

Social Security and Living Arrangements of the Elderly in Developing Countries

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I. INTRODUCTION

In the early 1990's, reforms of the social security systems in Brazil and South Africa dramatically expanded pension coverage. As a consequence, elderly both in urban and rural areas experienced substantial increases in their non-labor incomes. In South Africa, after the end of the apartheid, Blacks became eligible for the same benefits as the Whites; in Brazil, the reform led to parity in pension eligibility between rural and urban workers as well as to increases in the minimum benefits.

This paper, based on data from Brazilian National Household Survey (PNAD) and Population Housing Census of South Africa, examines the determinants of the living arrangements of the elderly in both countries, and particularly the effects of changes in income due to Pension Reform on those arrangements.

For this purpose, we first examine descriptive statistics regarding household composition, mean number of living children, headship rate, and the proportion of the elderly in co-residence and living independently, to examine if the change in the living arrangements are due to compositional effect. We then apply a logit model to disentangle the roles of demographic and economic factors to determine which factor or combination of factors can account for the observed changes in living arrangements of the elderly.

This paper makes contributions to understand the behavioral responses of the income change to the living arrangements of the elderly in two aspects. First, several studies on the literature were based on the developed countries, especially in the United States. Our paper is based on developing countries – Brazil and South Africa. Second, we go beyond the emphasis on widows from the previous literature, expanding to all elderly, males and females, residing in rural and urban areas.

The paper is organized as follows. The next section gives the literature review. Section III describes briefly the Social Security Reform in Brazil and South Africa. Section IV describes the data. Section V gives the descriptive statistics. Section VI discusses the econometric model. Finally, there is a brief conclusion.

II. LITERATURE REVIEW

Previous studies in the literature about living arrangements of the elderly have focused most exclusively in the developed countries and have addressed how income change, especially income from social security, was responsible for an increase on independent living arrangements of the elderly (Borsch-Supan, A., 1992; Costa, D. 1997, 1998; Kramarow, E., 1995; McGarry and Schoeni, 2000; Engelhart, G. et al., 2002; Wolf, D., 1995). Costa (1998) for example, finds evidence that Old-Age-Assistance substantially increased demand for separate living for the widows. In this model, privacy is considered as a normal good, and the elderly will prefer to live independently if they can afford to do it.

Conversely, a small existing literature available from studies in developing countries shows conflicting results. Edmonds, E. et al. (2001) have shown that pension eligibility in South Africa makes co-residence more attractive for adult child and it leads to a modest but meaningful change in household composition. On the other hand, Carvalho Filho (2000) finds an increase in propensity to live alone associated with pension income for single, rural women in Brazil. Thus, pension income may influence living arrangements in a number of ways.

This paper seeks to test these two opposing views about the role of the pension income on the living arrangements of the elderly in developing countries. Will the elderly in developing countries follow the same behavioral pattern as their peers in developed countries, preferring privacy and living on their own when they have the resources to do it? Or are their preferences and culture different resulting?

III. Social Security Reform in Brazil and South Africa

BRAZIL

The 1988 Constitution established the guidelines for a reform for the social security system:

- 1) Universal coverage;
- 2) Parity in pension eligibility between rural and urban workers;
- 3) increase in minimum benefits to one minimum wage;
- 4) Women can accumulate retirement benefits, and survivor's pensions
- 4) Reduction of the minimum age eligibility for old-age-benefits for rural workers from age 65 to 60 to males and from age 65 to 55 to females;
- 5) The end of one person per household restriction for receiving a pension;
- 6) Rural workers' old-age-benefits are extended to women who were not considered household heads.

The results of the reform may be seen in the table below. Brazil became the only country in Latin America with widespread coverage in social security. The graph illustrates the effect of the implementation of these policies on the well-being of the elderly. Before the reform, more than half of the elderly had the income less than one minimum wage. After the reform, the proportion of the elderly without any earning and the proportion of the elderly with less than one minimum wage decreased dramatically.

Percentage of Elderly who receive pension and/or survivor benefits in Latin America

| | Urban Areas | Rural Areas |
|----------------------|-------------|-------------|
| Argentina (1997) | 67.4 | n/a |
| Bolivia (1997) | 26.3 | 3.6 |
| Brazil (1996) | 61.8 | 74.9 |
| Chile (1996) | 61.3 | 48.4 |
| Colombia (1997) | 20.3 | 8.5 |
| Costa Rica (1997) | 39.4 | 18.7 |
| Ecuador (1997) | 17.1 | n/a |
| Honduras (1997) | 8.1 | 1.8 |
| Mexico (1996) | 23.2 | 7.5 |
| Nicaragua (1997) | 16.8 | n/a |
| Panama (1997) | 47.6 | 18.8 |

| | | |
|--------------------------|------|-----|
| Paraguay (1996) | 21.4 | n/a |
| Dominican Republic(1997) | 15.7 | 6.4 |
| Uruguay (1997) | 81.3 | n/a |
| Venezuela (1997) | 10.8 | n/a |

Source: Commission Economica para America Latina y el Caribe-CEPAL

Income distribution among elderly



SOUTH AFRICA

Before the Apartheid, Blacks received only an insignificant fraction of the pension Whites received. However, after the end of Apartheid, it was established the equal rights for Blacks and Whites beneficiaries. There is no incentive to rearrange households to be eligible for the pension as it exists for Aid to Families with Dependents in the USA.

IV. Data

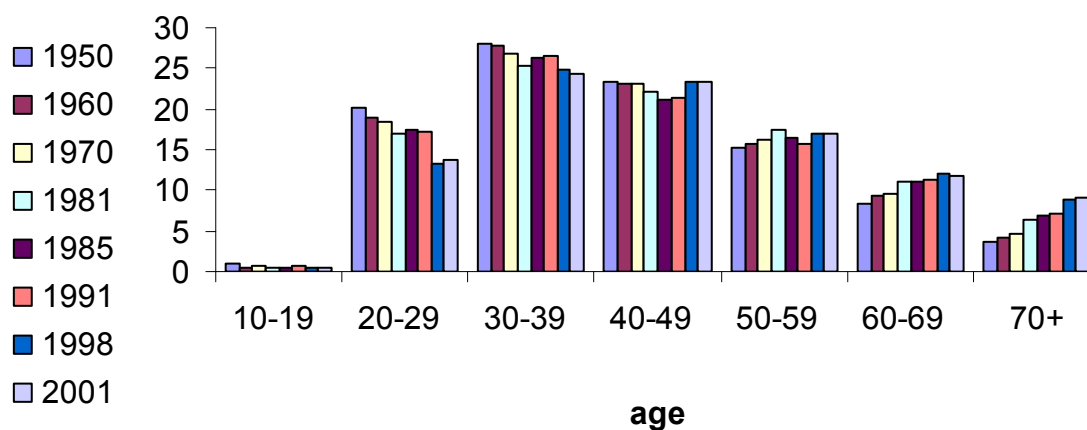
The empirical work for this study relies on The Brazilian National Household Survey (PNAD) and 1996 Population and Housing Census of South Africa. PNAD is an annual household survey that investigates the characteristics of the rural and urban population such as education, work status, income, home ownership and household composition. The survey contains individual and household information. The sample size is about 100,000 households units and approximately 350,000 individuals.

The data used for South Africa comes from a 10 per cent public use of The 1996 Population and Housing Census of Africa. The sample size is 9,058,540 households and 40,578,800 individuals. Seventy-seven per cent of the population is Black. We focus on the Blacks households because they were more affected by the social security reform.

V. Descriptive Statistics (only for Brazil)

Heads of Household by Age

Source: 1950-1970, U.S.Census Bureau; 1981,1985,1998,2001-PNAD, 1991-Brazilian Census



Characteristics of Elderly Household by Living Arrangements

| | Living independently | | | | Co-residence | | | |
|--------------------------------------|----------------------|-------|-------|-------|--------------|-------|-------|-------|
| | 1981 | 1985 | 1987 | 1998 | 1981 | 1985 | 1987 | 1998 |
| Composition of the household | 9.92 | 10.30 | 10.70 | 13.67 | 90.08 | 89.70 | 89.30 | 86.33 |
| mean size of the household | 1.83 | 1.79 | 1.82 | 1.73 | 6.00 | 5.71 | 5.72 | 5.07 |
| headship rate | 74.45 | 73.61 | 73.73 | 73.09 | 54.75 | 56.98 | 55.52 | 58.88 |
| mean age | 69.27 | 69.40 | 69.34 | 70.14 | 68.47 | 69.50 | 68.67 | 69.20 |
| % no income | 4.68 | 4.68 | 4.68 | 3.34 | 13.49 | 13.49 | 13.75 | 8.50 |
| % receiving s.s. benefits | 62.80 | 67.66 | 69.21 | 78.57 | 58.70 | 62.44 | 63.68 | 75.53 |
| % of elderly income to family income | 98.28 | 98.72 | 98.35 | 97.92 | 53.41 | 54.12 | 51.62 | 57.82 |

Calculation from 1981-1998 PNAD

Characteristics of Elderly Household By Sex

| Women | Living independently | | | | Household Headed By Elderly | | | | Household Headed By Non-Elderly | | | |
|----------------------------|------------------------------|-------|-------|-------|-----------------------------|-------|-------|-------|---------------------------------|-------|-------|-------|
| | 1981 | 1985 | 1987 | 1998 | 1981 | 1985 | 1987 | 1998 | 1981 | 1985 | 1987 | 1998 |
| | Composition of the household | 24.75 | 26.50 | 25.63 | 29.82 | 47.35 | 49.55 | 49.86 | 51.82 | 27.91 | 23.96 | 24.50 |
| mean size of the household | 1.60 | 1.60 | 1.60 | 1.56 | 4.08 | 3.98 | 4.04 | 3.83 | 5.34 | 5.10 | 5.09 | 4.54 |
| headship rate | 12.13 | 12.67 | 12.68 | 15.22 | 20.80 | 22.29 | 21.84 | 26.70 | * | * | * | * |
| mean age | 68.98 | 69.17 | 69.43 | 70.11 | 67.86 | 68.05 | 68.25 | 68.81 | 70.79 | 70.77 | 70.71 | 72.09 |
| % no income | 9.08 | 8.64 | 7.50 | 5.24 | 19.39 | 17.61 | 17.29 | 9.88 | 8.74 | 6.40 | 6.50 | 3.03 |
| % receiving s.s. benefits | 51.23 | 57.14 | 60.52 | 74.23 | 48.78 | 54.95 | 56.17 | 73.74 | 62.76 | 66.34 | 67.62 | 77.36 |

| Men | Living independently | | | | Household Headed By Elderly | | | | Household Headed By Non-Elderly | | | |
|----------------------------|------------------------------|-------|-------|-------|-----------------------------|-------|-------|-------|---------------------------------|-------|-------|-------|
| | 1981 | 1985 | 1987 | 1998 | 1981 | 1985 | 1987 | 1998 | 1981 | 1985 | 1987 | 1998 |
| | Composition of the household | 27.55 | 29.36 | 28.39 | 32.87 | 63.74 | 63.81 | 64.36 | 60.64 | 8.71 | 6.84 | 7.25 |
| mean size of the household | 1.82 | 1.82 | 1.81 | 1.79 | 4.98 | 4.83 | 4.85 | 4.41 | 6.20 | 5.97 | 5.84 | 5.14 |
| headship rate | 27.39 | 29.25 | 28.23 | 32.24 | 62.10 | 62.25 | 62.59 | 57.76 | * | * | * | * |
| mean age | 69.45 | 69.52 | 69.80 | 70.18 | 37.27 | 67.37 | 67.57 | 68.14 | 72.49 | 72.96 | 73.07 | 72.74 |
| % no income | 0.18 | 0.18 | 0.24 | 0.38 | 1.38 | 0.99 | 1.21 | 1.85 | 0.87 | 0.54 | 0.65 | 0.71 |
| % receiving s.s. benefits | 74.34 | 78.40 | 78.42 | 83.48 | 62.37 | 65.42 | 66.93 | 76.57 | 77.26 | 80.56 | 79.45 | 77.30 |

Calculation from 1981-1998 PNAD

Mean number of living children for women older than age 60

| | 1985 | 1996 | 1998 | 2001 | Percentage Change 85-2001 |
|-------|------|------|------|------|---------------------------|
| 50-60 | 3.99 | 4.48 | 4.28 | 3.94 | -0.05 |
| 60-70 | 4.03 | 5.01 | 4.87 | 4.76 | 0.73 |
| 70+ | 4.05 | 4.84 | 4.84 | 4.75 | 0.70 |

Source: Author's calculation from 1985, 1996, 1998 and 2001 PNAD

VI. Model (not done yet)

CONCLUSION (not done yet)