# Inter-age transfers in Chile 1997: economic significance

### Jorge Bravo

United Nations Population Division New York, USA

#### Mauricio Holz

ECLAC, CELADE-Population Division Santiago, Chile

#### Draft

April 19, 2007

Paper to be presented at the *Seminar on Ageing in Developing Countries: Building bridges for Integrated research Agendas*, Santiago, Chile, 23-24 April, 2007. Organized by the International Union for the Scientific Study of Population (IUSSP) and the Economic Commission for Latin America and the Caribbean (ECLAC), Latin American and Caribbean Demographic Centre (CELADE).

Funding for this research was initially provided by an ECLAC technical cooperation project financed by the Government of France, and is currently supported by the University of California Berkeley and the National Institutes of Health, grant NIA R01-AG25247.

### 1. Background

Chile is a middle-income country with a relatively small, aging population. The evolution of the economy in recent decades has been followed and scrutinized by scholars and policy analysts interested in the country's structural adjustment programs, reforms and policies, and their measure of success as reflected in some macro indicators. Considerable attention has been given for example, to the effect of economic policies on the country's macro stability and growth, to the effects of the privatization of the pension system on aggregate saving, investment and growth, and to the distributive effects of public expenditure and some transfer programs. Demographers and other observers have analyzed the demographic trends in some detail and have pointed out some of the potential economic consequences of population aging, but in spite of some clear interrelations between the two spheres of concern, there has been very little research integrating them.

Of particular interest to this paper is to enquire about the role of the different mechanism whereby the population is able to satisfy its consumption needs over the different stages of the lifecycle. The paper explores the extent of economic dependency in different age groups, the means of financing their consumption, and some of the effects that inter-age resource reallocations have on the living conditions of the different generations of the Chilean population. The analysis is based on new estimates, the first available to date, of Chilean national transfer accounts (NTAs). As we will se in the following sections, these accounts allow for a systematic and rather detailed examination of some important aspects of the economic lifecycle.

## 1.a) Economic setting

The Chilean economy and the living standards of the population have changed significantly over the last decades. The country generally ranks high within the region in many socioeconomic indicators, including a per capita income of about US\$ 12,700 PPP in 2006, the second highest value in Latin America after that of Argentina (IMF, 2007). Annual growth of per capita GDP accelerated from averages of little over 2% during the 1980s to 5% during the 1990s (Loavza and Soto, 2002). Growth in per capita GDP decelareted somewhat since, but in spite of short-term variations, averaged a healthy 3.2% per year during the first half of 2000s. Over the past decade and a half, Chile has maintained a reasonably stable macroeconomy and sustainable external accounts. The government introduced in 2000 a fiscal rule of "structural balance" (Marcel et.al., 2001) whereby spending is set in accordance to the estimated medium-term trend in GNP, with effective counter-cyclical effects.1

One of the engines of aggregate growth has been capital accumulation, made possible by national saving. During the 1960s and 1970s, the national saving rate of Chile fluctuated significantly, and averaged only about 12% of GDP (Bennet, Schmidt-Hebbel and Soto, 1999). After the economic crisis of 1982-83, a decade in which ageing of the population structure started to become noticeable, savings increased sharply, to over 20% of GDP at the end of the 1980s, remaining at about those levels during the the 1990s. By 1997, the main year examined in this paper, savings were 23,1% of GDP

<sup>&</sup>lt;sup>1</sup> Fiscal discipline has contributed to greatly reduce the public and external debt, resulting in record low country risk premia (Marcel, 2006)

while investment was 27,7% of GDP. This performance is better than average within Latin America, but it lags considerably behind that of other developing regions and countries, particularly those of Asia.

Another area in which the country has made substantial progress is poverty, which used to be were very high during the 1980s, the last decade of the military government, reaching 45% of the population in 1987. The incidence of poverty was directly and sometimes severely affected by short-term macroeconomic cycles, as unemployment, salaries and general living conditions were. The trend changed course starting the 1990s with the return to democracy. Poverty rates have halved since, from 38.6% of the population in 1990 to 18.7% in 2003, while the rates of extreme poverty have fallen from 13,0% in 1990 to 4.7% in 2003, all well below the average of Latin American countries (ECLAC, 2005). This systematic improvement was made possible by fairly sustained macro growth, but the trend has also been largely insulated from the short-term fluctuations, a result that is to be credited in good part to the aforementioned governmental policy of "structural balance" as well as social policies, including the public transfers specifically geared toward poverty reduction (Leiva, 2006). Nonetheless, as we will point out below, there is surely room for further improvement, in particular as regards as the worrisome age distribution of poverty, which is increasingly concentrated in young children.

Two dimensions of socio-economic development have been more resistant to long-term improvement. One is unemployment, which has remained over 8% of the workforce in recent years in spite of the favorable macro trends just described, the counter-cyclical fiscal policy, and specific government-supported employment programs. The other is income inequality, as measured by the Gini coefficient (or other indicators such as the ratio of income of the richest to the poorest population groups). Thus measured, inequality increased somewhat from the 1970s to the late 1980s when it reached a Gini of nearly 0.6, and then declined during the 1990s to attain in 2003 about 0.55, comparable to the inequality levels of the late 1960s (Larrañaga, 1999, Ministry of Finance, 2005, ECLAC, 2006). Government social expenditures and public transfer programs in particular, appear to make a significant contribution to lessening inequality (MIDEPLAN, 2006), but some of the inertial structural conditions that affect the income distribution have proved hard to overcome.

## 1.b) Demographic characteristics and trends

The population of Chile, which today stands at 16.3 million, is undergoing a significant demographic transition. The first half of the XXth century featured a total fertility rate of over 6 children per women and life expectancy at birth under 55 years. The elderly (those aged 60 or 65 or older) constituted a small group of the population, and relatively few survived to ages much older than the normal retirement age: less than 40% survived to the age of 70 and less than 20% to the age of 80. As in all pre-transitional societies, the main demographic burden was on the maintenance of children, with old-age dependency being a relatively low risk for individuals and a concern of modest aggregate dimensions for the nascent social protection systems.

At the beginning of the 1980s, a decade when important reforms were introduced to the pension system and to the health and education sectors, fertility had dropped to near 2.5 children per woman and life expectancy had surpassed the 70 year mark. In

more recent years, important policy changes have been introduced in the health sector, and an active debate over the course of 2006 has taken place over a new reform of the pension system, which has resulted in a comprehensive government proposal that was submitted to Congress for consideration and approval. Changes to the education system may come next. All this occurs at a time when the demographic transition has advanced to below-replacement fertility of about 1.9 births per women in 2006, and to a combined sexes life expectancy of 78 years, a level comparable to that of some developed countries, such as the United States.<sup>2</sup>

These changes are producing significant demographic ageing, and imply that an increasing fraction of the lifecycle of individuals is spent in retirement: men surviving to age 60 can expect, on average, to live more than 20 additional years, and women more than 24 additional years. These numbers will continue to rise as the general trend toward ageing is projected to accelerate over the coming decades. The process of demographic ageing has also converse expressions in the number of children, whose proportion in the population has decreased continuously since the 1960s, and have started to decrease even in absolute terms during the last few years. Viewed in their entirety, the current and projected changes in the population age structure translate into a demographic dependency ratio that is still low and falling, but which is expected to reverse trend in less than 10 years, when it is projected to reach its historical lowest level of 45.5 persons in the conventionally dependent ages (younger than 15 years and 65 years or older) per 100 persons in the main productive ages (between 15 and 64 years). This is an indication that there is little time left to reap the full benefits of the "demographic dividend" associated to a low demographic pressure on the consumption and distribution of the national production.

The economic and demographic patterns and trends just summarized have direct implications on inter-age transfers and the different ways in which individuals, families and the public sector reallocate production and economic resources to satisfy the consumption needs of the population in different stages of their lifecycle.

### 2. National Transfer Accounts for Chile, 1997

We present and examine next the first set of "National Transfer Accounts" (NTA) of Chile, following the methodology developed by Ronald Lee, Andrew Mason and others (2005), which has been adopted for international comparison with other countries, in particular those participating in the international NTA research project (http://www.ntaccounts.org). The results refer to the year 1997 and include the life-cycle deficit, public and private transfers and asset reallocations, that is to say, all the major modules of the generational transfer accounts.

Intergenerational reallocations are measured in terms of the size and component elements of the life cycle deficit, the difference between consumption and production at each age. One useful summary expression of the analytical and accounting framework is given by the equation of the life-cycle deficit and its component elements:

<sup>2</sup> In the Latin American context, Chilean life expectancy ranks highest together with Costa Rica (followed closely by Cuba, with e<sub>0</sub> near 77 years), and fertility is second lowest, after Cuba's very low 1.6 children per woman.

$$\underbrace{C - Y_l}_{\text{Lifecycledeficit}} = \underbrace{Y_A - S}_{\text{Asset-based reallocations}} + \underbrace{t_g^+ - t_g^-}_{\text{Netpublictransfers}} + \underbrace{t_f^+ - t_f^-}_{\text{Netprivatetransfers}}$$

$$\underbrace{V_{\text{Netpublictransfers}}}_{\text{Nettransfers}} = \underbrace{V_{\text{A}} - S}_{\text{Netprivatetransfers}}$$

In this framework, inflows to individuals of any given age consist of labor income  $(Y_l)$ , income from assets A  $(Y_A)$ , transfer inflows from the public sector  $(\boldsymbol{t}_g^+)$  and from the private sector  $(\boldsymbol{t}_f^+)$ . Outflows consist of consumption (C), investment (I) in capital, credit and land (which in the agreggate must equal savings, S) transfer outflows to the government  $(\boldsymbol{t}_g^-)$  and to the private sector  $(\boldsymbol{t}_f^-)$ . In a few words, the equation says that, the *lifecycle deficit* must be matched by *age reallocations* consisting of *asset-based reallocations* and *net transfers*. The specific estimation methods are presented in detail in the NTA website (http://www.ntaccounts.org).

For Chile, two key micro-level databases for the year 1997 estimates are the national Budget and Expenditures (BES) of 1997/98, and the socioeconomic characterization survey (CASEN) of 1998. The BES is the main data source for the estimation of private consumption, as it reports in great detail on 726 categories of expenditures on goods and services in the household. Although both surveys contain information for each individual household member on their sources of income (labor income, income from assets, transfers), we prefer the CASEN survey for the estimation of labor income, because it contains greater detail of the categories of income (43 in all, while the BES has only 5 types) and because the individuals are classified in single ages (in the BES their were categorized in 5-year age groups). The CASEN survey is also the most pertinent database, as well as the official source, for the statistics and analysis of income distribution, poverty, and the impact of government transfer programs on living conditions of the population, especially low income groups.

We also use the aggregate figures of public expenditures by programs reported annually by the Budget Directorate of the Finance Ministry (<a href="http://www.dipres.cl/fr\_estadisticas.html">http://www.dipres.cl/fr\_estadisticas.html</a>), and on the age profiles of income taxes provided by the National Tax Service (Spanish acronym SII), which together allow for the estimation of net public transfers. All the age profiles were scaled to match the appropriate aggregates of the National and Income Accounts (NIPA), published on the Chilean Central Bank (http://www.bcentral.cl/esp/publ/estad/aeg/aeg15.htm).

## 2.a) Lifecycle deficit

Figure 1 displays the lifecycle deficit for Chile in 1997. The curve of per capita labor earnings (dark purple line) has the characteristic inverted U-shape but with relatively high values in the older ages in comparison with other countries: only India, rural China and the Philippines have equal or greater (relative) labor income at ages above 70. This is a somewhat unexpected finding, since Chile, unlike India, rural China and to a lesser extent Philippines, is a highly urbanized country with relatively high coverage of its social security system by developing country standards. The result is partly due to the significant income from self-employment (dashed black line) in Chile, which represents an increasing fraction of labor income as individuals age. But this fact cannot account for all the difference since the average amount of self-employment income across the lifecycle in Chile is much lower than in India, China or the Philippines.

Conversely, and in accordance with international evidence, wages from employed work are the main component of labor income for most of the lifecycle, especially in the younger ages. In effect, the overall Chilean age pattern of labor income is similar to that of Taiwan, which in this particular regard is closer to what is observed in the more developed countries.

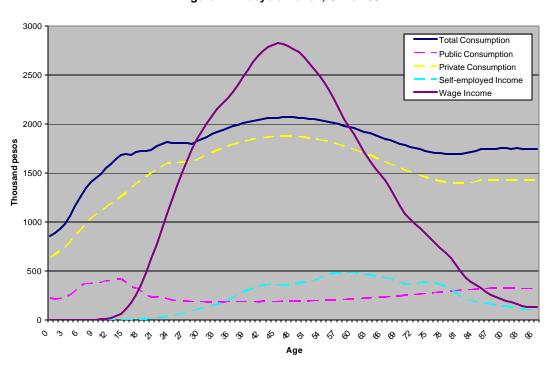


Figure 1. Lifecycle Deficit, Chile 1997

The (per capita) consumption profile (thick blue line) has a much more dampened humped shape, commonly observed in developing countries. The age pattern is dominated by *private* consumption (dashed yellow line), which represents 86% of total consumption. Public consumption (i.e., the value of the goods and services consumed by the population that are provided in-kind by the government) accounts for the other 14%. This is a value in between the lowest registered to date in developing countries such as those of Indonesia and Thailand, and the much higher values observed in developed countries such as Japan, Sweden and the United States. Compared with other Latin American countries, the Chilean downturn of consumption at the older ages differs somewhat from the flatter Costa Rican pattern and from the moderately increasing one of Brazil.

Public consumption (dashed pink line) has a distinct, roughly inverted U-shape, but its upturn at the older ages is not strong enough to overturn the slope of the total consumption curve to positive, as it occurs in today's more developed countries with very large government expenditures in health and other social services for the elderly. In Chile, these public programs are also important, but these data show that, especially after the privatization reforms in the pension and health systems initiated in the 1980s,

5

<sup>&</sup>lt;sup>3</sup> We discuss in detail the different components of the lifecycle deficit, including of course private consumption, in Bravo and Holz (2007).

the elderly are relying relatively less on (in-kind) public consumption and more on cash public transfers (essentially pensions), their own labor earnings, asset income and, in some cases, on private transfers provided mostly by their children. We will return to this point in section 2.c).

Another interesting aspect of the results on the lifecycle deficit are the ages at which individuals become net producers and net consumers: in the Chilean case, we find that the first transition occurs at about age 27, and the second one at age 59. The average period of net production of 32 years is very close to the mean of the countries that have comparable estimates so far.

Finally, we must note that although those younger than age 27 and older than 59 are "dependents" from the point of view of the lifecycle deficit (individuals in both groups produce less through their work than what they consume), there are evident differences in their economic status and degree of economic dependency, for several reasons. First, younger dependents produce only 26% of their average consumption (young children produce 0%), whereas the older dependents produce about 55% of their consumption with their labor and thus rely to a much lesser extent on other sources of support than the younger dependents. Second, as we will see in section 2.d), older adults draw substantial asset income whereas children, adolescents and younger adults do not, or do so to a very limited extent; therefore older adults are much less dependent on transfers than children. As we will see below, the public/private transfer mix is also very different across the different ages. Third, the public transfers that older adults receive can reasonably be considered a "pay-back" of the taxes they paid while more economically productive<sup>4</sup>, as in an implicit intergenerational social contract, whereas in the case of children this interpretation is less clear.

### 2.b) Public Transfers

In the NTA framework, public transfer *inflows* to individuals refer to total government current expenditures, not only specific cash programs as generally understood in the public finance usage of the term. The concept is that the activities and associated spending of the public sector produce goods and services that are of direct or indirect benefit to the population. Some of these benfits accrue only to specific groups (such as those in education, pensions, poverty programs, etc.) while others accrue to the population at large, such as public infrastructure, foreign relations, general government operational costs. The former we assign to the pertinent population groups, the latter are allocated on a uniform per capita basis to all age groups. Public transfer *outflows* refer to the payments (taxes and social security contributions) that individuals make to the government within a given time period (years, in our analysis).

Public transfer *inflows* are categorized as cash or in-kind, and by some social sectors; i.e., health, education, social security. Under the method's definitions, the ensemble of public transfers equal public expenditure. Public transfer *outflows* consist of direct and indirect taxes, which refer to income and property taxes on the one hand, and consumption and excise taxes on the other.

### 2.b.1) Transfer inflows

-

<sup>&</sup>lt;sup>4</sup> Note also that we are not considering in this paper net time transfers, which may flow either upwards or downwards, i.e., from younger to older ages, or vice-versa.

Aggregate *in-kind* transfers represented in 1997 11% of GDP, more than half of which (6% of GDP) was consumption of collective goods; the remaining 5% was accounted for by health and education programs. Cash transfers represented 4,8% of GDP, virtually all of which is accounted for by public pensions, together with a small proportion of spending in training and unemployment subsidies.

The next figure shows the components of in-kind transfers, which are clearly concentrated in children and adolescents on the one hand (education expenditures, blue dots) and public health programs in the elderly (pink dots).

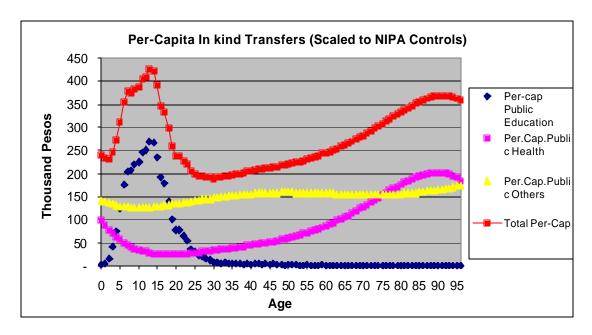


Figure 2

Compared to other countries in the NTA project, Chile has public education and health transfers that are in an intermediate range, close to other developing countries such as Costa Rica and Taiwan, well above Indonesia, but much lower than developed countries such as Japan and the U.S. As expected and commonly observed in other countries, education expenditures are high for children, teenagers and young adults, while health expenditures benefit young children, but mainly older adults. Other public consumption expenditures have no clear age correlation, except for government-supported training programs concentrated in young and middle-aged adults, which are in any case of relatively small quantitative import.

In the case of Chile, cash transfers consist basically of old age and survivors pensions geared mostly to the elderly, which indeed constitute the lion's share of the public transfers to the elderly, as seen in figure 3.

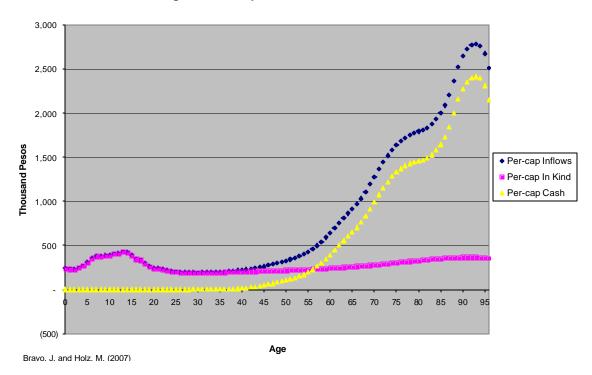


Figure 3. Per-capita Public Inflows, CHILE 1997

This figure also shows that per capita public benefits for the elderly dwarf those received by children, but because the population age structure is still heavily tilted toward the younger ages, the public expenditure in children and the elderly are of comparable aggregate magnitude (Bravo 2006).

Along these lines, from the point of view of the income distribution, it is interesting to ask about the final incidence of these transfers. In previous work (Bravo, 2007) we have assessed, for several Latin American countries, the impact of government cash transfers on poverty rates by age, drawing from an estimation procedure developed by Uthoff and Ruedi (2002). In figure 4, we display the estimates obtained in the same manner as in our previous work, in this instance for Chile 1998.

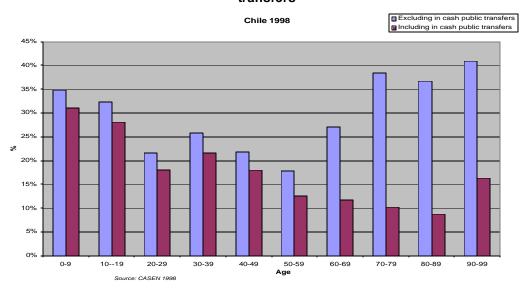


Figure 4. Incidence of poverty by age group, excluding and including transfers

The results confirm our previous findings for Chile, also observed in varying degrees in Brazil, Mexico and El Salvador, that the poverty-reducing effect of cash transfers is much greater for the elderly. Even though not insignificant for younger adults and children, government cash transfers are still insufficient to impede that children end up with much higher poverty rates than the other generational groups. This finding should be a cause of concern from the point of view of inter-generational equity and from an inter-termporal economic perspective, to the extent that it can be read as a sign of under-investment in the younger generations, i.e., future productivity. Along these lines, the recently inaugurated government program emphasizing the well being and social protection of all children (MIDEPLAN, 2007) appears to be well targeted.

However, it must be noted that this is only a starting piece of evidence for the analisys of the distributional effects of transfers, since one should consider also in-kind transfers and public transfer outflows (see next section) to have a complete view of the net generational impact of public policies. The series of NTAs that we are constructing will provide the basic data with which these more integrated, comprehensive assessments can be made.5

## 2.b.2) Public outflows

The tax structure of Chile, heavily concentrated on indirect taxes (they represent % of tax proceeds), imply an age profile of public outflows quite different from the developed countries, where direct taxes on income and assets play a much more important role. Figure 5 shows the main results, where it is possible to see that in fact income taxes have an older age distribution that the value-added tax.

<sup>&</sup>lt;sup>5</sup> Ideally, one would like to examine the incidence intertemporally, allowing for a true generational analysis and evaluation. This requires though, long series of NTAs, which are not yet available for Chile (see Lee and others, 2005, for an interesting analysis of long lifecycle deficit series for the U.S. and France).

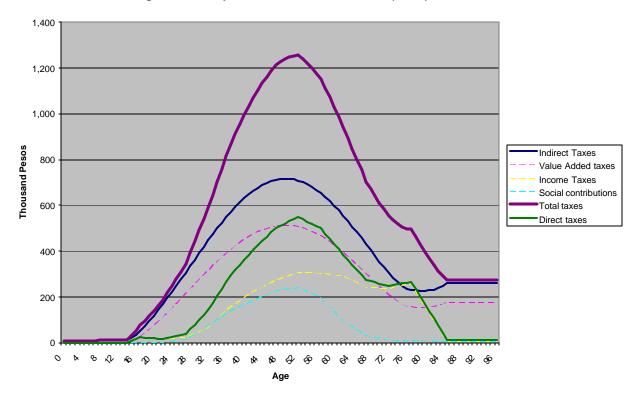


Figure 5. Per capita Public Transfer Outflows (taxes), Chile 1997

Considering both public transfers inflows and outflows, Figure 6 summarizes the results of *net* aggregate public transfers, which may be more relevant from the point of view of public finance, inasmuch as they reflect the total, net amounts transferred by the government by age, that is to say, the benefits received from the government less taxes paid by the population in each age group.

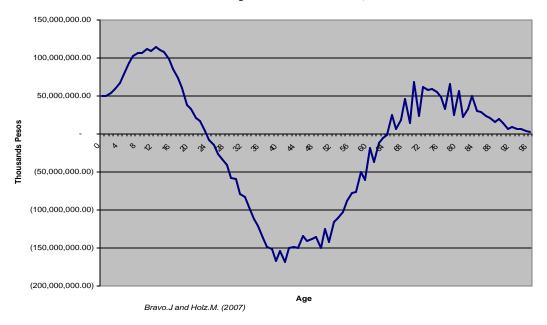


Figure 6. Net Public Transfers, Chile 1997

The figure clearly shows that Individuals under the age of 26 and those over 65 receive net public inflows from the government, while those in between are net taxpayers, especially and more intensely those in their late thirties and early fifties. Note that, when viewed in their entirety, the elderly receive somewhat lower net transfers than children and teenagers.

#### 2.c) Private transfers

Transfers that take place amongst private individuals without the mediation of the government (i.e., private transfers) can be either intra-household (among persons of the same household, which is the most common case) or inter-household (those made between persons that belong to different households). Unfortunately, in the case of Chile, the household surveys ask only about transfers *received* (no question available on transfers *given*), and has no information on who are the givers of the transfers received. Even though we have the information of transfer receipt for each individual household member, in order to estimate net private inter-household transfers we had to use special assumptions about the givers *vis-à-vis* the receivers. We considered two basic possibilities: (1) following the standard methodology of the NTA project, all private transfers are made only amongst household heads, and alternatively, (2) the receipient is that person identified in the survey and the givers are the household heads only. In both cases, we assume giving is proportional to household total factor ("autonomous") income.

The results for inter-household transfers in both cases are of course different. Under the first assumption, the young and the old receive a very small portion of net transfers while individuals of intermediate adult ages are large net givers. This is to be expected from the assumption made, since most household heads are indeed middle-age adults. Under the second assumption, net inter-household transfers are more evenly spread out. But since

inter-household transfers represent only 16% of private transfers, the reliance on one assumption or the other does not have a large effect on total net private transfers.

In comparative perspective, inter-household transfers in Chile are larger than in some countries with NTA estimates (e.g., in Thailand they are 6% of all private transfers). But Chile has in common with the other countries that by far the largest part of private transfers takes place *within* households. Figure 7 shows the estimates of private transfers using the first assumption to estimate interhousehold transfers and the standard NTA methodology for intra-household transfers. The results clearly reveal that the main net receivers of private transfers are children and young adults and also, but to a much lesser degree, the elderly (over the age of 70).

Another noteworthy feature of this figure is that, for all ages above 16, individuals are both givers and receivers of private transfers, something consistent with findings (Saad, 2005) from SABE surveys, representative of the population of selected Latin American cities. Considering the *net* flows however, private transfers for older adults clearly represent a very small fraction of their income and of financing of their consumption.

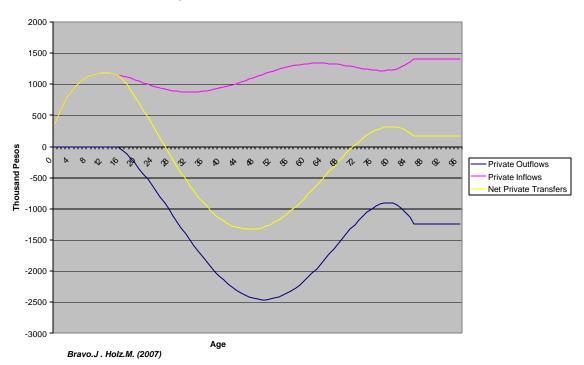


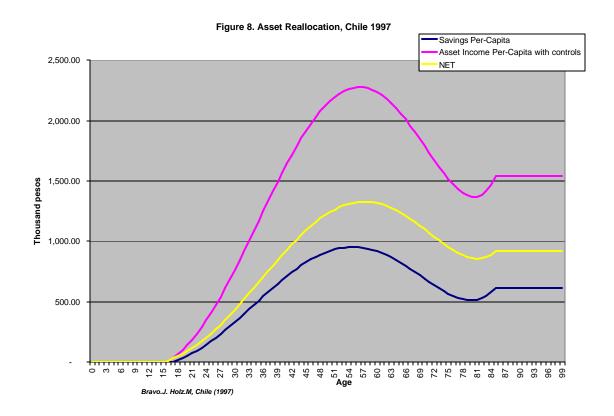
Figure 7.Net Private Transfers, Chile 1997

#### 2.d) Asset reallocations

Even individuals that do not generate substantial labor income nor receive transfers to finance their consumption, may resort to inter-age asset-based reallocations. Recall that asset-based reallocations are the difference between asset income and saving of each age group.

Figure 8 display the results for Chile, 1997. Per-capita net asset reallocations start to increase from the late teens, first slowly and then more rapuidly until the peak at age 56,

after which asset reallocations decrease until age 85. Both of the main components of asset reallocations have a very similar age pattern. Income from assets increases very rapidly until age 56, while savings are also increasing (albeit at a slower pace) peaking at very nearly the same age (55 rather than 56). Then both asset income and saving fall until age 85. This pattern is very similar to that of Thailand, which in fact has almost the same turning point at 56, but is different from other countries such as the U.S. and Costa Rica. In these latter countries, net asset reallocations have no turning point, but keep increasing even at older ages when savings are falling toward negative values at the oldest ages.



## 2.e) How is consumption financed at different stages of the lifecycle?

A useful way to summarize the foregoing results is to examine the different sources of financing the lifecycle deficit of some broad age groups, which we show in figure 9.

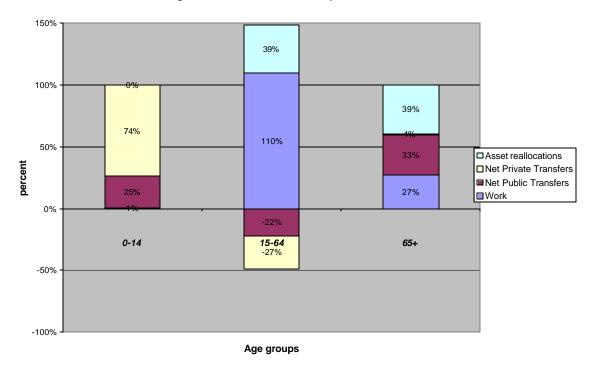


Figure 9. Finance of Consumption, Chile 1997

We confirm that the adults in the main productive ages are substantial net producers, i.e., their labor income is larger than their own consumption, 10% higher, to be precise, and they obtain important positive net asset reallocations, equivalent to 39% of their consumption. This provides them with suuficent resources to be net transfer givers of both private and public transfers, in amounts that represent 27% and 22% of their average consumption, respectively.

Children below the age of 15 and adults 65 and older are net consumers ("dependents"), but their sources of support (funding of consumption) are radically different. Almost ¾ of the consumption of children is funded by private transfers (mostly intra-household), and another ¼ by net public transfers. Work in this age group is neglible, and there are no asset reallocations to speak of. The elderly finance more than ¼ of their consumption with their own labor, and can count on asset reallocations to finance almost 40% of their consumption. They make very little private transfers, but don't depend on them either to finance a significant part of their consumption.

#### 3. Conclusions

This summary examination of new results and analysis of intergenerational reallocations for Chile in 1997 on the basis of NTA accounts, result in the following observations.

Labor earnings in Chile are an important source of maintenance for the great majority of adults, even for the elderly, in a greater proportion than in countries with similar levels of development, urbanization and social security coverage. Consumption displays a smooth, somewhat dampened age profile that falls in between the more pronounced

inverted-U shape found in the lowest income countries and the upward-sloping consumption curve observed in todays's more developed countries.

Those younger than age 27 and older than 59 are on average economically dependent, in the sense that individuals in both groups produce less through their work than what they consume. But there are clear differences in their economic status and degree of economic dependency: older adults are much less "dependent" on sources of income beyond the resources that they can avail themselves through work and asset reallocations. In 1997, our main year of analysis here, this is probably the result, to a significant extent, of the privatization reforms initiated in the 1980s, especially that of the pension system which has increased private saving for old-age and reduced in relative terms the weight of publicly-provided pensions.

Public inflows (benefits) to individuals are mostly in-kind health, education and collective goods received in different intensities by all population age groups. Cash transfers (pensions, basically) represent by far the largest public transfer received by the elderly, which obtain total net per capita public transfers several times larger than children or younger adults. However, since there are still many more younger than older persons in the population, the aggregate public spending on children and teenagers is roughly comparable to that on the elderly.

Cash public transfers appear to have a much greater impact in reducing poverty among the elederly than any other age group, and there is a legitiimate concern that poverty is still heavily concentrated in children, the future generations of citizens, producers and taxpayers. Nonetehless, a careful and comprehensive distributional analysis must also take into account in-kind transfers and public outflows (taxes). The appropriate information basis to allow for this in generational terms is being generated by the NTA time series under construction.

Private transfers are the main source of financing consumption for children, but are not of great importance for any other age group. The elderly rely to a significant extent on net public transfers, but are not substantial receivers of net private transfers. Interestingly though, persons in all the adult age groups both give and receive private transfers, confirming previous evidence from Chile and other Latin American countries that private support tends to be mutual.

Asset reallocations finance about two-fifths of the consumption of adults. They are a particularly important source of support for the elderly, and is possibly an increasing one over time, considering the aggregate trend in private savings and the accumulation of private pension funds since the 1980s.

### **Bibliography**

Bennett, Herman, Klaus Schmidt-Hebbel & Claudio Soto (1999) "Series de Ahorro e Ingreso por Agente Económico en Chile 1960-1997," *Working Papers Central Bank of Chile 53*, Santiago, Chile.

Bravo, Jorge (2006) "Constructing a baseline NTA for Chile: preliminary results". Presentation at the 3rd Workshop on the Macroeconomics of Ageing, January, Honolulu, Hawaii.

Bravo, Jorge (2007) "Intergenerational transfers in Latin America". *United Nations Expert Group Meeting on Changing Age Structures, Mexico City, Mexico, September 2005*. Department of Economic and Social Affairs, Population Division, New York. ESA/P/WP.201.

Bravo, Jorge and Mauricio Holz (2007) "NTA Estimates for Chile 1997: Methods and Results" Unpublished mansucript, ECLAC/CELADE-Population Division, Santiago, Chile.

ECLAC (2005) Panorama Social 2005 www.cepal.org, Santiago, Chile.

ECLAC (2006) Panorama Social 2006 www.cepal.org, Santiago, Chile.

International Monetary Fund (2006), http://www.imf.org/external/pubs/ft/weo/2006/01/data/

Loayza, Norman and Soto, Raimundo (2001) "Economic Growth: Sources, Trends and Cycles", *Series on Analysis of Economic Policy*, Central Bank of Chile, Volumen IV, Santiago, Chile.

Larrañaga, Osvaldo, 1999, "Desigualdad del Ingreso en Chile 1960-2000". Universidad de Chile, Santiago, Chile.

Leiva, Alicia (2006), "Sistema de Protección Social: Fundamentos y Componentes" Presentation at the *Expert Group Meeting on Population and Poverty*, ECALC/CELADE, Santiago, Chile, November, 2006.

Marcel, Mario, M. Tokma, R. Valdés, J. Benavides (2001), "Balance Estructural: Metodología y Estimaciones para Chile 1987-2000", *Estudio de Finanzas Públicas No.* 1, Dirección de Presupuestos, Ministerio de Hacienda, Septiembre 2001.

Marcel, Mario, (2006), "Cinco anos de Balance Estructural en Chile: Una Evaluación Presentation at the 18th Seminar on Regional Fiscal Policy, ECLAC, January, 2006

Mason, Andrew, Ronald Lee, An-chi Tung, Mum-Sin Lai, Timothy Miller (forthcoming) "Population Aging and Intergenerational Transfers: Introducing Age into National Accounts" *Development in the Economics of Ageing*, David Wise (ed). National Bureau of Economic Research, University of Chicago Press.

MIDEPLAN (2007) Chile Crece Contigo: el Sistema de Protección Integral a la Primera Infancia, http://www.mideplan.cl/final/categoria.php?secid=10&catid=51
National Transfers Account (2007) website, www.ntaccounts.org/.

Ministry of Finance of Chile (various years), "Estadisticas Finanzas públicas: Series Trimestrales" <a href="https://www.dipres.cl">www.dipres.cl</a>, Santiago, Chile.

Saad, Paulo M. (2005) "Los adultos mayores en América Latina y el Caribe:arreglos residenciales y transferencias informales" *Notas de Población* No. 80, ECLAC/CELADE, Santiago, Chile.