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Consumption, Income, and Intergenerational Reallocation of Resources: Application of NTA in the Philippines, 1999

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Philippine Institute for Development Studies
Surian sa mga Pag-aaral Pangkaunlaran ng Pilipinas

Consumption, Income, and Intergenerational Reallocation of Resources: Application of NTA in the Philippines, 1999

J.M Ian S. Salas and Rachel H. Racelis

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Consumption, income and intergenerational reallocation of resources: application of National Transfer Accounts (NTA) in the Philippines, 1999[1]

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January 2008

Abstract

A country's population consists of persons at different ages and stages of their economic lifecycle. Those in the population that are incurring lifecycle deficits would not be able to sufficiently support themselves, while those generating surpluses would have more than they require. Resources then have to be reallocated or transferred from the surplus age groups (working ages) to the deficit age groups (children and elderly) and there are various ways to achieve these across age transfers or intergenerational reallocations. Lifecycle consumption and income patterns, and the systems for age reallocations in the Philippines, are examined in this paper using the 1999 NTA Flow Accounts estimates. This paper finds that: (1) Filipinos incur lifecycle deficits and do not become self-sufficient until after age 25, lifecycle surpluses are generated for the next 35 years, and at age 61 consumption starts to exceed labor earnings and lifecycle deficits are once again incurred; (2) In 1999 the estimated aggregate lifecycle deficits amounted to about PhP 1,061 billion in current prices (with the young and elderly accounting for 93 percent and 7 percent, respectively) while surpluses generated by the working age group amounted to PhP 461 billion, or an excess of PhP600 billion of deficits over surplus; (3) The mix of systems that support the consumption of Filipinos in the deficit ages differ between the young and the elderly groups, with the mix also changing with age for the elderly deficit group; (4) The financing of consumption of children up to age 14 is primarily by public and private transfers, while for the age group 15-25 about half of consumption is already paid for by own wages but a significant part continues to be supported by private transfers; and (5) Consumption of the elderly is financed by own earnings, asset reallocation, private transfers (starting age 73) and to a very small extent by public transfers (starting age 80).

Keywords: National Transfer Accounts, economic lifecycle, intergenerational transfer, income age profile, consumption age profile, lifecycle deficit

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[1] Prepared under the Asia's Dependency Transition Project, a project covering the four countries of China, India, the Philippines and Thailand. The Philippine Institute for Development Studies and the Nihon University Population Research Institute implemented the Philippines component with support from the United Nations Population Fund (UNFPA.) The Project is part of an international collaboration to develop and apply the National Transfer Accounts (see www.ntaccounts.org.)

Consumption, income and intergenerational reallocation of resources: application of National Transfer Accounts (NTA) in the Philippines, 1999

J.M. Ian Salas and Rachel H. Racelis

I. Introduction

An individual person's economic lifecycle may be described simply as follows: consuming more than producing, or incurring lifecycle deficit, as a child; producing more than consuming, or generating lifecycle surplus, as a working-age adult; and, again, consuming more than producing, or incurring lifecycle deficit, as a retired elderly. A country's population consists of persons at different ages and at different stages of their economic lifecycle. Those in the population that are incurring lifecycle deficits, as described above, would not be able to sufficiently support themselves, while those generating surpluses would have more than they require. Resources then have to be reallocated or transferred from the surplus ages (working ages) to the deficit ages (children and elderly) in order to fully cover the latter's current consumption requirements.

There are various channels or systems through which economic resources are transferred from surplus to deficit ages. One system relies on capital markets. Individuals accumulate capital or assets during their working ages, and when they are older and no longer productive, they support their consumption by relying on income from the accumulated assets (if invested) and/or by liquidating those assets. Another system relies on direct transfers from those currently at surplus ages to those currently at deficit ages. Transfers are mediated by the public sector and by private entities, and familial transfer is the most important type channeled through private means. Economic lifecycle behavior of individuals and the choice of systems for intergenerational support in a country can have important implications on the welfare of the deficit age groups and on the potential for economic growth of the country in general.

This paper has the following three objectives: first, to examine the lifecycle patterns of consumption and labor income in the Philippines and to identify the ages at which lifecycle deficits are incurred; second, to determine how consumption of the deficit age groups in the country are currently being supported or financed; and, third, to discuss the economic implications of the current Philippine systems of financing the consumption of the population in the deficit ages.

Data on consumption expenditures and labor income have been available in the Philippines for some time: in the Family Income and Expenditure Surveys (FIES) conducted routinely by the National Statistics Office since the 1970s, and in the Annual Poverty Indicator Surveys (APIS) since the late 1990s. But so far, the study of lifecycle patterns of consumption and income has been limited, and the systematic study of lifecycle deficits and support systems has not yet been done for the Philippines. Income

and the age factor have been examined in several previous studies but mainly within the context of wage differentials or income inequality analyses (Encarnacion 1978; Estarillo and Ilagan 1988; Estudillo 1995; and Alba 1998.) The studies that presented age profiles of income had actually profiled household income versus the age of the household head. Similarly, household consumption expenditures were profiled against age of household head in previous Philippine studies (Mason and Tirol 1992; Figueroa and Bernal 1992; Alba and See, 2007). Some attempts, outside of this paper, at estimating consumption age profiles at the individual level has been done but only for health expenditures (Racelis, et. al. 2004; Racelis et. al. 2006; Racelis et. al. 2007). There continues to be very limited individual-level consumption expenditures data in the Philippines, which may explain the general lack of lifecycle studies of consumption. Now various methodologies for assigning household consumption expenditures to household members are available, specifically those that have been developed in the National Transfer Accounts (NTA).

II. Philippine Application of NTA

NTA-Flow Accounts was estimated for the Philippines for the year 1999 and the results are used and analyzed in this paper. A short description of what NTA is and how NTA was estimated in the Philippines is provided in this Section. For a more detailed description of the data and estimation procedures used to produce the 1999 NTA-Flow Accounts for the Philippines, the reader may refer to Paper No. 2007-12 of the PIDS Discussion Paper Series, which is downloadable from the website http://www.pids.gov.ph. General references on the NTA methodology and analyses include Lee and Mason 2004, Mason and Lee 2004, Lee at al. 2004, Mason 2005a, Mason 2005b and Mason et. al. 2005.

The NTA is a comprehensive system for measuring economic resource flows across ages, done at the aggregate level and for a prescribed period of time. In the NTA, the individual is the fundamental analytic unit. All transactions are treated as flowing to (INFLOWS) and from individuals (OUTFLOWS) and are classified on the basis of the age of those individuals. Public and private institutions mediate these transactions. Public reallocations are social mandates embodied in law and regulations and implemented by local, regional, and national governments. Private reallocations are voluntary or contractual transactions between individuals, households, firms, and charitable organizations. The household plays a prominent role in private age reallocations. In virtually every society, reallocations to children are dominated by intra-household transfers, and in many countries the elderly live with and are supported by their adult children.

The governing equation for the Flow Account which must be satisfied for any individual, household, age group, or (closed) economy, is (EQUATION 1)

$$\underbrace{C - y^l}_{\text{Lifecycle deficit}} = \underbrace{\underbrace{rA - S}_{\text{Asset reallocations}} + \underbrace{\underbrace{\tau_g^+ - \tau_g^-}_{\text{Net public transfers}} + \underbrace{\tau_f^+ - \tau_f^-}_{\text{Net private transfers}}}_{\text{Net transfers}}}_{\text{Age reallocations}} .$$

Consumption expenditures (C) and labor income (y^l) are defined in NTA as follows, using components of the Philippines National Income Accounts as reference:

C = personal consumption expenditures
+ government consumption expenditures
- indirect taxes

y^l = compensation of employees from resident producers
+ compensation of employees from rest of the world (ROW)
+ 2/3 household operating surplus

The *lifecycle deficit* (LCD) is the difference between consumption (C) and production or labor income (y^l). A negative LCD indicates a surplus. The deficit or surplus must be matched by *age reallocations* consisting of *asset reallocations* and *transfers.* Asset reallocations consist of the difference between asset income (rA) and saving (S). Transfers consist of *net public transfers* or transfers mediated by government (public services received, y^+_g, less taxes and other fees paid to government, y^-_g) and *net private transfers* or transfers mediated by households and other private entities (inflows to, y^+_f, less outflows from, y^-_f, each age group).

Assets are not allocated among members of the household, but rather are assumed held by a single individual, the household head. In general, individuals accumulate assets during lifecycle surplus years and rely in their retirement years on asset income and dis-accumulation of capital to cover the lifecycle deficit. The function of assets as a reallocation tool for a single individual is to smoothen his or her consumption over time or to reallocate resources across time for some other purpose. Thus, for any year's cross-section of age groups, the asset income and dis-accumulation of capital observed for older ages is not tied to the accumulation at younger ages.

Transfers, on the other hand, are transactions that transfer goods, services or cash from individuals belonging to one age group to individuals belonging to another age group with no expectation of *quid pro quo* in any form. Public transfers are mediated by governments which collects taxes from some age groups and then makes transfers to all or specific age groups. Private transfers are mediated by the family and by non-profit institutions serving households. Intra-household familial transfers are transfers made from household members with lifecycle surpluses to household members with lifecycle deficits. Inter-household transfers are transfers made from one household head to other household heads.

The first step in setting up the Lifecycle or Flow Account of the NTA is the construction of the age profiles of consumption and labor income. Next is the identification of the deficit and surplus age groups by comparing consumption with labor income earned at each specific age. After this, resources reallocated across ages (from

surplus to deficit ages) through the different systems, i.e., asset-based reallocation, public transfers, and private transfers, are estimated.

The main sources of data for the estimation of components of the 1999 Philippines NTA Flow Account include: the National Income Accounts (NSCB 2003), specifically the Income and Outlays breakdown; the National Health Accounts, the National Education Expenditure Accounts, household income and expenditure surveys, government finance documents, and the UN Population Database (United Nations, 2007).

The general steps for the estimation of per capita means of consumption and labor income by age are as follows:

1. Obtain the value of the National Income Accounts (NIA) "equivalent" of the NTA component and use the NIA value as the aggregate control total. Aggregate control values used in the estimation of selected 1999 NTA Flow Accounts components are shown in Table 1.

Table 1. NTA aggregate controls: Philippines, 1999
(value in million pesos)

NTA Component	*Control Total Description*	*Value*
CONSUMPTION		
Public – Total	Government consumption expenditures (GCE)	389,238
Education	GCE * (education budget share)	88,134
Health	GCE * (health budget share)	29,621
Other	GCE less public education and health expenditures	271,483
Private – Total	Personal consumption expenditures (PCE) less net indirect taxes paid by households (=netPCE)	2,026,645
Education	netPCE * (education household expenditure share)	89,314
Health	netPCE * (health household expenditure share)	40,997
Other	netPCE less household education and health expenditures	1,896,334
LABOR INCOME		
Earnings	Compensation of domestic workers plus net compensation from rest-of-the-world (ROW)	1,030,430
Self-employment	2/3 * operating surplus of households	791,427

2. Calculate per capita means of the NTA component (e.g., private household education expenditure, private household health expenditure, salaries and wages, etc.) by age in single years either directly from household survey data or using some other data and method;

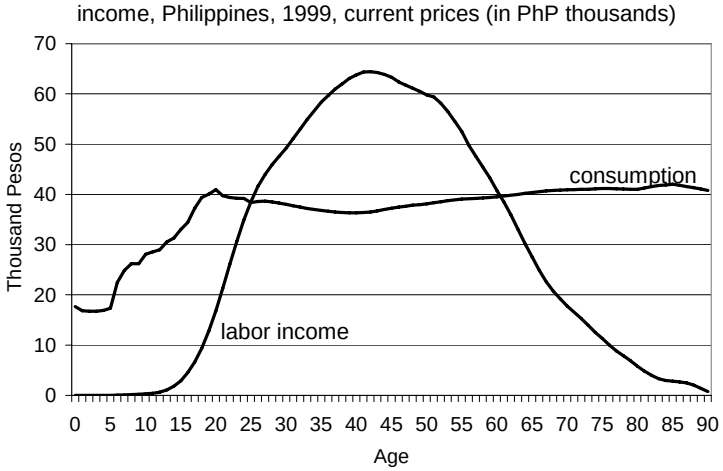
3. Multiply per capita means obtained from Step 2 by the population size of each age to obtain aggregate values by age and then compute for the grand total by taking the sum of aggregate values across all ages;
4. Compare the grand total from Step 3 with the control total from Step 1 and, if necessary, adjust the per capita means at each age estimated in Step 2 upwards or downwards to gain consistency with the control total.

In some cases, especially for public consumption, the reverse process is done wherein estimation starts with the control total. First, the (control) total value is distributed to identified consumers or users of services (e.g., public school students) at each age, where users are identified using survey data. This step provides the total or aggregate value for each age group, e.g. total public education expenditures (primary, secondary, and tertiary schools) allocated to each age group. Next, per capita values (not per user or per consumer) are computed by dividing the aggregate total by the population size at each age.

III. Lifecycle Deficit by Age

The analysis starts with the age profile of mean per capita labor income and current consumption shown in Figure 1. Labor income has the expected single-humped shape, peaking at age 42 and appearing a little skewed to the right. Consumption is strongly influenced by the shape of the ad hoc equivalence scale used to distribute household other consumption to its members (the age profile of private other consumption is shown later in Figures 8), but with pronounced sharp increases as age approaches 7 and 18 years, which are shown later on to be due specifically to education consumption. As expected, children and the elderly are observed to consume more than they produce. The youth begin to produce as much as they consume at age 25 and adults no longer produce as much as they consume at age 61. That is, lifecycle deficits are recorded for ages 0 to 24 and 61 or older. The span of years during which there is lifecycle surplus, with labor income exceeding total consumption, is about 36 years.

Figure 1. Age profile of per capita consumption and labor income, Philippines, 1999, current prices (in PhP thousands)



The age profile of the Philippine population in 1999 is presented in Figure 2. As is typical of a developing country, the number of persons declines almost consistently with age. If this population age structure was presented in pyramid form, the Philippines would have the classic wide-based pyramid representation of an "expansive" or growing population. The young dependency ratio (0-14) is 0.67, elderly dependency ratio (60 or older) is 0.10, and the total dependency ratio is about 0.77, or there are roughly 77 dependents for every 100 working age persons. The United Nations (2007) projects population age structure in the Philippines to change significantly by around 2040 when total dependency ratio would drop to its lowest at about 0.60 and the country's population pyramid would begin to show a narrow base or a "constrictive" shape.

Figure 2. Age profile of population, Philippines, 1999 (in millions)

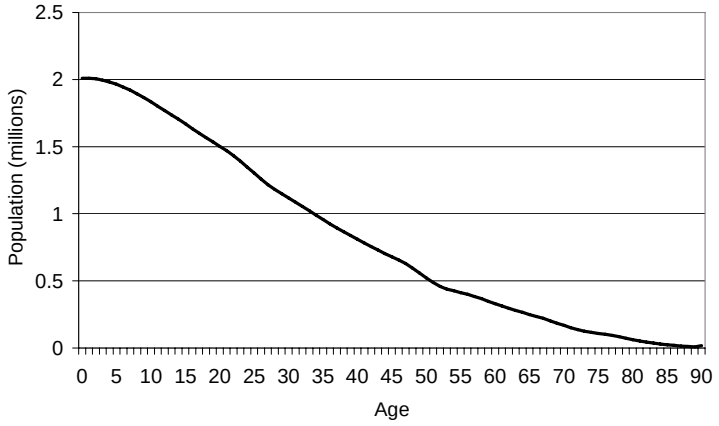
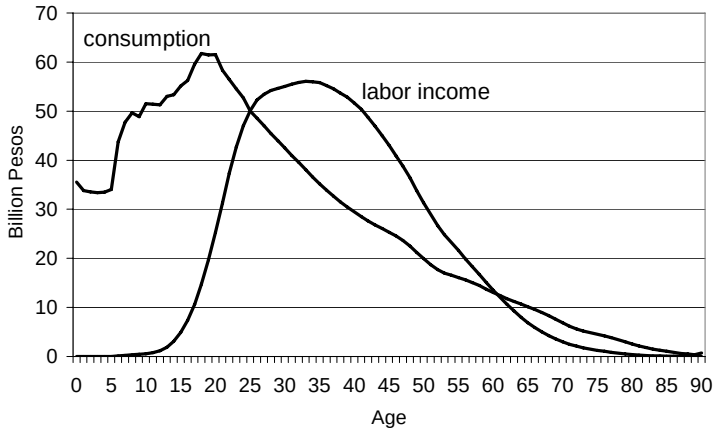


Figure 3. Age profile of aggregate consumption and labor income, Philippines, 1999, current prices (in PhP billions)



The aggregate age profiles for labor income and consumption in Figure 3 are obtained by multiplying the per capita means by age shown in Figure 1 with the population size at each age shown in Figure 2. The aggregate lifecycle deficit in Figure 4 is computed as the difference between aggregate consumption and income at each age shown in Figure 3. These aggregate values are summarized in broad age groups and in

tabular format in Table 2. The lifecycle deficit is 80 percent of consumption for those aged 0-25 (young deficit ages) and 46 percent of consumption for those 61 years and older (elderly deficit ages.) The population age structure magnifies the lifecycle deficit attributable to the younger age groups, becoming more than 14 times the size of the deficit attributable to the elderly. The lifecycle surplus recorded for the ages 26-60 is insufficient compared to the deficit, emphasizing the burden of raising and sustaining a very young population. The aggregate surplus amounts to about 43 percent of the combined deficit of the young and the elderly.

Figure 4. Age profile of aggregate lifecycle deficit, Philippines, 1999, current prices (in PhP billions)

IV. Age Profiles of Specific Consumption and Labor Income NTA Components

Table 2 summarizes in broad age groups the aggregate values for consumption and income components which are examined further in this section of the paper. The grand totals shown in this table for the various components may not exactly tally with the control totals shown in Table 1 because of rounding off in the age-specific computations.

Consumption consists of public and private components, with public consumption accounting for about 16 percent of total consumption in 1999. Each consumption component is composed of education, health and other types of consumption. Education and health expenditures in 1999 accounted for about 23 percent and 8 percent of public consumption expenditures, respectively, and 4 percent and 2 percent of private consumption expenditures, respectively. But taking the age dimension into account, education expenditures, for example, accounted for 37 and 7 percent of public and private consumption expenditures, respectively, for the population age 0-14. There is interest to analyze education and health consumption specifically because these are important inputs to building a country's human capital and improving the quality of the future workforce.

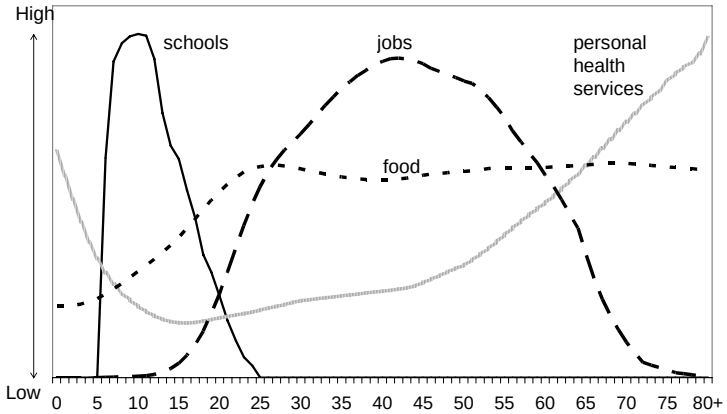
Labor income consists of earnings from paid employment and net income from self-employment, with the paid employment earnings accounting for about 56 percent of total labor income. Paid employment earnings include both earnings of resident and overseas Filipino workers.

Table 2. Aggregate consumption, labor income and lifecycle deficit by age group, Philippines, 1999, current prices (PhP billions)

		Age group			
NTA Component	*Total*	*0-14*	*15-25*	*26-60*	*61+*
LIFECYCLE DEFICIT	600	654	337	(461)	70
CONSUMPTION	2,413	654	628	980	151
Public	389	183	85	104	16
Education	88	67	21	0	0
Health	30	13	4	10	3
Other	271	103	60	95	14
Private	2,024	471	543	875	135
Education	91	32	60	0	0
Health	42	15	6	14	7
Other	1,891	425	478	861	128
Total	2,413	654	628	980	151
Education	180	99	81	0	0
Health	71	28	10	24	10
Other	2,163	528	537	956	142
LABOR INCOME	1,813	0	291	1,441	82
Earnings	1,026	0	210	794	22
Self-employment	787	0	81	647	60

Shown in Figure 5 are age profiles of service requirement cited in Herrin (1983) (taken from Corsa and Oakley, 1971). The profiles in Figure 5 suggest that a person exerts pressure on specific services differently at different points in his lifecycle. Personal health service requirements are high at infancy and early childhood as well as in older ages. Schooling requirements begin at around age 5 and ends at approximately age 20. Demand for employment begins from age 15 years and continues up to the retirement age of the individual. Food requirement is low at very young ages, rises as the individual approaches adult age and stays at a relatively fixed level at adult ages.

Figure 5. Relationship Between Service Requirement Per Person and Age (Source:L.Corsa & D.Oakley 1971 cited in Herrin 1983)



While the profiles in Figure 5 are for amounts of services to be consumed at each age and the profiles presented in this paper are for consumption in monetary terms, the profiles in Figure 5 can still be used as references for what general shapes to expect for the various consumption and income items. The age profile for jobs can be used as the reference for the shape that the income age profile is expected to take. In low-income countries, food tends to take the largest share of household spending. Thus, the age profile for food requirement makes a good reference for what the profile of other consumption (i.e., consumption excluding education and health) should look like. In general, the age profiles presented later on in this paper for the Philippines are shown to be consistent with the hypothesized shapes represented in Figure 5.

Current Consumption

The per capita mean profiles in Figure 6 reflect the observation made earlier from Table 2 that private consumption is about five times public consumption and this is generally true across all ages. Comparing Figures 7 and 8, per capita public consumption is seen to be targeted towards providing educational services in the primary and secondary school-attending ages, while per capita private consumption is highest among the tertiary school-attending ages. Expenditures for child health care and elderly health care are prominent for per capita public consumption, but only for the elderly for private consumption. One may surmise that these patterns reveal household substitutions between public and private provision of health care and education. The shape of the age profile of private other consumption is driven primarily by the ad hoc equivalence scale used to distribute household other consumption expenditures to its members. The allocation method assigned weights to household members on the basis of age as follows: 0.4 for children age 0 to 4; linearly increasing from 0.4 to 1.0 from age 5 to 19; and 1.0 for ages 20 and older. Public other consumption expenditures are assumed to benefit all individuals in a population equally, hence the equal per capita means across all ages.

Figure 6. Age profile of per capita public and private consumption, Philippines, 1999, current prices (in PhP thousands)

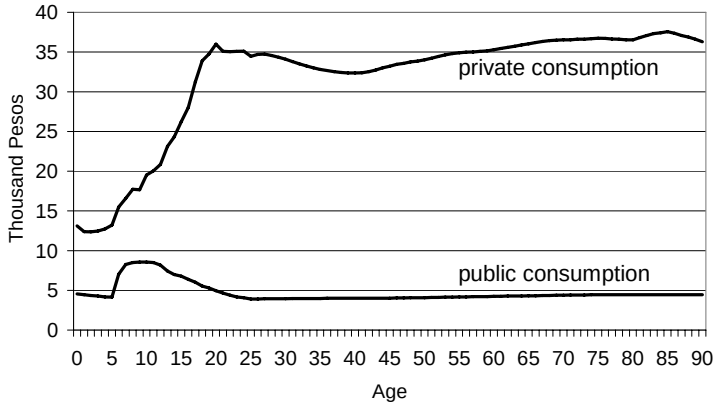


Figure 7. Age profile of per capita public consumption, Philippines, 1999, current prices (in PhP thousands)

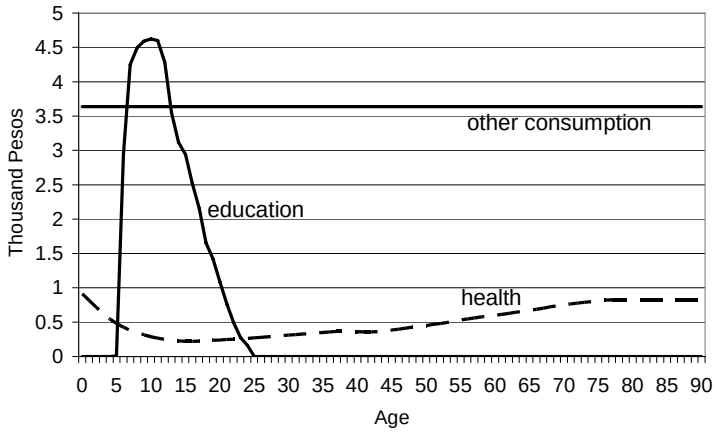
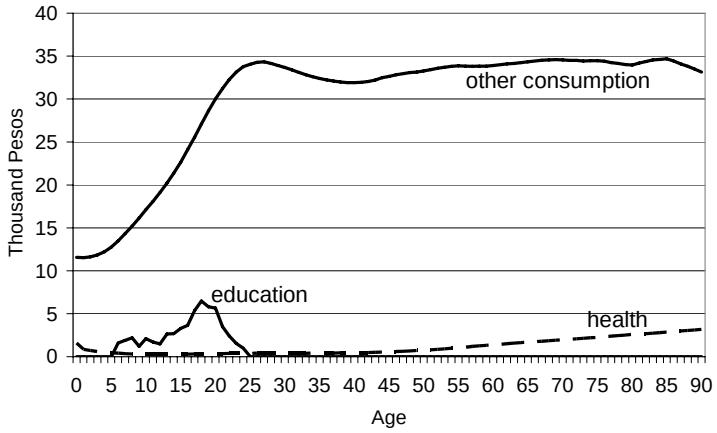


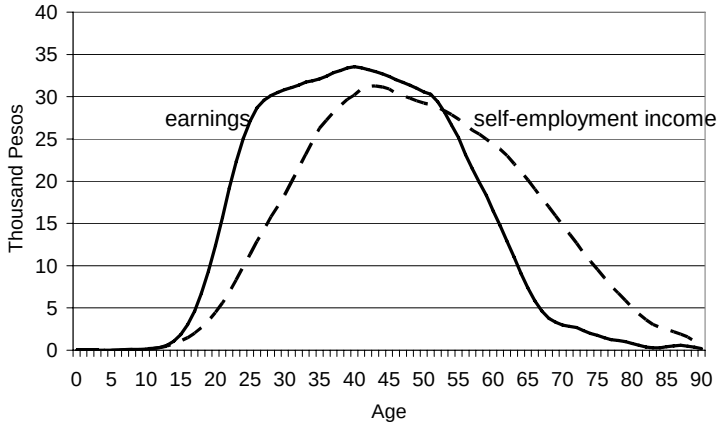
Figure 8. Age profile of per capita private consumption, Philippines, 1999, current prices (in PhP thousands)



Labor Income

The age profiles shown in Figure 9 for both paid employment earnings and self-employment income have the expected inverted U-shape, with per capita means peaking at 40 and 43 years old, respectively. The age profiles, however, differ in terms of general shape. The wage earnings profile shows per capita means rising sharply between ages 20 to 25, staying relatively high and flat between 25 to about age 55 and then declining sharply thereafter. In contrast, the self-employment income profile shows per capita means increasing more gradually from age 15 to the peak level at age 43 and then gradually declining thereafter. Per capita means for earnings are generally higher than the means for self-employment income before age 55 years, but the pattern reverses after age 55. Schooling and retirement patterns are two factors that may explain the shapes of the two income profiles.

Figure 9. Age profile of per capita labor income components, Philippines, 1999, current prices (in PhP thousands)



Higher education in the Philippines is completed at around age 20 to 24 years. Data from the 1999 APIS (Table 3) show that wage earners generally have higher levels of education – more specifically, the percentage with college education is significantly higher. The sharp rise in the per capita wage earnings of the age group 20-24 is explained by the sudden increase in the number of salaried workers after age 20 because these type of workers are more likely to complete college education first before joining the workforce. This pattern is not observed in the profile of the self-employed because of the lower percentage of college-educated in this group.

Table 3. Distribution of employed persons by level of schooling completed, by type of worker, Philippines, 1999 (Source: 1999 APIS)

Highest Schooling Level Completed	*Wage Earners*	*Self-employed Workers*
Elementary	34.1	53.7
Secondary	33.9	30.9
Post-Secondary	2.9	1.9
College or Higher	29.1	13.5
All Levels	100.0	100.0

Per capita mean income is higher for self-employment income after age 55 because of a difference in the retirement patterns of wage earners and the self-employed. Formal sector paid employment is governed by provisions in the Philippine Labor Code of 1974 regarding retirement. The Labor Code states that employees who have reached the age of 60 years or more, but not beyond 65 years which is the declared compulsory retirement age, may retire from work. Thus, by age 60, the number of paid employees drops substantially and it follows that aggregate total earnings at these older ages would be significantly reduced. On the other hand, those that retire from formal sector work may in fact stay economically active and go on to be self-employed workers. Data from the 1999 APIS show that about 40 percent and 30 percent of those who are age 70 and age 75, respectively, remain active in the labor force. The data additionally shows that the proportion of workers who are self-employed increases with age as follows: ranging

from 30 to 50 percent for the age group 20-55; about 60 percent for the age group 55-59; about 70 percent for the age group 60-64; and at least 80 percent at age 65 or older. It is to be expected then that aggregate income from self employment will begin to exceed aggregate earning from paid employment for ages around and after the compulsory retirement age.

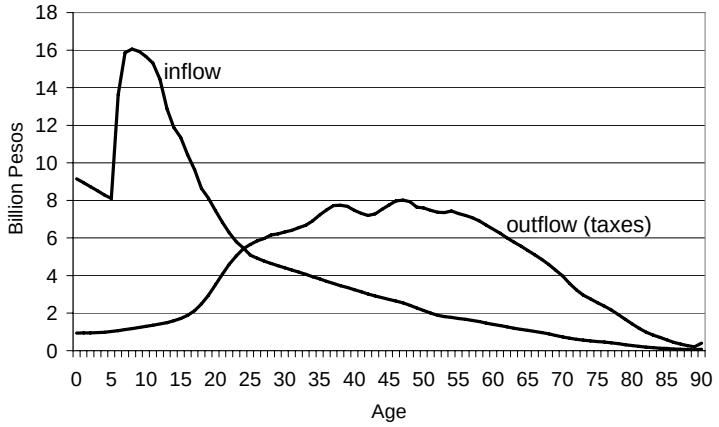
V. Intergenerational Reallocation of Resources

As explained previously in Section II, the deficit or surplus of an individual, a household or a nation must be matched by age reallocations consisting of net public transfers, net private transfers, and asset reallocations. Resource reallocations in the Philippines done through each of these systems are examined in terms of age profiles of inflows to identify the age groups of recipients of resources and age profiles of outflows to identify the age groups providing the resources. Then the net resources taken or given by each age group through all systems combined are summarized at the end of this section.

Public Transfers

Public transfer is one means by which resources are reallocated from the surplus to the deficit age groups. The age profile for aggregate inflow of public domestic transfers shows that a sizeable amount of public transfers go towards the provision of basic education (Figure 10). The aggregate outflow, which is composed of direct and indirect taxes, shows that financing is somewhat spread out across the different ages owing to consumption taxes. But as expected, the bulk of tax payments are collected from the working ages.

Figure 10. Age profile of aggregate public domestic transfers, Philippines, 1999, current prices (in PhP billions)

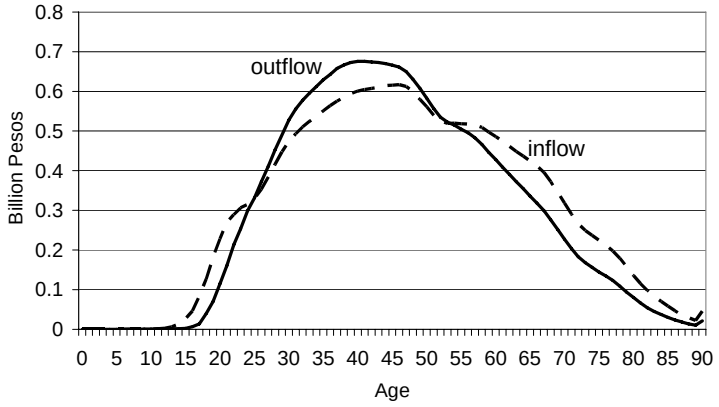


Private Transfers

Private domestic transfers made through households consist of those made between households (inter-) and those made among members of the same household

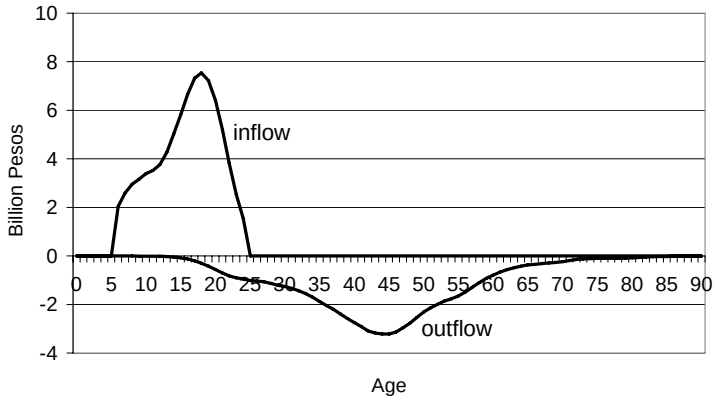
(intra-). For inter-household aggregate domestic transfers, the age profile of recipients (inflows) is observed to be wider compared to that for the contributors (outflows). That is, inflows exceed outflows at the young and older ages. This finding shows that households with the young and elderly heads, while also making contributions to other households, are on average net recipients of inter-household transfers. (Note that given the closed economy assumption used in NTA, aggregate inflows are set equal to aggregate outflows. It is not atypical, however, for household surveys to yield aggregate inflows and outflows that do not match. It is interesting to note that in other countries, households report gifts given usually exceeding gifts received, unlike the case of the Philippines.)

Figure 11. Age profile of aggregate (private) inter-household domestic transfers attributed to the household head, Philippines, 1999, current prices (in PhP billions)



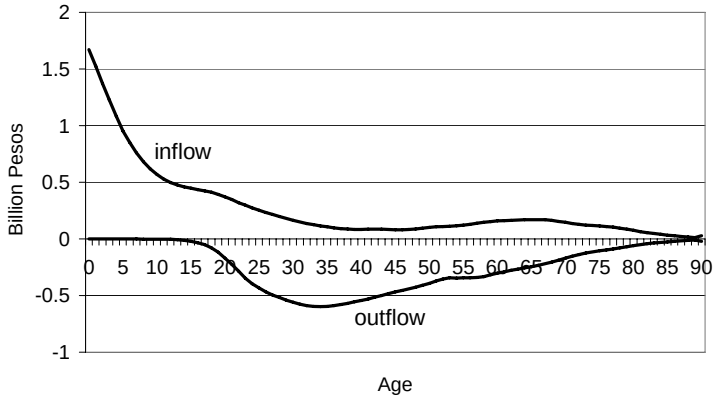
Intra-household transfers in the synthetic model of familial transfers in NTA are also formulated in terms of inflows to and outflows from age groups and by type of consumption item. For education consumption, inflows occur with pronounced sharp increases towards ages 7 and 18, or when most young people enter elementary or tertiary level school (Figure 12). Significant amounts of corresponding outflows come from age groups 20-65, with a hint of two humps that capture co-residence of parents with the identified school attendees.

Figure 12. Age profile of aggregate (private) intra-household transfers for education consumption, Philippines, 1999, current prices (in PhP billions)



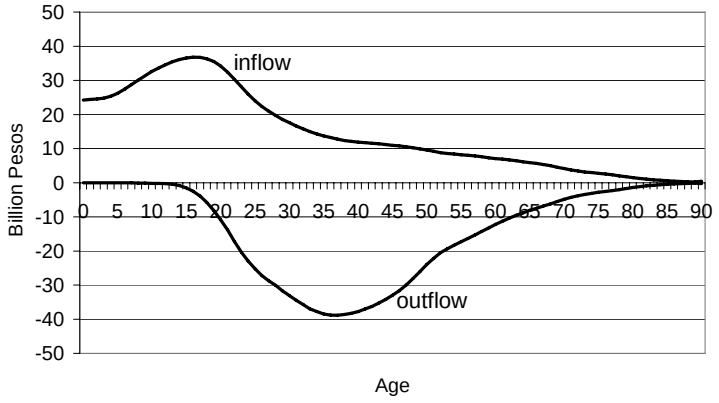
For health consumption, the age profiles in Figure 13 show intra-household inflows for health consumption going mostly to the young, most especially for newborns and children under age 5. Outflows are spread out but rise early on, again due to co-residence of parents with the very young

Figure 13. Age profile of aggregate (private) intra-household transfers for health consumption, Philippines, 1999, current prices (in PhP billions)



In Figure 14 the age profile of intra-household inflows to finance consumption other than for health and education increases as individuals approach adulthood (but while still in deficit) and then starts to declines (despite increasing consumption requirements) as individuals begin to pay their own way and enter the surplus ages. Outflows are spread out and concentrated in the working ages.

Figure 14. Age profile of aggregate (private) intra-household transfers for other consumption, Philippines, 1999, current prices (in PhP billions)

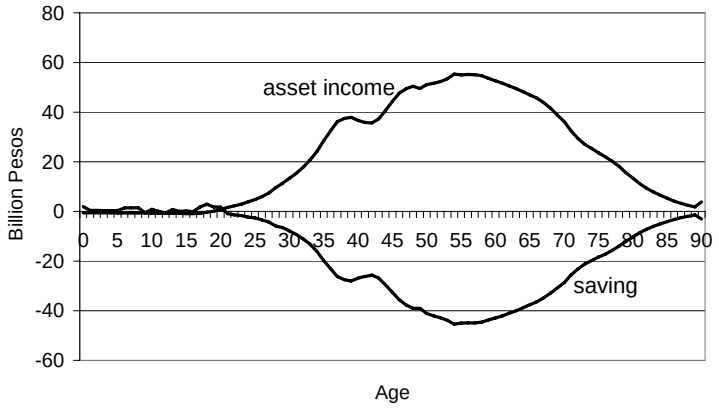


In all of the three components of private consumption, the median ages for aggregate intra-household inflows and outflows show a downward direction of movement of resources. The median ages for inflows are 16 for education, 12 for health and 20 for other consumption. The median ages for outflows are 39 for education, 41 for health and 43 for other consumption. Thus, resources are moving from older age groups towards younger age groups. This pattern is expected given the huge life-cycle deficit for the young relative to those for the elderly as shown in Table 2.

Asset Reallocations

In the Philippine NTA, the consumption of any age group not financed by the group's own earnings from work and by net public and private transfers to the group is attributed to net asset reallocation. Similar to the NTA public and private transfer components, asset reallocation also consists of inflows (all types of asset income) and outflows (financial resources put away as saving). In Figure 15, aggregate asset income (inflows) are observed to be earned soon after entering the surplus ages, increases up to age 60 and then declines. The rise in the total asset income up to about age 55 is a reflection of the ongoing accumulation of assets while individuals are in their productive ages. Outflows or saving are observed to get larger with age, but also only up to age 55.

Figure 15. Age profile of aggregate asset-based reallocations, Philippines, 1999, current prices (in PhP billions)



A Summary of Age Reallocations

Net resources (i.e., inflows minus outflows) received or given by each age group through government transfers (TG), private transfers (TP) and asset reallocation (AR) are presented in per capita mean and aggregate terms in Figures 16 and 17, respectively. Negative values represent net outflows of resources from, while positive values represent net inflows of resources to, age groups.

The reallocation systems that support children are primarily public and private transfers. Private transfers accounted for 84 percent while public transfers accounted for the remaining 16 percent of total transfers to children. Public transfer share is higher at 22 percent for the elementary and high school ages (6-16 years.)

The reallocation system that supports the elderly, on the other hand, is mainly asset reallocation. For the young-olds age 61-72, asset reallocation accounts for 100 percent after negative net public transfers and negative private transfers (-32 percent) are netted out. For the mid-olds age 73-79, asset reallocation accounts for 95 percent, private transfers 6 percent and public transfers –1 percent. For the old-olds age 80 and older, asset reallocation accounts for 80 percent, private transfers 19 percent and public transfers 1 percent.`

Figure 16. Components of age reallocations in per capita means, Philippines, 1999, current prices (in PhP)

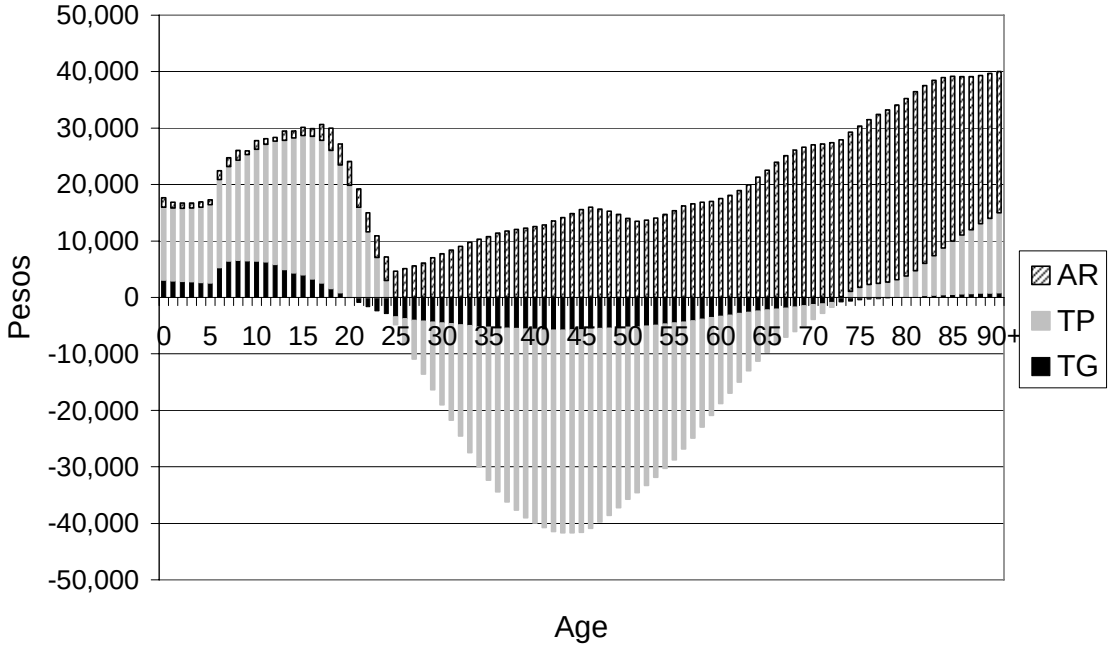
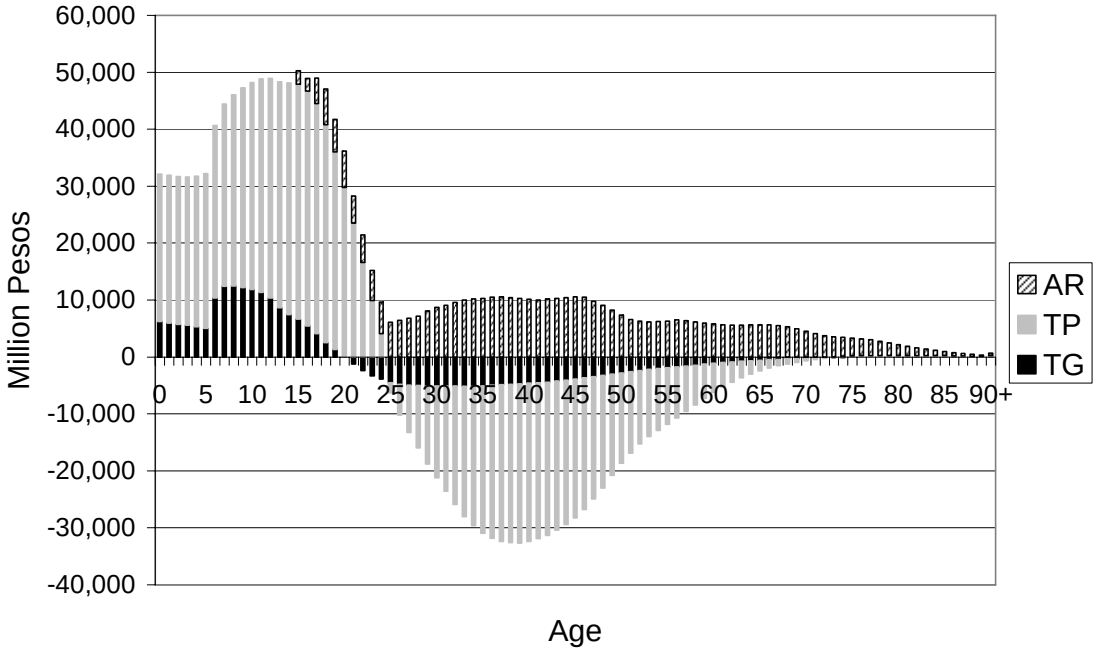


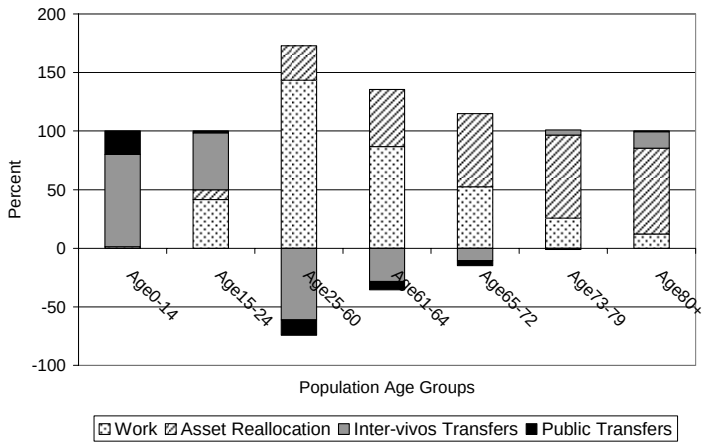
Figure 17. Components of age reallocations in aggregate values, Philippines,1999, current prices (million PhP)



VI. Finance of Consumption

The financing of consumption of the young and the elderly deficit age groups are shown in Figure 18. The financing of consumption of the working age groups is also shown for completeness. The older ages are split into separate age groups at ages where public and private transfers switch from being negative to positive. Private transfers become positive at age 73 while public transfers become positive at age 80.

Figure 18. Finance of Consumption, Philippines, 1999



The financing of consumption of children up to age 14 is primarily by transfers, with private transfers 79 percent, public transfers 20 percent and a very small 1 percent from own earnings. For the age group 15-24, consumption is still heavily supported by private transfers at 48 percent, but financing from own earnings is already very significant at 42 percent of this group's consumption.

Consumption of the elderly, on the other hand, are financed from own earnings, asset reallocation, private transfers (starting age 73) and to a very small extent from public transfers (starting age 80.) As expected, the share of elderly consumption financed by own earnings declines while the share of asset reallocations increases with age. Interestingly, the young-olds continue to transfer funds, by both private and public means, to other age groups.

VII. Summary of Findings and Implications

Main Findings

The main findings of the study are summarized as follows:

1. Filipinos incur lifecycle deficits and do not become self-sufficient until after age 25, lifecycle surpluses are generated for the next 35 years, and at age 61 consumption starts to exceed labor earnings and lifecycle deficits are once again

incurred. Thus, the Filipino deficit age groups consist of two groups: 0-25 year olds or the young deficit group, and the 61 and older or the elderly deficit group.

2. In 1999, the estimated aggregate lifecycle deficits for the young and elderly combined amounted to about PhP 1,061 billion in current prices, while surpluses generated by the working age group amounted to PhP 461 billion, or an excess of PhP600 billion of deficits over surplus. The young accounted for 93 percent while the elderly accounted for 7 percent of aggregate lifecycle deficits.

3. The mix of systems that support the consumption of Filipinos in the deficit ages differ between the young and the elderly groups. The mix also changes with age for the elderly deficit group.

4. The financing of consumption of children up to age 14 is primarily by public and private transfers. For the age group 15-25, about half of consumption is already paid for by own wages but a significant part remains to be supported by private transfers.

5. Consumption of the elderly is financed by own earnings, asset reallocation, private transfers (starting age 73), and to a very small extent by public transfers (starting age 80).

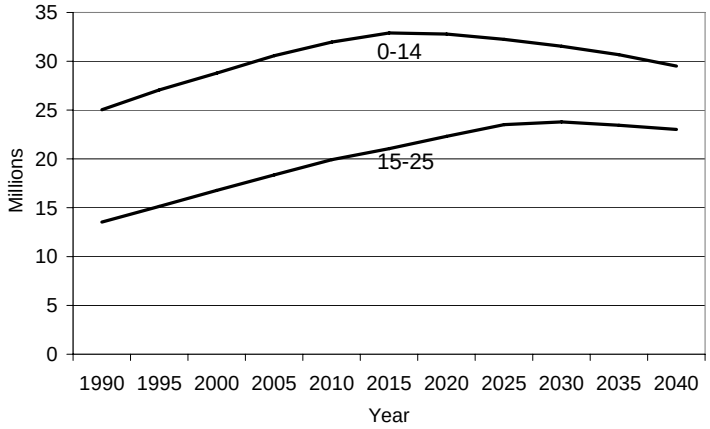
Implications

The implications that the mix of support systems have on the welfare of the deficit age groups and the economy in general are many, and thus the discussion below provide comments only on the following selected aspects: equity in the distribution of resources among those belonging to the deficit groups, sustainability of the systems of support, general social welfare of the deficit groups, and potential growth of the economy. The implications are discussed separately for the young and elderly deficit groups.

The support for the deficit group 0-14 years old is made equally through private and public transfers. Public provisions are distributed more equitably among income groups compared to household income. For example, government health expenditures were found to be the least concentrated in specific income groups compared to other types of health financing such as household out-of-pocket and private health insurance (Racelis et. al. 2006). The effects of the inequality of household income distribution (and of private intra-household transfers distribution) on the consumption of children of age 0-14 is then, to some extent, alleviated by the sizeable public transfers received by this group. On the other hand, support for the deficit group 15-25 years old come from their own earnings and from private transfers. There is no government provision to cushion this group from the effects of income inequality on their consumption. These young people in low-income households would be receiving inadequate levels of support for their consumption because the pools of resources from which intra-household transfers are drawn are low.

The existing support systems for the young deficit group, even public transfers, could feasibly be maintained in the future since the size of this group will stop growing soon and, as shown in Figure 19, is even projected to decline. The aggregate resources required by this group may even go down in the future.

Figure 19. Size of population age 0-14 and 15-25, Philippines, 1990-2040



Work among the young deficit group exists, as evidenced by own earnings being reported by the group. It is a social welfare concern particularly if the workers are under 15 years of age. The Philippine Labor Code of 1974 set the minimum age of employment at 15 years and furthermore prohibits the employment of persons below 18 years of age in hazardous work (DOLE, 1974.) If work among the young also means permanently leaving school, then another cause for concern is the possible long-term consequences on the quality of the country's future workforce.

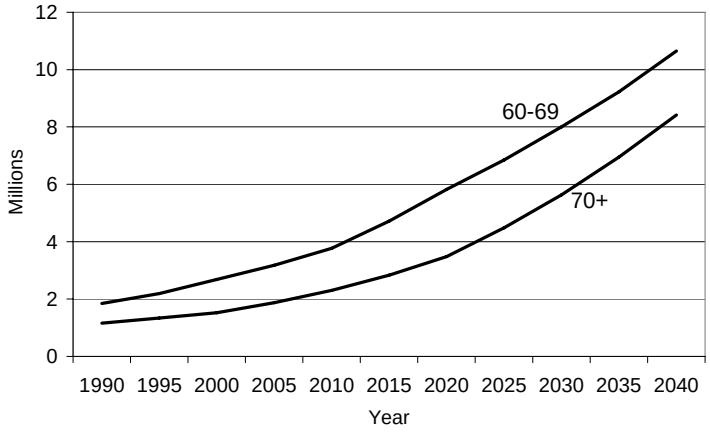
Unlike the young deficit group, the elderly deficit group gets very little support through public transfers. The consumption of the elderly is financed mainly by their own earnings and revenues from assets, including pensions. The limited public transfers to the elderly imply limited leverage for the government to directly influence the level and distribution of the elderly group's resources. The distribution of resources among the elderly is thus driven mainly by the general distribution of earnings and assets across households. In Estudillo (1995), earnings in the Philippines are shown to be unequally distributed across households but even more so for non-wage or asset-related types of income. The inequality of income distribution, specifically, becomes an elderly social welfare concern if it manifests in a disproportionate share of households with elderly members belonging to the bottom income decile. In the Philippines, based on data from the 1999 APIS, more than 13 percent of households with elderly members are in the bottom decile, but then a disproportionate share of households with elderly, also about 13 percent, is also to be found in the top income decile.

Many elderly continue to work for pay, as evidenced by the high proportion of their consumption financed by own earnings. The studies by Domingo and Asis (1997) and Domingo et al. (1994) found why the elderly choose to continue working. The

reasons include, among others, the need to support themselves, wanting to improve their children's economic situation, and wanting to stay active (for exercise and recreation) for health reasons. Should work among the elderly be viewed as a social concern? If the purpose for working is because they have no choice but to support themselves in order to survive, then there can be cause for concern. First, this paper found elderly earnings on average to fall below their consumption requirements and this implies that some elderly who are relying solely on their own earnings may be adjusting their consumption downwards. Second, the flow of earnings will become irregular because it is inevitable that health and physical capacity to work deteriorate as age increases.

Resources required to support the elderly deficit group will be increasing in the future because the population size of this group, contrary to the pattern for the young, is projected to keep increasing as shown in Figure 20.

Figure 20. Size of population age 60-69 and 70+, Philippines, 1990-2040



How should the increasing requirement of the elderly be provided? Direct transfers, publicly or privately, from surplus age groups was not sufficient in 1999 to cover aggregate lifecycle deficits of the young and the elderly deficit groups at the same time (Table 2). It is unlikely that transfers will be sufficient to cover the lifecycle deficit of the elderly in the future since there will still be the young to be supported and especially when aggregate deficits of the elderly will continue to grow as the size of the elderly population increases. The elderly can continue to work for pay to moderate the increase in lifecycle deficits, but this raises elderly welfare concerns as described above. The other option is to encourage asset accumulation in individuals during their productive years and to rely on asset reallocation thereafter, which the government can support by providing the necessary environment and institutional arrangements to expand the coverage and sustainability of the pension fund system. These means of preparing for the future consumption of the elderly are actions that may contribute to increasing the stock of reproducible capital, i.e. pooled funds get invested instead of being used for consumption goods, and hence increase the productive capacity of the country.

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