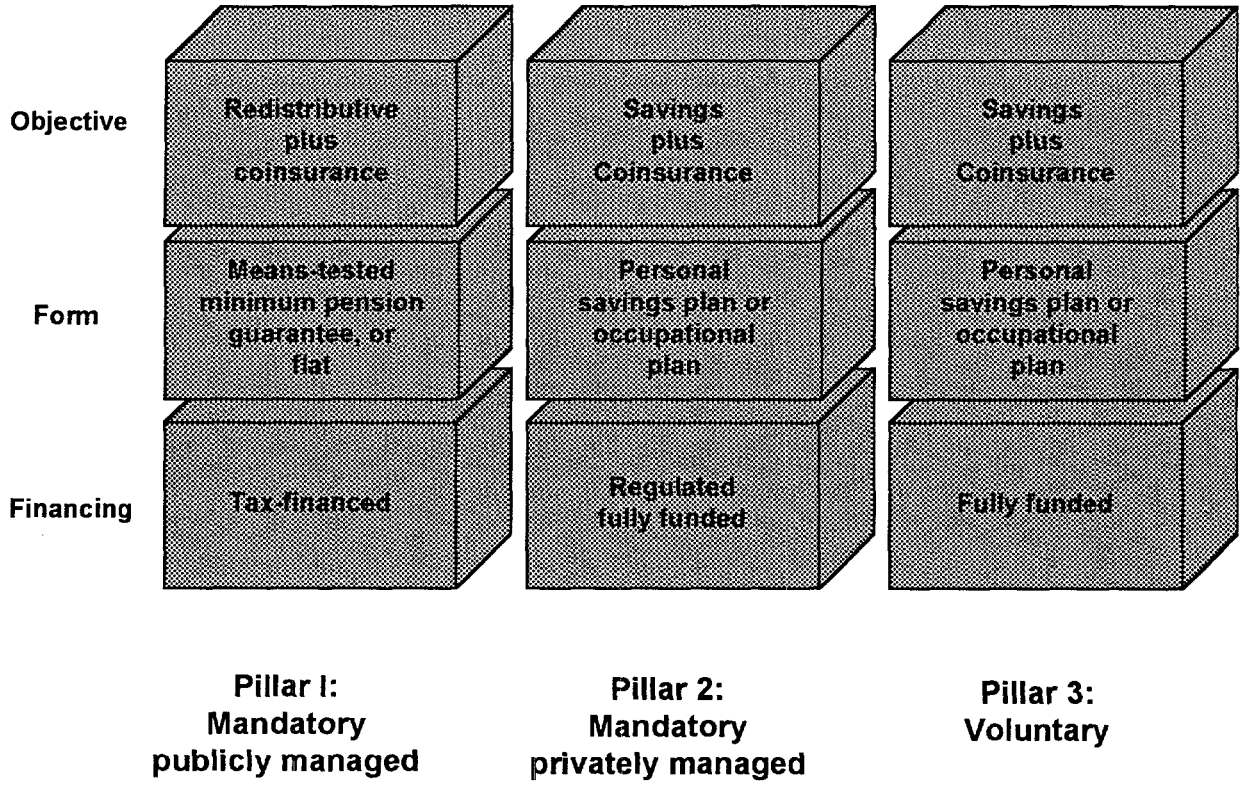
6. Countries such as Chile (1981), Peru (1993), Argentina (1994), and Uruguay (1996) have adopted multi-pillar systems, and several others such as Hungary are currently implementing such reforms. There are important differences in the nature of these reforms, though. In Chile, the old system is being phased out by making it compulsory for new entrants to the labor force to enter the new system, while older workers have a choice of system; in Argentina and Peru, the old system (consisting of the first pillar) is optional for all; in Uruguay the old system was "repartitioned", being mandatory for workers under 40 years, and optional for those above 40. In all cases, however, when the transition is complete, the new system will have three pillars: a defined contribution, capitalized, privately managed second pillar, some form of minimum pension guarantee which can be thought of as the first pillar, and a voluntary third private savings pillar.

7. There can be considerable costs of transition in the shift from an unfunded pay-as-you-go system to a fully capitalized scheme. The problem arises because of the need to set aside enough funds to finance the pension obligations that have been already accumulated, i.e., for current retirees, who receive benefits but do not contribute to the system anymore, and current workers who have contributed and are still contributing. The cost of transition depends on the magnitude of these liabilities of the old system, which in turn depends on how generous the defined benefits were, and how old the population is. Chile, Argentina, and Peru had relatively young populations at the

time of reforms, and not overly generous defined benefits, so the costs of transition were manageable. To further ease the transition, Chile and Peru issued "recognition bonds" to currently employed workers who switched from the old to the new system which formally acknowledged their previous contributions. The actual transfer of funds to their accounts would come later. In Peru's case, the total cost of recognition bonds was about 3% of GDP. Brazil's relatively young population would imply low costs of transition, but the generosity of defined benefits potentially raises these costs.

Figure 1

The Pillars of Old Age Income Security



II.1.b The OECD Model

8. Countries such as Germany and France have opted so far to maintain the old system (which consisted of the first and third pillars). Reforms are under consideration in some OECD countries such as the US. However, a few industrialized countries have already made major structural changes, and their experience may be considered the "OECD model" of social security reform. The reforming countries are Australia, Switzerland, Denmark and the UK.

9. The main differences between the OECD and Latin America models of reform is that in case of the former - because it was small and affordable in the first place - the first pillar remains essentially the same, i.e., universal, pay-as-you-go and defined benefit.

In Australia the first pillar is a means-tested pension paid from general revenues, in the UK it is a small flat benefit, and in Switzerland it is a compressed earnings-related benefit. The original contribution rate was also small, so a second pillar could be added on with additional contributions. And because the second pillar was an add-on rather than a substitution, there were no transition costs. For historical reasons, the investment decisions of funds of the second pillar are entrusted to employers and/or labor unions, instead of individual workers.

10. OECD countries such as France and Germany that already have large pay-as-you-go pension systems and relatively old populations, would face large costs of transition in adopting the Latin American (capitalized) model of reform. But these countries have also managed to avoid large scale evasion of payroll taxes that fund these systems. While real pension benefits in these countries have been eroded over time due to unanticipated increases in retirement duration, being wealthy has enabled these countries to prop up their social security deficits. For all these reasons - *none of which resemble conditions in Brazil today* - these countries have been exceptional in that they have not moved away from defined benefit system that characterized older social security schemes towards a system relying on defined contribution. As a result, while these countries have postponed the transition to a capitalized pillar, they retain the potential distortions of the old system.

II.1.c The Swedish "Notional Accounts" Model

11. The third approach seeks to combine the more attractive features (from a political economy standpoint) of the OECD model, viz., low transition costs, with those of the Latin American model, viz., low levels of labor and capital market distortions. This approach was pioneered by Sweden in the 1990s. Faced by a growing deficit and an increasingly distorted labor market, but unwilling to bear the high costs of transition of moving to a capitalized system, Sweden devised a system of "notional accounting". Countries such as Italy, Poland, and Latvia are considering such a system as well.

12. In this system, contributors have notional or virtual accounts that earn a notional interest rate, which is based on economic and demographic projections. But it is still a pay-as-you-go system: while contributors are aware of their account balances, their contributions are in fact used to pay current retirees: no pension fund exists except to bridge the gap between ***current*** contributions and benefits. Thus the government is not required, as in the Latin American model, to contribute large sums of money to start a fund with which accrued pension rights are met. The notional link between contributions and benefits is believed to eliminate some disincentive effects associated with traditional pay-as-you-go systems: the somewhat tighter link between contributions and benefits may reduce evasion and annuity calculations can be used to help workers understand why retiring early will result in low replacement rates. But the system remains pay-as-you-go, so it does not offer the benefits of the Latin American model: there is no increase in saving and financial market development and contribution rates will have to increase as the population ages so intergenerational transfers stay large.

13. In summary, international experience shows that the common goals of social security reforms are:

- a closer link between benefits and contributions to minimize distortions;

- including a funded element to generate more savings and help growth;
- long-term fiscal sustainability and minimizing intergenerational conflicts by eliminating scope for manipulation of the system for short-term redistributive gains.

14. The only countries that are not currently reforming are some OECD countries, because they have avoided large scale evasion of taxes that fund their systems, because the age distribution of their populations would imply very high costs of transition, and because they are wealthy enough to fund deficits of the system from general revenues. These circumstances clearly do not fit those of Brazil, where there are serious concerns about evasion of payroll taxes (of which social security taxes are the most important) and the resulting high levels of informality of employment, the population is relatively young (though aging rapidly), because propping up the existing system would drain resources from investments in primary education and health and infrastructure, and make it impossible to raise saving rates. Even the experience of richer, more aged countries - those concerned about competing in a global marketplace - shows an increasing emphasis on reductions of distortions that raise the cost of labor and discourages saving. ***Economic*** concerns about ***social*** security are no longer ***politically*** incorrect.

15. The cases of Argentina, Hungary, and the USA (which respectively has implemented, is beginning to implement, and is still deliberating the course of reforms) illustrate the rationale for and nature of social security reforms.

II.2 Argentina's Recent Reforms

16. The Argentinean social security reform, which was initiated in 1994, was done against the backdrop of a large fiscal deficit which reached 1.5% of GDP, widespread evasion of taxes that funded the system, and charges that the system was unfair. The successful stabilization plan initiated in 1990 had exposed the financial weaknesses of the old system. There was consensus that the system was financially unsustainable, inequitable, contained serious distortions that led to strong incentives to evade, and that change was needed. However, there was little or no consensus on what the shape and speed of this change ought to be. By 1994, some general principles for the new system were agreed upon. These were: the system should be ***universal, equitable, redistributive, transparent*** and ***credible.***

The main features of the reform were:

- The new scheme is multi-pillar, funded by a 11% payroll tax on workers, 16% on employers, and 27% for self-employed workers.
- The first pillar consists of a universal flat pension (*prestacion basica universal*) - which was a defined benefit of 2.5 times the average contribution (about US$200), upon retirement at age 60/65 (female/male) after contributing for 30 years - in contrast to Chile, where the first pillar consists of transfers to supplement benefits from the defined-contribution capitalized pillar to ensure everyone reached a minimum level.
- In the new second pillar, which is capitalized, workers have a choice between a public-managed and privately managed system, in contrast to Chile where the second pillar is entirely privately managed.

- Compensatory pension for past contributions, in contrast to Chile, where recognition bonds were issued to switchers to the new system, and
- A defined-contribution, privately-provided, regulated second pillar, similar to Chile's.

17. The system is believed to fulfill four of the five rules. The flat pension makes it both universal and redistributive. The system is transparent: the AFJP publishes system accounts periodically and people have full information of their individual accounts. The privately managed system is credible: the number of participants in the public and private second pillar was about 2 million each in February, 1995; since then participation in the private system has risen to 2.8 million, and that in the public system fell to less than 1.5 million. The average rate of return on accounts has risen from 13 to 22 percent over the same period. But while progress in making the system equitable has been made, some inequities remain: e.g., the highest pension in the first pillar is about 15 times the lowest.

18. For Brazil, the experience of Argentina has the following lessons. First, because of political reasons, Argentina's reformers could not make it mandatory for anyone, including new entrants to the labor force, to join the new, capitalized system. But almost all new entrants are going into the second pillar. Because they cannot switch back to the old system, this implies that in the long term everyone will have both a private account and the basic minimum from the government. So while this transition will take longer than in Chile, it has the benefit of being completely voluntary. Second, Argentina has maintained relative high payroll tax rates (of about 40-45%), and because only about one-fourth of these are linked directly to future benefits, evasion rates may not come down much. In Brazil, where high evasion rates are a serious concern, bolder measures may be required. Hungary reforms may contain useful lessons in reducing evasion and informality.

II.3 Hungary's Current Reforms

19. Hungary, with a per capita income of about $4,300 (about the same as that of Brazil), is beginning to implement social security reforms. Hungary's population of about 10 million is declining, aging, and facing deteriorating health and life expectancy. The disability pension system is widely used and abused. As part of labor market restructuring to deal with growing unemployment, Hungary also used early retirement schemes in the 1980s and 1990s, which have strained the old age pension system despite low and declining life expectancy. Male life expectancy at birth is only 64 years, and that of women is about 75 years.

20. Hungary's old system is essentially a single-pillar system (with universal entitlement), with a minimal third pillar. The retirement age is low: 60 for men and 55 for women, and the replacement rates are high. The consequences were a high system dependency ratio of about two pensioners for every three contributors. Payroll taxes to finance the pension and health system are therefore very high: in 1994, payroll tax rates totaled 54% (44 on employers and 10 on employees). These high rates have led to widespread and increasing evasion, and the system has become a financial drain. In 1996, social security expenditures were about 15% of GDP, which took up more than one-third of central government expenditures, and contributed to a deficit of about 3.3% of GDP. The important point is that Hungary's problems with social security stem not from an aging population but from labor market distortions.

21. Faced by these problems, Hungary is launching a set of stringent reforms:

- As part of pre-reform measures, the government reduced the official replacement ratio and, through indexation rules (in a situation where annual inflation rates are about 25%), cut the real benefits even further.

- Falling real pensions have fueled the growing dissatisfaction with the system, strengthening public support for deeper reforms. The reforms, being initiated in 1997, aim to modernize the first pillar, introduce a second pillar, give a boost to the third pillar, and tighten labor and disability regulations.

- The first pillar will be reformed by a gradual increase in the retirement age to 62 years for all, linking replacement rate to time of service, which will be defined strictly (only military service and maternity leave will be included other than work), and Swiss indexation of pensions (indexed to both wages and price indices).

- The second pillar will be a fully-funded defined contribution scheme, with mandatory participation by workers below 40 years (as in Uruguay), freedom to choose among pension funds and individual account management (as in Chile), and a minimum of 10 years of contribution. The contribution rate will be almost halved to 30% (20% employers and 10% employees).

- Regulation of these pension funds is separated from schemes that belong to the third pillar, and carry a guarantee by the state.

22. While the reforms of the first and second pillar are only now being implemented, these reforms and other changes have already encouraged the growth of the third voluntary pillar. In the three years since 1994, the number of voluntary pension funds has grown from 80 to 270, and the number of members has increased seven-fold from 50,000 to 350,000. Hungary's reforms aim at achieving two broad goals: striking a balance between inter- and within-generation solidarity (redistribution) on the one hand and individual insurance on the other; and encouraging fiscal sustainability and increasing saving. In designing these reforms, Hungary has sought to learn from the experiences of countries all over the world. Hungary's attempt to return to an official economy from a shadow economy by lowering the payroll tax rate and establishing a tight link between today's contributions and future benefits, while retaining a redistributive component, should be closely studied by Brazil which has similar problems and aspirations.

II.4 The Social Security Debate in the United States

23. The social security debate in the US has heated up because of several factors, the most important of which is that the system is believed to have registered an actuarial deficit, which occurs when system assets fall short of accumulated expected liabilities. Unlike fiscal deficits, which occur when current revenues fall short of current payments, these deficits are difficult to calculate since they rely on projections of work force, growth of income and social security taxes, and the average benefit level and duration of retired life. What is clear, however, is that the number of workers per beneficiary has fallen from 14 in the 1950s to less than 3 today. The problems facing social security have in part been the result of an

unanticipated increase in life expectancy, and because benefits and coverage were boosted sharply. The future does not look rosy, even if immigration of young workers is accounted for. The population above 65 years is expected to rise from 12% today to more than 20% by the year 2030. As a result, the ratio of the present value of benefits to present value of taxes were about 7 for men and 9 for women in 1960. These have fallen to about 1.5 in 1995.

24. Replacement rates - which differ by wage level, being high for low-wage workers and vice versa - have already been reduced from an average of about 55% of average earnings to less than 40%. The situation calls for either cutting benefits further or raising taxes. The current proposals include three plans:

- The first proposal would maintain the system, but increase the coverage of taxes on social security income from 50-85% to 100% of benefits, and invest 40% of the assets in equities to raise the rate of return.

- The second proposal would add a system of individual account funded by 1.6% of wages and managed by the government, raise the retirement age, and lower the replacement rate even more for rich retirees.

- The third proposal would establish a multi-pillar system with a flat pension of two-thirds of a poverty line, and a second pillar of individual accounts funded by a 5% contribution, with pension funds managed privately.

25. The design of the US system, and the discussion surrounding it, is notable for ***long-term thinking***:

- Legislators have the mandate to keep the system in good health for the next 75 years. In contrast, Brazil's constitution requires lawmakers to ensure that benefits are paid, but does not ensure that the system is financially viable.

- The US system will not go into a current deficit (i.e., when social security payments exceed contributions) for approximately another 25 years, but the situation is already being treated as a crisis. In contrast, Brazil's INSS system registered a deficit last year.

- Social security benefit levels - for both private and government workers - are calculated using individual indexed earnings over the last 35 years of work, in essence the entire working life of contributors. In contrast, INSS pensions use only the last 36 months' earnings, and public pensions use only the last (usually the highest) monthly salary.

II.5 Points for Policy Makers

26. Some important points that emerge from discussions of the experience of countries in West and East Europe, and North and Latin America are:

- ***Long-term thinking required***: The very nature of the problem of social security implies that long-term thinking, which goes beyond the concerns of one or even two generations, is required for sustainable solutions.

- ***Reforms will be difficult to implement***: The reasons are, first, politicians are shy to propose deep reforms because costs have to be borne now while benefits come later and second, the potential losers from reform (e.g., old workers and retirees) are often well-organized and

vocal, while the gainers (young workers) are unaware of the benefits or disinterested because the gains are so far in the future.

- ***But reforms are being implemented successfully***: Nevertheless, many countries, even those that were welfare states (e.g., Sweden) or socialist economies (e.g., Poland and Hungary) are implementing reforms.

- ***Solutions are unique, but problems are the same***: The solutions are often unique, but the problems that prompt these reforms are the same: ***financial unsustainability, inefficiency,*** and ***inequality.***

III. THE PROBLEMS FACING BRAZIL

27. All these problems - fiscal unsustainability, inefficiency, and inequality - that have prompted countries to reform their social security systems confront Brazil today. Using one of the measures of fiscal sustainability - the ratio of estimated pension debt to current GDP - Brazil's ratio of 200% is about the same as that of Hungary (but about three times that of China). As in the case of the US, the ratio of contributors to beneficiaries has fallen sharply. But, unlike the US where the social security system still enjoys a current surplus (i.e., annual contributions are greater than annual social security benefit payments), in Brazil benefit payments have exceeded contributions by a growing margin since 1995.

28. Unless this trend is reversed, this widening gap will have to be met by reducing other expenditures. There is the danger that the government will have to reduce critical investments in primary education, health care and infrastructure. Another problem that has arisen because of declining faith in the fiscal viability of the system and the weak link between contributions and benefits, is that increasing number of workers are opting to be informal, thus being neither contributors to nor beneficiaries of the social security system. The system, as currently designed, inadvertently distorts work decisions: the degree of informality of work is higher because of the weak links between contributions and benefits, and otherwise productive workers retire from the work force earlier because of overly generous eligibility rules and replacement rates (the ratio of individual monthly pension to salary). In a country with high income inequality by international standards, some inefficiency may be acceptable if the social security system promotes equality of welfare. But, unfortunately, there is little evidence of this. In this section we examine these concerns in turn.

III.1 The System is Financially Unsustainable

29. The actuarial imbalances in the Brazilian pension system for the private sector (INSS) and the public sector (state and federal pension systems) are examined in turn.

III.1.a The INSS System

30. Imbalances in the INSS system can be gauged by examining three indicators: the ratio of contributors to beneficiaries (*"ativos"* to *"inativos"*), contribution rates for employers and employees, and the trends in annual contributions and benefits.

- the ratio of contributors to beneficiaries has fallen from about 30 in 1938 to about 2.5 today, and will fall to about 1.5 by the year 2020,
- the rate of contribution for workers earning between 1 and 3 minimum salaries has risen from 3% to 8% between 1938 and 1996, but
- while receipts have grown from R$32 billion in 1988 to R$42 billion in 1996, benefits have more than doubled from R$18 to R$43 billion over the same period. Thus while receipts were roughly twice the level of benefits less than nine years ago, they are smaller than benefits now.

31. Demographic changes have played an important part in this sharp downturn of the fiscal health of the system.

- Life expectancy at birth has risen from about 50 (48 for men and 52 for women) to about 68 years today, and is expected to rise to about 75 (70 for men and 77 for women) by 2030.

- For social security considerations, a more relevant indicator is the expected additional life at retirement. At 55 years, men are now expected to live until 72 years, and women until 77; at 65 years, men are expected to live until 75, and women until about 80 years.

- In 1940, only about 10% of Brazil's population was older than 50 years; by 1996 this fraction was about 15%, and by 2020 it will be about 27%.

32. But these patterns, which explain the growing ratio of *inativos* to *ativos*, are only one side of the story. The other, perhaps more important, side is the pattern of contributions.

- The annual growth of receipts has dropped from about 10% in the 1970s to about 0% in the 1990s.

- The share of the formal sector in national employment, defined as those paying payroll taxes, has fallen since 1988.

- The rate of urban informality grew between 1990 and 1993 for all five regions, and is about 55% in the North, Northeast, and Central East, and more than 40% in the Southeast and South.

- Estimates of evasion showed an increase from about 14% in 1979 to about 31% a decade later.

33. At the current, very generous, level of benefits compared to the contributions, efforts to extend the system to cover those currently outside the system may actually worsen the actuarial imbalances. For fiscal reasons, efforts to increase coverage should therefore come after reform of the system. If the reforms imply tighter links between contributions and benefits, it would also be easier to persuade workers to contribute to the INSS system.

34. The INSS system comprises of four major subsystems - time of service, disability, old age, and special programs. Table 1 lists the shares of each. The time of service program takes half of all benefits, although it accounts for one-third of all beneficiaries. The old age and the disability programs together account for one-third of all benefits but have more than half of all beneficiaries. The average level of INSS benefits has doubled in real terms from R$100 in 1991 to R$200 in 1996. In the time of service program, the average benefit rose from R$250 to R$450 over this period. The number of beneficiaries in this programs has also risen from less than 50,000 in 1988 to more than 300,000 in 1996. In all programs, women - because of their lower age and higher life expectancies - will receive benefits for about 50% longer than men.

Table 1: Characteristics of INSS Program Participants, 1995

Program	Share of total:		Average	Expected Duration:	
	Number	Value	Age*	Men	Women
Time of service	33.2	51.6	54.0	17.6	22.4
Disability	32.3	16.6	51.2	19.2	24.9
Old Age	25.4	16.2	51.5	16.0	22.6
Special programs	9.1	15.5	63.5	10.8	16.5

Source: de Oliveira and Beltrao, presentation.
* The average age is lower for women in all four programs

35. Without any changes, the fiscal imbalance in the INSS is expected to grow. While contributions are projected to rise from 5% in 1995 to 6% of GDP until 2030, benefits are projected to increase from 5% to 13%. These are relatively optimistic estimates: other estimates indicate a deficit of 2% of GDP as early as the year 2000. While demographic trends cannot easily be changed by policy makers, and overall economic growth depends on other factors such as monetary and fiscal policy, the fiscal imbalances faced by the INSS system can be effectively tackled by reforming the social security system. The main system-design issues are:

- ***High replacement ratio***. Brazil has replacement rates that are considered among the highest in the world. While these ratios seldom exceed 60% in other countries, the ratio is 100% for workers with earnings less than 8 minimum salaries.

- ***End-loaded replacement formula***. The problem of high replacement ratios is worsened by calculating benefits using a formula that is too "end-loaded", viz., is based only on monthly salary levels in the last three years of service when earnings tend to be higher, especially for relatively high wage (skilled) workers.

- ***Weak benefit-contribution links***. These result in high rates of evasion, but with the irony that increasing coverage of the current system will worsen, not improve matters.

- ***Time of service rather than contribution***. Reliance on time of service for determining eligibility rather than length of contribution period, and the overly generous rules for calculating time of service, have led to unsustainable high benefits.

- ***No minimum age at which retirees begin receiving benefits***. The above rules, combined with the absence of a stipulated age at which individual start receiving benefits, can result in "retirement" beginning at 40 years of age, and continuing for more than 30 years.

36. Since the actuarial problems faced by the INSS system arise in large part because of the generosity of benefits, changes in these features are necessary for solving these problems.

III.1.b Pensions for Public Employees

37. The main indicators of the seriousness of the situation facing pension systems for federal, state and municipal workers are:

- ***Rising pension expenses.*** The ratio of pension expenditures to salary bill for *ativos* is about 50% in Minas Gerais, almost 100% in Rio de Janeiro, and 120% in Rio Grande do Sul. The situation is equally grave in many other states and even the federal government has seen the share of *inativos* in personnel related expenses rise from 23% in 1987 to 42% in 1995.

- ***Generous pension levels.*** This is largely the result of very high average pensions relative to average wages. This ratio ranges from 150 to 180% for these three states. It is striking that the average pension relative to average wage is four times higher for civil servants compared to workers in the private sector.

- ***Expensive retirement privileges for some groups*** Overly generous retirement schemes for politically powerful groups, e.g., for teachers and politicians who can retire with full pensions after 25/30 years for women/men, contribute substantially to the burden on state governments. In Minas Gerais, for example, teachers are more than 75% of *ativos* and *inativos*.

- ***Distortion of incentives.*** Government pensions are more generous, and salaries and conditions of work are no worse than in the private sector. Private employees who join the government can carry their years of service into the public system, and many join the civil service late in their careers to avail themselves of the higher pensions. Such distortions have often led to public sector employment being viewed as a place of privilege rather than an organization that efficiently delivers public services.

38. The solution to bringing pension-related spending by states under control lies in dealing with the following problems:

- ***Lenient eligibility rules.*** Eligibility conditions are even more lenient than for INSS pensions, which are quite generous by international standards. Due to generous rules for calculating years of service (e.g., programs of study count as service) and special retirement schemes, the *average* age of *inativos* is only about 60 years, and civil servants are known to begin receiving pensions as early as 40 years.

- ***Generous benefits.*** The public sector plan benefits are even more generous than pensions for private sector workers. There is no upper limit on pensions (which cannot exceed 8 minimum salaries for the INSS system), and pensions are based only on the salary in the last month of service. Actuarial calculations indicate that if raising employee contributions were the only way to bring state systems into balance, even contribution rates as high as 75% of salaries would be insufficient to cover current benefits in some states. The solution, therefore, must include lowering the level of benefits.

- ***Zero contributions.*** While private sector workers contribute up to 10% of their salaries towards pensions, civil servants do not contribute anything (with the exception of Rio Grande do Sul, which introduced a 2% contribution rate in 1996).

- ***Parity rules that raise fiscal burden of administrative reforms.*** Pension adjustment rules are structured so that benefits for *inativos* goes up when salaries of *ativos* in public administration go up, implying high cost of administrative reforms that often necessitate a reduction of the work force and increases in the salaries of some worker categories.

39. Without effective measures to tackle these problems, it will be difficult to implement administrative reforms. Just as the consequence of an unreformed INSS system is an uncompetitive private sector labor market and strained treasury, the result of not reforming the public pension system is an inefficient civil service and a severe strain on state and federal budgets.

III.2 The System is Distortionary

40. The distortionary effects of social security in the Brazilian labor market are due to four design-related factors:

- ***The weak link between contributions and benefits.*** This results in contributions for social security being viewed largely as a tax by workers and employers. For all but the last three years of an individual's working life, the worker's reported earnings do not determine pension levels, giving both employers and workers a strong incentive to under-report earnings for all except these three years.

- ***The high payroll tax to finance the social security system.*** Social security contributions, which total 22% of wages, raise the cost of labor. This has two effects: first, for those employers who can switch to less labor-using methods of production, this reduces the demand for labor. Those who cannot save labor costs in this way have two choices: go out of business, or evade payroll taxes by becoming "informal". The latter option is preferred by most employers and many workers. Informality of employment thus arises as the result of collaboration between workers and employers. There is mounting evidence that informality in Brazil is largely a tax-related phenomenon: compliance with minimum wage increases, hours of work, and modes of pay are similar for formal and informal sector workers, and only noncompliance with payroll tax obligations distinguishes informal from formal employment.

- ***The absence of a minimum age at which retirees can begin collecting benefits***. Combined with other attributes such as the high replacement rations, weak link between contributions and benefits and generous eligibility conditions, this leads to persons retiring while relatively young. The distorted labor-leisure choice results in wasted human capital and excessive reliance on government transfers.

- ***The "parity" rule for ativos and inativos.*** The practice of indexing benefits of those currently retired to the salaries of current workers raises the cost of effective civil service reform and compromises the effectiveness of minimum wage policies. State and federal governments have to consider the enormous fiscal burden of paying *inativos* when considering remedies for situations where it is found that public sector workers are underpaid. Similarly, the federal government would have to consider the fiscal implications (i.e., raising pension levels for many retirees) of raising minimum wages even if it is found that this would help some disadvantaged workers. The parity rule

may thus compromise the effectiveness of both efficiency- and equity-enhancing policies.

III.3 The System is Not Very Equitable

41. In its current state, Brazil's old age system has three main inequities:

- Civil servants and employees of public enterprises that have closed funds get more from the system than INSS pensioners.
- Within each of the public and private systems, the system is regressive because of the use of final month's or last three years' salary to compute pension levels.
- Due to differences in mortality, there is some inequality in net social security benefits across groups differentiated by gender, region, and skill (or wage) levels.

42. We briefly take these up in turn. In addition to these inequalities, there are many workers who, because of relatively short formal sector length of service (i.e., less than 25 years for women, and less than 30 for men), have contributed to the system but will not receive benefits from the time of service program.

III.3.a Public-private differentials.

43. Estimates of private-public earnings differentials from the 1995 PNAD survey indicates that employees in public administration earn almost twice as much as those in the private sector. While a large part of this difference is due to their higher education levels and age, significant differentials remain for federal administration, and legislative and judicial employees even when these attributes are controlled for. For all *estatutarios*, higher earnings also translate into much higher overall pension benefits than private sector employees. As mentioned above, the ratio of average pension to average wage is four times higher for civil servants compared to workers in the private sector. Pension rules exacerbate the private-public difference in earnings:

- Contribution rates are lower (usually zero) for civil servants. Private sector workers contribute, together with their employers, about 20% of their monthly salaries toward pensions.
- While monthly INSS pensions are capped at 8 minimum salaries (or about R$1,000), government employees receive up to 120% of their final salary, which can be higher than $10,000 per month. In Rio Grande do Sul, for example, about 15% of current civil servants would receive pensions greater than $1,000 despite earning the same amount (controlling for education, age, race, gender, and tenure) contributing only 2% of earnings towards pensions; in 1995, more than 6,500 workers would receive pensions above R$5,000 per month.
- While salaries for the final 36 months before retirement are used to calculate pension levels for private sector workers, pensions for public servants are calculated using the final monthly salary. Even if age-earnings profiles are identical for an *estatutario* and a *CLTista*, the public employee would get a higher pension due to greater "end-loading" in the formula for calculating pension levels.

44. Recent analysis shows that public employees have higher or similar earnings than similarly qualified private sector employees, and have greater job security.

Pension differences between these groups add to, rather than compensate for, this inequality in labor market rewards.

III.3.b Inequality due to skill differentials.

45. In general, higher levels of education are associated both with higher levels of earnings, and faster growth of earnings with age. Put another way, more educated workers start with earnings levels that are similar to their less educated counterparts but, over much of their working lives, this earnings gap widens. In the case of the Brazilian pension system, where only the last month (in the case of government employees) or the final three years (in the case of private sector workers) of an individual's earnings history is used to compute pensions, this pattern implies that less skilled (poorer) workers will not receive as much from the pension system as would more skilled (richer) workers. Consider the following example.

- Assume that educated workers earn a constant amount R$200 per month in the first half of their working lives, and uneducated workers earn R$100 per month. In the second half of their career, assume that these numbers are R$400 and R$100 respectively.

- Thus, while the educated worker's lifetime contributions to social security were based on average earnings of R$300, his pension level will be R$400. The less educated worker's contributions and benefits will be based on an average of R$100.

- So even though skilled workers earn only three times more than less skilled workers, their pensions are four times as much.

46. The example is hypothetical, but reality in Brazil is not very different. And when we consider that less educated workers usually work for more years and live shorter lives, the differences in pension benefits relative to contributions are exacerbated.

III.3.c Inequality due to mortality differentials

47. The inequality in pension benefits due to differences in mortality arises because groups with longer retired lives can expect to receive pension benefits for longer, even though their contributions may be over working lives that are similar in length. The matter is complicated somewhat if eligibility periods for these groups differ as well. A methodology that uses "rates of return" (in terms of expected pension benefits to each *real* of contribution) has been used to compute some aspects of inequality due to mortality differences. This methodology was applied to the US and Argentina, and found to be useful in determining the inequality-related effects of social security systems.

48. A 1991 study of differences in life expectancy in Brazil found that the main determinants are gender, region and income level. Using these three categories, and applying the "rate of return" methodology, the following results stand out:

- ***Gender***. Upon reaching 60 years, the average woman can expect to live for another 20 years, relative to 15 years for men, thus collecting 33% more benefit checks than men. Women also have lower time of service requirements: 20/25 years to 30/35 years. These differences translate into about 20-30% higher rates of return for women. Since women have lower earnings than men, these higher returns may actually be equality- enhancing. On the other hand, since female labor force participation will

continue to rise in Brazil, this pattern implies an increasing fiscal burden.

- ***Region.*** Life expectancy levels are higher in the South and the East than in the poorer Northeast, and these translate into higher rates of return for these regions in case of the old-age program. The old-age program therefore does not help reduce regional disparities in income. In the length of service program, regional mortality differentials appear to be offset by other factors.
- ***Earnings levels.*** Since wealthier persons live longer, they may have higher returns since they can collect benefits for longer. In case of women, this "advantage" appears to be offset by other factors. But wealthier males in both the old age program and length of service programs appear to receive higher rates of return. Both programs appear to worsen inequality.

Table 2: Rates of return (percent), by groups with different mortality rates

Group	Old Age Program*	Length of Service Program*
Sex:		
Females	18.3	9.7
Males	14.7	7.0
Region:		
South	17.3	7.9
East	17.2	8.3
Frontier	17.0	7.3
Northeast	16.2	7.9
Earnings:		
<2 min. wages, Males	11.1	5.9
>4 min. wages, Males	13.5	7.2

Source: Rofman, presentation.
The assumptions are 12 years of contributions in the case of the old age program, and 25/30 years in the case of the length of service program

IV. SUMMARY AND IMPORTANCE OF REFORM

49. The main lesson of international experience appears to be that faced by problems of insolvency, economic distortions and social equality considerations, many countries are moving towards multi-pillar old age social security systems. The new systems tend to have in-built mechanisms that do not distort individual incentives and cannot be tampered with to obtain short term gains for selected groups. Principally, this involves installing a capitalized pillar that has a tighter link between contributions and benefits to encourage savings and reduce labor market distortions, while restructuring the redistributive pillar that most countries have already to ensure a universal minimum pension. Countries that face very high costs in transiting to a fully capitalized system are trying to find ways around this: Sweden's notional accounts system is one such innovation.

50. In light of this experience, it is clear that Brazil's problems are neither unique nor beyond repair. As compared to countries such as the US, Sweden, and Uruguay, Brazil has a young population. This means better prospects for moving to a multi-pillar system, since it implies lower transition costs to a capitalized system. But the window of opportunity is small. The population, while young, is aging quickly; the rate of increase of pension debt is high because of high benefit levels; the absolute number of retirees, and the ratio of *inativos* to *ativos* is rising rapidly; and Brazil is facing strong pressures to increase labor market competitiveness.

- Other Latin American countries that face similar pressures, e.g., Chile, Argentina, Uruguay, Peru, and Bolivia, have already launched far-reaching reforms.

- Formerly communist countries such as Poland, Hungary, and China have begun reforming their social security systems.

- Even rich countries such as Sweden, the US, and Japan, who face high transition costs due to their older populations, are contemplating deep reforms or have already begun reforming their systems.

51. Social security reform is critical for the development and functioning of labor and capital, for efficiency of public expenditures, and hence for economic and social welfare:

- ***Capital market functioning.*** The President of the Senate, Mr. Antonio Carlos Magalhaes, has correctly warned policy makers that "*Social security will undermine every financial system in Brazil if not reformed.*"
- ***Labor market efficiency***. Besides its importance for capital markets, social security is critical for smooth functioning of labor markets. Without reform of social security, it will be impossible for Brazil to have an efficient civil service, and an efficient, competitive private labor market.
- ***Allocation of public expenditures.*** If left unreformed, the current social security system will divert resources from much-needed investments in health, education and infrastructure, and hence jeopardize not only current economic progress, but economic prosperity and social welfare for many generations to come.

SUGGESTED READINGS

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