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BRAZILIAN SOCIAL SECURITY PAST, PRESENT AND FUTURE

André Cezar Médici - IPEA
Francisco E. B. Oliveira - IPEA
Kaizô I. Beltrão - ENCE/IBGE

BRASIL
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INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA - IBGE
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BRAZILIAN SOCIAL SECURITY PAST, PRESENT AND FUTURE

ANDRÉ CESAR MÉDICI

FRANCISCO E. B. OLIVEIRA

KAIZÔ I. BELTRÃO

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CHAPTER 0

BRAZILIAN MACROECONOMIC ASPECTS: IMPACTS ON SOCIAL SECURITY

From Internal Growth to External Debt; From the Inflationary Culture to the Hyperinflation; Economic Adjustment Strategies; Employment and Wage Adjustment; Final Considerations.

0.1 - From Internal Growth to External Debt

By the end of the seventies, Brazil was one of a select group of newly industrialized countries. The economic instability of the early sixties had been solved by a strong adjustment program and by a State reform. From 1968 to 1973 Brazil presented a considerable large GDP growth rate.

The fast increase of international trade brought a good spell for export and internal market oriented groups. The latter had benefits with the extension of the access to credit mechanisms and the rise of population income, particularly of the urban middle class.

Besides the high GDP growth rates achieved (table 0.1), the export led model created conditions to import goods and services essential to the expansion of capital goods, basic inputs and durable goods national industry.

During the seventies, two great changes in the economic order had strong impacts on the Brazilian economy. First, oil prices increased fourfold, with impacts on the reduction of the economic growth rates, revealing the frailty of an Economy that had chosen network of roads as its main transportation infrastructure.

The oil price fourfold increase began a strong process of external unbalance (Table 0.2) reflected on the increase of the payment balance deficit and on the growth of the weight of oil in the import bulletin. From 1979 on, new increases of international oil prices increased more the importance of oil on the external debt process. In the beginning of the eighties, oil represented more than 50% of total Brazilian imports.

TABLE 0.1 - **GDP Growth Rates BRAZIL 1959/1993**

Years	Rate (%)	Years	Rate (%)
1959	5.6	1977	4.6
1960	9.7	1978	4.8
1961	10.3	1979	7.2
1962	5.2	1980	9.2
1963	1.6	1981	-4.5
1964	2.9	1982	0.5
1965	2.7	1983	-3.5
1966	3.8	1984	5.3
1967	4.9	1985	7.9
1968	11.2	1986	7.6
1969	9.9	1987	3.6
1970	8.8	1988	-0.1
1971	11.3	1989	3.3
1972	12.1	1990	-4.4
1973	14.0	1991	0.9
1974	9	1992	-1.4
1975	5.2	1993	4.1
1976	9.8		

Source: "FGV - Revista Conjuntura Econômica" (several issues)
IBGE - "Indicadores Sociais: Tabelas Selecionadas (vol.2)", 1984 and "Indicadores IESP" (several issues).

The rise of oil prices brought large and unexpected revenues to the OPEC cartel members. Without the ability to invest in real assets, the OPEC country members made speculative investments in the international banking system, creating monetary surplus supplies and causing the fall of international interest rates. Several newly industrialized countries like Brazil used the available floating rate loans to finance not only their balance of payment deficits but also to finance the development process itself.

The second great change in the economic world context was the rise of international interest rates, starting in 1979, with strong impacts on the external debt dimension of indebted developing countries.

TABLE 0.2 - **External Deficit or Surplus BRAZIL: 1972/1993**
(Dec 1990 US$ Billion)

YEARS	Deficit/Surplus (in US$ Billion)	Exports/GDP (%)	% Of Petroleum in Imports
1972	-751.3	6.5	11.1
1973	19.7	8.0	12.4
1974	-10,731.0	7.6	23.4
1975	-7,414.7	7.0	25.0
1976	-4,516.4	7.4	31.0
1977	183.2	7.6	33.9
1978	-1,791.6	7.0	32.8
1979	-4,223.8	7.2	37.5
1980	-2,823.0	5.7	44.4
1981	1,202.0	6.9	51.3
1982	780.0	5.9	53.9
1983	6,460.0	6.7	55.8
1984	13,089.0	7.8	52.9
1985	12,486.0	6.9	50.7
1986	8,305.0	5.6	25.2
1987	11,172.0	6.3	31.3
1988	19,184.0	8.1	21.9
1989	16,120.0	8.0	24.2
1990	10,990.0	7.6	27.0
1991	10,589.0	7.6	24.1
1992	15,680.0	8.9	24.5
1993	13,100.0	8.5	21.39

Source: "Revista Conjuntura Econômica" and "Indicadores IESP" (several issues).

During the eighties, the growth of the international debt brought two kinds of problems:

- Reduction of the use of internal savings for development financing. The largest part of internal savings was used for the payment of the flow of external debt (interests and amortization);

- Major difficulties for using the external resources to finance the development process. Table 0.3 data show that between 1970 and 1980 the Brazilian external debt had a six fold increase

while during the eighties it increased less than 50%. It reached a peak of around US$ 144 billion in 1987 and has been slowly falling ever since.

TABLE 0.3 - **EXTERNAL DEBT BRAZIL: 1970/1993**
(Dec 1990 US$ Billion)

YEARS	External Debt	YEARS	External Debt
1970	19.1	1982	119.2
1971	23.7	1983	126.7
1972	31.2	1984	132.3
1973	42.4	1985	131.7
1974	51.6	1986	136.5
1975	60.6	1987	143.7
1976	73.3	1988	131.0
1977	81.6	1989	125.9
1978	103.5	1990	126.3
1979	100.2	1991	118.3
1980	105.0	1992*	135.9
1981	109.7	1993	145.7

Source: "Revista Conjuntura Econômica" and "Indicadores IESP" (several issues)
* The 1992 and 1993 values are subject to revision.

0.2 - From the Inflationary Culture to the Hyperinflation

In spite of the high GDP increase, the seventies were influenced by the lower inflation rates of earlier Brazilian economic history. Between 1968 and 1973 (see table 0.4) the annual inflation rates never went over 21%; a very low value for an economy with an inflationary culture like Brazil.

TABLE 0.4 - **Annual Inflation Rate BRAZIL: 1959/1993**

YEARS	Inflation Rate (%)	YEARS	Inflation Rate (%)
1959	37.8	1977	38.8
1960	29.2	1978	40.8
1961	37.1	1979	77.2
1962	51.7	1980	110.2
1963	75.4	1981	95.2
1964	90.5	1982	99.7
1965	56.8	1983	211.0
1966	38.0	1984	223.8
1967	28.3	1985	235.1
1968	24.2	1986	65.0
1969	20.8	1987	415.8
1970	19.8	1988	1,035.6
1971	20.4	1989	1,782.9
1972	17.0	1990	1,476.6
1973	15.5	1991	480.2
1974	34.5	1992	1,157.9
1975	29.4	1993	2.708,2
1976	46.3		

Source: Revista Conjuntura Econômica (several issues)

The international oil crisis brought inflation rates to 40% between 1974 and 1978. The onomic policy by this time aimed at inconsistent objectives: sustain high levels of GDP crease and, simultaneously, reduce the inflationary levels and the payment balance debt.

Within this contradictory context, the maintenance of high economic growth, was one of e basic goals of the "Segundo Plano Nacional de Desenvolvimento" (National Development an II). The inflation rose again and the balance of payment had a surplus only at the beginning the eighties.

The rise of interest rates and the strong emission of public debt treasury bonds, since 76, combined with a restrictive monetary policy, was the Brazilian Government economic licy to slow down the inflationary process.

As a great portion of Brazilian companies were highly in debt, higher interest rates pressed up price levels reducing the effects of the governmental efforts in the fight against inflation.

Around 1979 annual inflation rates soared to 100%. Given the absence of new external credits and the low growth of fiscal funds, the increase of public debt was the main policy used to finance public sector needs. It is needless to stress the high inflationary impact of this strategy.

Inflation rates stepped up once again between 1983 and 1987, jumping to an average around 200%. This phase begins with a strong speculative behavior by all economic agents (individuals and enterprises), reducing even more productive investments. Between 1987 and 1988 the inflation rate level changed again, stepping up to 1000%. Several efforts to produce an adjustment through economic shocks produced social defensive mechanisms like preventive elevation of prices and wage indexation.

0.3 - Economic Adjustment Strategies

For Brazil, getting new resources(fresh foreign money) was very important to its development and/or to refinance the external debt. This was impossible without submitting Brazilian economic policy to IMF and/or World Bank proposed policies. The strategies of these multilateral organizations were:

a) Change deficits of the trade balance into surpluses;
b) Raise the internal interest rate;
c) Restrictive Monetary Policy.

This strategy would supposedly permit to reduce external debt and lower inflation rates by supply shocks. As for the first point - change deficits of the trade balance into surpluses, - from 1981 Brazil to this point obtained the highest surpluses of its history.

The first agreement between Brazilian government and the IMF, signed in 1983, was based on the following points:

a) maxi-devaluation of the Cruzeiro;
b) Elimination of the gap in public prices and tariffs;
c) Elimination of subsidies;
d) Reform of Wage Laws;
e) Increase of tax collection as percentage of GDP.

The little success of the program did not justify the sacrifice it took to implement it. The decrease of the GDP on 1983 - the greater of the period between 1980 and 1989 - brought negative consequences on employment, income and other national social indicators.

The second stabilization strategy used in Brazil was based on "Heterodox Plans"[1]. Some of those plans included goals defined by multilateral organizations for the economic policy agendas, but a lot of these goals were not achieved, characterizing a stop-and-go policy.

The first of these plans was the "Plano Cruzado" (1986) that made a positive impact on the restarting of the development process, reversing the income transfer mechanisms that worked in benefit of the financial system and more affluent strata. The income distribution turned out to be less regressive and the poorest economic classes got more jobs, goods and services.

The "Plano Cruzado" did not survive its own inconsistencies and the political pressure of major economic groups. The excess demand for goods and services as a result of the sudden rise in wages coupled with price controls led to the appearance of a black market, artificial product differentiation strategies and general disregard of price controls by the entrepreneurs. In turn, price controls collapsed and interest rates increased as well as inflation rates.

Other heterodox plans ("Plano Bresser", "Plano "Feijão com Arroz"[2]), tried to replicate some of the mechanisms used before in other adverse political and psychological contexts. Preventive actions of economic agents combined with the low government credibility brought about fiscal evasion and growth of the informal economy.

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1 Plan that use mixed instruments of several economic approaches, like monetarist ,keynesian, neoclassic, etc.

[2]Plan developed by Mailson da Nobrega, nicknamed as "Rice and Beans Plan", because of its little economic boldness

The Collor Plans (I and II) were a last attempt at using heterodox economic adjustment plans. A few months after their implementation they triggered off a disorganization process in the national economy and deepened the worst characteristics of the economic crisis.

0.4 - Employment and Wage Adjustment

The crisis of the eighties brought strong negative effects on the labor market and on the wage trajectories in the Brazilian economy.

A progressive increase of the formal labor market (table 0.5) occurred during the early seventies. The share of formal employees in the total economically active population rose from 23.5% in 1976 to 28.1% in 1983. From 1983 to 1989 this participation rate dropped steadily.

Another important point to stress is the fall of the real value of the minimum wage (table 0.6), that has lost 1/3 of its purchasing power between 1980 e 1989.

0.5 - Final Considerations

Economic crisis, chronic inflation, rise of the informal economy and fall of real wages were some important characteristics of the recent past of the Brazilian economy. These adverse conditions have had a negative impact on Social Security finances.

Several adjustment mechanisms were tried in an attempt to restore Social Security equilibrium:

a) public debt bonds emission to pay outstanding debt[1];

b) creation of new social contributions (using gross business revenues and profits as the tax base) and an increase of the rates of the existing ones; and

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[1]In 1982 a large special Treasury Bonds emission was made in order to cover a large Social Security debt with private banks. Since they were indexed with only 50% of the regular inflation index, their devaluation over time was enormous.

c) reduction of the real value of the benefits through imperfectly indexing them against inflation.

All these issues and impacts show that the Social Security crisis in Brazil has three components: the first is a conjuctural component and shows how badly conceived global economic policies can bring great losses to social policies; the second is a structural component, involving socioeconomic, demographic and institutional characteristics of the system and of the population involved in it; and the third is a managerial component involving administrative costs and absence of control mechanisms.

TABLE 0.5 - **Labor Market Precariousness Indicators BRAZIL: 1976/1989**

YEAR	Workers Without Formal Documentation		Workers With Income 1 < MW	Workers With No Social Security Coverage	Precariousness Rate
	(1)	(2)	(3)	(4)	(5)
1976	23.3	38.7	43.7	-	-
1977	25.0	41.1	46.9	-	-
1978	25.0	40.1	45.1	51.7	-
1979	25.1	40.1	41.6	50.9	-
1981	25.8	41.9	38.6	50.1	52.4
1983	29.2	47.2	41.7	52.3	58.0
1984	27.6	45.1	40.9	53.2	56.3
1985	28.1	43.5	42.1	2.7	57.6
1986	27.9	42.2	35.5	-	-
1987	27.5	41.7	33.8	-	-
1988	27.3	41.3	36.9	49.2	50.7
1989	26.9	40.8	35.3	-	-

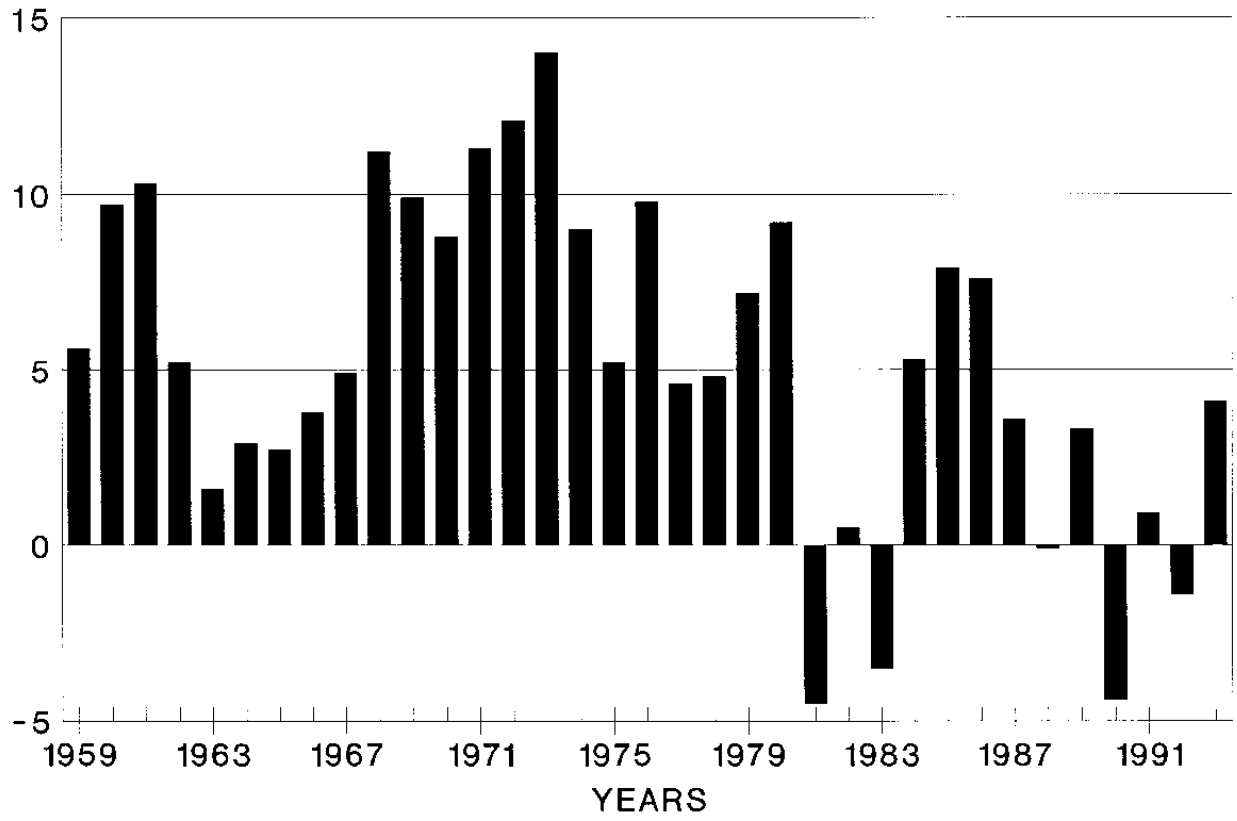
Source: IBGE, PNADs 1976-1989.
(1) - Employees with no formal ties as a percentage of all workers.
(2) - Employees with no formal ties as a percentage of all employees.
(3) - Workers with income less than one minimum wage as a percentage of all workers.
(4) - Workers with no Social Security coverage as a percentage of workers.
(5) - Precariousness rate defined as the sum of open unemployment, plus workers with income less than one minimum wage and workers with income between one and two minimum wages with no Social Security coverage as a percentage of the economically active population.

TABLE 0.6 - **Minimum Wage Index BRAZIL: 1952/1993**

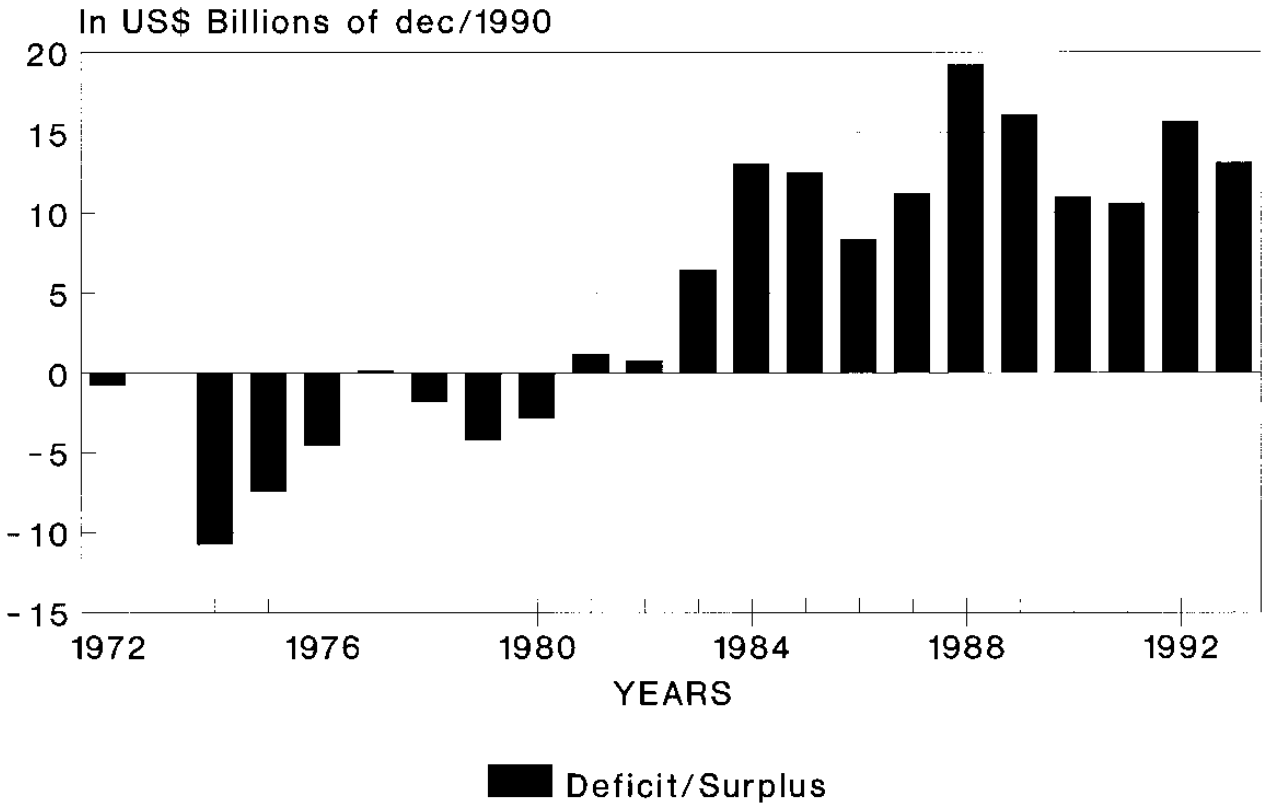
YEAR	INDEX	YEAR	INDEX
1952	100.0	1973	60.1
1953	82.4	1974	55.2
1954	100.1	1975	57.6
1955	112.4	1976	57.2
1956	114.2	1977	59.6
1957	124.2	1978	61.4
1958	108.0	1979	62.0
1959	120.9	1980	62.5
1960	102.0	1981	64.1
1961	113.2	1982	66.8
1962	103.1	1983	56.8
1963	90.6	1984	52.7
1964	93.6	1985	53.9
1965	90.3	1986	49.1
1966	77.0	1987	37.3
1967	72.8	1988	37.2
1968	71.3	1989	47.4
1969	68.6	1990	41.6
1970	69.8	1991	40.8
1971	66.8	1992	42.7
1972	65.6	1993	48.08

Source: "Boletim do DIEESE" (several issues)
Deflator:"Índice de Custo de Vida da Família Assalariada" - DIEESE/SP.

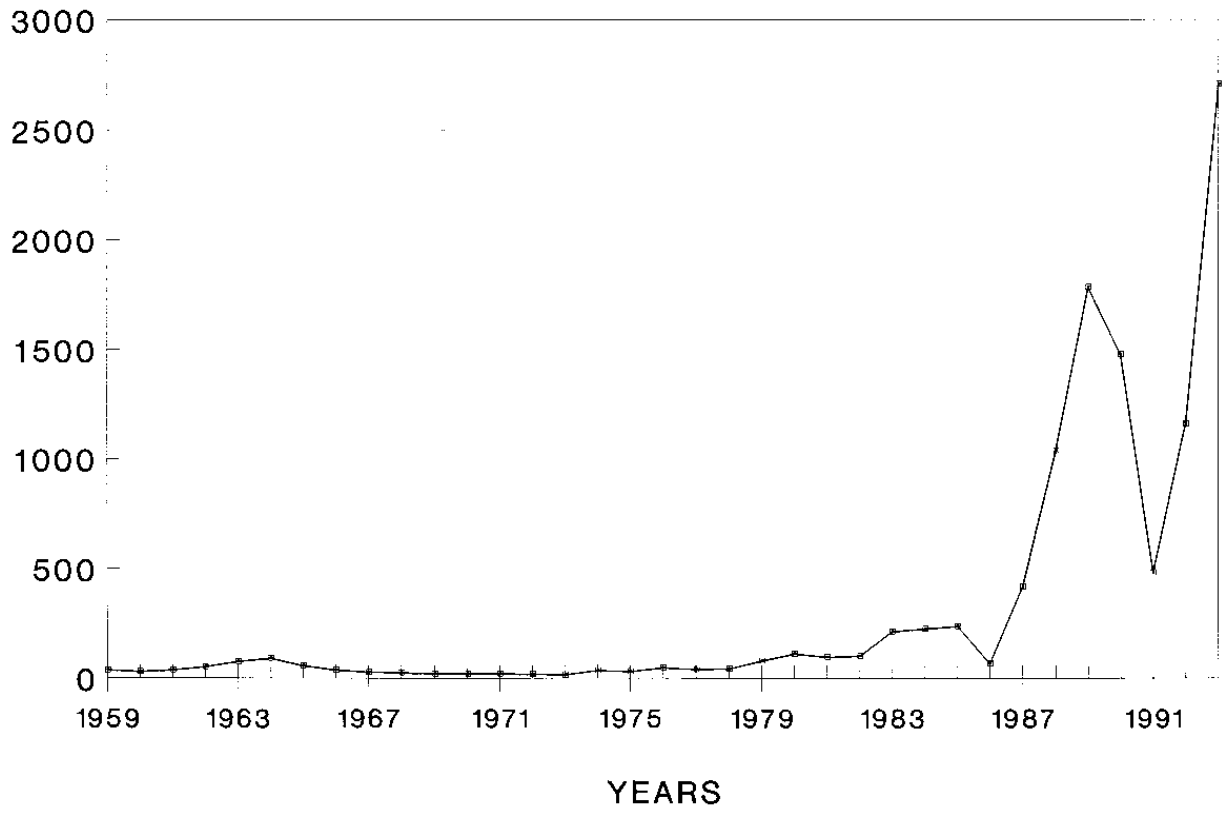
Graph 0.1
GDP GROWTH RATES



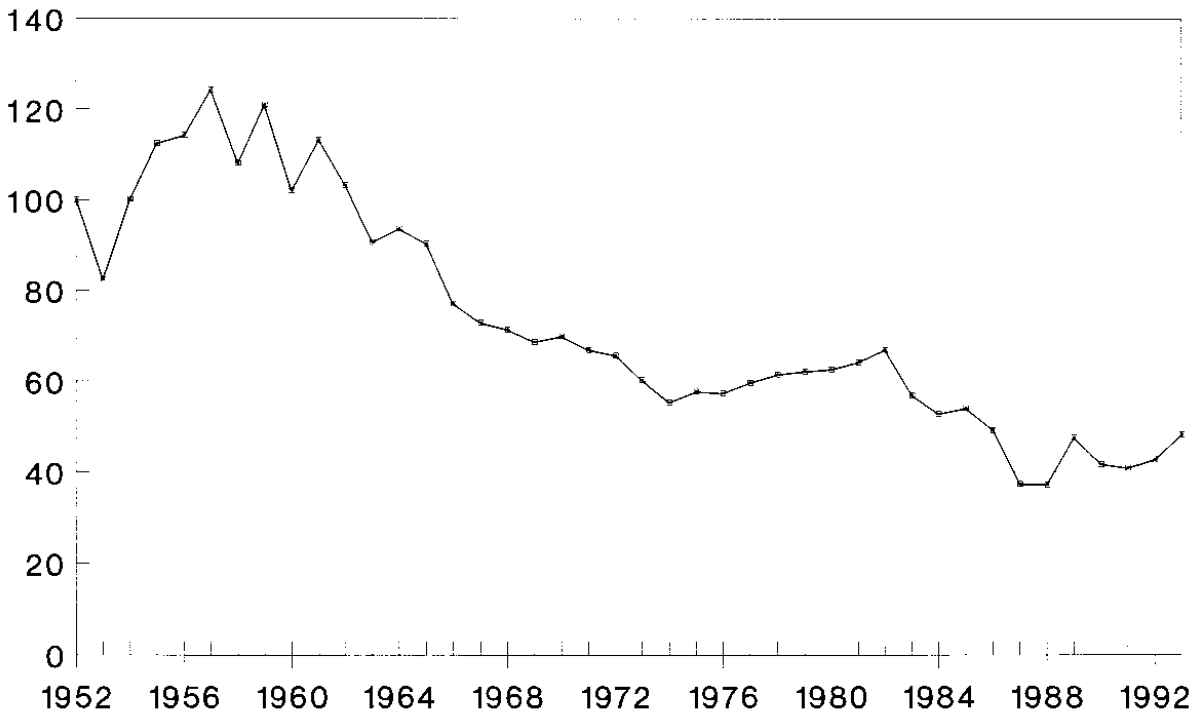
Graph 0.2
DEFICIT/SURPLUS TRADE BALANCE



Graph 0.3
ANNUAL INFLATION RATE - 1959-1993



Graph 0.4
MINIMUM WAGE INDEX



CHAPTER 1

HISTORICAL EVOLUTION AND DIAGNOSIS OF THE BRAZILIAN SOCIAL SECURITY

Introduction; Institutional Evolution; Evolution of Social Security Revenues; Evolution of Social Security Expenditures.

1.1 - Introduction

The Brazilian Social Security System underwent a considerable evolution since its conception, both as a result of political struggle in the democratic context, and of the State's paternalistic and authoritative actions. The current crisis which the Social Security and Social Assistance System is going trough, if, on the one hand worries the population, on the other hand has a positive side, leading the way to discussion of some points that before had been kept within the narrow bounds of the State bureaucracy. The present moment, with the coming constitutional reform, is a favorable one for discussing the Social Security System and equating reasonable alternative solutions. We firmly believe we could get financially and economically efficient solutions that also would meet equity criteria.

1.2 - Institutional Evolution

The earliest attempts at social assistance in Brazil were made by the Catholic Church and date back to colonial times ("Casa de Misericórdia de Santos", 1543). Throughout Brazilian history, some form of public charity and/or insurance existed, but it was not until 1919 that the first law concerning occupational risk insurance was passed. Nevertheless, it was the so-called "Lei Eloy Chaves" ("Decreto-Lei[1]" 4682 of January 24 th, 1923) which served as the foundation for the present Brazilian Social Security System. This law created a pension and survivors benefits fund for railway workers. It was the starting point of a company fund period, characterized by the small size of the population covered by a large number of funds.

During the 1920's and 1930's, the system mushroomed to include a total of 183 funds in 1937.

From 1930 onwards, urban workers became a social and political force in the Brazilian scene. The "Ministério do Trabalho Industria e Comércio" (MTIC=Ministry of Labor, Industry and Commerce) was established and a Social Security System began to be a matter of major

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[1]Legal equivalent to a law, not voted by Congress but promulgated by the government executive branch.

concern to both workers and Government. Because of the actuarial instability caused by the small number of members of each fund, a change in the system was implemented.

It was the beginning of a new period, where the small funds were gradually grouped into larger "Institutos de Aposentadorias e Pensões " (IAPS=Pensions and Survivors Benefits Institutes), which covered nearly all regularly-employed urban wage earners and a large majority of the self-employed, under the broader but still specific concept of coverage by occupational category. The State that so far had kept itself somehow apart from the process, incorporated a more active role. These "IAPS" were generally directed by a Federal Government appointee, acting under a board composed of representatives of the employers, employees and Government. The degree of effective action of each of these boards varied widely among these institutes, mainly as a result of how much political power was in the hands of a specific occupational union. For this reason, as well as their varying financial capacities, there were also striking differences between the benefit plans offered by the institutes. In 1945 there was an attempt to correct these distortions, with the creation of the "Instituto de Serviços Sociais do Brasil" (ISSB = Brazilian Institute of Social Services), which would congregate the several existing Social Security institutions. The Government inaugurated in 1946 did not approve the credit necessary for its creation and the ISSB was not implemented.

Six years later, the unification was achieved through the creation, in November 21 st 1966, of the "Instituto Nacional de Previdência Social" (INPS = National Social Insurance Institute). The 1960's were marked by a trend towards more uniform benefit plans and institutional unification. The first and major event was the "Lei Orgânica da Previdência Social" (LOPS = Organic Social Insurance Law) enacted by Congress in August 26 th, 1960. This Law had been proposed in Congress 14 years earlier and its major achievement was the uniformization of Social Security benefits of the several "Institutos".

The new agency congregated six "Institutos" and was charged with responsibility for social insurance and medical assistance to all legally-employed, urban employees (excluding federal employees, some State and municipal employees covered by specific schemes and household employees).

From 1963 onwards, restricted coverage was extended to other categories. The "Fundo de Assistência ao Trabalhador Rural" (FUNRURAL = Rural Workers Assistance Fund) instituted in 1963 and the "Plano Básico" (Basic Plan) in 1969 started the process, extending the benefits to rural workers, with moderate success. The process continued with the inclusion of

household servants (1972) and the self-employed (1973), the creation of social assistance benefits for the non-insured elderly and the differently able and coverage of rural employees also by FUNRURAL (1976). Virtually the totality of the economically active population, were potential beneficiaries of the system and entitled to receive some kind of social security cash benefits and medical assistance.

In 1974, the "Ministério do Trabalho e Previdência Social" (MTPS = Ministry of Labor and Social Security) was split into two different administrations and the "Ministério da Previdência e Assistência Social" (MPAS = Ministry of Social Security) was empowered with proposing and executing actions related to Social Insurance, Social Assistance and Medical Care[1].

The creation in 1977 of the "Sistema Nacional de Previdência e Assistência Social" (SINPAS = National Welfare and Assistance System) was the next step along the institutional evolutionary path toward the universalization and equalization of social coverage. The conceptual basis for the change was the functional specialization of social protection institutions, integrated within a systematic framework. INPS was now charged with responsibility for cash benefit payments for insured persons in both urban and rural populations. The same law phased out the FUNRURAL and created the "Instituto Nacional de Assistência Médica da Previdência Social" (INAMPS = National Medical Care Insurance Institute), whose functions encompassed medical care to all the population covered. The "Legião Brasileira de Assistência" (LBA = Brazilian Legion of Assistance) and "Fundação Nacional do Bem Estar do Menor" (FUNABEM = National Child Welfare Foundation), both institutions previously in existence and charged with social assistance to the non-insured needy population and non-insured poor minors, respectively, were integrated under the SINPAS system. Finally, the "Instituto de Administração Financeira da Previdência e Assistência Social" (IAPAS = Institute for the Financial Administration of Social Welfare and Social Assistance) was created with the specific function of collecting all social security taxes, as well as with financial and administrative responsibility for the whole system. "Empresa de Processamento de Dados da Previdência Social" (DATAPREV = Social Security Data Processing Company) and the "Central de Medicamentos" (CEME = Medication Center) were also part of the system.

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[1]The other institution created was the "Ministério do Trabalho "(MT=Ministry of Labor).

In August 1987, the Government, splitting the concept of the minimum wage standard, created two new parameters: the "Piso Nacional de Salários" (PNS = National wage floor) and the "Salário Mínimo de Referência" (SMR = Reference Minimum Wage).

This measure had a double effect on the system: on the side of expenditures, benefits were no longer referred to as multiples of the minimum wage, and on the side of revenues, the same happened to the contribution brackets, defined from then on as multiples of the SMR. The minimum benefit and the formal market minimum salary were defined by the PANS.

Still in 1987, the "Programa de Desenvolvimento de Sistemas Unificados e Descentralizados de Saúde" (SUDS = Development Program of Unified and Decentralized Health Systems) was created. Through this program, INAMPS' equipments and the responsibility for reimbursements to the private sector for services were transferred to state level, making planning viable for all the states. Recently the 1988 Constitution, creating the "Sistema Único de Saúde" (SUS = Unified Health System), guaranteed universal and complete coverage to the population, and reinforced the decentralization of health actions to state and municipal levels.

The Social Security concept expressed in the Constitution is "... the integrated collection of actions performed by government and society to insure the rights with respect to Health, Social Insurance and Social Assistance." The Constitution introduced several new concepts and established as basic principles: universal coverage, equal rights to urban and rural beneficiaries, benefit concession selectivity, non reducibility of benefits, equitable contributions, broadening of revenue sources, decentralization and workers participation in management, progress in identifying Social Security as a collective agreement, a citizenship right, where benefits are given according to necessity and payments according to means.

The question of weather the Social Security would be able to finance all the new rights was object of heated debate until the laws concerning revenues were published - Law 8212 (Organization of Social Security and Funding) - and 8213 (Benefit Plan). One of the most used arguments at the time claimed that the Social Security crisis related only to certain of the new responsibilities created by the Constitution, and to the depletion of the financing methods used until then.

With Collor's inauguration in, March 1990, the MPAS was made extinct and its responsibilities divided. The Social Assistance and the Health areas became, respectively, part

of the Ministry of Social Action and the Ministry of Health. The Social Insurance was incorporated by the Ministry of Labor and Social Security (MTPS). Other changes were the merging of INPS and IAPAS in the "Instituto Nacional do Seguro Social" (INSS = National Institute of Social Security) and the integration of INAMPS in the Ministry of Health[1].

On September 24 th, 1991, the president sanctioned the laws concerning the organization of Social Security and the benefits plan.

Compared to the old regulations, the new benefit plan introduced several changes:

- To some contingencies covered by the Social Insurance and their corresponding benefit values and ranges, for urban and rural beneficiaries, ending existing inequalities between urban and rural populations.

- The right to collect survivors' benefits for widows (already in the Constitution), at the time of the wives death.

- Length of Service reduced pension also for women, with 25 years of service.

- Reduction in 5 years of minimum age to be entitled to old age retirement for the rural population (65 years to 60 years for males and 60 to 55 years for females).

- Expansion of benefits coverage to all the contributors, with the sole exception of the family allowance[2], not applicable to household servants and the self-employed.

In January 1992 after an arduous debate over the payment of the inflation correction index (147%) to beneficiaries of the system and the substitution of the Minister of Labor and Social Security, Congress instituted a commission to study the system, contemplating the proposal of alternatives for discussion.

The president elected for the commission was representative Roberto Magalhães, and Sérgio Gaudenzi, João Rodolfo e Geraldo Alckmin were elected vice-presidents. The relater was representative Antônio Britto and the adjoint was representative Roberto Jefferson. The

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[1] By the first time in Brazilian history unifying preventive and curative care.

[2] See Annex 1 for definition

commission fostered debates on the subject, and collected suggestions and proposals from experts in the field, following a program proposed by the relater.

The Commission recommended, short, medium and long term actions to reform the system. The measures to be implemented without delay, were mainly administrative actions, routines and procedures already consensus among experts in the field and some items already contemplated in the new legislation. In spite of the fact that the short term recommendations were not promptly implemented, the administration of Minister Reynold Stephanes started the processes, later continued by the administration of Minister Antônio Britto.

The Commission also made suggestions with respect to: a)the creation of an administrative counsel with 12 members equally distributed among government personnel, employers, employees and retirees; b) earmarking the employers/employees contributions for social insurance and using other sources, which included a new tax to be created on financial transactions, for social assistance and health; c) changes in the benefit plan, specifically on length of service and special length of service pensions, a complementary system for higher incomes and a system for civil servants.

In October 1992, with the then transitional government of Itamar Franco, changes were made in the ministerial composition. The MTPS was split in "Ministério do Trabalho" (MT = Ministry of Labor) and "Ministério da Previdência Social" (MPS = Ministry of Social Insurance). INSS was incorporated by the latter and the MAS was renamed "Ministério do Bem-Estar Social" (MBES = Ministry of Social Well-Being). The managerial split in Social Security actions has not been yet translated into the cash flow yet. INAMPS personnel and social assistance benefits are still accounted by MPS.

In 1993, diagnosis of the then minister of social insurance, representative Antônio Britto, was that in the last years, mainly in 1991 and 1992, Social Insurance in Brazil went through a combination of three crisis:

- a conjunctural crisis, with reductions on the level of economic activity and on wages, and increases in unemployment and in the level of informality in the economy.

- a managerial crisis, with the high administrative costs, and the nonexistence of control mechanisms for concession and payments of benefits, facilitating frauds.

- a structural crisis, characterized by the nonexistence of a clear notion of social insurance.

The analysis done in the following considers revenues/expenses of an aggregated, that for simplicity sake we will call INAMPS, even in the period before it was created and after its extinction.

1.3 - Evolution of Social Security Revenues

Financial resources destined to cover Social Security programs can be broken down, for analysis purposes, in three main groupings:

- contributions, encompassing compulsory contributions as a percentage of the payroll of urban companies and from contributions by self employed persons and by employers and domestic workers. There is also a Social Security tax of 2.5% on the value of all agricultural products, collected upon their first sale and a charge, paid by rural land owners, for land left unused. Social Security tax rates paid by employees are progressive according to their wage bracket, and vary from 8.5 per cent (for wages from one to 3 times the minimum wage) to 10.0 per cent (for wages 5 times the minimum wage and above).[1] Employers pay a flat rate of 20 per cent on their payroll plus a tax ranging from 0.4 to 2.5 per cent for workmen's compensation insurance.[2] The latter is determined by the occupational risk to which workers are considered to be exposed as a function of their economic activity;

- Federal Government direct contributions, of different sources like fuel taxes, lottery games, general budget, and so on; and

- other sources, such as rents, dividends, fines, etc.

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[1] Social Security tax progressiveness was introduced after 1981. The present ceiling for social security taxes is equivalent to approximately 10 times the minimum wage.

[2] Up to a ceiling of 10 times the minimum wage.

Table 1.1 illustrates revenues development between 1971 and 1993; showing that compulsory contributions represented on average 88 per cent of total revenues. On the other hand, urban payroll was responsible for 98 per cent of compulsory contributions.

Until 1980 the State share declined, with an notable increase in the two following years, due to emergency fund transferrals to cover mounting deficits. In 1981 transferrals amount[1] to US$ 275,530,798.60 and in 1982 to US$ 991,910,874.97. Besides, from 1980 on, INPS, INAMPS and IAPAS payroll expenses and administrative costs became part of the Federal budget and were accounted also as State contributions.

The State share continued to increase until 1984, declining to almost nothing in 1988. The momentary revitalization of the economy and the salary increases due to "Plano Cruzado", replenish Social Security resources, and the surplus was invested in the financial market. Therefore, the State withdrew its contribution and "other sources" became a more prominent revenue item, increasing to 17.79 per cent in 1987 and to 10.78 in 1988.

The State share, as a fraction of total revenues, increased again in 1989, reaching the maximum of 19.89 per cent, as a result of the increase in "Finsocial"[2] rates, that were recorded as State contributions and another emergency fund transferral from the State Treasury, both aiming at reducing the projected deficits[3].

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[1] All dollar figures are at the time of event.

[2] FINSOCIAL is a contribution collected by de Federal Government. According to last year's Federal Government budget.Law 60 per cent of the tax collection should be allocated to the Social Security System the remaining 40 per cent funds other social programs, including.Unemployment insurance.These percentages can change every year.

[3] It is important to note that in March 1989 an inflation correction was implemented, updating benefits to its original values as a multiple of the minimum wage.

TABLE 1.1 - **EVOLUTION OF SOCIAL SECURITY REVENUES BY TYPE - 1971/93**

Year	Total	Contributions	% Total	State	% Total	Others	% Total
1971	12184	10166	83.44	1338	10.98	680	5.58
1972	17912	15300	85.42	1755	9.8	857	4.78
1973	25577	22266	87.05	2169	8.48	1142	4.46
1974	36856	32733	88.81	2562	6.95	1561	4.24
1975	55717	49148	88.21	3479	6.24	3090	5.55
1976	89495	78793	88.04	5560	6.21	5142	5.75
1977	138937	124594	89.68	9856	7.09	4487	3.23
1978	213748	188038	87.97	12743	5.96	12967	6.07
1979	330861	304315	91.98	16600	5.02	9946	3.01
1980	636003	582687	91.62	33139	5.21	20177	3.17
1981	1368675	1199131	87.61	130428	9.53	39116	2.86
1982	3363258	2962519	88.08	325347	9.67	75392	2.24
1983	6636897	5944064	89.56	545733	8.22	147100	2.22
1984	19873470	17081372	85.95	2198035	11.06	594063	2.99
1985	70365069	63077826	89.64	3092098	4.39	4195145	5.96
1986	197701615	181553308	91.83	7678447	3.88	8469860	4.28
1987	646270876	526025201	81.39	5266980	0.81	114978695	17.79
1988	4006540902	3550725000	88.62	23954162	0.6	431861740	10.78
1989	71747097000	54159107000	75.49	14267572000	19.89	3320418000	4.63
1990	204454338800	1621929302000	79.33	18755963000	9.17	23505445600	11.5
1991	890471504000	7241992374000	81.32	91214974600	10.24	75057292000	8.42
1992	108384351	77754996	71.74	4099434	3.78	26529921	24.48
1993	2576248031	2013765210	78.16	179076340	6.95	383402213	14.88

Source: "Grupo de Custeio do MPAS - Balanços do FPAS" for data until 1979 and "Sintese de 80/90"for the remaining period. NOTE: The State contribution in 1982 does not include as revenues US$ 991,910,874.97 of Government titles given to the banks as payment for the Social Security outstanding debt. This table considers this sum.

TABLE 1.2 - **GDP GROWTH RATE AND COMPULSORY CONTRIBUTIONS REVENUES VALUE AND REAL GROWTH RATE, 1970/1993**

YEARS	Compulsory Contributions		GDP
	CR$ of 1993	Delta %	Delta %
1971	780275		
1972	979551	25.54	11.1
1973	1099831	12.28	14
1974	1199174	9.03	9.5
1975	1347033	12.33	5.6
1976	1530444	13.62	9.7
1977	1663604	8.70	5.4
1978	1817044	9.22	4.8
1979	1904099	4.79	6.7
1980	1914633	0.55	9.2
1981	1922776	0.43	-4.4
1982	2346801	22.05	0.6
1983	1979490	-15.65	-3.4
1984	1849248	-6.58	5.3
1985	1962401	6.12	7.9
1986	2294272	16.91	7.6
1987	2184996	-4.76	3.6
1988	1970253	-9.83	-0.1
1989	2112434	7.22	3.3
1990	2358463	11.65	-4.4
1991	2113949	-10.37	0.9
1992	2003324	-5.23	-0.8
1993	2013765	0.52	4.1

Source: "Grupo de Custeio do MPAS", "Balanços Gerais do INPS" until 1979 and SÍNTESE of 84/91.
Note: Inflation corrected by the GDP index.

Table 1.2 shows the growth of Social Security compulsory contributions, as compared with the development of Gross National Product.

This can be accounted for by a combination of several factors: increases in the ceiling of contributions (from 10 to 20 minimum wages), the extension of coverage to social groups not

previously covered (house servants), and higher or new Social Security taxes (e.g. 2.4% to finance Social Security for the rural population).

Besides these institutional factors, the speedy process of urbanization and economic development led to in an increase of eligible contributors for the Social Security system.

It can clearly be seen that the extremely high real growth rates during the 1970's declined sharply towards the end of the period. The explanation for this lies not only in declining economic growth rates but also in a combination of factors, such as the exhaustion of the accelerated urbanization process, the almost complete extension of Social Security and compulsory contribution to populations not previously covered, and the raising of the Social Security tax ceiling during the 1970's.

The apparently high real growth rate observed in 1982, reaching 25.5 per cent, is merely a reflection of a set of government measures implemented to increase Social Security taxes revenues (increase in contribution ceilings and rates, creation of taxes on pensions, etc.).If we were to eliminate the effect of these measures, this rate follows the preceding years downward trend.

It is also obvious that the real contributions growth rate of 21.54 per cent in 1986 was due to the discontinuity in economic growth and salary increases generalized by the 'Plano Cruzado".

The Brazilian Social Security system operates on a pay-as-you-go basis. No reserves were built up during the "golden years" as can be seen by a revenues/expenditures analysis of the 1971/80 period; on the contrary, new benefits were added, thus raising the expenditure level.

1.4 - Evolution of Social Security Expenditures

SINPAS expenditures comprise four main categories:

-social insurance (INPS), there included all cash benefits, pensions, survivors' benefits, sick and family allowances, social assistance benefits, paied to urban ad rural beneficiaries and their families, and also occupational rehabilitation services;

-medical care (INAMPS), covering the same population encompassed by social insurance and the whole population in emergencies;

-social assistance to the non insured needy population (LBA) and social assistance to needy minors (FUNABEM); and

-financial and general administration expenditures (IAPAS), encompassing personnel and administrative expenditures, and eventually interests on debts to the banks.

Table 1.3 shows the evolution of the agencies composing SINPAS, as if they existed since 1971, through consolidation of financial and administrative accounts of INPS, IPASE[1] and FUNRURAL. Social Insurance expenditures, there included benefits and administration, are represented by INPS and accounted for approximately two-thirds, on average, of total expenditures. INPS expenditure shows a sharp upward trend that evolved from 65.80 per cent in 1971 to 74.08 per cent in 1983. Until 1989 its participation shows a downward trend, reaching 52.43 per cent of total expenditures in that year. This fact is explained by the strong benefit values compression, both at concession and for the ones already in the payroll, due to criteria used for inflation correction and the high values of inflation itself.

[1] "Instituto de Previdência e Assistência dos Servidores do Estado" - Institute of Social Insurance and Assistance of Civil Servants.

TABLE 1.3 - **EVOLUTION OF THE EXPENDITURES OF SINPAS AGENCIES 1971/93** (values currents)

Year	INPS		INAMPS		IAPAS		LBA		FUNABEM		TOTAL
	CR$	%	CR$	%	CR$	%	CR$	%	CR$	%	CR$
1971	7684	65.68	3265	27.91	631	5.39	78	0.6	42	0.36	11700
1972	11437	67.99	4436	26.37	808	4.8	97	0.58	44	0.26	16822
1973	15735	67.78	6230	26.84	1077	4.64	118	0.51	55	0.24	23215
1974	22990	68.16	8943	26.51	1583	4.69	147	0.44	68	0.2	33731
1975	34290	65.13	15377	29.21	2659	5.05	225	0.43	98	0.19	52649
1976	56625	62.42	28657	31.59	4959	5.47	303	0.33	179	0.2	90723
1977	89459	64.92	42115	30.56	5045	3.66	866	0.63	324	0.24	137809
1978	140149	65.87	63422	29.81	6894	3.24	1683	0.79	614	0.29	212762
1979	229088	68.83	91791	27.58	7305	2.19	3639	1.09	991	0.3	332814
1980	464415	68.01	186773	27.35	20236	2.96	8737	1.28	2652	0.39	682813
1981	1015381	68.26	362112	24.34	84344	5.67	19280	1.3	6467	0.43	1437584
1982	2240086	72.19	722678	23.29	92853	2.99	35815	1.15	11550	0.37	3102982
1983	5003083	74.08	1479425	21.91	177671	2.63	70019	1.04	23057	0.34	6753255
1984	14061824	70.54	5051148	25.34	604099	3.03	163128	0.82	55302	0.28	19935501
1985	46839749	69.08	18130820	26.74	2122749	3.13	542581	0.8	174052	0.26	67809951
1986	129462320	70.05	46588658	25.21	5328206	2.88	2931038	1.59	504700	0.27	184814922
1987	316391227	53.19	225090990	37.84	21556793	3.62	25419133	4.27	6413070	1.08	594871213
1988	2326015126	53.29	1657712292	37.98	177964869	4.08	172167548	3.94	30732376	0.7	4364592211
1989*	38261565	52.43	24825530	34.02	6270537	8.59	3132294	4.29	491459	0.67	72981385
1990	1262367988	62.64	647700729	32.14	37129716	1.84	52596900	2.61	15499461	0.77	2015294794
1991	5720958000	--	2588378000	--	1327576000	--	n.a	--	57638520	--	n.a
1992	33950000	--	5240000	--	3430000	--	n.a	--	n.a	--	n.a
1993	872760000	--	11100000	--	74590000	--	n.a	--	n.a	--	n.a.

Source: "Grupo de Custeio do MPAS" for data until 1977, "Balanços Gerais do FPAS" and "Balanços da LBA e da FUNABEM" until 1979, SÍNTESE for data between 1980 and 1990, "Balanços da LBA e FUNABEM/CBIA" for the period between 1987 and 1990 and "Informe de Previdência Social " november 1994 for data between 1992 and 1993.
Note: Data of fiscal years previous to 1978 were aggregated to adjust to SINPAS structure, as if it existed since 1971 and after 1991.
(*) From year 1989 on, values divided by 1000.

In the 1990 fiscal year, the inflation correction instituted in the 1988 Constitution, was already noticeable, and INPS participation grew to 62.64 per cent.

The opposite happened to INAMPS expenditures, that encompassed health care and corresponding administrative costs. Its share declined from 27.91 per cent in 1971 to 21.91 per cent by 1983. From this year on, health expenditures grew as a fraction of total costs, reaching almost 38 per cent in 1988, with a slight decline until 1990. As mentioned before, the surplus generated by "Plano Cruzado" were totally spent, mainly through the expansion of health programs. It is to be noted, that this major expansion included the implementation of SUDS (1987), with the intention of rationalizing the use of resources in the area.

IAPAS expenditures, encompassing the fiscal, financial and patrimonial costs, shows a declining pattern of expenditures, until 1983, with the exception of 1981, due in some degree to greater efficiency in collecting taxes. In other word, without increasing administrative and financial costs, it was possible to collect larger Social Security taxes and allocate growing amounts of Social Security resources to targeted activities. The peak of the 5.67 per cent share observed for 1981 is a consequence of interest payments and bank loans used to finance deficits of the system during that year. From that year on INAMPS' share has oscillated with a maximum of 8.59 per cent in 1989 followed by a minimum of 1.84 per cent in 1990.

LBA and FUNABEM are responsible for social assistance expenditures "stricto sensu", serving the non insured population. It is obvious that in spite of a sudden increase in the share of total expenditures, mainly after 1979, these costs represents, still, a very small portion.

CHAPTER 2

EVOLUTION AND DIAGNOSIS OF SOCIAL INSURANCE

Population Evolution of Contributors and Beneficiaries; Cash Benefits; Length of Service Retirement Pension; Equity in Social Insurance.

2.1 - Population Evolution of Contributors and Beneficiaries

The balance of a pay-as-you-go system, keeping everything else constant (wages, benefit values, rules for benefit's eligibility and maintenance, etc.), is a function of the number of contributors and beneficiaries of the system.

The institutional evolution experienced by the Brazilian Social Security system was marked by the assimilation into the system of an ever growing population of new groups. It was a process of universalizing coverage, like in most western countries. Graph 2.1 presents the population evolution of the system's beneficiaries and contributors in the period 1923/90

With the minimum waiting period of five years, the system's first beneficiaries only started to appear in 1929, establishing a dependency ratio of 1/13, between beneficiaries and contributors to the system. Until 1933, the population of beneficiaries increased at a higher rate than the population of contributors and the dependency ratio reached 8.59. The creation of the "Institutos" installed a decrease in the ratio, which reached 1/30.36 in 1938.

The great increase in the population of contributors with the institution of IAPI, (111.6% in a year) was followed, with certain delay, by an increase in the population of beneficiaries. This fact implied in a continuous increase of the dependency ratio, with some occasional decreases due to, for example, creation of INPS in 1967, the inclusion of house servants and regulation of self-employed workers' contributions in 1973. Other measures, like the institution of the "Pro-Rural" in 1974, helped increase even more the dependency ratio that went up to 1/2.8 in 1981.

Grouping together beneficiaries of different categories, as well as contributors, conceals some important characteristics that a more detailed analysis should take into account. For example a rural worker would receive as an old age retirement pension half of a minimum wage. His urban counterpart, would get in average around 1.7 times the minimum wage, i.e., in average 3.4 times more.

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[1]From September 1991 on, rural benefits were upgraded to one minimum wage.

Even considering all the limitations to the analysis, the dependency ratio in the Brazilian Social Security system has already reached very high values.

TABLE 2.1 - **Urban Social Security Benefits**
Paid in December 31 st

Year	1972	1974	1976	1978	1980	1982	1984	1986	1988	1990	1992
PENSIONS											
Disability	511089	614265	816544	970329	11000011	12333933	13551388	14559766	15334999	157802828	1537654
Length of Service	313892	368529	449409	567641	641873	780102	942260	10529177	11060355	114122323	1662747*
Old Age	137320	150886	173861	210074	267874	361487	469557	593866	699200	8428733	1018572
Special	34169	45485	58841	77812	92865	115008	158969	211012	247607	2794944	
Survivors'	710670	831846	973887	12101688	12310500	14076822	17790811	20088555	21982311	247625151	2585541
NON RETIREMENT BONUS											
25%	43928	28529	20359	11249	7499	13777	11962	12863	15605	16037	9961
20%	48945	86349	120696	120515	12015	111973	88394	94156	108529	1480388	96223
LIFETIME INCOME											
Disability			331666	427091	451933	489887	498196	495300	490812	4851188	464706
Old Age			414209	499372	469590	467718	423398	396350	370393	34001	295200
Sickness Aid	578504	649101	732861	883787	697172	753534	986900	911990	810327	8246511	499546

Source: DATAPREV

* In 1992 data on Lenght of Service includes Special Retirement data.

TABLE 2.2 - **Rural Social Security Benefits**
Paid in December 31 st

	1972	1974	1976	1978	1980	1982	1984	1986	1988	1990	1992
WORKERS											
Disability	*	46017	121893	179570	204620	351070	433238	458737	472294	483304	502640
Old Age	*	940408	1251570	1312165	1392502	1574597	1712126	1771624	1819706	1938905	2548282
Survivors'	*	77884	227098	322735	447987	595750	735494	853448	957451	1093351	1246369
LIFETIME INCOME											
Old Age			211421	277190	114218	1673845	207964	242832	262138	291401	364454
Disability					209991	229742	264346	304915	315905	334974	315010
EMPLOYER											
Disability					985	8911	12328	12806	12935	12589	11455
Old Age					19269	96957	109809	112670	104039	113434	103877
Survivors'					1681	14712	22841	29688	35217	43621	45021

Source: INPS
* The benefit exists but the data is unknown.
** Until 1978 the disability lifetime income benefits data encompass both lifetime income benefits for old age and for disability.

2.2 - Cash Benefits

Tables 2.1 and 2.2 show, respectively, the number of urban and rural beneficiaries receiving long term benefits[1], aggregated according to major types of benefits in the last day of each year between 1971 and 1990. Great increases in both populations are obvious in the period shown.

Comparing both values and population shares for urban and rural beneficiaries, an uneven distribution emerges. Rural workers (employers and employees) account for one third of the beneficiaries' population but only 15 per cent of the benefit values. These shares are basically constant in the period considered. Table 2.3 presents a population and values overview of the urban branch of Brazilian Social Security. Pensions, accounting for around 48 per cent of the population, corresponds to a share in the benefit expenditures of slightly more than 67 per cent. On the other hand, social assistance benefits add up to less than 4.5 per cent.

TABLE 2.3 - **Urban Benefits** (AVERAGES 1980/90)

	Percentage of Total	
	Population	Value
Retirement Pensions	47.99	67.17
Survivors'	26.46	18.75
LTOAIB and LTDIB (1)	13.19	4.49
Aids	10.45	8.16
Others	1.91	1.43
Total	100	100

Source: DATAPREV
(1) LTOAIB - Lifetime Old Age Income Benefit
LTDIB - Lifetime Disability Income Benefit

Data presented in table 2.4 show in more detail the major groups of urban pension types. Note that Disability Pensions which correspond to 46 per cent of the population account for only 26 per cent of the expenses. On the other hand, as a result of the dissimilarities among benefit

[1]Brazilian benefits can be classified in two major groups with respect to periodicity: a)long term benefits in multiple installments (pensions, survivors' benefits,workmen' compensation, sickness aid, etc.); and b)single installment (funeral aid, birth aid, etc.).

values, "Length of service" and "Special length of service" Pensions amount to more than 61 per cent of expenses but add up to less than 37 per cent of the population.

TABLE 2.4 - **Urban Retirement Pensions**
(AVERAGE 1980/90)

Type of Benefit	Percentage of Total	
	Population	Benefits
Disability	45.86	26.47
Length of Service	31.17	51.61
Old Age	17.09	12.62
Special	5.88	9.30
TOTAL	100.00	100.00

Source: DATAPREV

Before analyzing benefits of the rural branch it is worthwhile commenting that the programs are of recent institution and have been created with no minimum waiting period for benefit eligibility. These factors imply in a very large growth rate, both because we are starting from a small basis and because new benefits usually run into a large population of individuals already entitled to them. It is also worthwhile commenting that the control system already weak in the urban areas is almost non existent in the rural areas, and that the share of the rural branch is very small in the benefit expenditures.

Even considering all these comments, it is beyond doubt that the growth rate of rural benefits, mainly the ones related to the rural employer, were very high in the period under study.

2.3 - Length of Service Retirement Pension

Its is well known that the level, pattern and cause structure of mortality of a given population is a reflection of its socioeconomic, environmental and cultural conditions. Life expectancy can be defined as the average number of years that a person with a given age is expected to live from then on.

In 1975[1] the Brazilian life expectancy at birth was estimated at 57 and 63 years respectively for males and females. It is anything but natural that non demographers, confronted with this information, challenge the idea of defining a minimum age of 65 for retirement. The Brazilian low life expectancy at birth is a frequently used argument to justify the maintenance of the "Length of service retirement" benefit.

In countries like Brazil, with very irregular access to health services and major malnutrition problems among the less favored, child mortality in the first five years of life is very high, mainly among the lower economic strata. The ones that survive early life adverse conditions can anticipate a major increase in life expectancy.

The accrual of life years in life expectancy from birth to 15 years of age - the threshold for entering the labor market - is very significant. In 1975, life expectancy at 15 years of age for males and females in Brazil was respectively 65 and 71 years, i.e., in spite of being 15 years older, the individuals still had on an average 7 years more than their counterparts at birth.

The life expectancy at age 50 - age for full eligibility for "Length of service retirement" - for men who start working at 15 and women who start working at 20 is for males and females, respectively 21 and 25 years, adding up to a total life expectancy of 71 and 75 years.

The data shown prove that it is a mistake to judge retirement minimum age on the basis of life expectancy at birth. The concept of conditional expectancy, i.e., the number of years a person of a given age is expected to live, is a more adequate concept to base discussion on retirement age. A person who retires at age 65 will live, on an average, another decade, at the 1975 mortality level, a situation completely different from the one suggested by life expectancy at birth, with the population living on an average less than that required for retirement. It is assumed that the mortality level has been decreasing since 1975 and that life expectancy at birth in 1993 is around 7 years longer greater than the one estimated in 1975.

In short, when considering life expectancy as a constraint for defining minimum retirement age, we can infer that life expectancy at birth is not the information to consider; life expectancy either at retirement age or at age of entering the labor market is rather more important. So requiring a minimum age for eligibility of a retirement benefit is not an unfair

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[1]The last available Census is 1980 and 1975 is around the latest date for which we can obtain reasonable estimates.

rule, as can be thought at first sight. Workers that survive to age 60 still have a fair amount of years to live.

The argument that workers in the lower economic strata have a shorter life span gets diffused with age. The difference between life expectancy between male individuals in families with average monthly incomes of less than 1 and greater than 10 minimum wages decreases from 13.7 years at birth (respectively 51.9 and 65.6 years) to 5.4 years at age 60 (respectively 12.3 and 17.7 years).

"Length of service retirement" benefit exists in seven countries only, most of them oil exporting Arab countries, and even so with a minimum age requirement. In some countries the existence of the benefit must be on a purely formal level, considering that Iran and Iraq are among them. Italy, the only first world country among them, is presently going through a reform and doing away with this benefit is part of the reform. It is also worthwhile noting that the activity rate above 50 years of age in Brazil is very low by international standards, possibly because of early retirement of the labor force.

On the other hand, the "Comissão Especial para Estudos Previdenciários" (Special Commission for Social Security Studies) realized that the future infusibility of "length of service retirement" is a unanimous opinion among Social Security experts. The opinion is based on the demographic transition experienced by the country and the fact that as it is now, this benefit is only used as a wage supplement, and not as a replacement in case of working capacity loss, since the vast majority of retirees do continue to work. In face of that, we can conclude that Brazilian "Length of service" retirement is a very perverse and regressive benefit. It is worthwhile mentioning once more the discrepancies between "length of service retirement" and the other types os pensions, the former accounting for 37.05 per cent of the population and 60.91 per cent of expenditures.

2.4 - Equity in Social Insurance

From an equity point of view, the analysis of Brazilian social insurance is rather complex.Tables 2.5 and 2.6 show the distribution of population and benefits/wage values broken down by wage bracket. At first glance one could infer that since benefits are concentrated in the lower range of the scale, that it is a distributive and progressive program.

TABLE 2.5 - **Population And Income Distribution Of Covered Population By Wage Bracket (1989)**

Wage	Covered Population			Payroll		
	Males	Females	Total	Males	Females	Total
1-2	32.4	40.3	35.1	8.1	14.9	9.9
2-3	17	15.8	16.6	8.1	11.5	9
3-5	16.9	13.2	15.7	13.7	15.9	14.3
5-10	13.4	10	12.2	20.7	22.2	21.1
+10	20.3	20.7	20.4	49.4	35.5	45.7

Source: DATAPREV

TABLE 2.6 - **Population And Income Distribution of Population of Beneficiaries by Benefit Bracket (1989).**

Benefit Bracket	Population			Benefits		
	Males	Females	Total	Males	Females	Total
1-2	67.7	86.0	72.2	30.8	59.3	35.6
2-3	9.1	5.5	8.2	9.6	9.1	9.6
3-5	10.3	4.3	8.8	17.3	11.2	16.2
5-10	11.8	3.8	9.9	36.1	17.8	33.0
+10	1.1	0.4	0.9	6.2	2.6	5.6

Source: DATAPREV

Actually, a cross-section analysis is totally inappropriate for a Social Security system like the Brazilian one, which operates in a pay-as-you-go basis. In these kinds of systems there are a simultaneous transfer between and within generations. In other words,there is a set of cross

subsidies, among individuals of the same generations and of different generations that makes the question a very complex one to answer.

A specific quantitative model was developed to formally evaluate the equity on the Brazilian Social Security system. The model estimates the expected cost/benefit ratio for different population groups and different population cohorts. The model considers as costs all the direct and indirect cash contributions made to the system.

The ratio between the expected value of in cash benefits and expected value of contributions defines a comparison parameter: replacement level. These expected values are functions of demographic and other kinds of variables: contribution rates, mortality rates, age specific retirement rates, income trajectory, age distribution at the time of joining the labor market, inflation rates, discount rates, and so on.

Some preliminary results can already be inferred from the model in its present state. The evaluation of equity in the system can begin in the probability of receiving benefits shown in table 2.7, grouped by sex and wage bracket.

TABLE 2.7 - **Probability of Receiving a Benefit - Urban Insured Population - 1990 (By 1000 Insured) For the 1-3 MW Wage Bracket**

	FEMALES			MALES		
Benefit	FX.1	FX.2	FX.3	FX.1	FX.2	FX.3
Old Age Retirement	3.12	0.83	0.53	6.4	1.62	0.9
Disability Retirement	5.38	1.59	1.35	4.76	1.17	0.8
Length of Service	1.12	2.2	2.38	1.52	0.9	1.01
Aids	33.62	6.08	3.65	29.3	4.5	2.58
Especial	0.45	1.45	0.56	0.09	0.11	0.04

Note: FX.1 - Benefit bracket of 1 to 3 minimum wages
FX.2 - Benefit bracket of 3 to 10 minimum wages
FX.3 - Benefit bracket of more than 10 minimum wages
Source: SINTESE/DATAPREV, PNAD-90/IBGE

Considering type of benefit, females show a higher incidence of "age retirement" while males, depending on the wage bracket, show a higher incidence of "Disability retirement" and "Length of service retirement". It is worthwhile mentioning that the high incidence attributed to "Sickness and disability aids", mainly in the lower wage bracket,is due to the fact that they are temporary benefits (maximum three months) and are the result of work injuries and sicknesses.

Sex and wage seem determinant factors in defining the future benefit distribution of the present contributor. Lower strata contributors receive proportionally a greater share of "disability" and "age" retirement benefits, as opposed to their more affluent counterparts that get a greater share of "length of Service" and "Special length of service" benefits. The difference is due to the years of contribution to the system required for "length of service" and for "especial length of service". It can be inferred from the data that higher income males are the ones with the better contributive records.

As was expected, benefits of "Disability retirement" and "Sickness and disability aids" are more common among the lower strata population, more prone to diseases, accidents and work injuries.

According to the previous legislation there were great differences in the rural area between employers and employees. Rural employees contributed directly to the system and had proportional benefits, while workers did not contribute directly and had a fixed benefit of half of a minimum wage.

A detailed analysis of rural benefits, like the one made for urban benefits, is impossible due to the lack of information. For example DATAPREV data on rural benefits do not include the sex of the beneficiary. Table 2.8 presents the probability of receiving a rural benefit on file.

TABLE 2.8 - **Probability Of Receiving a Benefit - Rural Insured Population - 1990 (By 100 Workers/Employers Insured)**

Benefit	Workers	Employers
Disability Retirement	1.71	1.34
Old Age Retirement	11.94	84.73

Obs: The population of rural workers was obtained as the difference of the rural economically active population and the rural employees.
Source: SINTESE/DATAPREV and Population Projections/IPEA

With respect to the differences between generations, the preliminary results of the model show great transfers from new generations to the old ones. These transfers are not due to the nominal value of benefits, but to the distortion created by the direct contributions to the system. Older generations contributed with 3 per cent of their salaries as opposed to the rates applied now, varying from 8 to 10 per cent, depending on the wage bracket.

Graph 2.2 shows the evolution of contribution rates for employees in the first wage bracket, between 1 and 3 minimum wages.

Graph 2.3 presents the replacement level (defined as the ratio of expected value of benefit and expected value of contribution) for male and female contributors to the system, by cohort (identified by year of birth between 1900 and 1980) in the first wage bracket. The downward slope is noticeable, indicating the transfer between generations.

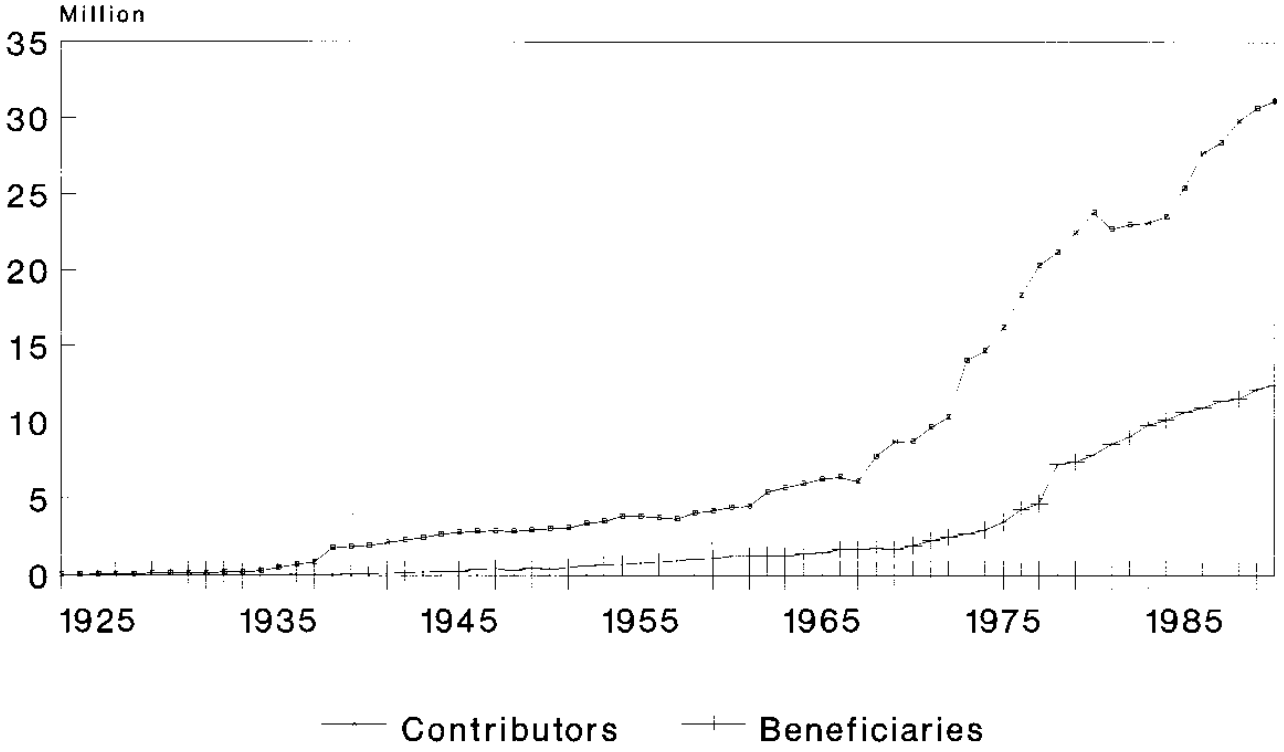
It is worthwhile noticing that it was assumed the date of 1936 as the beginning of the system. Cohorts born around the turn of the century started their contributive period at a later age and with lower rates than later born cohorts. As long as benefit values do not fluctuate between generations, later generations have a lower replacement level.

Comparing both sexes, we can see that women have a better replacement level than men, with the difference decreasing as wages increase. This difference is a function, among other factors, of mortality rates, average income, average benefit value, benefit distribution and probability of joining the work force.

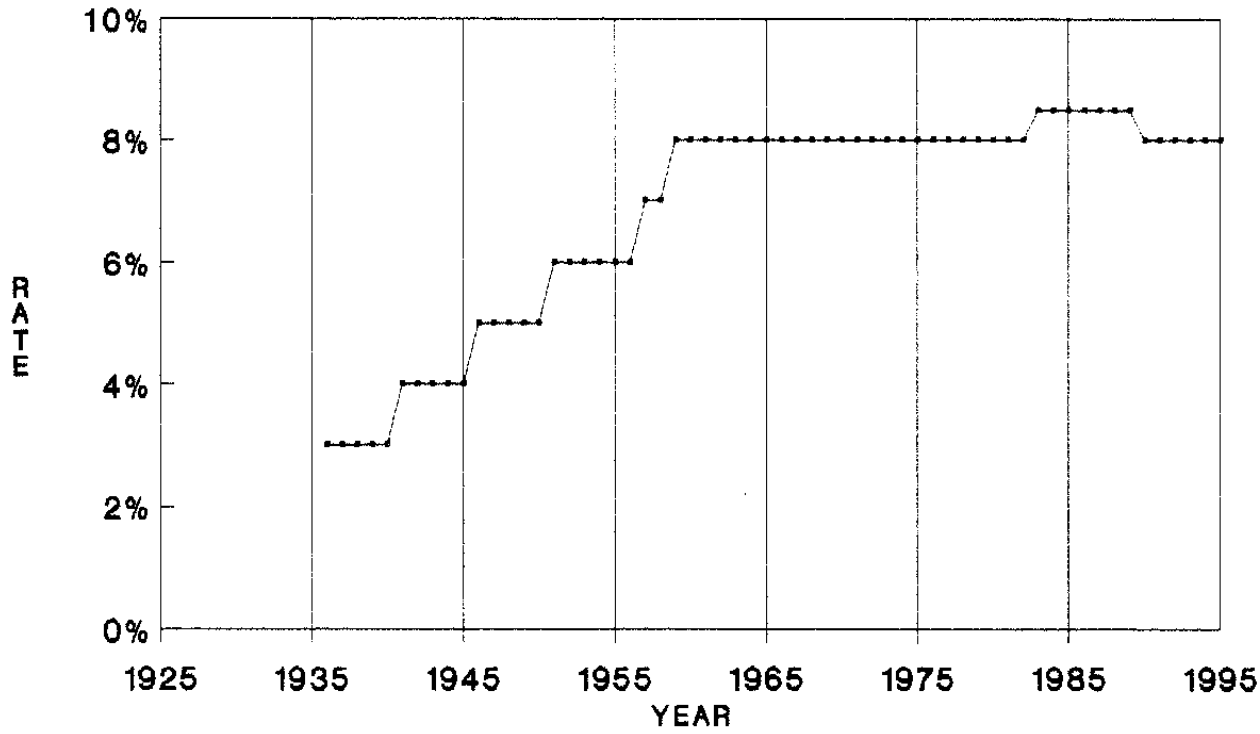
In short, with respect to the equity feature, the Brazilian Social Security system presents heavy transfers between generations, mainly due to the absence of ties between the

benefit and contribution values. Transfers within generations are less obtrusive, and lean slightly towards women and the upper income strata.

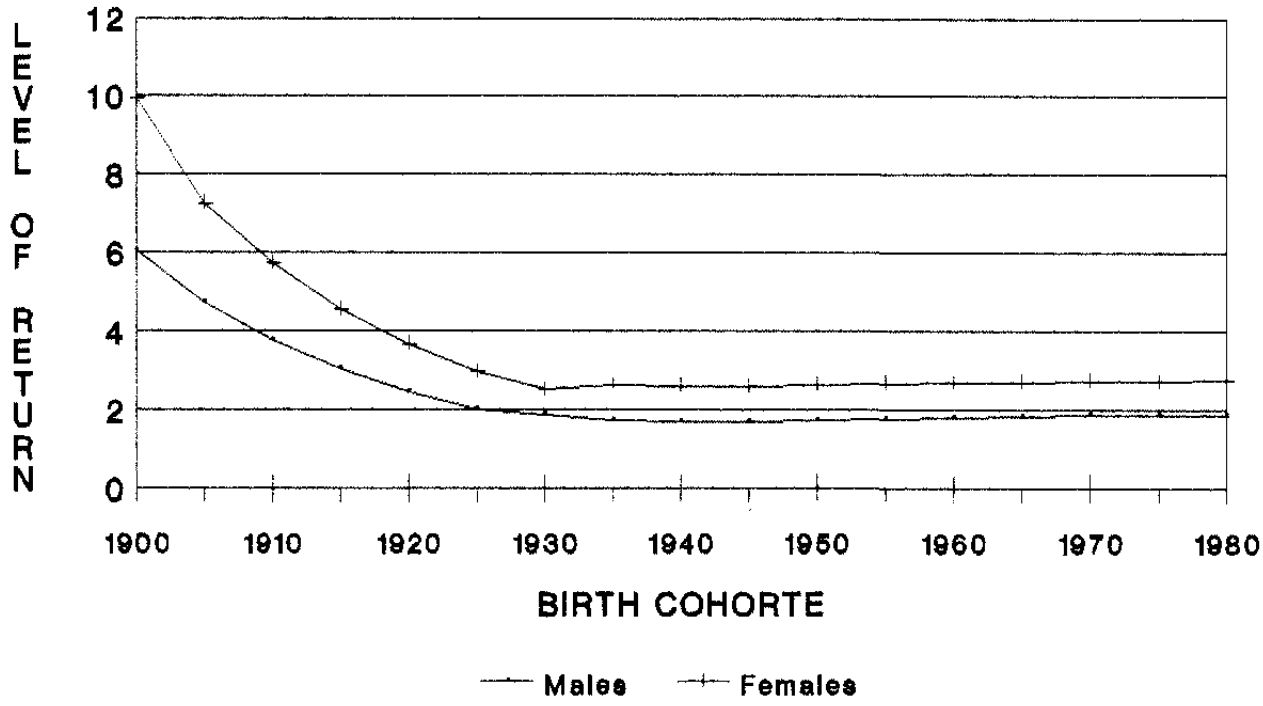
Graph 2.1
EVOLUTION OF BENEFICIARIES AND CONTRIBUTORS TO THE SYSTEM - 1923/199



Graph 2.2
CONTRIBUTION RATE ON MINIMUM WAGE 1-3



Graph 2.3
LEVEL OF RETURN BY SEX
MINIMUM WAGE 1-3



CHAPTER 3

BRAZILIAN HEALTH SYSTEM: DIAGNOSIS AND EVOLUTIO

Introduction; Physical Structure Service Supply; Efficiency Indicators; Health Workers Economic And Financial Aspects; Health Equity; Conclusions.

3.1 - Introduction

The historical evolution of the health system in Brazil has an intrinsic institutional dualism: on the one hand, the Health Ministry was in charge of preventive care and on the other hand the Social Security took care of all curative issues.

In the later years, this dualism ended with all areas coming under the Health Ministry but Brazilian health care is still a very problematic sector. This situation is reflected in several health indicators as for example an infant mortality rate greater than 60/1000 for children under one year of age.

Besides a sophisticated health care service supply, Brazil needs a global health care policy that assures the population its citizenship rights and a good standard of living. Very often the discussion about a Brazilian health system reform has been ideological and has left out its real needs and objectives.

3.2 - Physical Structure Service Supply

In 1989 the health network in Brazil was composed of 34,831 health units: hospitals, health centers and emergency care health units. The major part of these units (around 79%) provided only outpatient care (did not care for inpatients). The other 21% was composed of hospitals.

Between 1976 and 1989, the number of health units operating in Brazil had a geometrical annual increase of 7.8%. The public sector presented the greater growth rates (table 3.1). While in 1976 the public sector operated 51% of the health units, in 1989 that participation rose to 65%. This major growth of the public sector health units was related to the increase of outpatient care.

TABLE 3.1 - **Health Units - Brazil:1976/1990**

YEAR	Health Units		
	Total	With inpatients	Without inpatients
1976	13133	5310	7823
1977	14288	5458	8830
1978	15345	5708	9637
1979	17079	6036	11043
1980	18489	6103	12386
1981	22341	6473	15868
1982	24018	6650	17368
1983	25651	6680	18971
1984	27552	6861	20691
1985	28972	6678	22294
1986	30872	6920	23952
1987	32450	7062	25388
1989	34831	7127	27704
1990	35.701	7280	218242

Source: IBGE, AMS 1976-1989

Network of Clinics

Between 1976 and 1989 the network of clinics grew from 7,823 to 27,704 units (table 3.1), i.e., a growth exceeding 250%. The public sector that was responsible for 74.2% of the outpatient care network, raised its participation to 81% in 1984. In spite of the fall of the private sector share as a whole the commercial clinic health network increased its share from 9.7% to 13.3%, the opposite happening with the philanthropic network.

The increase of outpatient care was the result of changes in the concept of health system introduced by the government in the early seventies. The evaluation of government and public health professional groups was that health care in Brazil was based too much on a "hospital centered model". This model had brought few positive results for the solution of Brazilian health needs because of factors like high costs, low coverage and a distance to the real nosological structure needed.

At the same time, the high increase of the health federal network may be explained, partially, by the investment in the "Programa de Interiorização da Assistência, Saúde e

Saneamento" (PIASS = Health and Sanitation Inland Program) and by the growth of INAMPS' network of clinics. When the units of PIASS network were in operational conditions they were transferred to the state governments.

The Federal decentralization program that transferred the INAMPS and the Health Ministry's own network to the administration of the Municipalities (local governments) began in 1984. This process brought a strong growth of the health network of States and Municipalities. In 1986, around 25% of the outpatient network was placed under Municipal administration.

Network of Hospitals

In the last 15 years, the network of hospitals had the opposite development of the outpatient network, expressed by:

a) Slow growth of the number of inpatient health units between 1976-1986. The number of hospitals rose from 5,310 to 7,127 in this period, with an annual geometric increase rate of 3.5% between 1976 and 1980 and 3.0% between 1980 and 1984. The growth in the period that followed, 1984 to 1989, was even lower: 0.8% "per annum".

b) The high share of the private sector in the network of hospitals. The private sector had 81.9% of inpatient units in 1976. Since then, the share of the private sector has been slowly falling but was still 73.5% in 1986.

c) Between 1980 and 1984 the annual growth rate of the public sector inpatient network was 6.2% against 2.1% found in the private sector. Inside the public sector, the growth was homogeneous in terms of federal and state networks and minor in local networks. Inside the private sector, its possible to see the increase of the commercial sector and the decrease of the philanthropic sector.

d) Between 1984 and 1986 there was a stagnation of the network of hospitals growth of and a steep increase in the period that followed (1987-1989).

One of the adjustment strategies used by INAMPS, during the recent crisis, was the growth of the resources put in the public sector and the reduction of the purchase of services from the private sector.

Between 1976 and 1986, the growth rate of hospital beds was lower than the population growth. In 1981 there were 4.17 beds for each group of 1000 persons. In 1976 this rate fell to 3.77 (table 3.2). In the private sector case, between 1976 and 1986, there was an increase of the participation of the commercial sector in the total number of beds (33.9% to 38.7%). The same is not true about the non profit private health sectors. In the philanthropic sector the absolute number of beds got reduced in the same period.

TABLE 3.2 - **Hospital Beds, Consultations and Admissions by Person**
BRAZIL: 1981/1986

YEAR	Hospital Beds /1000 persons	Consultations per persons	Admissions /1.000 persons
1981	4.17	1.95	141
1982	4.13	2.09	139
1983	4.05	2.27	113
1984	3.98	2.39	134
1985	3.77	2.40	128
1986	3.77	2.46	131

Source: IBGE/AMS, 1981-1986

In global terms it is possible to conclude that:

a) The network of clinics had a more intensive growth than the network of hospitals;

b) In both networks (clinic and hospital) the public sector increased more than the private sector;

c) Inside the public sector, state and local structures were responsible for the major part of the growth of the health units;

d) Inside the private sector there was a decrease in the number of the non-profit units and a growth of commercial units. Both facts show a trend toward changing the institutional nature of the private run units from non-profit to commercial;

e) Public units are hegemonic among outpatient care units and the private system is hegemonic among hospital care units; and

f) The number of units increased more during the crisis (1980-1984) and less during the economic recovery (1984-1989). In the latter period it is possible to observe a relative stagnation in the size of the network of hospitals.

3.3 - Efficiency Indicators

Some changes in the health framework had strong effects on the productivity of health care. In 1986, Brazil executed an average of 2.45 consultations/person/year and 131 deliveries/1000 persons/year.

But the regional distribution of these services was very uneven. In the first case(consultations) only the South and the South East reached acceptable standards. In 1986, the number of consultations/person/year in the Northeast and the Mid West was respectively 1.60 and 1.93, while in the South East that number was 3.22. In terms of admissions, all regions showed an over supply when compared to INAMPS standards.

In terms of hospital beds, when compared with the INAMPS parameter (1.8 beds per 1000 persons) Brazil has a surplus of 67%. The South and the Mid West are the regions that present the greatest supply of hospital beds.

Regional studies show deficits in some medical specialties as gynecology and obstetric services, not only in the less developed regions but also in states like Rio de Janeiro and São Paulo.

On the other hand nearly 78% of the hospital beds are in the private sector and are not accessible to the poor.

3.4 - Health Workers

Brazil as a whole has an estimated surplus of physicians employed by the State of around 75%. In other words, the need of part time medical physicians to cover all the estimated population

demand is around 87.1 thousand. Brazil has 152.8 of filled physician positions. We can infer that the productivity of these physicians is very low.

In terms of dentists, Brazil has an estimated surplus of 23%. Only the Northern region has a deficit of these professionals, a deficit estimated at 34%.

The whole picture suggests that Brazil presents good facilities and manpower framework when compared to the deficits in the actual services performed. We can observe a perverse regional distribution of health units and corresponding workers. This situation urges the need of great health investments in some Brazilian states, specifically in the North, North East and Mid West.

3.5 - Economic And Financial Aspects

Brazil had in 1989 health expenses of the order of 4.77% of the GNP. Of this amount, 2.74% were federal expenditures (table 3.4) and 0.51% were state and local government expenditures. Around 0.4% were direct expense of families and 0.92% were enterprise expenditures with workers' health programs.

The last two sectors covered 32 million people in 1989. This population group, encompassing the middle class and some specific worker groups, contributed to the general public system but does not use the public health services.

TABLE 3.3 - **Physician Positions Needed And Existing The Out-Patient Care Centers BRAZIL and Regions: 1985**

Regions	Needed (A)	Existing (B)	Deficit or Surplus (C)	(C)/(A)
Brazil	87.10		+65.697	+75,43
North	4.693	4.550	-143	-3,0
Northae	25.485	29.665	+4.180	+16,4
Southea	37.538	87.088	+49.550	+132,0
South	13.662	21.583	+7.921	+58,0
Midwest	5.730	9.919	+2.611	+ 73,1

Source: Existing Physician positions - AMS-85 (sum of specialists, non specialists and residents that worked on a daily basis, one, two, three or four times a week). It was considered an average of 20 hours a week or 1056 hours a year.

In 1989 the expenditures of all these sectors added up to an average expense of US$ 90,00 "per-capita". This value, is not sufficient to give the entire population good quality health system. But some officials of commercial medical enterprises estimate that around US$120,000 per-capita would be necessary to do so. Health care expenses in Brazil are very low if one considers the real needs of the population.

TABLE 3.4 - **Federal Government Health Expenditures in BRAZIL: 1980/1990 (In US$ of 1990)**

YEAR	Health Expenditures as a Percentage of GNP	Annual Per capita Health Expenditures (US$)
1980	1.74	42.51
1981	1.76	39.30
1982	1.84	39.75
1983	1.56	31.76
1984	1.59	32.36
1985	1.68	36.11
1986	1.67	37.57
1987	2.27	53.98
1988	2.15	49.57
1989	2.94	55.92
1990	2.34	45.65

Source: AMS

The structure of expenditures with health services in 1980 shows that 63% of the total was used to buy services from the private sector. The reduction of unitary values paid to

private contractors and the reduction of the agreements with the private sector forced down the expenditures the in 1986 had dropped to only 36.1%.

As INAMPS was the main agency responsible for the health service supply, the reduction in values paid to the private health sector was the principal component of cost containment in health services.

Investments have had a negligible share in health expenditures. Some recent estimations show that the maintenance of operational capacity of health equipment and facilities(depreciation costs) should be around 11% of annual health global costs. Between 1980-1986 the investments varied around 2.8% and 2.9% of health global expenses (table 3.5). If there is no more net investments in health, the amount of resources allocated presently will not be able to maintain the facilities and equipment in an operational state.

In global terms, the health expense of states and local governments was equal to 30% of the federal expenditures. But it is actually very little since the major part of the health care of the poor and needy population is done(or should be done) by Local Governments.

The recent Brazilian federal Constitution (1988) creates new financial sources for states and local health services, but so far the mechanisms to implement these instances are still not working.

But in the cases of high cost/high complexity procedures, the public sector is still used as a solution to the demands of the rich, including the treatment of chronic and degenerative diseases, AIDS and other ailments usually not covered by the private sector.

3.7 - Conclusions

In short, the health sector in Brazil has the following problems:

a) Insufficient level of expenditures;

b) Inefficiency and inefficacy of the resources used;

c) Poor regional distribution of supply and lack of hierarquization of the health network;

d) Low visibility of the relationship between the public and the private sector with dangerous risks of fraud.

CHAPTER 4

EVOLUTION AND DIAGNOSIS OF THE BRAZILIAN SOCIAL ASSISTANCE

Introduction; Institutional Evolution and Diagnosis; Equity in Social Assistance; Conclusions.

4.1 - Introduction

Social Assistance programs can be divided in two main categories:

a) In cash benefits for the uninsured population, encompassing some urban benefits like "Rendas Mensais Vitalicias por Idade" (RMV - Life Time Monthly Income for Old Age), "Rendas Mensais Vitalicias por Invalidez" (RMI - Lifetime Monthly Income for Disability) and their rural counterparts "Amparo Previdenciário por Idade" (APV) and "Amparo Previdenciario por Invalidez" (API). The benefit value was originally instituted as a minimum wage.

b) Social assistance benefits, in goods and in services, from day care centers to food distribution, directly or indirectly by federal, state and municipal governments.

Considering that the cash benefits (item a) have been managed by the social insurance branch and their behavior analyzed in the previous chapter, this chapter will deal only with benefits in services and in goods.

4.2 - Institutional Evolution and Diagnosis

During the thirties and forties, a new social assistance legislation was created, reflecting the relationships occurring among the different society strata and the State. The State took the role of an organizing interface, within a solidarity framework, on the one hand collecting social taxes and on the other hand distributing services and benefits.

The "Serviço de Assistência ao Menor" (SAM - Minors' Assistance Service), later FEBEM, FUNABEM and CBIA, was created in 1941 under the "Ministério da Justiça e Negócios Internacionais" (MJNI= Ministry of Justice and Domestic Affairs) and even linked to the Justice of Minors.

A year later, in 1942, the "Legião Brasileira de Assistencia" (LBA = Brazilian Legion of Assistance) was instituted as an agency collaborating with the State, aimed at helping the families of WWII Brazilian soldiers.

During the eighties, Brazilian social assistance included a multiplicity of programs, under several different agencies and dispersed in the three government levels. The panoply of services and benefits offered included food, health services, education, legal assistance and leisure options.

The 1988 Constitution characterizes social assistance as a citizenship right, independently of any contributive relationship. On the other hand, it restricts the benefits to the needy and to the destitute. The Constitution includes as a part of social assistance, the protection of the family, maternity, childhood and old age, and the concern of children, needy teenagers, needy elderly and differently abled. These actions can take the shape of services, benefits in goods and also broadens the scope of RMV, RMI, APV and API, restricted before to the population that contributed at least once to the social security system.

With respect to management aspects, the Constitution justifies the municipalization of social assistance actions, keeping for the Federal government the role of regulation and coordination, decentralizing the execution of actions to State, Municipal level and beneficent societies. It also institutes population participation in policy formulation and implementation.

Concerning the target groups the Constitution only reiterates the criteria used in the already existing programs. The only changes are the inclusion, in the text, of social assistance itself, the institution of a minimum benefit, the division from social insurance and the explicit reference to the population participation in policy formulation and implementation.

The basic principles of Collor's government social assistance policy program, highlighted in the "Projeto de Reconstrução Nacional" (PRN - National Reconstruction Project), that should steer the actions of all agencies involved in social assistance, were:

- A combination of emergency and compensatory solutions with promotional actions, aimed at the integration of the beneficiaries in the basic social systems;

- The decentralization of programs with a new role for Federal, State and Municipal governments, and a redefinition of its relationships;

- To target actions to infant/mother, needy children and teenagers, delinquents, the differently abled and the elderly with no other income;

- Food distribution to the infant/mother group associated with health services;

- Food distribution primarily to depressed regions like the Brazilian Northeast and poverty pockets in major urban centers and metropolitan area perimeters;

- The unification of federal actions to define a comprehensive aid policy for children under six years of age, with programs decentralized to the Municipal sphere; and

- The definition of strategies for gradual municipalization of the school feeding program and the food distribution to the infant/mother group with the corresponding budget transfers.

In May, 1990 a Ministry of Children program was instituted. It aimed at integrating all the different programs for the underaged population, through a network among the Ministries responsible for basic social policies and the rationalization of the use of public resources. It forecast a target population of 37 million children and teenagers and 18 projects to be carried out during Collor's government, with the following framework:

- Promotion and protection of teenager and infant/mother group health;
- Developing youth programs;
- Promotion of children and teenagers as subject of Legislation;
- Prevention and aid to differently abled; and
- Assistance to community development.

The "Estatuto da Criança e do Adolescente" (ECA - Statute of Children and Teenagers), sanctioned in July 13th, 1990 by the President, substituted the "Código de Menores" (Statute of Minors) and steered the assistance for this population group in a new direction.

In September 1990, the law proposal 48/1990, "Lei Orgânica da Assistência Social" (LOAS - Social Assistance Organic Law) that defined the programs and the bureaucratic structure of the federal orb, was vetoed by the President.

At the end of January, 1991, a second government global adjustment plan, among other acts, instituted the "Fundo de Desenvolvimento Social" (FDS - Social Development Fund), directed to investment projects of relevant social interest by non-governmental organizations.

4.3 - Equity in Social Assistance

The attempt of quantitative evaluation of social assistance equity aspects runs into the lack of information at the household level. The 1983 "Pesquisa Nacional por Amostra de Domicílios" (PNAD - National Household Survey) attempted to collect data on social security with disastrous results (see Beltrão and Oliveira, 1988).

With respect to services and benefits in kind, in spite of the few evaluations made so far, there is a consensus that they are inefficient/ineffective and that there is no control, making fraud and malversation an obtrusive practice.

4.4 - Conclusions

The structure of Brazilian social assistance services are characterized by:

- A complex institutional structure, with coverage overlaps, a diffuse target population and uncovered groups;
- Absence of evaluation mechanisms to assess program cost effectiveness/efficiency; and
- System with low transparency and no social control, allowing for paternalism/clientelism and several fraud opportunities.

CHAPTER 5

EVOLUTION AND DIAGNOSIS OF PRIVATE PENSION FUNDS

Introduction; Evolution and Diagnosis; Conclusions.

5.1 - Introduction

The Brazilian private pension fund system is composed of two basic groups of organizations: the so called "Entidades Abertas de Previdência Privada" (EAPP="Open Pension Funds") and the "closed" ones "Entidades Fechadas de Previdência Privada" (EFPP).

The EAPF are opened to the public in general and can be independent organizations or branches of financial groups and insurance companies. Any individual wishing to join an EAPF, can therefore do it by simply adhering to an offered plan. The payment of contributions or quotas is done exclusively by the individual.

In turn, the EFPP are organized as civil non profit seeking societies or foundations. They have a restricted clientele, as opposed to the opened one that is characteristic of the EAPF. Their capitalization plans are only offered to employees of firms that patronize it, the so called (sponsors) "Patrocinadores". Contributions to these plans are usually paid both by the employee and by the patronizing firm(s), according to various proportions, depending on each EFPP.

5.2 - Evolution and Diagnosis

Both open and closed pension funds have existed for a long time in Brazil. The great expansion however occurred in the seventies, particularly after the promulgation of Law 6435/77, which still regulates this type of activity in the Nation.

Table 5.1 compares capital applications of EFPP and EAPP for the period of 1983 to 1990. It can be seen that the EFPP system is a much larger institutional investor as compared to the EAPF system, with applications twenty times larger than the latter. It can also be noted that the EFPP system has a much stronger growth trend. For this reason, the following analysis contemplates only the EFPP system.

TABLE 5.1 - **Investments Net Balance**

YEAR	EFPP		EAPP	
	Cr$	%	Cr$	%
1983	4354	91.49	405	8.51
1984	17090	93.20	1246	6.80
1985	77561	94.22	4758	5.78
1986	135286	93.42	9533	6.58
1987	577283	93.28	41578	6.72
1988	7734091	96.95	243473	3.05
1989	165346735	96.85	5385947	3.15
1990	1815147315	95.85	78565077	4.15

Source: Oliveira *et alii* (1992)

In October, 1992 there were 266 EFPP from which 110 were patronized by public sector enterprises and 156 were patronized by private national or foreign firms.

TABLE 5.2 - **EFPP's Summary Table**

	Number	Distribution(%)
1. Public Sector	**110**	**41**
Federal	41	
State	69	
2. Private Sector	**156**	**59**
Domestic	72	
Foreigners	84	
Total	**532**	**100**

Source: "Jornal ABRAPP", October 1992, "Consolidado Estatístico".

Despite the high growth rates demonstrated, the EFPP system is still in its embrionary stage. In July, 1991 the consolidated portfolio of applications amounted to around US$ 18.5 billion, which represents only 3.9% of the Brazilian GNP.

If compared to the corresponding American figure of 50%, the difference is staggering. The population coverage is also very low; the 1,715,000 affiliated to the EFPP system represented only 2.6% of the economically active population in 1991.

The EFPP system is also highly concentrated in terms of the distribution of assets: the five largest funds have more than 50% of the system's reserves.

Public enterprise patronized funds are also the largest ones. According to data published by the "Associação Brasileira de Entidades Fechadas de Previdência Privada" (ABRAPP = Brazilian Closed Pension Fund Association) in August of 1992 the consolidated applications of public enterprise patronized pension funds amounted to US$ 17,896, as compared to only 3,349 of total applications of the private sector patronized funds.

This overwhelming predominance of the first type of fund is not a consequence of their dominant presence, but of the absence of the second kind. In fact, public enterprises pioneered in the sponsoring of pension funds, as a consequence of the Brazilian post Second World War development model led by the public sector. In the future, it can be expected that more and more private sector firms will patronize new closed pension funds.

EFPP offers three types of plans: defined benefits, defined contribution and mixed plans that combine the first two types. The majority of the plans are of the defined benefit type (82% by the end of 1989), followed by mixed plans (15%) and defined contributions plans (3%).

In the presence of conjunctural economic factors that have been affecting the actuarial equilibrium of the EFPP, the majority of the new plans of recent creation are of the defined contribution type.

The number of multi sponsored funds is significative; firms that belong to the same business sector can and do get together and create an EFPP or adhere to an existing one.

There is also the possibility of totally independent firms, of different business sectors, of creating a multi patronized fund. The experience with this type of arrangement is rather limited: the only two funds are the MONTREAL BANK (applications of US$137 million in August, 1992) and SUPREV (applications of US$ 22 million), with total applications summing up to less than 0.8% of the consolidated applications of the EFPP system.

Another relevant aspect of the EFPP system is the ratio between employer and employee contributions. Data from ABRAPP show that this ratio was larger for the foreign private sector than for the public sector. In March 1989, the ratio for the private sector foreign companies was 3.54 and for the national companies was 3.06. As for the public sector patronized EFPP, the

State enterprises contributed, on the average, with a ratio of 2.39 of contribution to their funds for each 1.0 of employee contribution and the Federal government enterprises, with an average of 2.19.

Table 5.3 shows the evolution of the consolidated portfolio of the EFPP system by asset type. The first thing to be noted is the relatively high concentration on government titles. This is mainly the result of compulsory minimum application limits set by the controlling authorities- Ministry of Social Security and the Central Bank. Real Estate applications are also very important. In fact, due to a highly unstable economy, EFPP administrators have been attracted by such low risk investments.

TABLE 5.3 - **Consolidated Portfolio Of EFPP Assets (1980/1990)**

Type of Assets	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	average (2)
State Titles	32.5	30.5	35.0	31.3	38.6	38.3	29.8	38.2	31.1	29.0	16.9	31.9
Shares	21.2	13.2	9.2	17.3	24.6	38.8	33.1	18.4	30.5	35.9	15.1	23.4
Fixed Term Application Titles	17.8	28.8	26.6	23.6	10.6	5.7	15.0	16.9	13.9	10.2	17.4	17.0
Real Estate	11.6	18.7	14.7	12.9	10.1	13.5	16.2	14.3	15.3	22.4	22.4	15.3
Loans	8.6	7.7	7.7	10.8	8.9	6.0	7.0	8.8	4.1	3.9	4.6	7.2
Others(1)	8.3	1.2	1.2	2.3	4.4	1.1	1.5	1.5	6.1	5.7	23.7	5,2

Obs :(1) Others includes: gold/savings accounts, availability," Eletrobrás" Shares, Municipal titles, Private sector debentures, mortgage titles, loan funds, and assets kept in the Central Bank.
Source: Oliveira *et alii* (1992)

Company Shares have a relatively low participation in the portfolio composition, 23.4% on the average, with a high of 38.8% in 1985 and a minimum of 17.4% in 1990.

Fixed term private application titles (CDB, RDB, LC[1] and bonds) represented an average of about 17% of EFPP's portfolio during the last decade. This figure can be compared to the average of 15.3% participation of Real Estate investments during the same period, with a maximum of 22.4% in 1990. During this last year investors shied away from financial

[1]"Certificado de Depósito Bancário" (CDB = Private Bank Term Deposit Certificate); "Recibo de Depósito Bancário" (RDB = Private Term Deposit Voucher); and, "Letra de Câmbio" (LC = Bill of Exchange).

applications due to the confiscation of the financial assets that occurred in the first days of Collor's government, as a part of an ill- fated stabilization plan.[1]

A summary of the prevailing maximum and minimum application limits can be found in Table 5.4. It can be inferred from this data that the EFPP system has been used to create a captive compulsory demand for certain assets, particularly government titles. As a matter of fact, the joint observation of tables 5.3 and 5.4 shows that these limits are not always obeyed by EFPP portfolio administrators. This fact can be explained not only by simple management strategy to keep rentability up, but also by the extreme inflationary differential fluctuations of the asset prices themselves.

Finally, by the Central Bank Resolution 1.362 dated 07/30/87, it became unlawful for EFPP to buy/hold foreign assets.

TABLE 5.4 - **Maximum and Minimum Application Limits for EFPP Investments**

Type of Investment	Minimum	Maximum	Resolution
Shares	25%	-	BC 1.362, 30/07/87
Real Estate	-	20%	BC 1.362, 30/07/87
CEF mortgage titles	5%	-	BC 1.612, 23/06/89
Loans	-	17%	BC 1.612, 23/06/89
OFND	25%	-	BC 1.612, 23/06/89
CP(1)	25%	-	BC 1.710, 14/05/90
CP(2)	15%	-	BC 1.710, 14/05/90

Obs. :" Caixa Econômica Federal" (CEF - Federal Saving Bank)
" Obrigações do Fundo Nacional de Desenvolvimento" (OFND - Development Fund Titles)
" Certificados de Privatização" (CP - National Development Fund Titles)
(1) Only for Public sector sponsored EFPP.
(2) Other EFPP
Source: Oliveira *et alii* (1992)

The EFPP system has consolidated its position as an important institutional investor. As shown in Table 5.5, from December 1983 to December, 1990, the systems' total applications

[1]The same plan tried to make it compulsory for all EFPPs to buy a large proportion of a new government title, "Certificados de Privatização" (CP = Privatization Certificates). ABRAPP and several EFPP interposed judicial complaints against this measure and the Supreme Court ruled this compulsory application as unconstitutional.

had an average annual growth rate of 4.22% as compared to a rate of 0.66% per year of the EAPP system. This latter low figure can be explained by the low public credibility displayed with regard to open pension funds, due to very large frauds and bankruptcies that occurred in the past.

As a percentage of the GNP, the total applications of the main institutional investors were as follows, by the end of 1990:

-EFPP	2.8%
-Investment Funds	1.8%
-Insurance Companies	1.0%
-EAPP	0.2%

As a basis for comparison, monetary and non-monetary assets were, respectively, in the same period, 4.0% and 32.5% of the GNP.

TABLE 5.5 - **Institutional Investors Evolution of Investors Evolution of Investments 1982/1990(CR$ - DEC/1990)**

	1983	1990	Growth Rate (%)	Annual Growth Rate (%)
EAPP	126345996	132332615	4.74	0.66
Insurance Companies	162797022	627766624	285.61	21.27
Investment Funds	427230037	1234182653	188.88	16.36
EFPP	1358666909	1815147315	33.60	4.22

Source: Oliveira *et alii* (1992)

5.3 - Conclusions

As an overall conclusion, in the face of the data analyzed, it can be said that (a) the private pension fund system is still relatively small, existing, therefore, plenty of room for future expansion; and (b) the main causes that inhibit this expansion are the excessive reach of the public social insurance system, excessive governmental regulation (application limits) and institutional rigidity.[1]

[1]For example, its not permitted for workers' unions to patronize pension funds.

CHAPTER 6

ECONOMIC SITUATION PROJECTION OF THE BRAZILIAN SOCIAL SECURITY SYSTEM 1992/2030

Introduction; Methodology; Macroeconomic Scenarios; Results.

6.1 - Introduction

The following projections should not be understood as forecasts but as feasible scenarios. Given certain demographic, economical and institutional hypothesis, the model, developed by IPEA, projects itemized financial results for the Social Security system.

It should be remembered that unemployment insurance, "Programa de Integracão Social" - (Social Integration Program) PIS/ "Programa de Formação do Patrimônio do Servidor Publico" (Civil Servants Patrimony Formation Program) - PASEP and "Fundo de Garantia por Tempo de Serviço" - (Length of Service Warranty Fund) FGTS[1]. These programs, although part of the Social Security system "Lato Sensu", have their own funding schemes and should be studied separately.

6.2 - Methodology

The model used is composed of five basic modules. Given a set of base-year populations (1980)[2] and independent projections of fertility, mortality, urbanization and activity rates, the demographic model projects sex-age-household status distributions of total population, both urban and rural, and economic active population. Greater details can be found in Annex II.

Based on the projections of the economically active population and on sex-age specific hypothesis on the level and degree of formalization, the contributors generation module yields a projection of the distribution of sex-age contributors. Details can be found in Annex III.

Given the previous projections and institutional scenarios (rules for the concession and indexing of benefits), the beneficiaries generation module projects, for each calendar year, the sex-age distribution for the recipients of each social insurance or social assistance cash benefit, both for lump-sum and for continuous payment benefits (see Annex IV).

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[1]All these programs are subsidized by the employer and are not formally part of the Brazilian Social Security system.

[2]The last Census for which there are fully tabulated data referees to 1980. At the moment, the 1991 Census data are being published and will be incorporated into the model.

The evolution of the main macroeconomic variables (GNP, Average Wage, Minimum Wage, Gross Profits and Gross Business Revenues) is projected, in an internally consistent basis, by the macroeconomic consistency module[1].

Finally, the revenues and expenditure module projects revenues for each calendar year and for each financing source (payroll, profits and business revenues) as well as expenditures for each type of social insurance or social assistance cash benefit.

Health expenditures are projected starting from the 1992 value and assuming a rate equal to the combination of population growth and medical expenditures index[2]. Social assistance expenditures (LBA and FUNABEM) other than cash benefits are projected from the 1992 value assuming a growth rate equal to the population growth.

Payroll estimates are made using the previous estimates of the average contribution salary[3]. Profits and Business Revenues are obtained directly from the macroeconomic consistency module (see Annex VI).

Treasury funds are allocated so as to cover personal and administrative social insurance costs, according to prevailing legal provisions.

Financing needs for each calendar year are calculated as the difference between social security total revenues and total expenditures.

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[1]Since the Social Security revenues and expenses are a major part of public sector accounts, there is an interactive-iterative process that feeds the macroeconomic consistency model with these data for each run of the model.

[2] The behavior of the medical expenditure index was assumed to be equal to the population is average wage.

[3] Average formal sector salary considering the value of the upper contribution incidence limit of 10 minimum wages.

6.3 - Macroeconomic Scenarios

Previous experiences in the utilization of the model demonstrates its low sensibility to variations of demographic variables, characterized by their inertial properties. The exercise is thus restricted only to the formulation of alternative macroeconomic scenarios.

As can be found in greater detail in Annex V, the macroeconomic consistency module considers three Scenarios: Scenario 1 or the "Public Adjustment" where the basic hypothesis is that public sector economic and financial equilibrium will be achieved resulting in high economic performance indicators; Scenario 2 or "Private Adjustment" where the growth in domestic savings rate is achieved by means of increasing business retained profits; Scenario 3 or "Crisis" where public and private adjustments are not carried out, resulting in a poor economic performance.

Table 6.1 shows the main indicators for each scenario in terms of average annual growth rates for the next ten years of the projection. The system is homothetic from the tenth year on, i.e., all segments maintain the same growth rate. For example the total payroll is constant as a fraction of GNP after 2003. Assuming a constant GNP growth rate (5.4% for the first and second scenarios and 3.5 for the third one), the hypothesis is equivalent to an average wage growth rate of 4.1% for the first two scenarios and 1.2% for the last one.

TABLE 6.1 - **Multi sectorial Projection Model**

Scenario	1	2	3
Their Index	1.54	1.03	1.52
	Growth Rates (%)		
GNP, Revenues and Retained Earnings	5.4	5.4	3.5
"Per capita" Income	3.6	3.6	1.7
Average Wage	2.9	2.9	1.2
Minimum Wage	2.7	6.4	1.0

6.4 - Results

Graph 6.1 presents total population projections by sex and household status (Urban/Rural). It can be seen that Brazil's total population will reach approximately 240 million inhabitants, with 200 million living in urban areas by the year 2030.

Graph 6.2, shows that the urban economically active population will reach some 90 million individuals, which is more than double the present figure.

The evolution of contributors/beneficiaries can be observed in Graph 6.3.

The population pyramids for 1980 and 2030 are shown in Graph 6.4. As expected there is a large narrowing of the pyramid base and a broadening at the top, characterizing a rapid population aging process.

Projections of the expenditures of each social security component as percentages of GNP, can be found in Graphs 6.5 to 6.7, for each scenario assumed. In the most favorable hypothesis (Scenario 1), they grow from 8.0% in 1990 to 13.5% in 2030, reaching 15.0% in the most critical Scenario (Scenario 2).

Finally, Graphs 6.8 to 6.10 present the financing needs for each calendar year[1]. As can be seen, they vary from 4.0% of the GNP in 2030 in the most favorable case to almost 6.0% of the GNP in the worst case.

Just to provide a basis for comparisons and to show how critical the future perspectives are, its good to recall that the whole Federal budget represents around 6.0% of the GNP.

The very optimistic hypothesis that evasion levels will be the same despite the high tax hikes needed to partially finance the system tends to be unrealistic. On the contrary, higher informalization and evasion in the labor market are to be expected as a consequence of heavier social taxes.

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[1] Note that these are yearly figures. They are neither capitalized nor accumulated over the time span considered.

Another adverse macroeconomic effect not considered in the simulations is the coupling of the higher social security taxes with other tax increases needed to balance the Federal, State and Municipal Government Budgets foreseen for the near future. The impact would be on lower savings and investment growth rates, which, in turn, would lead to a lower growth of GNP itself.

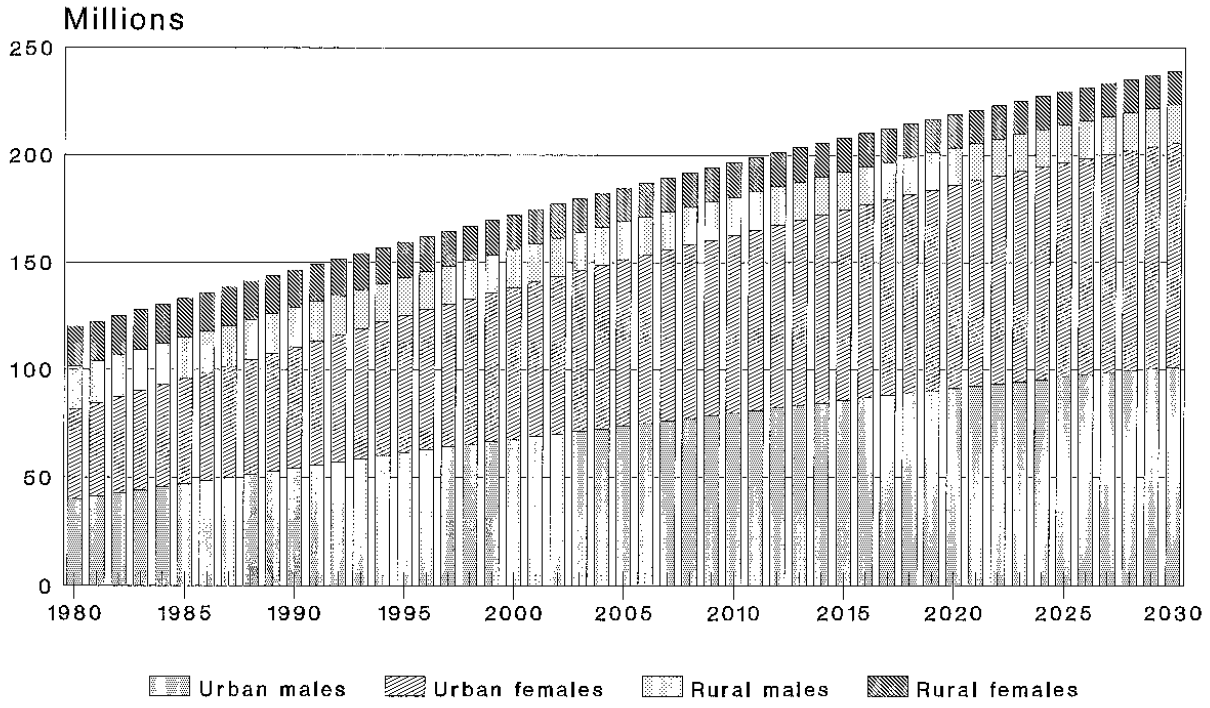
Finally, we have to keep in mind that Social Security is essentially a transfer process that, at least in principle, takes income from higher marginal investment rate groups to higher marginal consumption groups (retirees, survivors benefit recipients and low income social assistance recipient groups). In fact, these last groups have very high marginal consumption rates due to their extremely low socioeconomic standards of living. Even considering desirable redistribution effects, it is possible that GNP growth rates might be negatively affected.

For the time being these feedback effects were not taken into account by the model, although there are plans to do so in the near future.

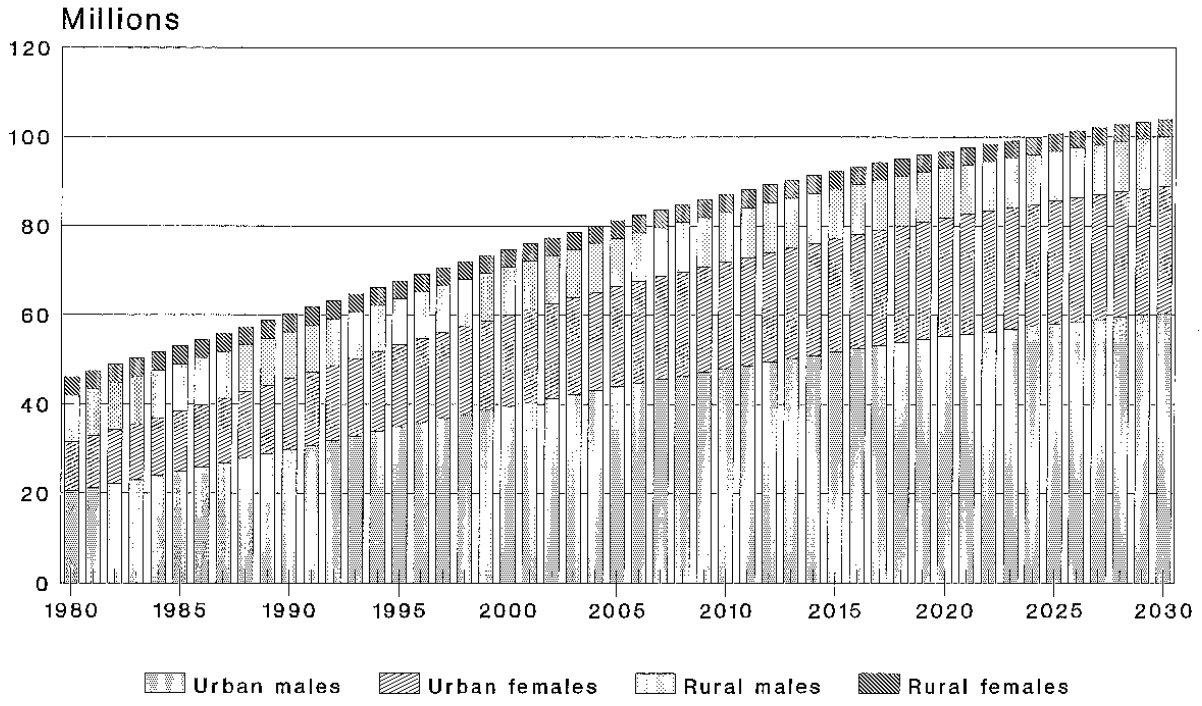
The results presented indicate that, certain justifiable social aspects aside, present Social security rules lead to a considerable cost hike, generating serious doubt as to the feasibility of non-inflationary financing. It also has to be noted that present rules left untouched some of the major Social Security distortions, as for example, the length of service benefit that serves an elite and is very costly.

Alternative reform proposals must thus consider not only the feasibility aspects but also, with equal or greater emphasis, the equity aspects. For a correct political decision making process, the accurate basic information on the perspectives of the system must be presented to the Brazilian society. In this context it is essential to show who pays what, how much he should pay and who benefits and how much he benefits from the system. Acquired rights have to be respected but cannot conflict with the economic feasibility and social justice criteria. It cannot be admitted that the Brazilian State waves another Utopia to the people. Its is essential that for each conceded benefit there should be a corresponding obligation whereby someone pays the costs.

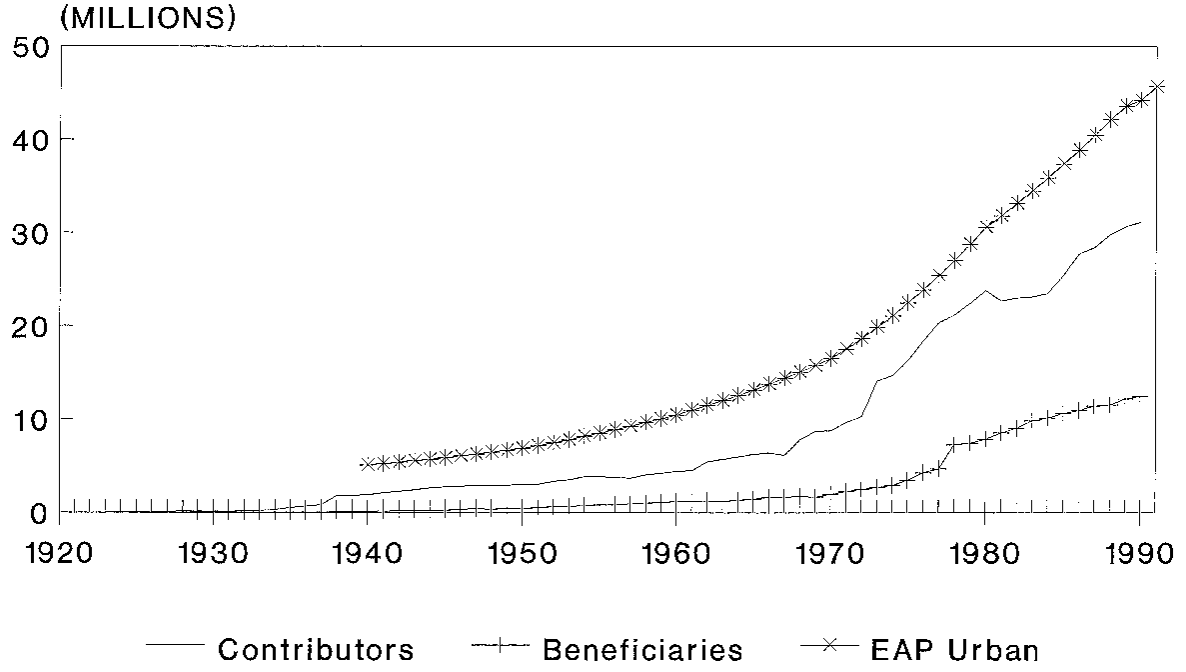
Graph 6.1
TOTAL POPULATION BY SEX AND URBAN AND RURAL CONDITION - BRAZIL 1980/2030



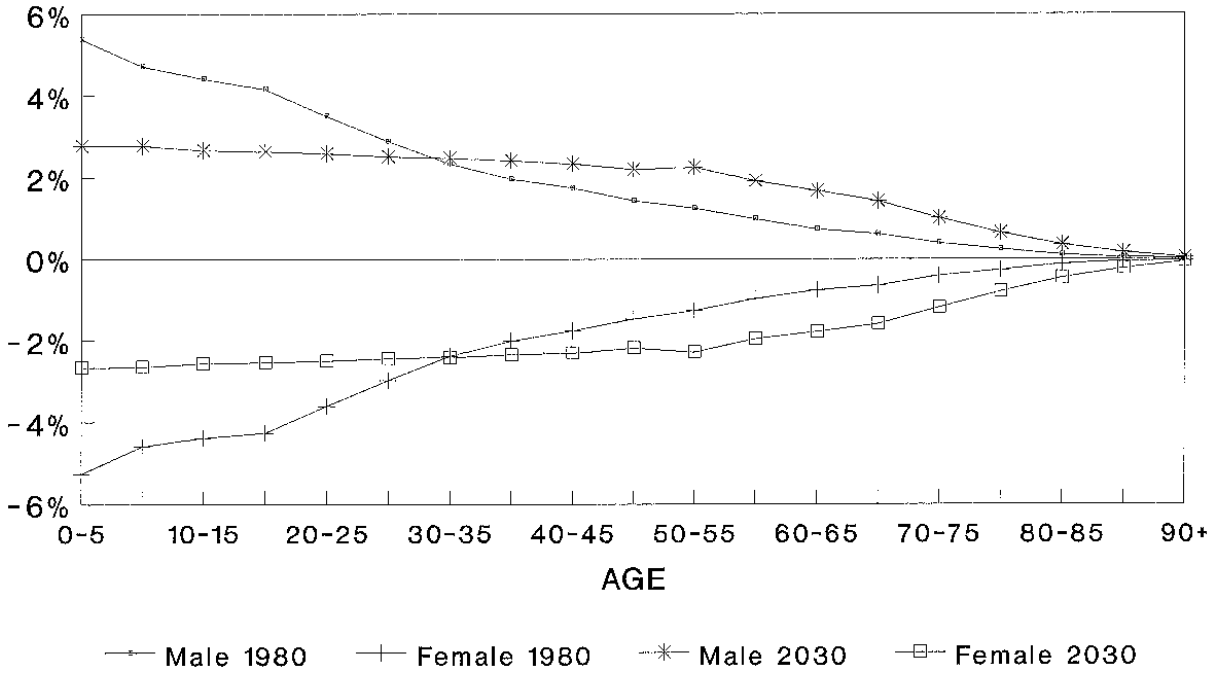
Graph 6.2
ECONOMICALLY ACTIVE POPULATION BY SEX AND URBAN/RURAL CONDITION - 1980/2030



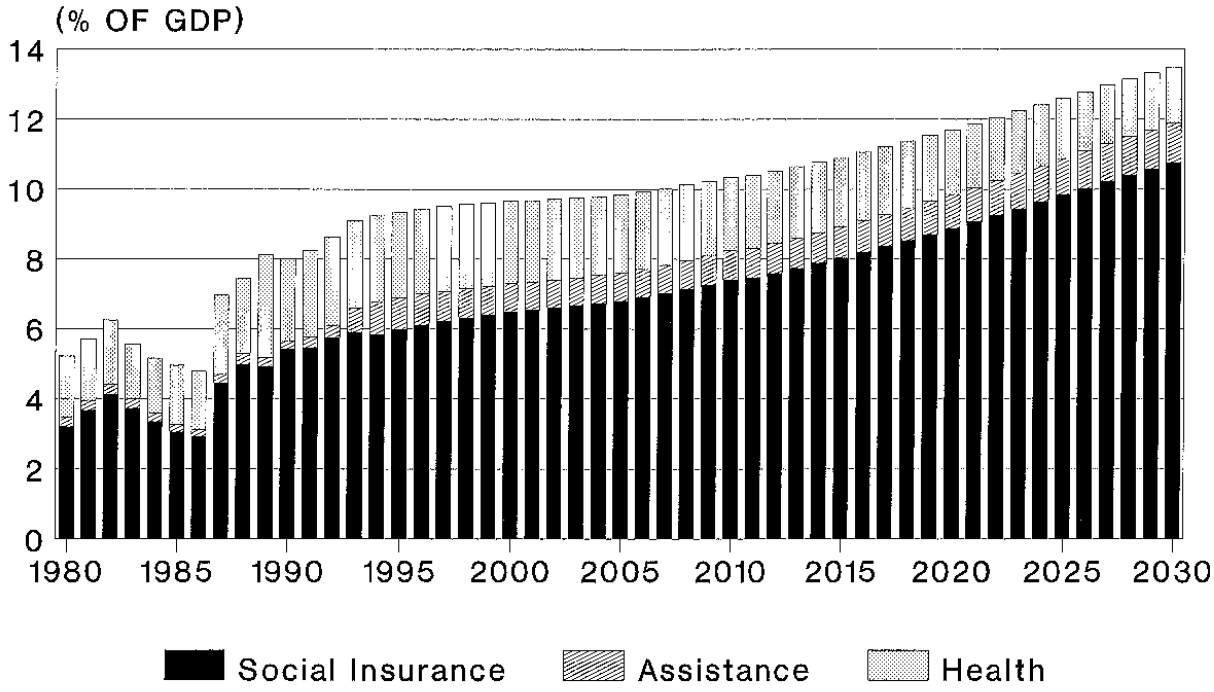
Graph 6.3
EVOLUTION OF EAP, BENEFICIARIES AND CONTRIBUTORS TO THE SYSTEM - 1923/1990



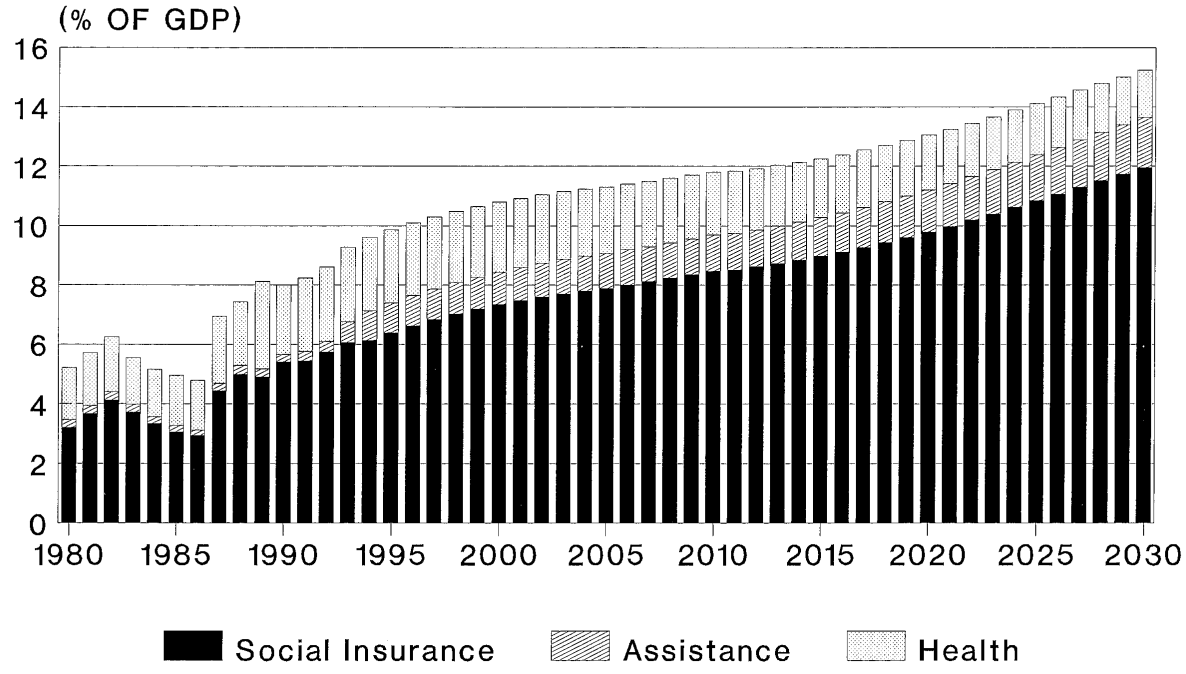
Graph 6.4
AGE DISTRIBUTION
1980/2030



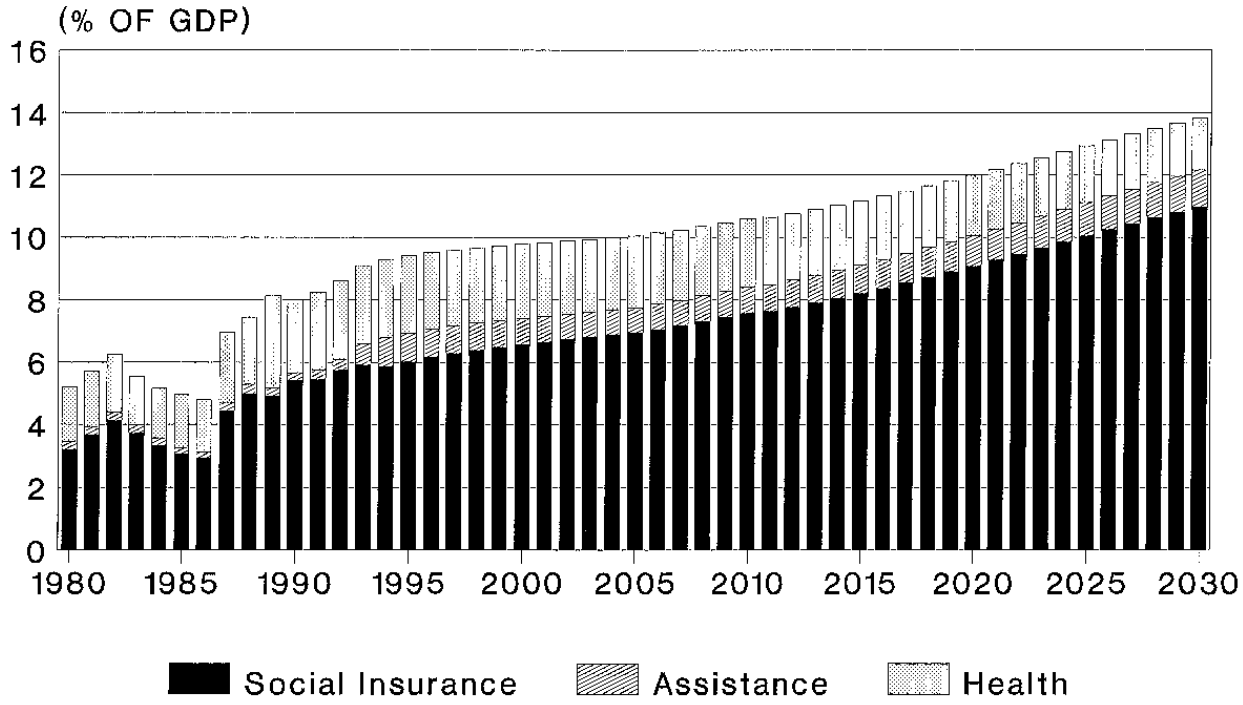
Graph 6.5
SOCIAL SECURITY EXPENDITURES
CURRENT SYSTEM - SCENARIO 1



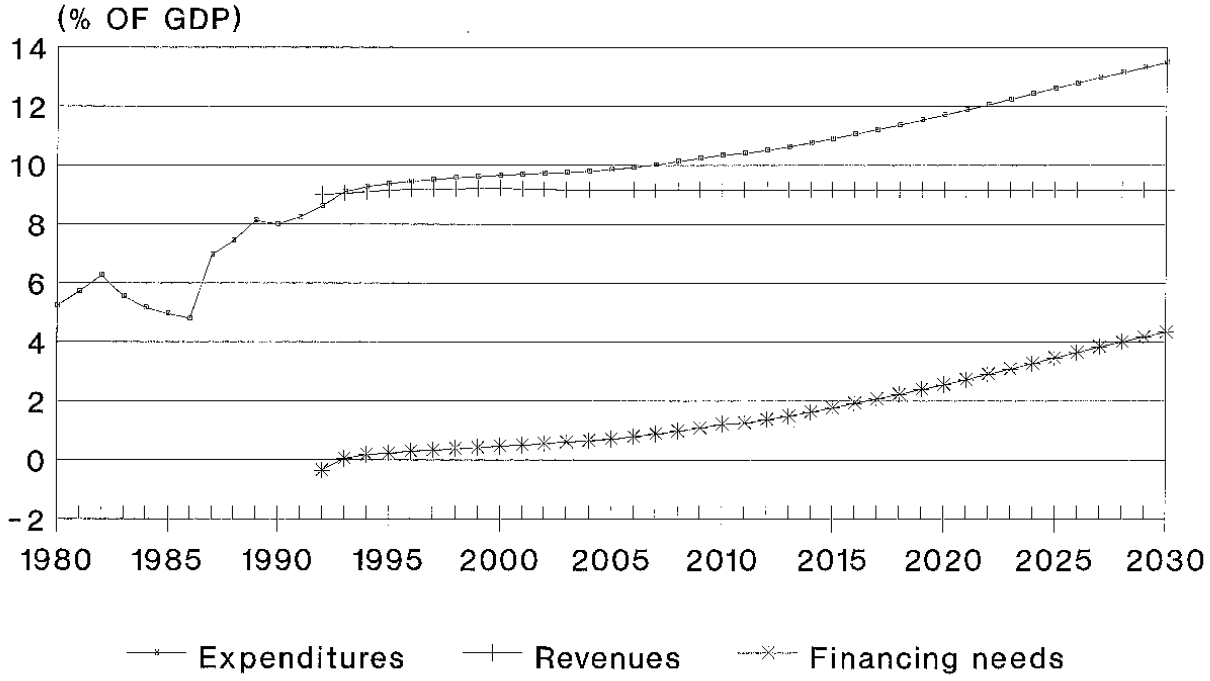
Graph 6.6
SOCIAL SECURITY EXPENDITURES
CURRENT SYSTEM - SCENARIO 2



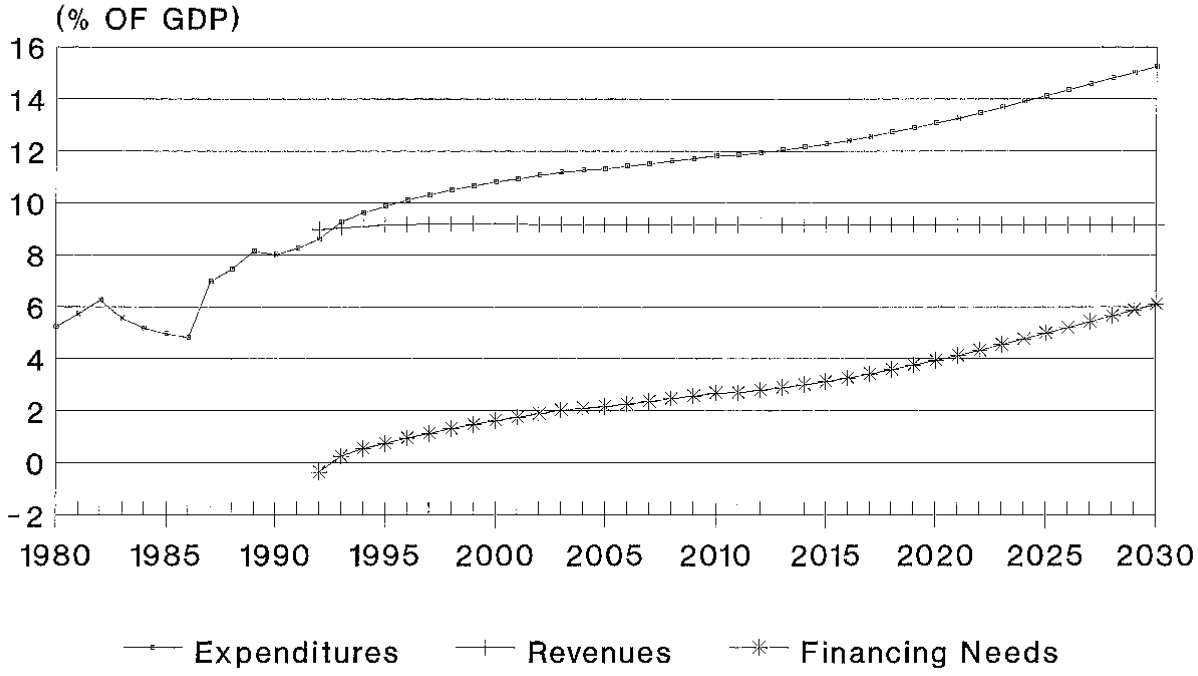
Graph 6.7
SOCIAL SECURITY EXPENDITURES
CURRENT SYSTEM - SCENARIO 3



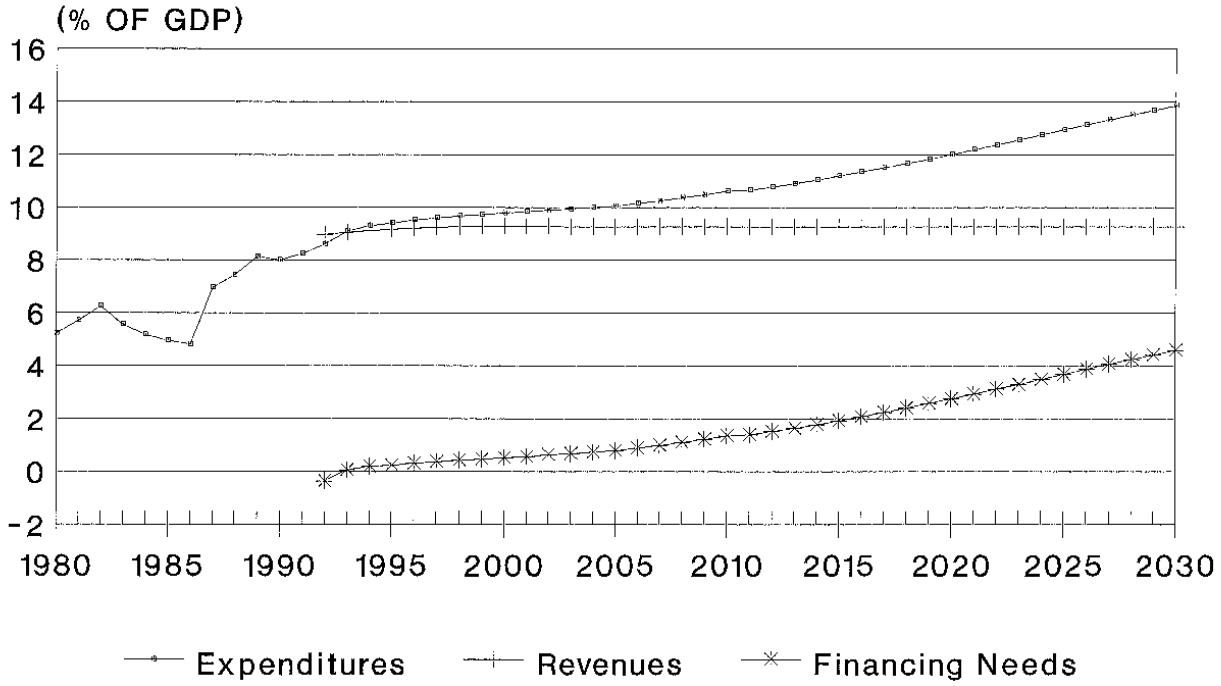
Graph 6.8
SOCIAL SECURITY FINANCING
SCENARIO 1



Graph 6.9
SOCIAL SECURITY FINANCING
SCENARIO 2



Graph 6.10
SOCIAL SECURITY FINANCING
SCENARIO 3



CHAPTER 7

PROPOSAL FOR THE BRAZILIAN SOCIAL SECURITY SYSTEM

Main Principles of the Reform; Basic Social Security; Workmen's Compensation Insurance; Social Assistance; Supplementary Insurance; Health; Transition.

A possible alternative to reform Brazilian Social Security is presented in this chapter in condensed form. The full version can be found in Oliveira *et alii* (1993).

7.1 - Main Principles of the Reform

The main principles of the proposed structural reform of the Brazilian Social Security are:

- Total "visibility" of costs and benefits of Social Security in order to make the distributive conflicts, of accrued earnings clearer;

- To uphold the Social Security concept stated in the Constitution though splitting its components (Social Insurance, Health Services and Social Assistance) conceptually, operationally and financially;

- To respect individual decisions and freedom of choice, restricting the intervention, of the state with regard to decisions on investments and savings;

- To respect acquired rights and to make changes optional;

- To give preference for contributions made directly by the individual contributors themselves;

- To broaden the taxable base and to reduce the nominal tax rates;

- To put a safeguard on Social Security assets;

- To institute social controls over all Social Security programs, preferably exercised by contributors;

- To decentralize financial control, in order to avoid concentration of political and economic power;

- To provide in-cash benefits instead of social assistance services and goods managed by the State;

- To substitute a **provider** State of social services for a **promoter** State of social services

7.2 - Basic Social Security

General Characteristics

- Universal clientele (employers, employees, self-employed, rural, urban, civil servants and military personnel)

- Compulsory affiliation

- Benefits

  Defined benefits;
  Minimum value for Social Security benefit not directly linked to minimum wage;

  Non programmable events (death, disability, sickness, involuntary unemployment): maximum benefit equal to 3 minimum wages inflation indexed by "Cesta de Consumo dos Beneficiários da Previdência Social" (CBSSB - Consumer Basket for Social Security Beneficiaries);

  Programmable events (old age, length of service): maximum benefit equal to 1 minimum wage, inflation indexed by the same criterion above;

  Contributive link.

Basic Costing Characteristics

- "Pay-as-you-go" system with contingency fund

- Contributions paid exclusively by employees, based on wages, with maximum value of 3 minimum wages. Employers contributions over worker's wages will be transferred directly to wages of employees opting for new system.

- Earmarked revenue (Basic Social Security Fund)

Operational Characteristics

- Social Security is State run and initially with centralized operations.

7.3 - Workmen's Compensation Insurance

General Characteristics

- Universal clientele
- Compulsory affiliation
- Defined benefits, greater than regular benefits from basic social security.
- Contributive link

Basic Costing Characteristics

- "Pay-as-you-go" system
- Variable rate contributions paid exclusively by employers, related to the company accident level (deviance to average of the economic activity of the company)
- Based on total wage paid by employer
- Earmarked revenue (Workmen's Compensation Sectorial Funds)

Operational Characteristics

- Insurance, essentially mutual
- Decentralized operation
- Insurance managed by "mutualidades"

Obs: A "mutualidade" is a non profit private entity, aggregating employers of the same economic activity or of the same geographic area, and where these employees are responsible for eventual losses.

Possibly redirect the use of SESI, SENAC, SENAI and SESC structures and contributions, presently financed by employer's compulsory contributions.

7.4 - Social Assistance

General Characteristics

- Residual clientele (Social Safety net)
- Non-contributive scheme
- Minimum benefits (60% of minimum wage at the time of the reform, inflation indexed by CBSSB

Basic Costing Characteristics

- "Pay-as-you-go" system
- Based on sources other than payroll
- Earmarked revenue (Social Assistance Fund)

Operational Characteristics

- Centralized operation
- State managed

7.5 - Supplementary Insurance

- Free mode with respect to compulsoriness, revenue sources, type of operation and financing.
- It is not desirable to institute supplementary Public Security as stated in the Constitution.

7.6 - Health

General Characteristics

- Universal coverage without contributive link
- State financed
- Decentralized operation

Basic Costing Characteristics

- "Pay-as-you-go" system, financed by general taxes with earmarked revenue
- Use of a "health-bonus" corresponding to the average cost (by sex and age bracket) of full health services
- "Health-bonus" with average value of US$ 100.00 *per capita*, actuarially determined by sex and age bracket

Operational Characteristics

- "Entidades Mantenedoras de Saúde - EMS " (Health Maintenance Organizations - HMO) would be responsible, by contract, for all risks involving health care of their affiliated members. They would have an economic incentive for promoting preventive health care actions.
- Possibility of changing HMO if service level does not meet individual needs or satisfaction.
- Public and private system would compete for consumers in the sense that public hospitals would have "health-bonus" as the source of revenue.

7.7 - Transition

Individuals Choosing the New System

- "Bonus of acquired rights" valued as 2/3 of contributions paid over 3 minimum wages, made by employers and employees until date of option.

- "Bonus" would be transferred to his/her own private supplementary insurance plan, and would be redeemable at time of retirement (or death).
- "Bonus" backed by Government shares on State companies and/or long term public debt.

Individuals Choosing to Remain in the Old System

- All benefits of the old system, including integral pension for civil servants would be maintained.
- Actuarial balance for each individual: employee will pay additional rates to match expected benefit costs.

Incentives to Choose New System

- Real wage gain resulting from shift of employers' social contributions to wage of employee, even after deducting higher contributions to the new system

Increase of Taxable Basis

- Strict link between individual contributive record and rights to collect benefit makes each contributor a controller of the system (no records will imply in receiving only safety net benefits).
- Easy characterization of the legal crime of embezzlement
- Estimated increase of taxable basis given by difference between total contributive payroll (as presently informed by company to Social Security) and wage information from RAIS (Annual Social Information).

Payment of beneficiaries already entitled to pensions at date of reform

- Contribution on payroll decreasing with time as the number of old system beneficiaries also decreases.

CHAPTER 8

PROPOSAL EVALUATION

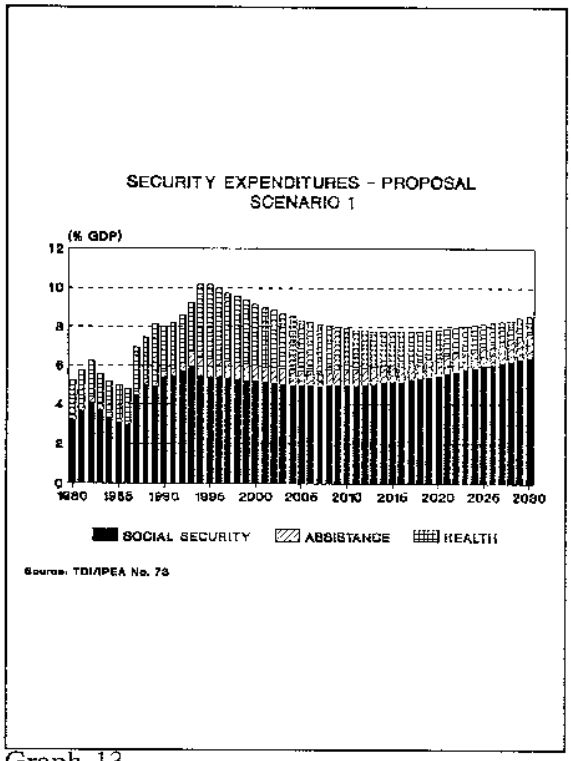
Projections for Social Security expenditures using the macroeconomic scenarios previously presented were made in order to evaluate the system proposed. Results can be appreciated on Graphs 13 to 15.

First, in all scenarios Social Security expenditures reach a maximum near 10% of GDP in the mid nineties. This increase is due to an expansion of Health expenditure. It must be noted however, that since the "bonus" replaces health expenditures of Federal State, County and private sector in the former system, the total amount in the new system is almost the same.

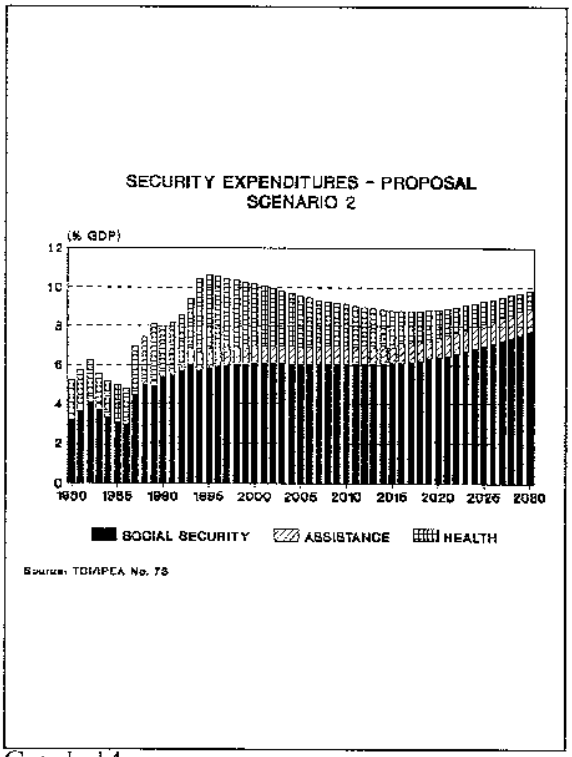
Second a drop of annual expenditures is forecast for the mid nineties, plateauing around 8% for scenarios I, and 9% for the others. Expenditures rise again after 2015 mainly due to social security expenses. The values are always lower than those obtained from projections of the present system for the scenarios adopted, when the total expenditures tend to stabilize around 13.5%, 15.2% and 13.4%, respectively for scenarios I , II and III.

Graphs 16 to 18 present, for each scenario, the comparison of Social Security costs for the present system and the one proposed. Social Security represents the major portion of expenditures in both systems.

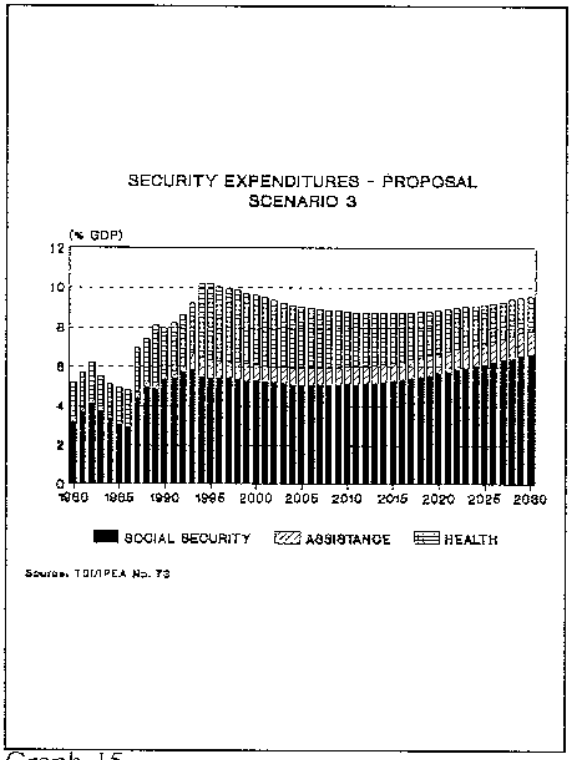
Graphs 19 to 21 present the rates needed to finance the Social Security system. All programs already in existence in 1994 would be financed by a so called "mutual"rate that decreases with time and is levied over the total wage. Entries in new benefit programs, would be financed by so called "individual" rates, also levied on the payroll but with a top of 3 minimum wages.This top indexed by CCBPSS



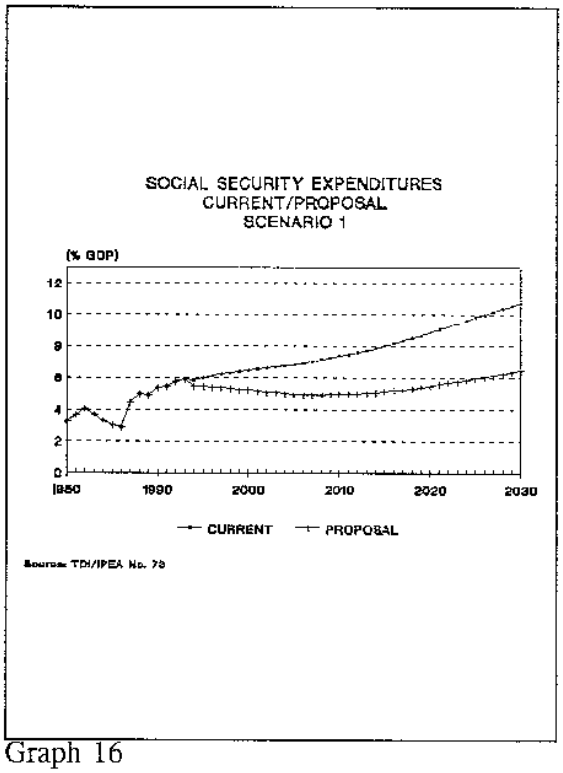
Graph 13



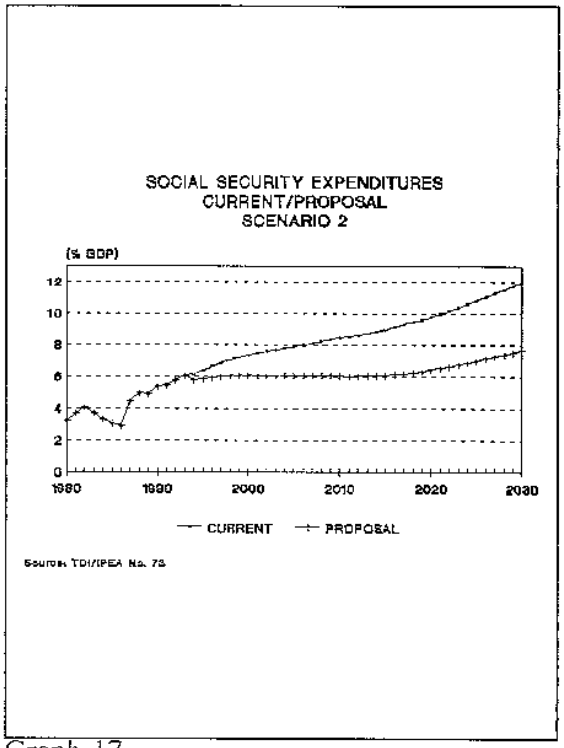
Graph 14



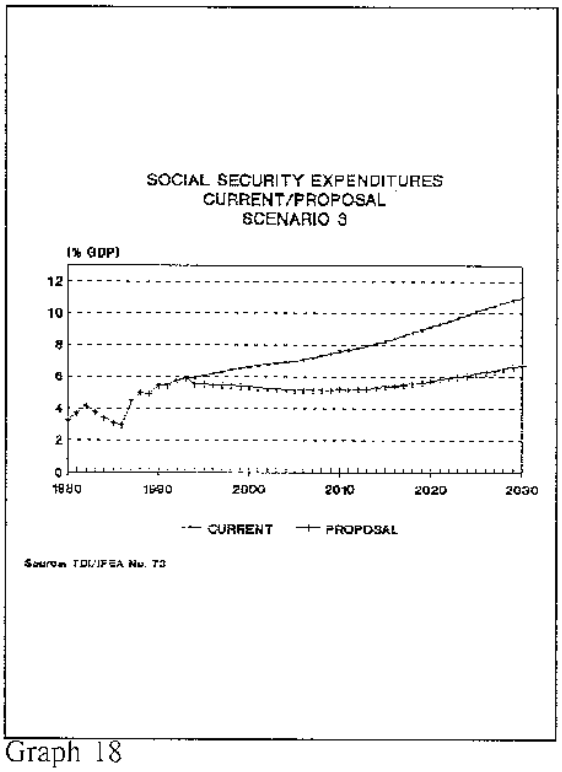
Graph 15



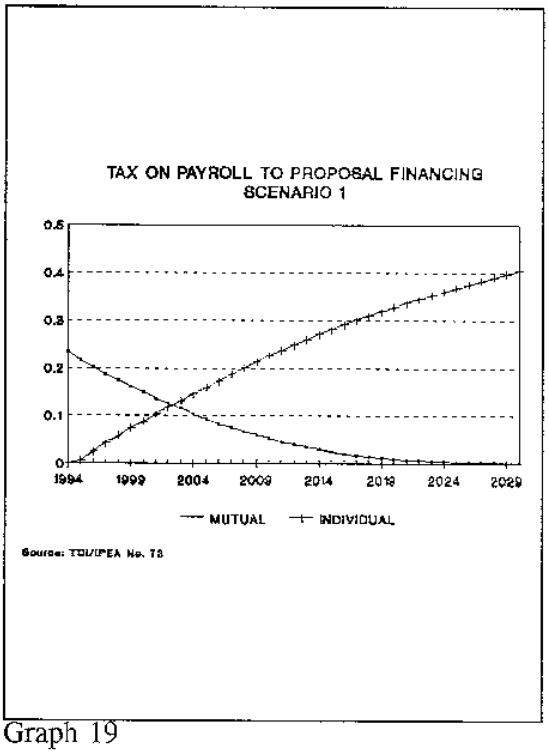
Graph 16



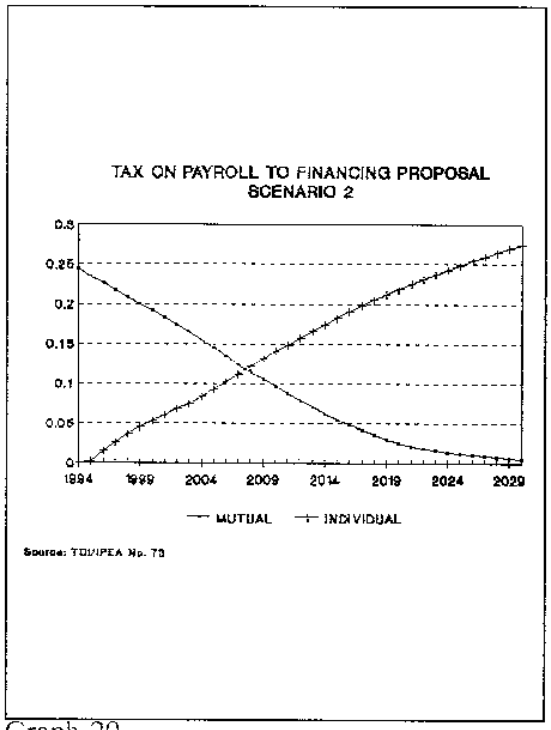
Graph 17



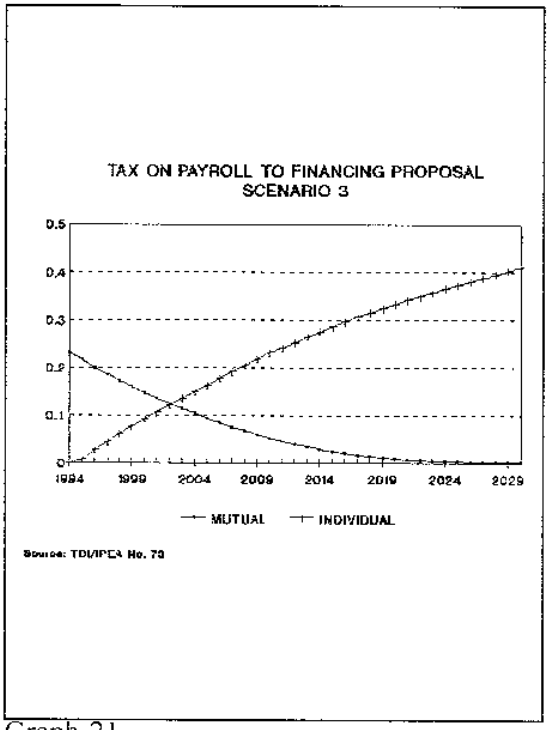
Graph 18



Graph 19



Graph 20



Graph 21

CHAPTER 9

MAIN ASPECTS OF THE PROPOSAL TRANSITION

Acknowledgement of Acquired Rights on Social Security; Backing for Bonus and State owned Companies; Operational Aspect of the "Bonus"; Shift of Contributions Paid by Employer to Wage; Maintenance Fund for Pensioners; Individuals not Choosing the New System Regarding FGTS and PIS/PASEP; A Note about Parafiscal Contributions.

9.1 - Acknowledgement of Acquired Rights on Social Security

Acknowledgement of acquired rights of the old system is a necessary condition, although not sufficient for introducing a new system by free option of the insured person. The proposal presented shows the need to acknowledge acquired rights through a "bonus" to any person who chooses the new system, corresponding to the present value of contributions made to the old system until the date of transition, which is above the new contribution top. In order to stimulate economic measures and avoid instantaneous demand for these resources, this bonus would be only credited along with open or closed entities of complementary social security, following individual preferences of insured persons.

Graphs 22 to 24 show the expenditure with the "bonus". This "bonus" would not necessarily be Government expenses. Supplementary private security would change this bonus for bonds/stocks of State companies as stated in the proposal.

9.2 - Backing for Bonus and State owned Companies

One critical problem for the transition is how to link the bonus with "real assets". The great participation of Federal Government in state companies and private companies gives an excellent opportunity to achieve simultaneously two main objectives: financial support for bonus and capital democratization of State companies. A fund corresponding to the total participation of Federal Government in the productive sector of the economy should be created, with each bonus allocated to its corresponding share value.

This proposal would allow, from a distributional point of view, the participation of employees in the capital of state companies through social security entities. We must note that the bonus will be valued proportionally to time of contribution and consequently any insured person will have a participation proportional to his/her own labor effort.

9.3 - Operational Aspect of the "Bonus"

One main difficulty in introducing the proposed reform is to compute bonus values for each new participant. We should observe that this difficulty would happen anyway: within the present system, insured members must prove their contributions in order to be entitled to a pension, specially for length of service. The solution would be a complete census of all Social Security members.

Finally we should say that these difficulties to recognize length of contribution are not inherent to the proposed reform but a deficiency of the present system that, as previously shown, does not keep proper individual records.

9.4 - Shift of Contributions Paid by Employer to Wage

One fundamental element of transition, seeking not only to stimulate option for the new system but to make it more transparent, would be the shift of company contributions levied over wages directly to wage of the new participants.

In view of expected efficiency gains by the system change, it is probably possible to give to new participants a real wage increase, a powerful incentive to adhesion. The new costing system creates the possibility of a great increase in the contribution incidence base by embodying any employee as the main controller of his/her contribution.

We should consider similar procedure for contributions over companies profit, within the context of an extensive tributary reform.

Regarding contributions over income, the proposal is that they should be eliminated within the context of a tributary reform.

9.5 - Maintenance Fund for Pensioners

One of the most complex problems in any transition in Social Security is the payment to the old system beneficiaries after the introduction of the new system. Stock of beneficiaries tends to be high, particularly in countries with relatively old systems.

One option is to keep a "Beneficiary Fund" for the old system through contributions exclusively paid by employees/self-employed, independent of having chosen or not the new system. These contributions tend to decline over time since it would be a population group in extinction.

9.6 - Individuals not Choosing the New System

Obviously, for some reason or other, there would be a group that would choose to remain in the old system. They would be assured all rights of the former system within the acquired rights warrant principle, including the length of service retirement with present replacement levels.

An individual actuarial balance for each insured member, in order to make him/her pay integrally eventual differences not covered by present contributions.

The same procedure would be followed with respect to special groups like public servants, Congressmen and the Military.

9.7 - Regarding FGTS and PIS/PASEP

Social Security reform must take into account the so called "patrimonial funds" -FGTS and PIS/PASEP, since present resources include a percentage on wages that would be used for other purposes in the proposed reform.

The main idea would be to create a "Liquidness Fund for FGTS and PIS/PASEP" in order to give financial support for participants of both funds to exert the acquired rights.

Concerning the FGTS individual cumulative fund, since existing rules include a replacement plan in case of involuntary unemployment, payments should be made in a long term schedule. Eventually, a similar kind of "bonus" suggested for social security can be used for these funds. In this case, "bonus" would be credited by beneficiary to his chosen complementary social security institution at retirement, resulting in a monthly gain. We must note that total withdraw would be restricted.

Similar to social security bonus, the financial portfolio should be kept with long term government papers, consistent with fiscal and monetary policy.

9.8 - A Note about Parafiscal Contributions

Similar to other contributions over wage, also parafiscal contributions to SENAI, SESI, SESC and SENAC[1] would be shifted, optionally, directly to wages.

In this case, each individual would choose to continue or not in the old system, receiving services from these institutions maintained by company contributions or to incorporate these contributions as part of their wages at the rate of 2,5% .

A more radical reform would contemplate the possibility of making this kind of contributions optional to companies.

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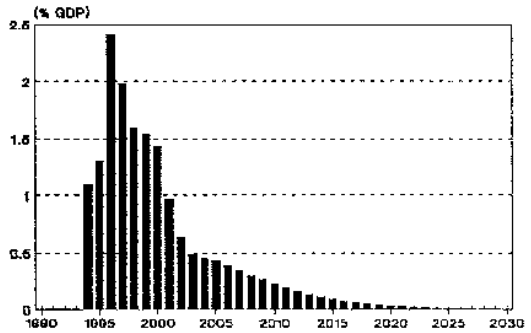
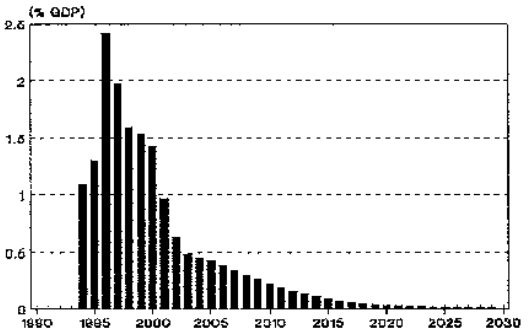
[1] Funds related to different corporations: commerce, industry, ...

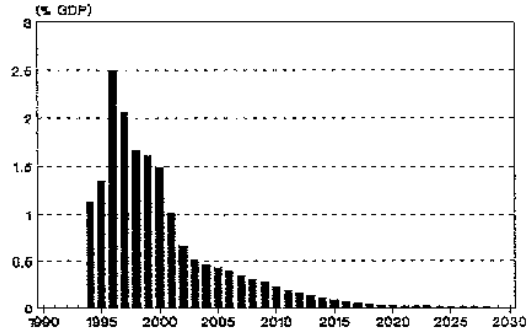
BONUS EXPENDITURES
SCENARIO 1



BONUS EXPENDITURES
SCENARIO 2



BONUS EXPENDITURES
SCENARIO 3



CHAPTER 10

FINAL CONSIDERATIONS

The evaluation of the Brazilian Social Security System indicates the need for an in-depth and immediate reform. The main goals of such a reform are social justice and economic and financial equilibrium but always assuring the acquired rights to members of the present system.

The present political environment seems appropriate for the debate of the subject. Since constitutional reform is due to begin next October, one must bear in mind that the main directions which characterize Brazilian Social Security were defined in the 1988 Constitution.

From the macroeconomic standpoint the present moment is also suitable for the discussion of a Social Security reform; Brazil is one out of the few countries in its continent that have not yet adjusted its economy. Thus, for the sake of macroeconomic consistency, actions concerning Social Security reform must be taken in a wider macroeconomic adjustment context.

In spite of these favorable aspects there is no doubt that to reform Social Security will require much effort and great ability from both the Government and the concerning groups in society.

As an imperative to Social Security reform, Brazilian society must undergo a process of greater awareness and, also, a change of mentality. So, it is of paramount importance to state clearly the limits of economic and financial constraints that must be respected in order to surmount the myth that the State can finance everything. Above all, it must be clearly stated who pays and who receives benefits and services and if there exists cross-subsidies and conflicting interests of participating groups.

Finally, a reformulation of the incentive apparatus, government regulation and controls is of fundamental importance. Privatization of Social Security is absolutely meaningless. A liberal approach as proposed here cannot work without an increase in government power over regulatory matters. In fact, what is proposed here is that instead of providing by itself all sorts of benefits and services the government should assure a role targeted towards incentives, regulations and controls.

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ANNEX 1 - SUMMARY OF "INSTITUTO NACIONAL DE SEGURIDADE SOCIAL" (INSS = NATIONAL SOCIAL SECURITY INSTITUTE) BENEFITS

1 - Introduction

This annex summarizes the main types of Brazilian social security cash benefits offered by INSS. There are other programs maintained by the State offering cash benefits to formal sector workers: unemployment benefits, "Fundo de Garantia por Tempo de Serviço" (FGTS = Length of Service Warranty Fund), "Programa de Integração Social" (PIS = Social Integration Program) and "Programa de Formação do Patrimônio do Servidor Público" (PASEP = Civil Servant Patrimonial Fund Programs)[1]. These programs are not described here.

2 - INSS Insured Population

The following groups can be so characterized:

a) Employee - Someone who realizes services of urban or rural nature for a firm under a formal work contract;

b) Employer - The head/owner of an urban or rural individual firm, the director or administration board member of a corporation, the solidary partner or the industrial partner who participates in the administration and receives monetary compensation by his/her work in an urban or rural firm;

c) Self employed - Someone who works for himself/herself in urban or rural activities;

d) Domestic Servant - Person employed in a household to do domestic work, with a formal labor relationship;

e) Voluntary Contributor - person with more than 14 years of age who wants to join the social security system but does not work in a job or activity requiring compulsory contribution. Examples: students, housewives, and so on;

f) Specially Insured - Farmers, tenant farmers and other rural self employed who work in a household economy with eventual aid from family members;

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[1]PIS (private sector workers) and PASEP (civil servants) are programs that create collective capitalized funds for workers in the formal market. These funds: a) provide a 14th salary for workers with an income of less than two minimum wages; and b) can be collected in situations of involuntary unemployment, retirement or death of the worker.

g) Temporary worker - Someone who does not have a continuous work relationship with a firm but a sporadic one; and

h) Family Group - includes economically dependent spouse, children under 21 years of age or permanently disabled, dependent parents and dependent under aged siblings.

3 - Wage Concepts

For a better perception of the benefits conceptual framework the following explanations are required:

a) Contribution Wage - It is the reference value to calculate the monthly payment of the insured individual for social security purposes. It is calculated applying the discounts and limits[1] on the wage. For self employed, employers and voluntary workers, the contribution wage conforms to a basic wage scale described by a Social Security Law, with minimum time intervals for upgrading.

b) Benefit Wage - It is used to calculate the benefit value. The law defines it as the average of the last 36 contribution wages in a maximum time interval of 48 months. The wages are individually inflation indexed by the "Índice Nacional de Preços ao Consumidor" (INPC = National Consumers Price Index)[2] before averaging.

4 - Main Benefit Types Offered Nowadays:

Benefits offered by the Social Security and Social Assistance programs are[3]:

- 13 th. benefit (Abono Anual);

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[1]According to the present legislation the maximum taxable salary for social security purposes is equivalent to 10 minimum wages.

[2]The INPC is the most important and reliable consumer price index in Brazil. This index is calculated by the "Instituto Brasileiro de Geografia e Estatística" (IBGE = Brazilian Institute of Geography and Statistics) and it covers the ten major Brazilian cities.

[3]The benefits marked with A are Social Assistance benefits and the ones marked with S are single payment benefits. All other benefits are periodic payment benefits (annuities).

- Non Retirement Bonus[1] (Abono de Permanência em Serviço);
- Special Length of Service Retirement (Aposentadoria Especial);
- Old Age Retirement (Aposentadoria por Idade);
- Disability Retirement (Aposentadoria por Invalidez);
- Workmen's Compensation Disability Retirement (Aposentadoria por Invalidez por Acidente de Trabalho);
- Length of Service Retirement (Aposentadoria por Tempo de Serviço);
- Length of Service Special Retirement offered to teachers, newspapermen and other professional categories (Aposentadoria por Tempo de Serviço de Grupos Especiais);
- Workmen's Compensation Disability Aid (Auxílio-acidente por Acidente de Trabalho);
- Workmen's Compensation Sickness Aid (Auxílio-doença por Acidente de Trabalho);
- Sickness Aid (Auxílio Doença);
- Funeral Aid (S) (Auxílio Funeral);
- Birth Aid (S) (Auxílio Natalidade);
- Imprisonment Aid (Auxílio Reclusão);
- "Pecúlio"[2](S);
- Survivors' Benefit (Pensão por Morte);
- Workmen's Compensation Survivors' Benefit (Pensão por morte decorrente de Acidente de Trabalho);
- Life time Old Age Income Benefit (A) (Renda Mensal Vitalícia por Velhice e Amparo Previdenciário por Velhice);
- Life time Disability Income Benefit (A) (Renda Mensal Vitalícia por Invalidez e Amparo Previdenciário por Invalidez);
- Family Allowance (Salário Família); and
- Maternity Leave Allowance (Salário Maternidade).

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[1]It is a benefit paid to the worker who is eligible for "Length of Service Retirement" but chooses to keep working.

[2]A lumpsum benefit whose value is the capitalization of all contributions made by an individual who goes back to work after retiring, or by one who is not eligible for any social security benefit.

5 - Brief Description of Benefits

a) 13 th. Benefit:
Type: periodic (once a year);
Clientele: Urban and rural beneficiaries;
Eligibility Conditions: Beneficiary who receives sickness aid, workmen's compensation disability aid, retirement benefits, survivors' benefits or imprisonment aid;
Benefit Value: Value equal to the December benefit whenever the benefit is paid during the whole year and proportional, when the benefit is paid during a period greater or equal to 15 days.

b) Non Retirement Bonus
Type: periodic (every month);
Clientele: Urban and rural insured individuals already eligible to "Length of Services Retirement" who chooses to keep working;
Eligibility Conditions: (1) length of service (in years): men 30 and women 25; and (2) for persons joining the system after 07.24.91, minimum contribution period of 180 months; otherwise between 60 and 180 monthly contributions pending on the date of the benefit application;
Benefit Value: 20% or 25% of the would be retirement benefit value.

c) Special Length of Service Retirement
Type: periodic (every month);
Clientele: Urban or rural insured persons that had worked in unhealthy, dangerous or arduous activities;
Eligibility Conditions: (1) Minimum length of service of 15, 20 or 25 years according to the nature of activity; (2) for persons joining the system after 07.24.91, minimum contribution period of 180 months; otherwise between 60 and 180 monthly contributions pending on the date of the benefit application. (3) minimum age is fifty years for some activities;
Benefit Value: 85% of the benefit wage plus 1% for each group of 12 contributions up to the limit of 15%.

d) Old Age Retirement
Type: periodic (every month);
Clientele: Urban and rural Insured persons;

Eligibility Conditions: (1) Minimum age: urban (men 65, women 60) and rural (men 60, women 55); (2) for persons joining the system after 07.24.91, minimum contribution period of 180 months; otherwise between 60 and 180 monthly contributions pending on the date of the benefit application.
Benefit Value: 70% of the benefit wage plus 1% for each group of 12 contributions up to the limit of 30%.

e) Disability (Invalidity) Retirement
Type: periodic (every month);
Clientele: Urban or Rural insured persons;
Eligibility Conditions: (1) Permanent handicap to exercise any economic occupation in order to provide his/her own maintenance; (2) 12 monthly contributions;
Benefit Value: 80% of benefit wage plus 1% for each group of 12 contributions up to the limit of 20%.

f) Workmen's Compensation Disability Retirement
Type: periodic (every month);
Clientele: Urban or Rural insured person with the exception of domestic workers;
Eligibility Conditions: Totally and permanently handicapped to exercise any economic occupation in order to provide his/her own maintenance; Eligibility is not dependent on the number of previous contributions;
Benefit Value: 100% of the contribution wage of the day of the accident or the benefit wage, whichever is higher;

g) Length of Service Retirement
Type: periodic (every month);
Clientele: Urban and rural insured persons;
Eligibility Conditions: (1) length of service (years): men 30; women 25 and (2) for persons joining the system after 07.24.91, minimum contribution period of 180 months; otherwise between 60 and 180 monthly contributions pending on the date of the benefit application.
Benefit Value: Men: 70% of the benefit wage at 30 years of service plus 6% for each complete year after the 30 th year up to a maximum of 30%; Women: 70% of the benefit wage at 25 years of service plus 6% for each complete year after the 25 th year up to a maximum of 30%.

h) Length of Service Retirement for Teachers
Type: periodic (every month);

Clientele: Insured teachers of credited courses and subjects;
Eligibility Conditions: (1) length of service (years) men: 30; women: 25; (2) for persons joining the system after 07.24.91, minimum contribution period of 180 months; otherwise between 60 and 180 monthly contributions pending on the date of the benefit application.
Benefit Value: 100% of benefit wage.

i) Workmen's Compensation Disability Aid
Type: periodic (every month);
Clientele: Urban and rural insured persons with exception of domestic workers;
Eligibility Conditions: Insured person with labor capacity reduced by work injury: (a) considering the same activity; (b)considering other activity with the same complexity level; (c) considering other activity of lower complexity level. The eligibility for this benefit does not depend on the number of contributions paid.
Benefit Value: 30%, 40% or 60% of contribution wage of the day of the accident proportional to the seriousness of the injury. The same percentages may be applied to the benefit wage whichever is higher.

j) Sickness Aid
Type: periodic (every month during attested sickness with a maximum of three months, but renewable);
Clientele: Urban and rural insured persons;
Eligibility Conditions: (1) temporarily incapacitated to work for more than 15 consecutive days due to sickness; (2) minimum of 12 monthly contributions (except for sickness specified by law, in this case the benefit can be collected without previous contributions);
Benefit Value: 80% of benefit wage plus 1% for each group of 12 monthly contributions up to a maximum of 20% of the benefit wage;

k) Workmen's Compensation Sickness Aid
Type: periodic (every month during attested work related sickness or injury with a maximum of three months but renewable);
Clientele: Urban or rural insured persons except domestic workers;
Eligibility Conditions: temporarily incapacitated to work because of a work related injury or professional sickness. Eligibility to this benefit does not depend on previous contributions;
Benefit Value: 92% of the contribution wage of the date the injury/sickness happened, or 92% of the benefit wage, whichever is higher.

l) Funeral Aid (S)
Type: single payment;
Clientele: Urban and rural insured persons or retirees. The benefit is paid to the person who underwent the funeral expenses;
Eligibility Conditions: Death of the insured person;
Benefit Value: Twice the minimum wage

m) Birth Aid (S)
Type: single payment;
Clientele: Urban and Rural Insured Persons;
Eligibility Conditions: Births. If both parents are insured, the benefit will be paid to the mother;
Benefit Value:One minimum wage

n) Imprisonment Aid
Type: periodic (every month during the imprisonment period);
Clientele: Urban and rural insured persons. The benefit is paid to the insured's family group of the insured person;
Eligibility Conditions: Imprisonment of the insured person;
Benefit Value: 80% of the would-be retirement benefit value the insured person would receive on the imprisonment date, plus 10% for each additional member economically dependent in the family group (up to a maximum of 20%).

o) "Provident Fund"[1] (S)
Type: single payment;
Clientele: Urban or rural insured persons;
Eligabity Conditions: (1) Person permanently incapacitated for work before having being eligible to receive an other social security benefit; (2) Retired person who goes back to work and then quits;
Benefit value: lumpsum payment corresponding to the capitalized sum of all contributions made.

p) Survivors' Benefit
Type : periodic (every month until death/loss of eligibility of recipient);
Clientele: Urban or rural insured persons. Payments are made to the family of the deceased;

[1]Discontinued from 1994 on

Eligibility Conditions: death of insured person; minimum of 12 monthly contributions without interruption;
Benefit Value: 80% of the would-be retirement benefit value on the date of death plus 10% pieces for each additional member economically dependent in the family group (up to a maximum of 20%). The value of the benefit wage used to calculate the value of the survivors' benefit can not be less than one minimum wage.

q) Workmen's Compensation Survivors' Benefit
Type: periodic (every month until death/loss of eligibility of recipient);
Clientele: Urban or rural insured persons. The payment is made to the family of the deceased person;
Eligibility Conditions: death of insured person because of a work related injury/accident or professional sickness. Eligibility to this benefit does not depend on previous contributions.
Benefit value: 100% of contribution wage or 100% of the benefit wage whichever is higher; The benefit value is not a function of the number of family members economically dependent;

r) Old Age and Disability Life-Time Income Benefits (A)[1]
Type: periodic (every month);
Clientele: Urban or rural non-insured persons;
Eligibility Conditions: (1) non-insured persons with seventy years of age or permanently handicapped; (2) insured person with income less than one minimum wage; (3) minimum of 12 monthly contributions during five consecutive years. This benefit can not be collected simultaneously with other benefits;
Benefit Value: one minimum wage.

s) Family Allowance
Type: periodic (every month)
Clientele: Urban or rural insured persons except domestic workers;
Eligibility Conditions: Evidence of children under fourteen years of age or handicapped son or daughter living in household of insured person;
Benefit Value: Number of "quotas" is equal to the number of children under the above described conditions; The value "per capita" is a function of the income of the insured person and set by the Social Security Ministry.

[1]The Constitution states that everybody is eligible for this benefit and actually no contribution is required.

t) Maternity Leave Allowance

Type: periodic (every month, for four months);

Clientele: Urban or rural insured women;

Eligibility Conditions: Baby delivered by an insured woman. This benefit does not depend on previous contribution; the worker receives the benefit directly from the firm (that deducts it from the Social Security contribution) and the domestic worker receives the benefit from the social security agencies;

Benefit value: equivalent to the last contribution wage(no ceiling).

ANNEX 2 - DEMOGRAPHIC MODULE

Demographic projections were made using the Components Method by which independent fertility and mortality trends are assumed by sex, age and calendar year, for the urban and rural populations. For the future it was assumed that the migration process would slow down to the level measured during the sixties. The specific activity rates sex/age and rural/urban status were used to estimate the economically active population. As for the contributors' population, sex-age specific formalization rates were assumed, as well as the shares of the individual contributors (self employed workers, house servants, employers, etc.) that actually contribute to the Social Security system. The year of 1980 was taken as base for projections because it is the last one for which complete Census information is available. The 1991 Census has not been published yet.

1 - Fertility and Mortality

Various recent studies[1] focus on the fertility decline that occurred in Brazil during the last 20 years. As can be observed in Table 2.1, the Total Fertility Rate - TFR for the urban population dropped from 5.05 in the period 1960/65 to 2.93 in the period 1980/85, a reduction of 2.12 children per woman. In the rural area the reduction was even greater.

The TFR projections assume a continuous decline during the period considered according to a logistic function with an asymptote of 2.23 children, which is about the figure of the Brazilian population replacement level. This seems to be a conservative hypothesis considering the last information from the "Pesquisa Nacional por Amostragem de Domicilios" (PNAD = National Household Survey) 1986[2] and from the Brazilian DHS (Demographic Health Survey)[3]. The international experience shows various countries with below replacement level TFR.

In spite of the decline observed in the TFR, there was a recent specific fertility rate increase in the first fertile group (15 to 19 year old age bracket). The fertility reduction took place mainly among older women through contraceptive methods (cf. PNAD/86). Values for the

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[1].See, for example, BERQUÓ (1983), OLIVEIRA and SILVA (1986), WONG (1986), CAMARANO, BELTRÃO e NEUPERT (1988).

[2].PNAD 1986 had a part of its "supplement" dedicated to fertility.

[3]. See BEMFAM (1987); and OLIVEIRA and SIMÕES (1988)

80/85 period were obtained by linear extrapolation for the values for 75/80 (as measured by the 1980 Census) and values for 79/84 (as measured by PNAD 1984). This change in pattern were incorporated into the projections.

The United Nations model for early fertility pattern with median concentration was assumed as a limit, applied to a TFR of 2.23 to be reached in the period 2050/55. Using each period's projected TRF as guides, age specific rates were obtained by interpolating between the estimated distribution for women in the period 80/85 and the limit distribution.

Mortality trend projections were made resorting to the existing literature, and among the various alternatives considered[1] the CELADE/IBGE estimates for life expectancy at birth by sex (E_o) for the period 1950/80 and its projections for the 1980/2025 period were chosen. The logistic model was used to extend the projections to 2025/2030.

Substantial gains in Life Expectancy at birth were achieved during the 1950/1980 period. Men had an increase of 10.12 years and women an increase of 11.50 years. The projection assumes an increase of the mortality differential between men and women as well as between urban and rural populations.

2 - Rural and Urban Specific Activity Rates

The hypothesis on activity rates were based on the urban and rural figures observed in the 1980 Census and on the PNADs of the decade.

For men, economic activity rates are greater in rural areas then in urban areas with the largest differences corresponding to men under 20 years of age and for men older than 50. As it is widely known, these differences are due to the fact that rural men start working earlier and stay working longer. The differential is just in the reverse direction for women. Urban women work substantially more than their rural counterparts; activity rates for urban women in the 20 to 50 age bracket double the rural rates. Part of this differential can be explained by the

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[1]. National Academy of Sciences/Comites on Population and demography/Panel on Brazil; Preliminary report of the Panel on Brazil, (mimeo); CARVALHO, Jose Alberto M. e PINHEIRO, Silvio de Menezes Gama, "Fecundidade e Mortalidade no Brasil 1970/1980'. Estimaciones y Proyecciones de Población, 1950-2025', fasciculo F/BRA., 1, julho 1984.

"economic activity" concept. In rural areas there are more women working at home that are not computed as part of the economically active population.

Male population projections by activity status took 1980 data as a basis. Taking into account that these rates are not statistically different from the ones observed for 1985 and assuming a "saturation" condition, it was decided to keep them constant throughout the projection period. Observed PNAD 85 female activity rates were used for the projection, yielding a larger contingent of women in the labor force during the projection period. Since data was only available for 5 year intervals, it was necessary to interpolate in order to obtain age-specific activity rates, assuming that the given figures would correspond to the middle of the interval.

TABLE II.1 - **Observed Total Fertility Rates BRAZIL: 1960/1985**

Period	Urban	Rural	Total
1960/1965	5.05	7.95	6.15
1965/1970	4.45	7.32	5.31
1970/1975	3.90	6.70	4.70
1971/1980	3.40	6.10	4.25
1980/1985 (1)	2.93	5.40	3.35

Source of basic data: IBGE "Censo Demográfico (several years)" and IBGE "Pesquisas Nacionais por Amostragem de Domicílio". (1) The 1980/1985 rate was obtained extrapolating 1980 Census data (1975/1980) and PNAD 84 data (1979/84).

TABLE II.2 - **Economic Activity Rates By Sex, Age Group and Urban/Rural Condition BRAZIL : 1985**

Age Group	Urban		Rural	
	Males	Females	Males	Females
10-14	16.00	8.73	48.52	20.13
15-19	66.32	40.65	89.16	44.73
20-14	91.00	52.77	96.77	41.20
25-29	96.82	51.05	98.24	39.21
30-39	97.15	51.37	98.36	43.79
40-49	92.79	44.67	97.24	39.93
50-59	76.16	28.89	93.41	34.92
60	37.02	8.87	64.24	15.40

Source: PNAD 1985

ANNEX 3 - CONTRIBUTORS' GENERATION MODULE

1 - Urban Contributors - Data Source and Projection Methodology

Although data corresponding to the number of contributors to the Social Security system are presented in many documents, the fact is that the system does not furnish this information with any precision. After the unification of the old provident funds and of the Institutes, individual contributors' records were abandoned and substituted by records aggregated by firm/employer. This type of control was also abandoned for quite a long time and the Social Security system's controls were made only at the State level.

From 1979 onwards serious efforts have been made to rehabilitate controls, with the creation of (Business Social Security Current Account) "Conta Corrente da Seguridade Social" and the use of the "Relação Anual de Informações Sociais" (RAIS = Annual Social Information Report)[1]. After the "Census" of retired and survivors' benefit recipients (1988), the goal has been to reconstruct contributors' individual records[2].

Taking into account these limitations, base year (1980) population estimates were made combining various sources - RAIS, Demographic Census and estimates of IAPAS Secretary of Planning for the number of autonomous and domestic workers (information is not available with regard to sex).

A problem common to all records was the existence of incomplete information, mainly about sex and age. In some cases, for example, inconsistent information was observed, such as workers with less than 10 years of age,an impossible situation according to the Brazilian formal sector labor regulations; these cases were treated as unknown information. Two basic groups of urban contributors were considered: urban employees whose contributions are paid trough their employers and individual contributors (domestic and autonomous workers, employers, etc.).

In summary, the procedures adopted for each subpopulation were as follows:

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[1] Every formal employer must file, once an year, a RAIS declaration containing data on his employees such as sex, age, salary, etc. and other Labor Ministry required documents covering existing, admitted and dismissed employees during the period.

[2]See MIPS - "Modernização e Informatização da Previdência Social - Projeto Formação e Manutenção de Cadastros" - DATAPREV, 1988.

a) Distribution of data with sex and/or age unknown according to observed sex/age distribution (RAIS 1980) and according to known age distributions (RAIS 1980)

b) In addition to the RAIS data, the number of urban employers as recorded by the 1980 Census, assuming that for a given sex their age distribution is equal to the RAIS distribution.

c) IAPAS Secretary of Planning data were used to estimate the number of domestic, self employed, temporary and "double" contributors[1]. As a simplifying hypothesis it was assumed that all domestic workers were women. Autonomous, temporary and double contribution workers sex distribution was estimated using the 1980 Census sex ratio for these conditions (8,840,833 men / 1,066,566 women, i.e. 8.288/1.000). IAPAS total number of domestic and autonomous workers were distributed by sex using the previously explained criteria and by age using the RAIS distribution. The distributions so obtained were added to their corresponding sex age urban employees distributions.

Base-year (1980) formalization rates were calculated as sex-age specific ratios between the number of contributors and the economically active population. Assuming that these rates will hold in the future, contributor population projections were simply obtained by applying them urban economically active population supplied by the demographic model. A similar process was used to estimate the number of rural producers that contribute to the Social Security system.

The working hypothesis was thus that, given the sex and age, the probability of an individual having a formal work/Social Security relationship will remain constant into the future.

2 - Rural Employers and Employees - Data Source and Methodology

The 1980 Census data participation were used to estimate the distribution among the categories of Rural Employers and Employees, controlling the total of the first by the overall figures obtained from IAPAS Secretary of Planning.

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[1]When by some reason a person loses his condition as an insured participant (e.g. unemployment for a long period) he/she can keep the rights to benefits and services by contributing with his own share as well as the employer's share.

For the future, it was arbitrarily assumed that 50% of the formal rural workers (rural workers with working papers) would contribute to the Social Security system (as recorded by PNAD 1986). For males that means 8.9% of the economically active population and 6.9% for females. As this data is not available by age group, it was decided to assume that the age distribution is the same as the rural economically active population.

ANNEX 4 - BENEFICIARIES SUBPOPULATION GENERATION MODULE

Three different beneficiaries groups were considered: those who received their benefits up to 1988 (promulgation of the new Constitution), between 1988 and 1991 (decree that regulates the Constitutional provisions on social insurance[1]) and those who received/will receive their benefits after 1992.

Average values for the same benefit type are different for each group because: a) the average value of older benefits has been historically lower than new ones[2] and b) different groups are differently affected by the new constitutional rules.

The first group corresponds to those who were already in the system in 1988 and had obtained a benefit value recomposition using the minimum wage as yardstick. Their benefit value was computed for each calendar year since 1980 using data from DATAPREV. In 1990 the lower benefit limit went up from 0.915 to 1.00 minimum wage, and the value was recomposed in 1991.

The second group, who entered in the system between the promulgation of the new Constitution and the promulgation of the regulating laws only benefit from the higher minimum benefit from 1990 onwards.

The third group, corresponding to insured persons who start collecting their benefits after 1992 have their benefits calculated according to the new Constitutional rules with all the complementary regulating rules.

In the short run the largest impacts of the new constitutional rules are on the first group. In the long run, as death reduces the first group and it is eventually substituted by newcomers, the largest impacts are caused by the constitutional rules that affect the third group.

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[1]Unless self-applicable constitutional provisions need complementary laws and/or decrees to go into effect.

[2]The situation was inverted by the recomposition of benefit values in number of minimum wages as determined by the new Constitution in its transitory provisions. It must be noted that this provision was self-applicable and applies only to benefits with starting date before the promulgation of the Constitution.

The second group is in principle the one that is adversely affected because it does not get any advantage from the new Constitutional provision since their benefit started between the promulgation of the Constitution and the date the regulating laws were edited. They were considered for a partial entitlement of the advantages regulated by the laws.

1 - Data Sources

Sex-age distributions of existing benefits (stock) in December 31 st of each year between 1979 and 1990 were obtained from DATAPREV as well as the new benefits (flow) conceded each year for the same period. To the best of our knowledge, there are no records of the distributions for the years prior to 1979.

2 - Projection Methodology

The methodology used was simply to simulate, for each calendar year, sex-age distributions of the general social insurance regimen, rural employer and rural employee program's populations. In other words, for each calendar year between 1981 and 2030 the same partitions defined for the base year were estimated in terms of their sex-age composition.

Considering some simplifying assumptions[1], a first order markovian process can be a possible representation of this process, where there is a follow-up of each population and their evolution occurs through stochastic transitions among the various possible states. Each beneficiary state, corresponding to a pre-defined group of similar benefits[2] is a sub-set. The in/out flows allow the calculation of the beneficiary populations for each year.

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[1] For more details see HOWARD (1960)

[2] At the present moment, the Brazilian social insurance system pays 88 different types of benefits. It has to be noted that this figure includes a great number of old benefit types that have no more entries. All the existing urban retirement benefit types were aggregated into 4 groups: old age, disability, length of service and special retirement (length of service under special conditions). Rural retirement benefit types were grouped separately for employers and employees, according to 2 groups: disability and old age retirement. Survivors' benefits were considered for each group: Urban workers, Rural Employers and Rural Employees.

There is a probability associated with each transition. In this version of the model, constant probability were assumed throughout time, except for social assistance benefits (old age and disability lifetime income).

In a first order Markovian model, the transition probability for an individual, from an (I) state to a (J) state depends only on (I), (J) and the time instant were the transition has occurred, independently of the path taken to reach state (I). By hypothesis, each transition occurs to one and only one state.

For each transition between populations, for a given moment in time, there is an associated sex-age probability distribution called transition rate.

Population (I) expected stock variation from year t and year t+1 equals the sum of expected flows into the population (I) minus the sum of expected flows out of the same population, where the sums are defined over all states and where death is one of the states.

It should be noted that, for each relationship, flows and transition rates are defined from ages 0 to 91 for each sex. Death is an absorbing state and birth is a source state in this model.

Transitions explicitly considered are given in Tables IV.1 and IV.2, for urban and rural populations, respectively.

3 - Determination of Transition Rates

The methodology used was parallel to the one described in OLIVEIRA *et alii*[1] (1985). The major differences were that a) more data was available and could be incorporated into the estimation procedure and b) data in more recent reports showed no presence of individuals with unknown sex and age.

[1]For stocks with multiple origins a special individualized treatment was used as described in OLIVEIRA *et alii* (op.cit.).

In the case where only a single origin for entering a certain state is possible, transition rates were obtained by dividing the entering flow in the target state by the stock in the source state, already deducting the corresponding deaths.

Brazilian mortality (entire nation) tables estimated by IBGE were used for the contributor population. For beneficiary populations where the only possible exiting state is death, specific sex and household status (urban/rural) mortality tables were estimated. The striking case was the disability benefit population. It could be observed that having its own mortality pattern, it could not be reproduced using available models, being higher than the general mortality of the population and presenting a bi-modal pattern that is atypical for homogeneous populations. The most probable hypothesis is that disability retirement populations are a mixture of two subpopulations, one of which is characterized by chronical-degenerative diseases (with higher mortality in lower ages).

It is possible that inaccurate recording of the cancelling by death of this type of benefit (or simply fraud) may be contributing to the reduction of the differences in mortality of disability retirement populations and mortality in the general population. If so, the difference must be even larger.

Besides the disability benefit population specific mortality tables, other tables were estimated for special groups such as length of service, old age and lifetime income benefit populations.

Once flows and stocks were obtained for each benefit group (old age, length of service, disability and special retirement; nonretirement bonus of 20% and 25%; old age and disability lifetime income, urban and rural social assistance benefits; old age and disability rural employer and rural employee benefits and urban and rural survivors benefits) and for each sex, for each individual age and for each calendar year, transition rates were defined as the ratio between flows and stocks of the source population. Projections of the model itself were used as an estimate of the contributors' population.

To simulate the increases of waiting periods a special DATAPREV_tabulation was used, which relates affiliation time with social insurance to sex and individual age distribution of the old age retirement population. It was also assumed that the old age retirement benefit group would be the only one affected. Flows of retirees having from 5 to 15 or more years of affiliation time were then computed. The corresponding transition rates were calculated and the

year by year generated flow of groups with less than 15 years of affiliation time were allocated to a temporary population with a waiting time for retirement equivalent to 15 minus the affiliation time. For example, if a certain group could retire after a 7 year contribution time period under the old rules it would have to wait, an extra 8 years (15-7=8 years) to retire under the new rules.

As for the proportional length of service benefit for women[1], a special DATAPREV tabulation was used, relating affiliation time to the individual ages of women retired by the length of service benefit.

Considering that there is no information on affiliation time under 30 years (since, until recently, the minimum length of service for women to retire was 30 years) it was assumed that the distribution would have the same pattern as found for the 30 years or more, with only a 5 year shift in age and affiliation time.

For example, the transition rates for length of service benefit calculated for women with 51 years of age and 32 years of affiliation time were allocated to women 46 years old and with 27 years of affiliation time.

All the handicapped estimated by PNAD 1981 with ages in the 15 to 69 year interval were considered as eligible for social assistance benefits. This should be considered an upper limit since the regulating social assistance laws and decrees will probably impose some kind of limitations on the concept of handicapped persons.

Handicapped persons over 70 years of age were not considered since they would be eligible for old age lifetime social assistance. The handicapped under 15 years of age were also disregarded and assumed as potential dependents.

All persons recorded as not covered by social insurance above the age of 70 by PNAD 1983 were eligible for old age social assistance benefits (see data on Table IV.3). If a stable population is assumed, each new year a fraction corresponding to the number of individuals that

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[1]According to the newly edited regulation of constitutional provisions, women can now retire having worked in the formal labor market for 25 years, with the benefit value reduced to 70% of the value it would have had after 30 years length of service. For each additional working year there is a 6% increase to the benefit value, up to 100%.

turn to be exactly 70 years old become eligible to the benefit for the first time. This fraction was estimated using 1983 PNAD data.

Proportional length of service retirement for women presents two alternatives: either they can retire after working 30 years with the full benefit value on after working 25 years with a reduced benefit. Projections were made under both hypothesis for the selection of the most expensive one.

If one considers the total obtained by summing up the records of the operational data banks (provided by DATAPREV) and the ones contained in the SINTESE system[1] directly, they show slightly different figures. The totals obtained aggregating the number of beneficiaries by benefit type, along sex and age and aggregating the number of beneficiaries by region in SINTESE itself show discrepancies.

As for the urban benefits, the differences are not expressive. In the majority of the cases it is less than 1.6% with a maximum deviation for the length of service type of 5.5%.

As for rural benefits, the 1980 set of data contained in the SINTESE system is not even consistent with the rest of the time series presented by the system itself, making comparisons impossible.

Considering that the SINTESE system does not always explicitly describe the treatment used for unknown information, there may be differences due to different aggregation methods.

4 - Survivors' Benefits Projection

Another type of methodology was used for the projection of survivors' benefits, using a time series adjustment. If the components method were to be used, a specific family structure model would be needed in order to allocate dependents to dead insured persons. This model has been developed by IPEA but has not been incorporated in the general simulation model.

[1]SINTESE is the Social Security decision support managerial data handling system.

As can be clearly seen on Graph IV.1 urban survivor benefit time series has a discontinuity in 1977. The option was to fit an exponential curve but different treatment was given to data prior to 1977. All points were used to obtain the slope but only the data after 1977 was used to estimate the level.

By using other IAPAS Secretary of Planning tabulations, it was possible to calculate from 79 on, the differences responsible for the pattern break. It was not possible to find data for previous years because the total of survivors' benefits were aggregations of systems that no longer exist. As SINPAS was created in 1977, it may be possible that the reason for the discontinuity was some change in the accounting criteria.

For rural workers the time series begins in 1973 but the first 3 point were considered outlier and disregarded in the estimations. The rest of the points were used to fit an exponential curve with a quadratic exponent, used as a model.

The rural employer survivors' benefit time series was found too short for the adjustment of a curve without additional hypothesis (see Graph IV.1). By similarity, considering the pattern of the two other populations of this type of benefit, an exponential curve was also adjusted.

TABLE IV.1 - **Model Explicit Transitions - Urban Social Insurance**

	Contrib	Retirements				Aids	Bonus		Survivors'
		Old Age	LS	Espec	Disab		20%	25 %	
Contrib.	*	*	*		*	*	*	*	*
Old Age		*							*
LS			*						*
Especial				*					*
Disability					*				*
Aids	*				*	*			*
Bonus 20%				*			*	*	*
Bonus 25%				*				*	*
Survivors' Benefits									*

TABLE IV.2 - **Model Explicit Transitions - Rural Social Insurance**

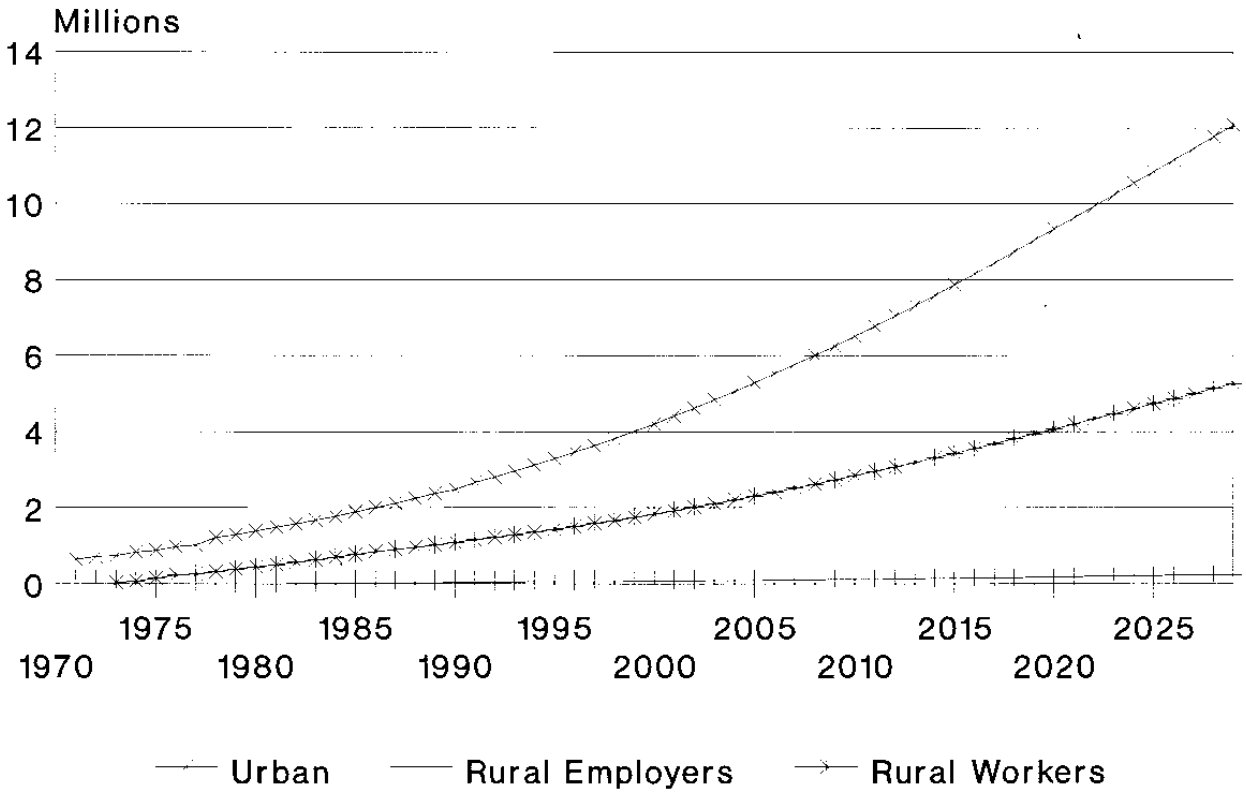
	Worker	Workers' Benefits			Employer	Employees' Benefits		
		Old Age	Disability	Survivors'		Old Age	Disability	Survivors'
Worker	*	*	*	*				
Old Age		*		*				
Disability			*	*				
Survivors ' Benefits				*				
Employer					*	*	*	*
Old Age						*		*
Disability							*	*
Survivors ' Benefits								*

TABLE IV.3 - **Elderly Population By Age Group, Sex and Urban/Rural Condition - 1990**

Age Group	Urban		Rural	
	Males	Females	Males	Females
65-69	620.888	1.194600	406.916	359.626
70 or +	1.399.476	1.959.948	624.733	569.023

Source: PNAD/1990

Graph IV.1
SURVIVORS' BENEFITS EVOLUTION



ANNEX 5 - MACROECONOMIC CONSISTENCY MODULE[1]

1 - Introduction

The Brazilian growth strategy until the seventies, characterized by the external borrowing, the growth of government enterprises and import substitution was broken down by the consecutive external shocks and by the decay of public sector organizational conditions in the public sector. The rise of international oil prices and of the interest rates brought the external debt to very higher levels making the payment of interest in the debet the main restriction to growth. The external debt and the financing of the internal unbalance led the Brazilian economy to a latent hyper inflationary situation.

The economic policy strategy, on external payment balance and public sector financing, concentrated on the short run problems and instituted price freezes that were followed by periods of high growth of inflation rates and recession phases, aggravating structural problems like unemployment, income concentration and the deceleration of public ad private investments, mainly in social areas and economic infrastructure. This situation brought about a more sluggish economy and eventually affected the growth expectations, enhancing the distributive conflict ad creating feedback as to the above mentioned structural problems.

This picture summarizes the Brazilian economic situation during the eighties. We believe that it is possible to modify these trends by political, economic and institutional reforms negotiated both in the National Congress and with the international financing system. If these negotiations were to be fruitful from several different points of view, new questions about the Brazilian economy growth would arise: 1) From a macroeconomic point of view: The relationship between external debt, fiscal adjustment, internal savings rate and the growth of GDP; 2) From a sectorial point of view : the effect of an eventual and gradual reduction of Brazilian income inequality or an increase in the external commerce liberalization level of the economy, on the sectorial composition of GDP and on sectorial growth and; 3) From a social point of view: the increase of the average income of a given social group, for example the poorer 10%.

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[1] This section was summarized from Moreira, Ajax R.B. "Modelo Multissetorial de Consistência", TD 217, IPEA, March 1991.

MOREIRA (1991, op. cit.) developed a long run multi sectorial consistency model to simulate the Brazilian economy taking into consideration all these points. This model makes projections based on hypothesis about the situations abroad and on the behavior of domestic economic agents. The model is multi sectorial because it deals with 29 productive sectors: agriculture and cattle breeding, forestry, mining, seventeen industrial sectors and nine sectors of different types of services. It is a consistency model because goods and services markets are balanced and the budgetary restrictions on each economic agent are considered, specially the public sector constraints. It is a long run model, because it estimates only trends, based on the economic situation at a given point in the future. It does not deal with short run aspects and other questions associated with the transition.

The main characteristics of this model are:

a) It uses a social accounts matrix coefficients to simulate the relationship between productive sectors and agents (families, public ad private enterprises, public sector) participation on the income generation process;

b) It considers an unequal family income distribution that can be represented by a probability law;

c) Family demands for goods and housing investments are a function of income and were estimated by a household survey of families budget; and

d) For all the projection years, sector investments are assumed to meet the full production capacity, with a specific products mix for the sector.

The main results of the model are: production and investment by sector, national accounts, public sector accounts, external trade balance, exchange rates, wage distribution, employment level and average income of the various social groups.

2 - Brief Comments About the Projections

The model was used to construct projections based on different hypothesis for the year 2003[1], yielding three scenarios:

a) "Crisis" (scenario 3) assumes that no adjustment measures are taking in the public sector, generating a low growth level and fiscal unbalance;

b) "Public Adjustment" (scenario 1) assumes that a public sector adjustment is made, resulting in greater economic growth; and

c) "Private Adjustment" (scenario 2) assumes an increase of domestic savings generated business' retained profits. With the same growth rate as in scenario 1 and the unbalance of the public sector of scenario 3, the model increases company mark up to finance public deficit and investments.

The condition in the foreign market are kept the same for all the three scenarios: growth of international world trade of 4% per year; external interest rate at 8%; dollar inflation of 4%; and an increase of 6% of international oil prices;

To incorporate the Brazilian foreign trade liberalization policy, the model assumes that the import rates (except oil) will increase in 15%. The external debt in the first scenario is kept constant around US$ 115 billion in nominal terms and in the second it is assumed that the 1990 Brazilian proposal will be accepted,with a increase of the debt to US$ 140 billion.

With respect to domestic economic policies, some exogenous variables are assumed to be the same for all scenarios. Government expenditures increases 5% per year and interest rates of internal public debt are kept at 4% per year. The model also assumes that:

a) All public companies in the sector of steel mills and petrochemical processes are privatized;

b) 40% of business profits are distributed as dividends;

c) Some changes on the 1980 structure of the aggregated production function are assumed; and

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[1] From this year on the system becomes on different hypothesis, i. e. ,all segments maintain the same growth rate.

d) 5% of demand for steel is fulfilled by petrochemicals and 20% of the oil demand by thermoelectric power;

The income concentration among families is kept fixed in scenarios 1 and 3, supposing a 5% increase in the Gini index. This increase is half of the one with occurring in the eighties and is explained partially by the deterioration of public services. A 10% reduction of the Gini index occurs in the second scenario, restoring in to the 1980 level. The model supposes a 7% per annum increase in domestic oil production (1.2 million barrels produced by the year 2000). We assume the of combustible alcohol production to be stable, implying in the progressive substitution of gasoline as demand grows and a partial substitution of steel mill inputs by petrochemicals.

In the fiscal area, the adjustment scenarios assume the success of the privatization of government companies, with a generation of capital of US$ 9 billion and the elimination of governmental activities in steel mills and petrochemical plants.

The gross fiscal load was kept near 1991 level. On the "Public Adjustment" scenario (scenario 1) this load was defined two percentage points above it (as a percentage of GDP). The public sector administrative reform was embodied as a services efficiency measure, with the variable that controls public sector payroll expenditures per unity of product decreasing 20% from the 1991 level. This variable increases proportionally with family income, total public services and expenditures with social benefits, the latter with an annual growth rate of 4.5 per cent.

The model forecasts on scenario 3, "Crisis" (see table 6.1), are low growth, low exchange rate and high wage participation in the GDP. It also forecasts a social chaos, a result of the society inability to create the new jobs demanded by the economically active population growth and of the public sector's incapacity to provide services at such a rate to allow the reduction of income concentration.

The others scenarios (see table 6.1) imply on a *per capita* income growth that replicates the one experienced during the seventies, an improvement of social conditions, and the reinstatement of a economic situation similar to the one in 1980. In the first scenario, under the assumption of a more progressive income tax law, the consumption of the poorest 10% doubles and in the second scenario the consumption of the richer 10% increases by only 10%.

The second scenario delineates an economy where there is no public sector adjustment, but the same growth rate is obtained through the increase of company retained profits, that should go up by 18% to finance the government debt and the required investments.

These scenarios are all, in a sense, optimistic yielding the possibilities and the conditions for the redemption of social debt and economic recovery

3 - Conclusion

The present projections can not be understood as forecast. The model ensures the scenarios consistency but does not take into account the uncertainty associated with the exogenous variable behavior. This model was conceived as a tool to answer questions about the long term behavior of the economy. It was based mainly on structural relationships believed to be more stable as: the productive and reproductive structures; family consumption baskets; and the participation of productive agents in the sectors. The model was so devised with the intention of making it an accessible and simple policy analysis tool, without loss of the elemental relationships.

ANNEX 6 - REVENUES AND EXPENDITURES GENERATION MODULE

This annex summarizes the methodology used for the projections of Social Security revenues and expenditures as mandated by the Laws regulating constitutional changes, 8212/91 and 8213/91 which contains respectively the regulation of the organization and funding of the Social Security system and the Social Insurance Benefit Plan.

Health and social assistance expenditures estimates were included in order to evaluate the economic performance of the Social Security system as a whole.

It is important to highlight that the results must be examined within the relevant demographic and macroeconomic limits. The existence of economic-financial unbalance does not indicate an implicit opinion of the authors on the merits of the system. The unbalance shown are just the result of the shortcomings of the financing scheme to fund the expenditures, without any further considerations about eventual favorable social aspects of the system.

It is also important to note that the relatively more favorable results presented here (see OLIVEIRA and BELTRÃO 1989) are a consequence of certain measures already taken by the government. The most important ones were: a) the indexation of social insurance benefits with an index different from Minimum wage adjustments, and b) social security tax increases[1].

1 - Projection Methodology and Hypothesis

Social Insurance

For the entire projection period it was assumed that the 1988 Constitution provisions on Social Security and their regulatory laws and decrees would remain unchanged.

Expenditures were calculated for two main account groups:

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[1].It is very important to note that in 1989 when the FINSOCIAL tax was 0.5% on gross business profits the authors estimated in 1985 that an additional tax of 1.5% would be necessary to balance the finances of the system, which amounts to the 2% rate of FINSOCIAL the tax prevailing nowadays. In a certain way this shows the adequacy and the precision of the methodology used (cf. OLIVEIRA and BELTRÃO, 1989).

- benefit expenditures: composed of costs defined by the 1988 Constitution itself and by legislation regulating specific item of it.

- personnel and administrative expenditures: involves costs with personnel, materials and services used for tax collection enforcement and overall economic and financial administration of the social insurance component of Social Security.

The following changes of the social insurance expenditure structure were explicitly considered in the simulations (with the starting year in parenthesis):

- recomposition of the original value of the benefit in terms of the number of minimum salaries at their starting date (1990);

- a floor of 1 minimum wage for all Social Insurance urban and rural benefits (1992);

- an increase of the maternity leave benefit period from 90 to 120 days (1990);

-a full inflation adjustment of contribution salaries for the calculation of benefit values (1992)[1];

- new benefit calculation formulas in general (1992); and

- payment of the 13th. annual benefit equal as to the December benefit value (1990)[2].

The assumed starting dates were the ones that really occurred, disregarding legal provisions concerning these matters. It was not possible to estimate the economic effects of the many existing law suits against the government because of delays in the proposal of the Constitution's complementary and regulatory legislation[3].

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[1].Previous legislation would take nominal contribution salaries of the previous 12 months from the starting month of the benefit. This would result in large inflationary losses on the benefit values during high inflation periods, specially for disability benefits (where only the 12 previous salaries were considered for benefit calculations).

[2].Previous legislation would mandate that the calculation of the 13th. annual benefit should be done by averaging nominal benefit values of the years 12 months. This procedure resulted in high benefit value losses during high inflationary periods.

[3].The Constitution gave the Executive Power a maximum time period of 18 months to propose complementary legislation on provisions regarding the social security that were not self-applicable. Because of a series of political factors the deadlines were not met.

For the estimation of INSS personnel expenditures it was assumed they would grow according to the average income of the population as a whole compounded with the growing numbering of beneficiaries , disregarding eventual efficiency gains in the management of the system.

Personnel and administrative costs of social assistance benefits and programs and those related to unemployment insurance were not included in this item.

Health

Health expenditures with the delivery of all medical services, regardless of their nature, were calculated from the 1992 value with a projected increase compounding population growth and the medical expenditure index[1].

Social Assistance

Social Assistance expenditures include lifetime old age and disability income benefits and personnel and other administrative expenses of LBA and FUNABEM.

Funeral and birth aids were not considered because their regulatory provisions had not been voted yet.

Growth rates for lifetime income benefits were estimated as equal to the estimates of eligible population growth rates, and were based on PNAD 86 data.

2 - Revenue Projections

In accordance with the Constitutional provisions and the Social Security Funding Law, contributions were estimated as follows:

a) Payroll Contributions

[1]The medical expenditures index was assumed to be equal to the average wage

For all institutional scenarios it was considered as "Contribution Payroll" the sum of all salaries with a maximum limit of 10 minimum wages per month applied to the employees and individual contributors' share of the contribution. Its growth is thus a function of the evolution of the average salary in the economy, of the minimum wage and of the number of contributors. The evasion level implicit in the contribution salary is around 25% of the potential revenue, which is consistent with other independent evasion estimates done by the authors for the 1979-1988 period. This evasion level is held constant throughout the projection period.

b) Taxes on Gross Business Revenues

For the 1990 fiscal year the exact amount of financial resources transferred by the Federal Treasury to the Social Security[1].Was considered for other years the working hypothesis was that the full FINSOCIAL 2% tax would be transferred to the system by the government.

c) Taxes on Business Profits

For 1990 fiscal year, the amount of resources that was actually transferred by the Federal Government to the Social Security system[2] was considered.

For the other years it was assumed that the system would receive the full result of the 10% tax on profits .

d) Taxes on the Revenues resulting from the first sale of agricultural products, non-industrial fishery and individual mining products

Having no other better basis for the estimates, it was assumed that these minor revenues would grow at the same pace as the "Contribution Payroll".

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[1]FINSOCIAL is a contribution collected by the Federal Government. According to last year's Federal Government Budget Law, 60% of the tax collection should be allocated to the Social Security system. The remaining 40% funds other social programs, including Unemployment Insurance. These percentages can change every year.

[2]Contributions on profits are also collected by the Federal Government and should be entirely transferred to the Social Security system. In practice, it has not always happened. There are also many law suits against this tax.

A pay-as-you-go system was assumed for the system's operations, without even a Contingency Reserve. For this reason,neither financial revenues nor financial expenditures were considered.

As the law mandates a single budget for the entire Social Security system, financial data is presented for the system as a whole.

Besides the Social Security specific contributions, Treasury Ordinary Funds were considered as covering exactly the estimated personnel and other administrative costs of the social insurance and social assistance tax collection and benefits payment bureaucracy.

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