The impact of population ageing on Brazilian Social Security System

Population ageing, much discussed in developed countries, is no longer a mere future prospect for developing nations nor does it appear only in long-term forecasts; it is now also present in the current data of these nations.

Table 1 presents Cepal data showing the demographic transformation that had already occurred and a forecast for 40 years ahead for some selected countries in Latin America, including Brazil.

Table 1 - Demographic indicators - Selected Countries in Latin America 1950 - 2050

	1955/1960	1995/2000	2045/2050	1955/1960	1995/2000	2045/2050
	Total growth rates			*Life expectancy at birth*		
Brazil	29,1	15,1	2,2	53,4	69,4	79,4
Argentina	17,1	12,6	2,6	64,7	73,1	80,4
Chile	24,4	13,5	0,1	56,2	75,7	82,1
Mexico	30,4	16,3	0,8	55,3	72,4	79,5
Peru	27,1	16,9	3,4	46,3	68,3	78,1
Uruguay	13,5	7,3	1,6	67,2	74,1	81,3
	Total dependency ratio [1, 3]			*Older´s dependecy ratio [2,3]*		
Brazil	87,6	53,86	57,52	6,13	8,3	29,41
Argentina	57,04	60,76	57,56	8,71	15,74	29,53
Chile	79,45	53,76	61,75	8,55	11,02	34,91
Mexico	98,44	60,95	58,11	9,12	7,6	30,41
Peru	87,8	64,58	52,68	6,45	7,75	24,68
Uruguay	56,25	60,47	59,52	12,69	20,69	31,53

1: (pop. 0-14 + pop. 65+ / pop. 15-64)* 100
2: (pop. 65+ / pop. 15-64)* 100
3: dependency rates refers to the end of the period.

Source: Cepal (http://www.eclac.cl/badeinso in march, 31, 2005)

The growth rate of the population in all these selected countries decreases over time, in opposition to the growth in life expectancy at birth. It is important to note that, according to the Cepal forecast, there should be continuity in these tendencies. Social progress implicit in these data, such as improvement in conditions and in access to health and familial planning will not be discussed in this text. However, we can see that the figures also show changes in familial structure, which in turn has been quite influenced over the last decades by transformations in the labor market. This is especially true in the case of greater female participation, as well as of new social arrangements, in answer to new population patterns that have emerged.

One of the main concerns trigged by the ageing process is with respect to social security. With the end of the Second World War, the tendency towards organized protectionist States has been noticeable, and not only in the region. In light of this and with favorable economic conditions up to mid-seventies, social security systems were enlarged and, to a certain extent evolved into welfare systems, incorporating programs geared to social assistance and health, especially tailored for the population of the time that had very different characteristics from those of today.

With the economic slowdown in several of the main countries, the role of the State as promoter of economic and social development, was questioned. The Social Security Systems showed some inconsistencies when up against their own social dynamics. Countries showed marked changes in their demographic structure (ageing of the population due to increase in longevity and decline in fertility rates) and in the organization of the labor market (especially informalization and a shift towards the services sector).

Bearing this in mind, the primary aim of this paper is to study the new Brazilian demographic pattern, analyzing how this population profile has influenced the social security system and how it was affected in turn.

In addition, as shown in Table 1, even though there may be a trend towards population ageing, it does not occur in the same way in different countries. Similarly, changes in the structure of the Brazilian population take place differently according to region and social segments.

Thus, the above mentioned transformations are analyzed for the population disaggregated by color/race, gender, income and schooling. The reason is that though recognizing the relevance of universal social rights, efficient management of programs should take into account the diversity of the population. The need then arises for a segmented study in order to better understand the global reality of the country. We modeled three populations: active population, population in the formal labor market (and therefore eventually eligible to social security benefits) and pensioners. As explanatory variables were: i) race/skin color (with three categories – “whites and asians”, “blacks” and “mixed race”); ii) gender (two categories); iii) income (three categories – individual and family income below social security ceiling, individual income below and family income above

the ceiling, and individual income above the ceiling); iv) schooling of head of household (numerical variable up to fourth degree); and v) age (numerical variable up to fourth degree).

In sum the main findings for the Brazilian population are:

- Low level of formal work ties and high level of pension collection, both in Urban and in Rural areas, showing a discrepancy of the two stages in life work/retirement (mainly for rural women);
- Among rural individuals the probability of collecting benefits presents a sharp discontinuity as a function of age for both sexes;
- In the period considered, there is a noticeable increase in female activity rates, with the exception of younger ages in urban and rural areas, and elderly rural females;
- There is a slight decrease in time of male activity rates, more pronounced for younger ages;
- There is an increase in the probability of collecting benefits for all combinations of gender and geographic area;
- In urban areas the race gap with respect to activity rates increase with time: Whites *vis-à-vis* other race/color groups join the work force later, reach higher levels and quit the labor market earlier, with a more pronounced differential among females;
- The fitted model of activity rates shows that schooling is particularly important for females in all income groups. For males the variable is still statistically significant but with smaller coefficients. Only up to the second degree polynomial were deemed statistically important for both schooling and age. Individuals of both genders in the higher income groups stay longer in the labor market, independently of race. The gender gap, as expected, is statistically significant.
- The fitted model of the probability of receiving benefits shows that all explanatory variables were statistically significant. Race seems to work as an age-shift: Whites start collecting benefits earlier than the other two groups. Also, higher income groups reach a higher probability of collecting benefits, independently of race and gender.