

# Population Aging and the Generational Economy

A Global Perspective

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## 29. Transfer accounts in Costa Rica's mixed economy under rapidly changing demographic conditions

**Luis Rosero-Bixby, Paola Zúñiga-Brenes, and Andrea Collado**

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In Costa Rica government transfers to the elderly population are exceptionally high in per capita terms. In contrast, net transfers from adult children to elderly parents are negligible until the parents reach very advanced ages. Intragenerational reallocations are also a surprisingly large source of funding of consumption at old ages. The narrow age span with a labor income surplus, combined with the early age (55 years) at which Costa Ricans start having a labor income deficit, is another peculiarity of this country.

### THE SETTING

Costa Rica has a population of about 4.5 million inhabitants in a territory of 51 000 square kilometers. It is distinguished by racial and cultural homogeneity, political stability, and a constitution that abolished its armed forces in 1949.

#### **Economy**

Costa Rica's 'mixed' economy is considered a Latin American textbook case, halfway between Chile's market economy and Cuba's socialist economy (Mesa-Lago 2000). The government owns important sectors of the economy, including banking, telecommunications, insurance, petroleum, and even alcohol production, although in the last two decades the prominence of government in the economy has declined. Government revenue depends upon indirect taxes, but these are not very regressive because of exemptions in sales and consumer taxes (Zúñiga-Brenes 2008).

According to the World Bank (2008), per capita income in Costa

Rica (US\$5600 or \$10 700 PPP in 2007) is similar to the Latin American average. The Costa Rican economy is more oriented toward the external sector, with exports representing 51% of GDP, than is the Latin American region as a whole (25%). After a severe economic crisis in 1981, the country reduced the size of the government and diversified its economy from exports of a few agricultural products (mostly coffee and bananas) to the production of a variety of goods and services, including microchips and tourism, now the two most important sources of hard currency.

The Gross National Product has grown at about 5% per year since 1990 (population growth is about 2%). Unemployment is low: 4.6% in 2007 (INEC 2008), lower than the Latin American average of 8.7% (UN DESA 2007). The share of people working in the informal sector was 39% in 2003, below the Latin American average, but above that of Chile or Brazil (ILO 2007). The participation of women in the labor force has risen rapidly in recent decades, from 22% (ages 20–29) in the 1963 census to 54% in the 2005 National Household Survey.

Historically, income distribution has been more equal in Costa Rica than in much of Latin America, with a Gini index of 0.484 in 2007 (CEPAL 2009). Inequality has increased, however, in the last two decades.

### **Social Development**

Costa Rica has been more successful in achieving social development than economic development. The United Nations Development Programme ranks Costa Rica 48th in the world (fourth in Latin America) in its Human Development Index (UNDP 2008). It ranks Costa Rica 60th in the economic component of the index, in contrast with a ranking of 25 worldwide (first in Latin America) in the life expectancy component of the index. Costa Rican achievements in health, education, and social security are in part the result of its welfare state and zero expenditures on weapons (Mata and Rosero-Bixby 1988).

Since 1941 the country has had a quasi-universal public health insurance and care system provided by the government's Social Security Fund (Caja Costarricense del Seguro Social, or CCSS). Health insurance, which is mandatory for all workers, covers all health care needs of workers and their families, including prescription drugs. CCSS health care units provide services free of charge; there are no co-payments. Mandatory payroll-based deductions from employees' wages, employers, and the government fund the system. Those working in the informal sector, including peasants, farmers, petty merchants, and artisans, and those without jobs can obtain public health care either by buying insurance from the CCSS or by being insured by the government, which pays premiums for the poor

to the CCSS from a special fund (FODESAF), established in the 1970s as a means-tested program (Barahona-Montero 1999; Durán-Valverde 2002; Martínez-Franzoni and Mesa-Lago 2003; PAHO 2004). The public health insurance covers about 90% of the population (OPS 2004, p.48). The few uninsured individuals (a self-selected healthier group) can obtain health care from the CCSS units for a fee, or no fee if social workers verify that a patient has no means of paying.

In addition to the CCSS, there is a private health sector that includes a few hospitals and a large number of physicians, dentists, laboratories, and pharmacies. People who use these services usually pay out-of-pocket for them. Private health insurance plans are rare and cater to high-income households and employees of transnational companies.

Costa Rica has also been a success story in education. By the end of the nineteenth century the country had greatly expanded its primary education coverage (PEN 2008, p. 48), and the illiteracy rate decreased by 74% between 1864 and 1927, reaching a literacy level of 60%, 40 percentage points higher than its neighbors (Seligson et al. 1996, pp.46–7). Today primary education is universal, and illiteracy among the population aged 15 and older is only about 4% (UNESCO 2008). Costa Rica also has the highest secondary education enrollment rate in Central America (64% in 2007), although this rate is below the Latin American average (CEPAL 2009). In contrast to the health care system, the Costa Rican education system includes a strong private sector at all educational levels (PEN 2008, p.45).

A third leg of Costa Rica's social welfare state is its generous pension system. Among the population aged 65 and older, 64% receive a pension and an additional 12% are married to or co-reside with a pensioner. The percentage of those not covered directly or indirectly (e.g., spouses) by the pension system (24% nationally) is higher in rural areas (30%), but lower among the oldest old (18%) and in the lowest income quartile (22%). Elderly or disabled individuals are entitled to a pension accrued through contributions they made to the system when employed; through inheritance on the part of a worker's surviving spouse or children, whether the worker was retired or not upon his death; or from a basic, non-contributive system for persons living below the poverty line. Close to one third of old-age pensions are provided by the non-contributive system. All salaried workers and employers are required to contribute to a Social Security Pension Fund. Self-employed workers also participate in this fund with subsidized contributions. The statutory retirement age is 62 years for women and 65 years for men; special public funds such as those for teachers often have younger retirement ages. By age 60, 32% of men and 27% of women receive a pension. An independent fund (FODESAF) created with a 5.5%

salary tax paid by employers pays for non-contributive pensions. All these are typical pay-as-you-go systems that operate as intergenerational transfers: young generations support current pensions with the understanding that in the future their pensions will be paid by younger generations. Since 2000 there have also been complementary pension funds administered for private or public operators that function as individual saving accounts (Mesa-Lago and Bertranou 1998; Fernández and Robles 2008).

### Demography and Living Arrangements

Costa Rican life expectancy of 79 years at birth is the second highest in the Americas (after Canada's) and is higher than that of the US (World Bank 2008). Costa Rica had essentially completed its demographic transition by 2002, when fertility reached replacement levels (INEC and CCP 2008). The total fertility rate of 2.00 births per woman in 2005 was lower than in the US (2.04 births) and second lowest in Latin America after Cuba. Costa Rica is also one of the few Latin American countries with a substantial stock (10%) of international immigrants (UNPD 2009, table 1c). Because the demographic transition was so rapid and recent, a population aging process has not yet occurred: only 5.6% of Costa Ricans are aged 65 and over.

Nevertheless, the age structure has changed substantially since fertility started to decline in the 1960s. The change so far has inflated the center of the age pyramid and narrowed its base. Children and young people under 20 years of age, who represented 57% of the population in 1965, accounted for only 38% by 2005, whereas adults of ages 20–64, who represented 39% of the 1965 population, comprised 56% of the 2005 population. By the year 2050 the percentage of working-age adults will not change, but the proportion of children and young people will have declined to 23%, and the elderly population will have increased from the current 5.6% to 21% (INEC and CCP 2008, pp. 26, 64 and 65). The dependency ratios shown in Figure 29.1 summarize these recorded and projected changes in the age structure. Two features are worth noting: (1) the sharp decline in the ratio from 153% in 1965 to a projected floor of 60% in 2020 and a partial rebound to 89% in 2060; and (2) the substantial change in the composition of the age-dependent population: more than 50% of the dependent population will be elderly individuals by 2050, compared with 6% in 1970 and 13% in 2005.

Intergenerational transfers in Costa Rica are framed by living arrangements in households where elderly adults often co-reside with their grown children. Only 10% of Costa Rican elders live alone, while 57% live with an offspring. In a developed country such as England the corresponding

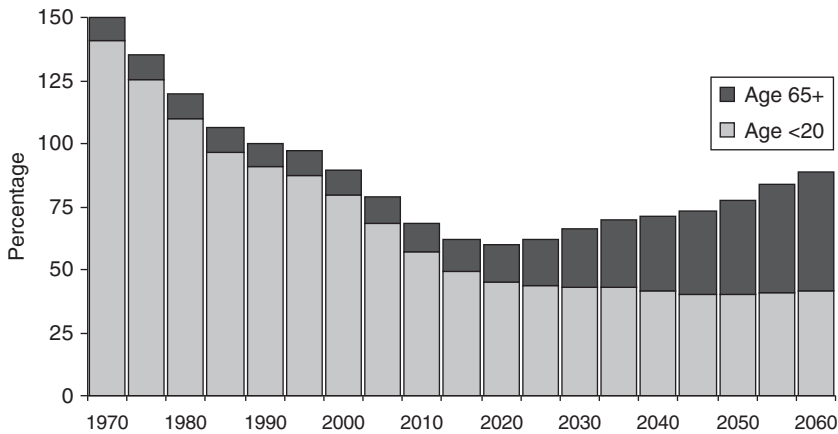


Figure 29.1 The demographic dependency ratio: Costa Rica, 1970–2060

figures are 33% and 11% (Puga et al. 2007). An important feature of co-residence of parents with grown children in Costa Rica is that children are the ones who overwhelmingly (96%) live with their parents (that is, who never left the parental household or returned to it), rather than vice versa. These patterns are partly dictated by high fertility in the recent Costa Rican past.

## DATA AND METHODS

### Data Sources

Calculating transfer accounts requires having estimates of the totals of income and product accounts and age profiles. We used microdata from the most recent Costa Rican Household Income and Expenditure Survey (ENIGH), conducted by the National Census and Statistics Institute (INEC), to estimate the age profiles and adjusted the totals to the National Income and Product Accounts (NIPA) as estimated by the Costa Rican Central Bank. The ENIGH is a nationally representative survey of 4200 households and 15600 individuals that was conducted by INEC from March 2004 to April 2005 (INEC 2006). It provides detailed information about individuals' income, including transfers and earnings from assets; use of selected services such as health and education; and household consumption. The data from the NIPA on public transfers were for the year 2004 and are available on the Web (BCCR 2007). The Central Bank provided unpublished estimates of mixed income, public transfers, asset income, and taxes.

### **Adapting the Available Data to the NTA Methodology**

We modified the original weighting factors of the ENIGH to replicate the Costa Rican population by single-year ages in December 2004 (INEC and CCP 2008). We treated the individual with the highest income in the household as the household head, not the person self-reported as the head. Given that the self-reported head tends to be older than the highest income earner, this change tends to reduce the age of asset income earners and to reduce the intra-familial transfers from the old to the young. We estimated the operating surplus of an incorporated business as the reported total operating surplus minus mixed income and the household's operating surplus. We allocated education and health expenditures by sector (public and private) within the family, using a regression method. Durable goods (except the respondent's own house) were included as if they were completely consumed at the time of purchase. Public transfers from the government to households included transfers in kind (public consumption) and cash transfers. Transfers-in-kind profiles for health and education required additional information about per capita costs of health services (CCSS 2007) and education (MEP 2007). The aggregate transfers in cash came from unpublished data from the Central Bank, following codes used in the System of National Accounts (SNA). We reclassified those transfers according to NTA groups.

Workers' contributions to the social security pension and health insurance systems were considered transfers to the government – that is, taxes on wages. Workers' contributions to individual pension funds were considered to be savings. Employers' contribution to the social security system and other employer-paid fringe benefits were included as a proportion of the salary in the labor income estimates.

Public asset reallocations follow tax age profiles, and private asset reallocations follow mixed income, plus property income, plus household operating-surplus age profiles, as reported in the ENIGH. Age profiles for private interest expenditures are based on what people reported to pay for loans. The expenditures include interest plus pay-offs; there is no information about interest expenses alone. We used the same profile for public and private expenses.

### **The Mixed Income Estimate**

A critical issue for Costa Rican estimates of labor income and other accounts was the lack of data at the aggregated level of 'mixed income', a component of the operating surplus that is not reported by Costa Rican National Accounts. The SNA defines mixed income as the 'surplus or



deficit accruing from production by unincorporated enterprises owned by households' (UN 1993). It is therefore a mixture of returns to labor and capital that in part should be allocated to labor income estimates in the NTA methodology.

Central Bank officers in charge of the National Accounts gave us a preliminary, unofficial estimate of mixed income representing a 15% share of the total net operating surplus – that is, the sum of household operating surplus, corporate business surplus, and mixed income. This figure, however, seemed too low as compared with other countries in the Americas, except Brazil; the share was 28% in Chile, 39% in Mexico, 37% in Uruguay, and 25% in the US (estimates provided by the NTA country teams in August 2008).

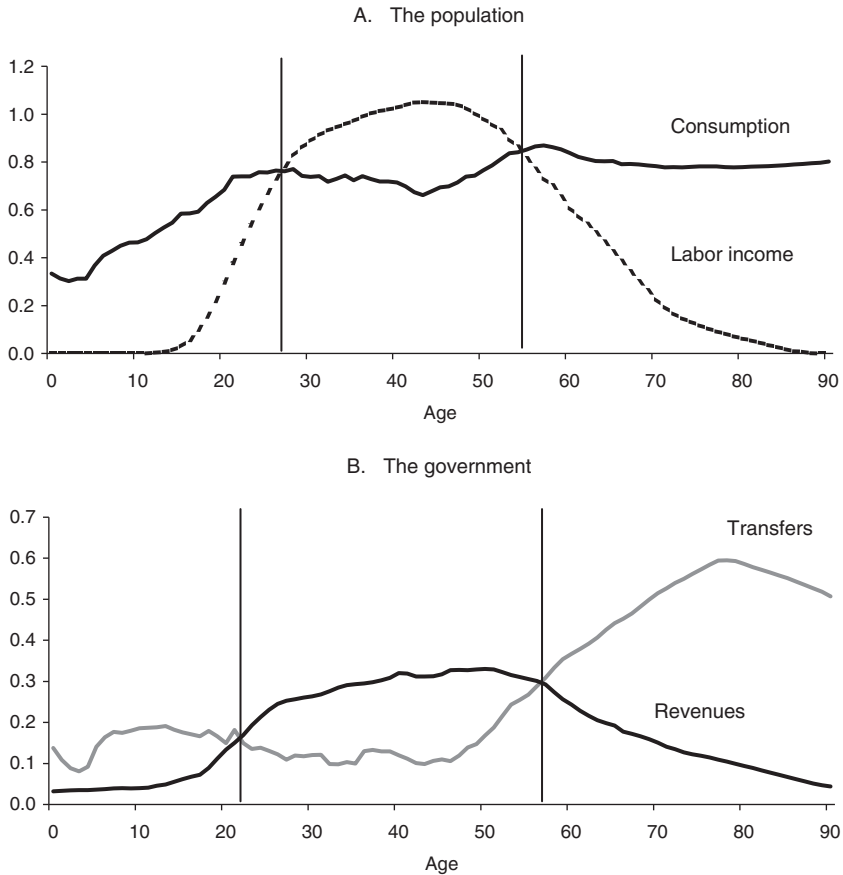
We generated several estimates of mixed income from the ENIGH data under selected scenarios, which combine four definitions of unincorporated business and two allocations of imputed wages, as well as an estimate that considers all independent income in the survey as mixed income. We kept as the best estimate of mixed income the one from the ENIGH that considers firms with fewer than ten workers as unincorporated businesses and allocates imputed wages in these firms to only wages (instead of assuming that it is mixed income). This estimate results in a 22% share of the operating surplus – that is, still below that of the US or Chile.

The amount of lifecycle deficit, as well as other transfer accounts, and the surplus age span are sensitive to this choice of a mixed-income estimate. For example, with the Central Bank estimate, the lifecycle deficit would be 9% larger and the surplus age span of 27–54 years would be the same. With the highest estimate of mixed income (34% share of operating surplus), the lifecycle deficit would be 18% lower and the surplus age span would be one year earlier and one year later. An earlier estimate that assumed a substantially larger mixed income share resulted in a 43% lower lifecycle deficit and a surplus age span of 24–57 years (Rosero-Bixby and Robles 2008, pp. 20 and 17).

## SELECTED RESULTS

The Costa Rican economy operates with a lifecycle deficit of US\$3.1 billion or \$740 per capita per year, about 24% of consumption. Asset reallocations (asset income and debt, public and private) are the main funding source of the deficit.

The age span with a surplus is from 27 to 55 years (Figure 29.2, panel A). The deficit for the population under age 30 is almost \$4 billion, or five times the deficit of \$800 million for people over age 50. In per capita



Note: Values are expressed in relation to mean labor income of the 30–49 age group. Average annual income at ages 30–49 = US\$4124.

Figure 29.2 The lifecycle deficit for the population and the government: Costa Rica, 2004

terms, however, the reverse is true: the deficit of elderly (65+) individuals is 37% higher than of individuals under age 20. The young Costa Rican age structure is the driving force that makes the lower per capita deficits of young people result in substantially higher total deficit at early ages: there are almost seven persons under age 20 for each person over age 65. As shown in Figure 29.1, however, this ratio is quickly changing, and by the year 2050 it will be 1 to 1.

Private intergenerational transfers, mostly within the family from parents to children, fund most (73%) of the consumption at young ages. That is not the case at old ages; direct transfers from children to parents are almost non-existent. Public transfers from a generous pension and health care system pay half the consumption (two thirds of the deficit) of the elderly. This reliance on public transfers by elderly Costa Ricans has been possible until now because of the relatively small size of the elderly population. One wonders whether this transfer pattern can be sustained as the population continues to age.

Asset reallocations are surprisingly important in Costa Rica. Even among relatively young adults, net asset income adds substantially to labor income (29% among ages 30–49 and 49% among ages 50–64). The highest per capita values occur at pre-retirement ages. About one quarter of consumption by the elderly is funded by returns from savings and investments made earlier in life or by inherited assets. This high figure suggests that asset accumulation is substantial in Costa Rica and might become an important force for economic growth as the population ages, in what Mason and Lee (2007) call the ‘second demographic dividend’.

The age span over which average Costa Ricans earn from labor more than they consume is surprisingly narrow, only 28 years from age 27 to age 55 (Figure 29.2, panel A), which is in part the result of Costa Rica’s welfare-state model of development. Generational effects may also influence it; the earning potential of older generations was limited by their low educational levels and by the low labor force participation of women as compared with younger cohorts.

Generational effects (as opposed to aging effects) may be the explanation for the peculiar shape of the consumption curve at middle ages. The depression in per capita consumption among individuals in their late 30s and 40s may be an echo of the economic crisis of the early 1980s that shaped their consumer behavior when they were adolescents or young adults. Some of these cohorts have substantially lower than expected educational levels. The depression of per capita consumption at middle ages can also result from the presence of teenage children at that time of the lifecycle.

Panel B of Figure 29.2 shows the government’s equivalent of the lifecycle deficit. Surplus ages, in which individuals pay more in taxes than the public transfers they receive, range from 22 to 57. The ending surplus age is low because of generous government transfers to older individuals and also because the taxation of wealth is limited in Costa Rica. These two elements cause large per capita deficits at old ages. In contrast, the government deficit at young ages is small, a reflection of limited expenditures on state-run education and the big role of families in meeting consumption

needs of the young. Because of this smaller deficit, the sharp decline in the demographic dependency ratio that has taken place in Costa Rica (Figure 29.1) has probably benefited the government less than families in what is known as the 'first demographic dividend'. By the same token, the big deficits at old ages will result in negative demographic dividends for the government sooner than for families (Rosero-Bixby and Robles 2008).

## CONCLUSIONS

The most striking findings from the Costa Rican National Transfer Accounts are: (1) the important role of government transfers to support the consumption and deficits of the elderly population; (2) correspondingly, the lack of net transfers from grown children to elderly parents; (3) the substantial intragenerational income reallocations, especially as a source of income at pre-retirement ages; (4) the narrow age span having a surplus, especially the early age (55 years) at which Costa Ricans start having a labor income deficit; (5) the peculiar depression in the consumption curve at the middle adult ages, which could be a reflection of generational effects of the 1980s economic crisis; and (6) the large absolute deficit at young ages, driven by a population age structure that is still young.

Some of these results are manifestations of a welfare-oriented government in this middle-income country with a mixed economy, which has been able to achieve some outstanding levels of social development, especially in the health and social security safety net of its elderly population. The sustainability of some of the Costa Rican achievements and practices is challenged, however, by a rapid process of population aging that will occur in the next few decades.

Demographic transformations in the age structure and generational balances also offer windows of opportunity for Costa Rica. The precipitous reduction in the young component of the dependency ratio has probably improved the well-being of Costa Ricans, especially within families in which most transfers take place to fund the deficit of the young. This is known as the first demographic dividend, which could be amplified if government and families take advantage of it by investing in human capital. A second demographic dividend may also occur with the inflation of the population in pre-retirement ages and some older ages, whose accumulated assets could be invested in the formation of physical capital to improve labor productivity.

Although the international and longitudinal comparisons in this book show that the age profiles of the lifecycle deficit, intergenerational transfers, and intragenerational reallocations are rather stable over time, they

are not immutable. Policy-makers can modify them, particularly public transfers and taxes. For example, they can increase taxation on wealth, which is mostly owned by elderly persons, to take advantage of opportunities and ameliorate risks brought about by the rapid aging of the population. Moreover, these age profiles reflect not only pure aging effects but also generational changes that by definition will modify cross-sectional age profiles at several time points.

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