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SAVINGS AND WEALTH CREATION IN UGANDA: EVIDENCE FROM NATIONAL TRANSFER ACCOUNTS

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1 Introduction and Motivation

While significant progress has been achieved in the reduction of child mortality, Uganda is still struggling with reducing the fertility rates and this has resulted into a high population growth rate with a large youth population. Managing the youthful population requires that the demographic dividend and structural change are harnessed to drive more rapid and sustainable economic growth. The burden of the youth on the working population (child dependency ratio) continues to be high and therefore constraining the capacity of households to save and get on board to the wealth creation process currently advocated for by government. Available statistics from UBOS show that over half of Uganda's population (57%) is under the age of 15 years, and over half the labor force is under the age of 30, youth aged 15 to 24 years comprising 23.8%, and youth aged 18 to 30 years comprising 24.4%. This bulging youth population calls for urgent need to simultaneously reduce both child mortality and fertility rates by government investing in both education and health sectors if Uganda is to benefit from the demographic dividend.

In 2014, the National Planning Authority (NPA), with support from United Nations Population Fund (UNFPA), published a demographic dividend report titled "Harnessing the Demographic Dividend: Accelerating Socioeconomic Transformation in Uganda." The report aimed to assess Uganda's prospects of harnessing the demographic dividend in light of Vision 2040 — "A transformed Ugandan society from a peasant to a modern and prosperous country within 30 years". The results of the study were used to inform the development of the Second National Development Plan (NPD II). In particular, the report outlines three key findings:

i. Uganda's demographic indicators and emerging economic opportunities can be turned into a sizable demographic dividend that can propel the country to achieving the socioeconomic transformation envisaged in Vision 2040;

ii. Under the Business as Usual Scenario, Uganda would achieve limited economic growth and development, and the per capita GDP would increase from USD 506 in 2011 to USD 927 in 2040, and;

iii. If the country prioritizes economic, social and demographic factors to achieve the socioeconomic transformation envisaged in Vision 2040, this would result into per capita GDP of USD 9,567.

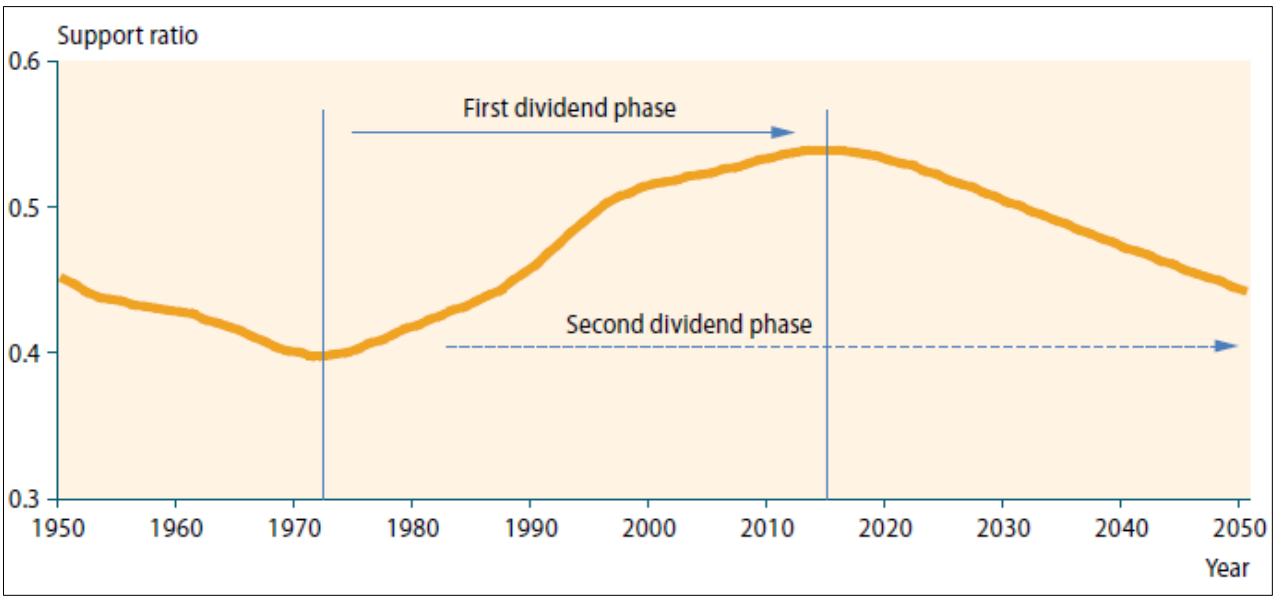
The above key findings are indeed at a very high macroeconomic level and would be difficult to understand how these high level results would be achieved. To achieve per capita income of USD 9,567 by the year 2040 as envisioned in the Vision 2040, it is imperative to understand the intergenerational flows of resources in an economy by analysing the behaviour of individuals over their lifecycle in terms of consumption, incomes, dependency, transfers and savings.

The generational economy can be well appreciated by analysing the "*economic lifecycle*" of individuals, which is characterised by the age pattern of labour income and consumption of public and private goods and services. The economic lifecycle typically shows that populations concentrated in working ages can support a higher level of consumption than population concentrated in the dependent ages for whom consumption exceeds income. This life cycle deficit

(LCD) of the dependent age groups is financed by age reallocations in terms of intergenerational transfers and asset-based reallocations (Ladusingh and Narayana, 2011). Indeed, people consume considerably more than they produce through their labour over extended periods at the beginning and the end of their life. In other words, children and the elderly consume more than they produce while those in the prime working ages not only support their own consumption but also that of the economically dependent segment of the society (Ladusingh and Narayana, 2011).

Countries with shrinking numbers of children due to fertility decline and large shares of working-age people can raise their rates of economic growth and standards of living. This phenomenon is often referred to as the "*first demographic dividend*" or window of economic opportunity (Lee and Manson, 20006), because even with no other changes in the economy, income per person will increase. The dividend in this case is usually quantified using the Economic Support Ratio (ESR) – the ratio of the number of workers adjusted for age-specific variation in work effort and productivity to the number of consumer adjusted for age-specific variation in needs. Over the demographic transition the support ratio rises to a high and favourable peak and then declines as the population ages (
Figure 1-1).

Figure 1-1: Illustration of Economic Support Ratio



***Source**: Figure 1.3, page 11: National Transfer Accounts Manual: Measuring and Analysing the Generational Economy by Department of Economic and Social Affairs, Population Division of United Nations.*

In light of the above, how rapidly the support ratio increases and how high a peak it reaches in Uganda will depend on the specifics of demographic change and on key features of the economic lifecycle. The support ratio will increase more rapidly in Uganda if fertility decline is more rapid. The support ratio will also increase more rapidly if fewer young adults emigrate in search of better economic opportunities. Of these two forces, however, fertility decline is the more important[1].

[1]*The support ratio (SR) and the dependency ratio (DR) are similar measures of population age structure. In some studies the support ratio is defined purely in demographic terms as the population in the working ages relative to the population in the consuming ages,*

It is within this context that, the National Population Council (NPC), and UNFPA commissioned an independent study on Harnessing Demographic Dividend using the National Transfer Accounts methodology, to examine the extent to which Uganda will be able to meet its aspirations of reaching upper middle-income status by 2040 given its current dependency ratio by age profiles. The findings of this study will inform wide-ranging policy planning and implementation of demographic developments in Uganda.

1.1 Objectives of the Study

The general objective of this study was to use the National Transfer Accounts (NTA) methodology to assess how Uganda will potentially be able to benefit from the demographic dividend given the current lifecycle behavior of individuals. The specific objectives are to:

1. Assess the current dependency and support ratios of individuals by examining their consumption and incomes over their life-cycle;
2. Assess the intra-household transfers as well as transfers between government and individuals and the extent to which these transfers could be used to accelerate achieving the demographic dividend; and
3. Assess the savings and assets accumulation process of individuals and whether the current savings behavior would support the expected growth in per capita income by 2040.

1.2 Research Questions

Achieving the above objectives requires answering the key research question of "How Uganda can capture and maximize the potential benefits presented to it by its changing demographic composition over the coming decades?" This question has several policy implications and therefore requires answering the following specific questions if the findings of the study are to inform policy design and discourse. Specific research questions included the following:

(i) Given the current dependency and support ratios of individuals, to what extent can government influence the existing trends by creating employment opportunities especially for the youth population;

(ii) Given the current intra-household transfers as well as transfers between government and individuals what should government do to accelerate achieving the demographic dividend;

(iii) What are the specific programs (e.g in education, health or family planning) that are currently underfunded by either the private or public sector;

(iv) Given the current savings and assets accumulation process of individuals, how feasible is it to meet the aspirations of Uganda joining the middle-income status as stipulated in the NDP and Vision 2040? What will it take to achieve this status?

equivalent to the total population. The dependency ratio is the population in the non-working ages relative to the population in the working ages. The working ages are often considered to be 15-64 but the exact definition varies from study to study. These two demographic measures are closely and inversely related: SR = 1/(1+DR). Which demographic measure is employed is often a matter of analytic convenience with the support ratio being a more convenient measure when considering the macroeconomic effects of changes in age structure.

2 Literature Review

There is a growing body of literature concerning demographic dividends and the National Transfer Accounts approach. Whereas the conceptual foundations of National Transfer Accounts (NTA) can be traced many years ago (Samuelson, 1958; Diamond, 1965; Willis, 1988; and Lee, 1994a and 1994b), it is only recently that many studies have been conducted in the subject area. For example, the most comprehensive discussion of NTA and estimates of accounts for 23 countries are provided by Lee and Mason (2011b). Developed by Lee et al. (2006), the National Transfer Accounts (NTA) framework aims at creating an understanding of the generational economy in terms of monetary transfers by age and overtime (Lee and Mason 2011b). In other words, NTA explores how different generations acquire and use economic resources.

NTAs are consistent with standard National Accounts as formulated by the United Nations System of National Accounts (SNA) (Lee 1994a and 1994b). However, they go beyond National Accounts in two important ways. First, they add an age dimension to most variables in the accounts such as consumption, labor income, saving, asset income of various kinds, tax payments and public benefits received. Second, they provide estimates of private transfers made and received, both within households and between households (Lee 1994a and 1994b).

The channels of intergenerational monetary transfers have been identified in the literature. The most common and conventional channel is the downward channel where monetary transfers move from parent to child or grandparent to grandchild (Albertini et al. 2007; Attias-Donfut et al. 2005; Kohli 1999; Lee and Donehower 2011). However, Lee and Donehower (2011) present an exception for some Asian countries where the elderly remain net givers through their seventies or longer. It has been observed that the elderly receiving pensions can transfer money received from government to the young ones who are still in the school going age bracket or those who are still searching for a job without any source of earning (Kohli 1999). This type of transfers is strongly influenced by the parental financial resources, the needs of the child, and the frequency of contact.

The macro-level factors influencing the patterns of the resource flows across generations have been identified as structural, institutional, and cultural (Kohli 2004). Under the structural proposition, the resource flows across generations seems to take place indirectly through sharing various core facilities like shelter, transportation and others. The cultural factor determines the social ties that an individual might have with the rest of the family members and this greatly influences intergenerational monetary transfers in terms of the amount to be transferred, to whom and for how long. The institutional environment is another factor influencing intergenerational money transfers. This concerns the legal and regulatory framework determining someone's obligation to support other family members. But the amount to be transferred under the institutional set up may depend on the cost of social services like health and education (Kohli 2004). Albertini et al. (2007) find that among Nordic, Southern, and Continental European countries, regional differences in welfare regimes are related to the frequency and degree to which family members choose to financially support one another. Others observe an inverse relationship between the availability of

public transfers within the welfare structure and private monetary transfers (Lee and Donehower 2011).

Literature has also emerged on the National Time Transfer Accounts (NTTA) which analyzes the intergenerational time transfer especially in the perspective of gender, age and household composition. It has been argued that time transfers especially within the household is almost unidirectional flowing from women to men. Women have been found to be the primary producers within the household and consequently incurring surpluses across the life cycle. Men are thin within the household in terms of contribution to household production at all stages (Anxo et al. 2007; Apps and Rees 2005; Donehower and Mejía- Guevara 2012; Phananiramai 2011). A comparative study of nonmarket activity in Western Europe and the United States have found the gender gap to be widest in Italy, followed by France, the United States, and Sweden. This gender gap is most prominent after marriage and before age 59 (Anxo et al. 2007). A study of household production in Thailand finds that household production peaks at age 31 for Thai women, but remain relatively high between approximately ages 25 and 70 (Phananiramai 2011).

A study by Lee and Mason (2011a) provides evidence to the fact that there is no significant difference between the production and consumption trajectories in the life cycle of both developed and developing countries. They find that deficits between labor income and consumption exist up to age 26 and re-surface after age 60. Lee and Mason (2011a) document that countries with an aging population like the case of Germany, display a much higher deficit among the elderly than those with younger populations. Amporfu et al. (2014) analyzed the demographic dividend for Ghanausing the National Transfer Accounts Approach. The authors found that lifecycle surplus runs for about 30 years and peaks around age 50. Additionally, they provide evidence that there is early entry in the labor force as well as late exit probably because of the large informal sector in the country. Furthermore, they argue that Ghanastarted enjoying the first demographic dividend in 1990 and is expected to peak around 2031. Soyibo et al. (2012), used the National Transfer Accounts (NTA) approach to estimate and compare the sources and size of economic lifecycle deficits of Nigeria and Kenya. They find that both countries have economic lifecycle deficits that cannot be offset by labor income, suggesting that individuals must rely on asset income and intergenerational transfers to finance the deficits. The findings of Soyibo et al. (2012) of an economic lifecycle deficit is similar to Lee and Mason (2011).

Oosthuizen (2013) investigates the resource flows across ages within the generational economy in the case of South Africa. The paper reveals that South Africans under the age of 30 and those over the age of 59 consume more than they earn in the labour market and so experience lifecycle deficits. The paper accounts for the impact of youth unemployment in South Africa in delaying the rise in labour income and a quick transition to surplus. Racelis and Salas (2007) applied NTA approach in the Philippines. They found that Labor income has the expected inverted-U shape, which peaks at age 42 and appears slightly skewed to the right. Consumption is strongly influenced by the shape of the ad hoc equivalence scale used to distribute household consumption to its members. The life-cycle deficits are recorded for ages 0-24 years and 62 years and older.

From the above analysis, it is clear that literature on NTA in the African perspective is still scanty. Much of the work has been done for Europe, America and Asia. There are a few studies in Africa and to the best of our knowledge; there is no study that particularly focused on Uganda. Therefore, the current study on the intergenerational transfer of resources in Uganda represent a real value added and will be instrumental in influencing government policy.

3 Methodology and Data for Deriving Uganda's Lifecycle Deficit

3.1 Introduction

To achieve the objectives of this study, it is imperative to understand the intergenerational flows of resources in an economy by analysing the behaviour of individuals over their lifecycle in terms of consumption, incomes, dependency, transfers and savings behaviours. To this end, we note that the economic system of Uganda is characterized by the coexistence of the public and private sectors in the production and consumption of goods and services, including ownership, management, and financing of social and economic sector activities. Moreover, Uganda is an open economy because its borders are open for international trade in goods and services as well as for international production (e.g., labour and capital). In fact, an increase in openness has been an important factor in the globalization of the Ugandan economy. To this end, we used the National Transfer Accounts Framework (see Mason et al. 2006) to capture the economic implications of a changing age structure based on the economic lifecycle.

3.2 The National Transfer Accounts Framework

The National Transfer Accounts (NTA) approach to quantifying the demographic dividend developments was developed by Manson et al. (2006) and is widely used to estimate demographic dividend in many countries. It provides a systematic approach to introducing age structure into the National Income and Products Accounts (NIPA) to describe intergenerational flows of resources in an economy. The NTA comprises an accounting system for measuring intergenerational reallocation of resources across ages at the aggregate level in a way that is consistent with the National Income and Product Accounts (NIPA) (NTA at flickr, 2010). Unlike the NIPA, which only estimates macro variables such as consumption and income that are delinked from population's age structure, the NTA is able to estimate the aggregate consumption and income for the population of each age in a given economy. Consequently, the NTA is an approach used to assess the economic performance of countries in relation to changes in the population structure (Lee et al., 2008). It has strong theoretical foundations based on the overlapping generation model (Samuelson, 1958 and Diamond, 1965).

The NTA methodology focuses on what is referred to as the generational economy, defined as: (1) the social institutions and economic mechanisms used by each generation or age group to produce, consume, share, and save resources; (2) the economic flows across generations or age groups that characterize the generational economy; (3) explicit and implicit contracts that govern intergenerational flows; (4) the intergenerational distribution of income or consumption that results from the foregoing (Lee and Mason, 2011, p.7). There are four activities that are central to the generational economy, namely working, consuming, sharing and saving (Mason and Lee, 2011b, p.7). Consumption occurs throughout the lifecycle, although the level varies by age. Productive employment, however, does not occur across all ages, particularly amongst the very young and the very old. As a result, the young and old are typically unable to finance their consumption on their own. Sharing and saving, then, represent the only means through which the young and old are able

to bridge this gap. Therefore, quantifying the demographic developments in a country like Uganda requires analysing the extent of the support ratio by age profiles.

The technical details of the NTA methodology are well explained in the NTA manual (Mason et al., 2009), as well as various other publications (see, for example, Lee and Mason, 2011). The aim of NTA is to be able to quantify economic flows for single-year age cohorts, from the very youngest to the very oldest. These economic flows are important because they reflect a fundamental feature of all societies: the economic lifecycle (Mason and Lee, 2011a, p.55). For any individual, inflows must equal outflows and the following identity holds:

$$Y^l(a) + \tau^+(a) + Y^k(a) + Y^{P+}(a) = C(a) + \tau^-(a) + +Y^{P-}(a) + S(a) \quad (1)$$

The left-hand-side of the identity comprise of inflows in terms of current labor income (Y^l), transfer inflows (τ^+), capital income (Y^k) , and property income(Y^{P+}), respectively. The right-hand side consists of outflows from the age group (a), in terms of consumption(C), transfer outflows (τ–*),* property income outflows (Y^{P-}), and saving (*S).*

The NTA flow account identity presented in equation 1, consistent with the national income identity, provides an empirical basis for computing Life-cycle Deficit (LCDs) and age reallocations. Rearranging the terms in equation (1), the economic life cycle consistent with the NTA framework and mechanism of transfers and reallocation of resources for each age cohort (a) can be written as:

$$[C(a) - Y^l(a)] = [\tau^+(a) - \tau^-(a)] + [Y^k(a) + Y^{P+}(a) - Y^{P-}(a) - S(a)] \quad (2)$$

The left-hand side of equation (2) presents the key variable of interest, which is$C(a) - Y^l(a)$and is defined as the life-cycle deficit (the difference between consumption and labor income at each age). In this study, we provide estimates of *LCD* made up of differences in consumption and labor income allocated by age group as well as public sector inflows and out flows. While the LCD tables—the LHS of equation (2)—provide a complete picture of NTA estimates, the details of the financing of the deficit is provided by the estimates of the right hand side variables which is beyond the context of this study.

3.3 Demographic Dividend Methodology

We follow Mason and Lee (2006) and Mason (2007) to formalize the demographic dividend. This is quantified and assessed in terms of the economic support ratio (ESR), which emphasizes the profiles of effective number of producers and consumers in the country. We start by defining the GDP per capita as in Equation (3):

$$\frac{Y(t)}{N(t)} = \left(\frac{L(t)}{N(t)}\right) * \left(\frac{Y(t)}{L(t)}\right) \quad (3)$$

Where *Y*(*t*) is the total output, *L*(*t*) is effective number of producers, and *N*(*t*) is the effective number of consumers.

Equation (3) states that GDP per capita comprises of the product of output per effective consumer as equal to output per effective producer and the support ratio (i.e. effective producers per effective consumers). The equation can be used to decompose economic growth to reveal the relationship of population growth with GDP per capita growth. Demographic dividend is defined as the growth rate of the support ratio, which can be obtained by taking the log of both sides of equation 3and differentiating it with respect to time:

$$\dot{y}_t = \dot{l}_t - \dot{y}_t^l \qquad (4)$$

Equation (4) reveals that the growth rate of output is equal to the sum of two components, which are the equivalents to the two demographic dividends. The first dividend corresponds to the growth of the support ratio. The second component is the second dividend, which is the rate of growth of productivity. It should be noted that given labour productivity, 1% increase in support ratio leads to 1% increase in per capita growth (Mason 2011).

In the NTA approach, the age profiles of consumption and labor income are calculated for each age in the population to give the age profiles of consumption and labor income. In the period of simulation for the demographic transition and dynamics, the associated support ratio is calculated holding the shape of the age profiles of consumption and labor income fixed, leading to the definition of the support ratio in Equation (5):

$$\frac{L(t)}{N(t)} = \frac{\sum_{a=0}^{w} \gamma(a)P(a,t)}{\sum_{a=0}^{w} \phi(a)P(a,t)} \qquad (5)$$

Where, $P(a,t)$ is the population aged a at time t, $\gamma(a)$ and $\phi(a)$ are the age patterns of labor income and consumption, respectively.

Equation (5) indicates that the support ratio measures the effect of age structure on the capacity of a population to contribute to current production. Ladusingh and Narayana (2011) note that using the age patterns of labor income and consumption—the parameters of the economic life cycle in the definition of the ESR in Equation (5)—clearly have an edge over ad hoc measures such as the total dependency ratio.

3.4 Data Sources and Estimation Techniques

To obtain estimates for the lifecycle *deficit* (LCD)—the difference between consumption (C) and production or labor income (YL), estimates must be obtained on the two main variables of interests—consumption and labor income components. It is important to note that age patterns of consumption (of public and private goods and services) and labor income must be consistent with NIPA. Table 3-1shows the process of data collection on the variables of interest for the estimation of components of the Uganda LCD.

Table 3-1: The Process of Data Collection

S/N	Variable	Micro data analysis	Macro data needed
1.	Lifecycle Deficit	Calculated as difference between No. 2and No. 11	Not applicable
2.	Consumption	Calculated as addition of No 3 and No 7	Not applicable
3.	Public Consumption	Calculated as addition of No 4, No 5 and No.6	Not applicable
4.	Public Consumption, Education	Age profile of student enrolment in government schools	Government financial statistics
5.	Public Consumption, Health	Age profile of spendingin government health Facilities	Government financial statistics
6.	Public Consumption, Other	Total government expenditure less expenditure on education and health	Government financial statistics
7.	Private Consumption	Calculated as addition of No 8, No 9 and No.10	Government financial statistics
8.	Private Consumption, Education	Age profile of spending by individuals on Education	Sectoral distribution of GDP
9.	Private Consumption, Health	Age profile of spending by individuals on Health	Sectoral distribution Of GDP
10.	Private Consumption, Others	National Household Survey	Sectoral distribution of GDP
11.	Labour Income	Calculated as addition of No. 12 and No. 13	Not applicable
12.	Earnings	Age profile of earnings of employees	Compensation of employees (GDP)
13.	Self-employment Labour Income	Age profile of earnings of self-employed Persons	Operating Surplus (GDP)
14.	Population by age	National Household Survey	

Data for the National Accounts was compiled from National Account Statistics and Statistical Abstracts compiled by UBOS. Other sources included the World Bank World Development Indicators. The population data (particularly population projections) was obtained from United Nations, Department of Economic and Social Affairs, Population Division (2013) and crosschecked with population projections from the USAID Demographic Dividend Model database.[2]

[2] We found population projections from UNDESA more realistic than the Uganda Census projections. For example, the Census reported a total population of 34.1 million in 2014 but the UNHS 2016/17 reported a population of 37.5

Micro data on labor income and the consumption of health, education, and other services (e.g., food, nonfood, housing, infrastructure) in the public and private (household) sectors are required for charting age patterns of labor income and consumption by sector in the Ugandan economy. To this end, the age profile allocation was derived from the 2012/13 and 2016/17 Uganda National Household Surveys (UNHS) collected by UBOS.

The UNHS is nationally representative survey designed to allow for reliable estimation of key indicators at the national, rural-urban, regional levels and separately for 10 sub-regions. The UNHS is collected following a two-stage stratified sampling design. At the first stage, Enumeration Areas (EAs) are grouped by districts and rural-urban location, and then drawn using Probability Proportional to Size (PPS). At the second stage, households, which are the Ultimate Sampling Units (PSU),are drawn using Systematic Random Sampling. The UNHS collects detailed information on demographic characteristics of respondents and all aspects of living conditions including health; education; housing; household income; consumption and expenditure; credit access; asset ownership and savings; market prices; and employment of household members.

million people, meaning that in just 2 years, the population increased by 3.4 million, making the annualized growth rate of 4.8% far higher than the actual growth rate of 3.01%

4 NTA Estimates: Financing Uganda's Lifecycle Deficit

This section uses National Transfer Accounts (NTA) Approach to estimate the lifecycle deficit (LCD) and hence the first demographic dividend for Uganda. The age profiles for consumption and labor income constructed from UNHS 2012/13 and UNHS2016/17 are presented, and subsequently used to construct the lifecycle deficits. Subsection 6.1 presents the profiles for public consumption. This is followed by presentation of age profile for private consumption (education, health, other consumption) in Sub-section 6.2 as well as the labour income profiles in Subsection 6.3. Lastly, Subsection 6.4 presents the estimates for lifecycle deficit.

4.1 Public Consumption in Education and Health

Public consumption is the value of goods and services individuals receive through the public sector. In Uganda, a large proportion of public expenditure (50.4% in 2012/13 and 54.6% in 2016/17) is accounted for by other consumption (e.g., security and defense). This is assumed to be allocated equally among all age groups. Public consumption of education and health account for 28.5% and 111.1% respectively in 2012/13. Similarly, in 2016/17, education and health account for 29.7% and 15.8% respectively. The shape of public consumption is influenced by both education and health. Whilst the shape of the public consumption for up to age 20 is influenced by public consumption on education, that after age 20 is influenced by the shape of public consumption on health (**Error! Reference source not found.**).

Table 4-1: Aggregate Control for Lifecycle Deficit for Uganda, 2012/13—2016/17

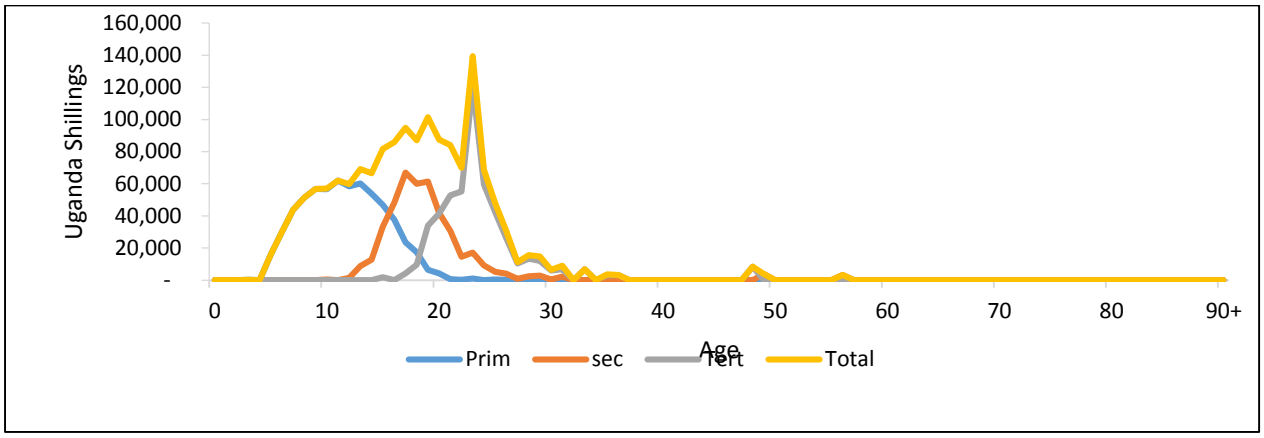
	2012/13 (Billions)	2016/17 Billions)
Total Consumption	**52,433**	**74,996**
Public Consumption	**5,095**	**7,405**
Education	1,454	2197
Health	1,075	1167
Others	2,566	4,041
Private Consumption	**47,338**	**67,591**
Compensation to employees	**1,403**	**2151**

Authors' *calculations based on UBOS National Accounts and Background to the Budget of MFPED.*

The public consumption profile for education reveals extremely large transfers to the younger population. Total public consumption on education increases sharply from age 4 peaking to age 19. It then declines sharply initially until age 22 (Figure 4-1). This result is similar with the public consumption profile in several other countries like Kenya (Mwabu et al., 2011) and Ghana (Amporfu et al.2014). A bigger share of public consumption on education is driven by spending on primary and secondary education. This is expected in light of the two government policies on education —UPE and USE. However, the per capita spending on each education level is small ranging between 59,000

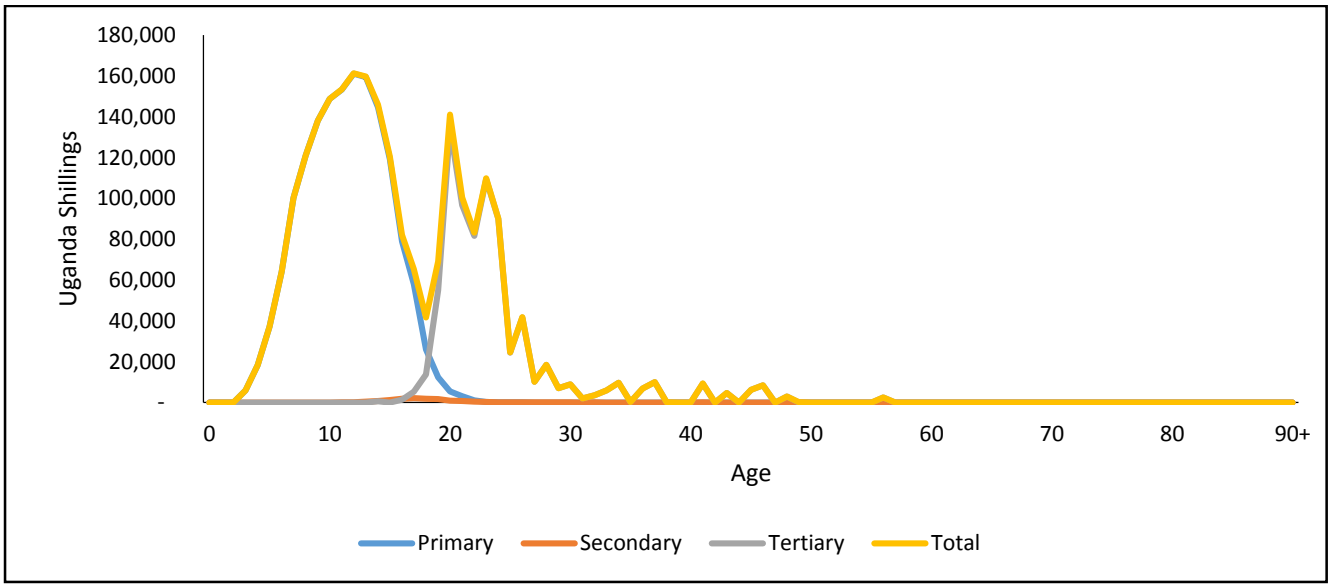
and 67,000 Uganda shillings per child per annum in 2012/13. The pattern for 2016/17 is similar but as mentioned earlier, the lower allocations to the secondary education sub-sector in FY 2016/17 lowers the per capita public spending so much the extent that public spending on education is largely influenced by the primary education sector (Figure 4-2).

Figure 4-1: Age profile of per capita Public Consumption Expenditures on Education by facility level (in Uganda Shillings), 2012/13



Source: Calculations based on UNHS2012/13 enrolment rates and MoES Unit costs for primary, secondary & tertiary education. Education spending is inflated to 2016/17 prices using GDP deflator for the education sub-sector.

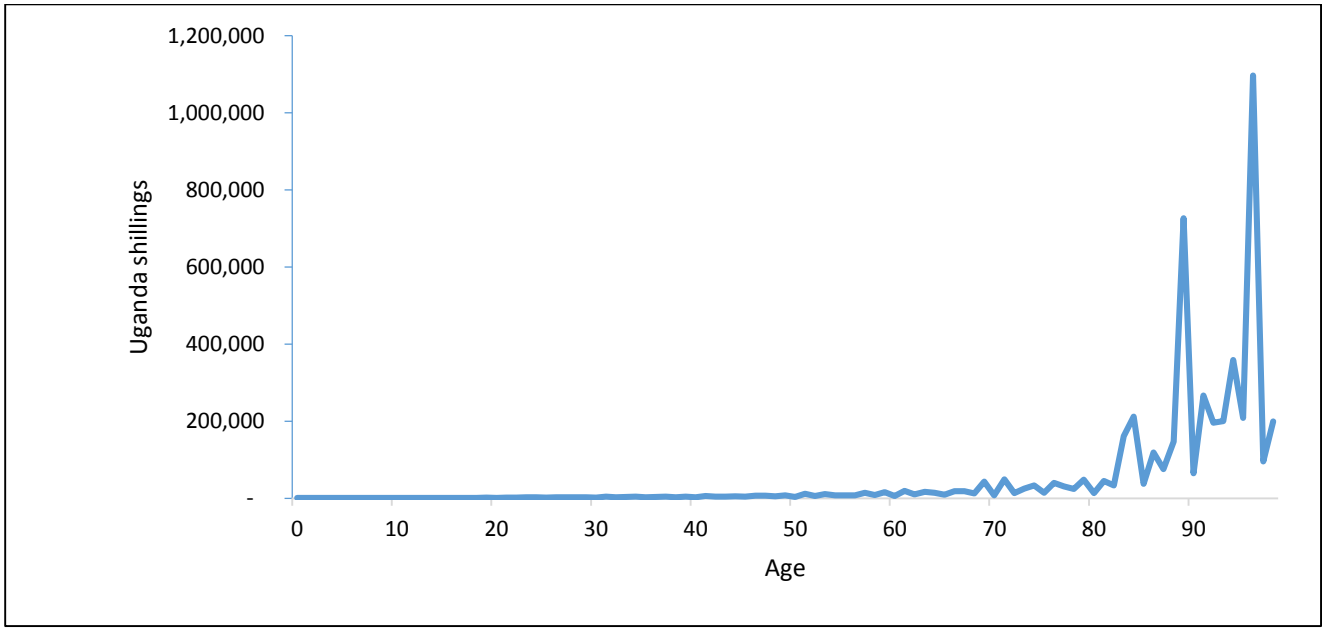
Figure 4-2: Age profile of per capita Public Consumption Expenditures on Education by facility level (in Uganda Shillings), 2016/17



Source: Calculations based on UNHS2016/17 enrolment rates and MoES Unit costs for primary, secondary & tertiary education.

The result for public consumption on health indicates that government spends more on the working elderly population (60 years and above) than the young and working age population (Figure 4-3). The result for public consumption on health is, however, not surprising since medical care targeted to the lower age groups remains limited. These figures include donor support that is captured under the budget.

Figure 4-3: Age profile of per capita Public Consumption Expenditures on Health (in Uganda Shillings)



Source: Calculations based on Ministry of Health data on public expenditure on health

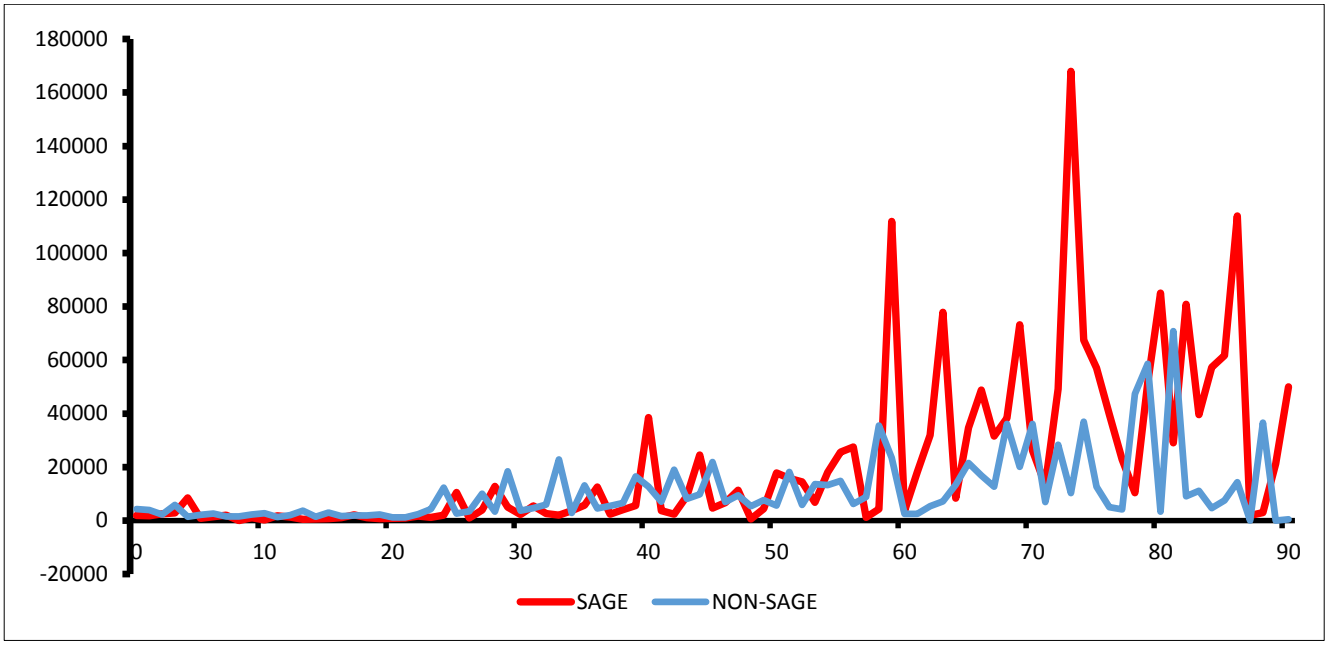
The above result was verified using the Social Assistance Grant for Empowerment Program (SAGE) data. SAGE is a form of social protection, which includes a range of intervention designed to protect individuals and households from poverty and deprivation (Holzmann and Jorgensen, 1999; Devereux, 2002). The SAGE program provides direct income transfer to persons aged 65 and above, to improve the welfare arising from life cycle contingencies associated with old age. However, for Karamoja region, which exhibits higher poverty levels and lower life expectancy, the eligible age is lowered to 60 years.

Figure 4-4 shows health expenditures profile among the SAGE and Non-SAGE recipients. [3]The results show that health expenditure is low between birth and age 24. Between age 24 and 45 years, there are spikes in health expenditure. This probably coincides with reproductive age. From age 60, there is significant rise in private health expenditure. The pattern is similar for both SAGE and non-SAGE households. However, the average expenditure is higher for household who benefited from SAGE program. Although the SAGE program data is not nationally representative, the results show that in

[3]*The NTA approach for computing private health expenditure profile was applied to SAGE end line survey data.*

the program areas, social assistance can enable old people to pay for some of their medical bills as well that of their household members. Given that most households do not have medical insurance, the provision of transfers such as SAGE could help old people to meet out of pocket expenditures.

Figure 4-4: Private Health Expenditure: A comparative Analysis of SAGE and Non-SAGE Households

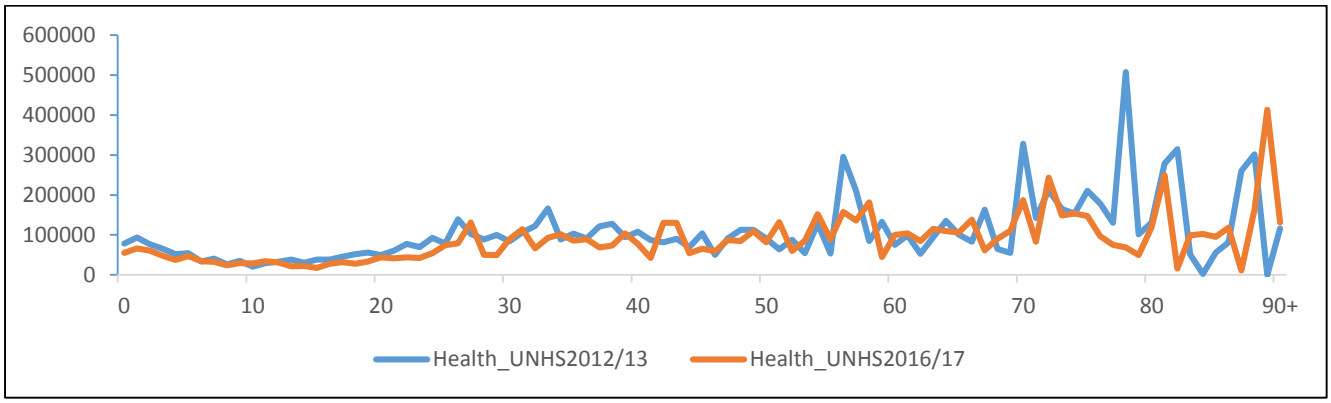


Source: Authors' calculations based on OPM-Evaluation of the Uganda Social Assistance Grants for Empowerment (SAGE) Programme endline survey data

4.2 Private Consumption

Uganda's age profile for per capita private health investment for the period 2012—2017 is shown Figure 4-5. It indicates that private health expenditure averages about UGX 50,000 between ages 0-54 years per annum. Thereafter private health expenditure starts to increase with spikes at various ages above 60. Uganda's per capita private health spending pattern has remained relatively the same in the last five years. The findings shown in Figure 4-5 are consistent with expenditure profile for Ghana (Amporfu et al, 2014) and Kenya (Mwabu et al, 2011). Between the age of 18 and 45, health expenditure increases. The swift increase in health expenditure after age 60 is a matter of policy concern because Ugandans aged 60 and above are largely those that have retired from the labour force. Therefore, increased private health consumption in the absence of national health insurance and efficient retirement benefits is an indication that the burden of financing health expenditures for the elderly falls on the working population. This has consumption and savings implications for the working age population and may be responsible for the large lifecycle deficit observed in Uganda.

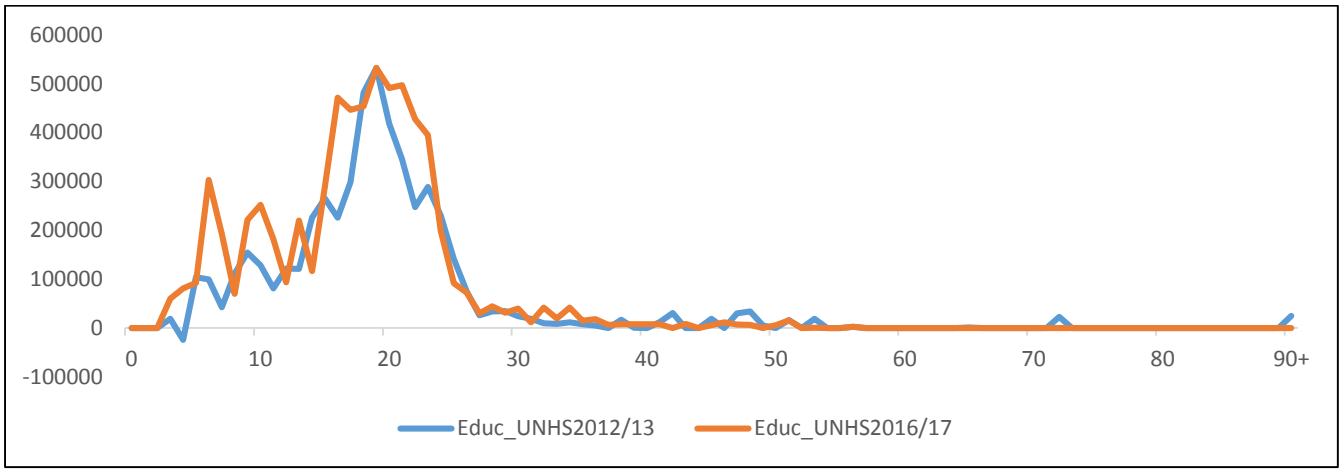
Figure 4-5: Age profile for per capita private spending on health: 2012/13*—2016/17



*Source: UNHS 2012/13 and 2016/17. Notes: *Inflated to 2016/17 prices using consumer price index (CPI).*

The age profile per capita private spending on education is shown in Figure 4-6. Private education expenditure comprises of households' expenditure on school and registration fees, boarding fees, uniforms, books and school supplies, and other expenses. The graph indicates that there is no private education consumption below ages 2 and after age 55. This is consistent with other studies in other countries that used the NTA methodology, which show that there is no private expenditure on education for individuals under 3 years. For Uganda, mean private education expenditure rises after age 3 and reaches a maximum of UGX 532,598, at age 20. The steep rise in private education expenditure between age 13 and 20 reflects the cost of secondary education and first year of tertiary education. Generally, private education expenditure is high between ages 14 and 26 years. Between age 6 and 13, the average expenditure is approximately UGX 105,000 in 2013 and UGX 187,000 in 2017, representing an increase of approximately 78% in private spending for the primary school age group in the last five years. However, this is relatively low compared to that of secondary school age group (13-18 years) which ranges between UGX 270,000 to UGX 330,000 for the same period. The average per capita spend for the 19-26 year age group is UGX 285 in 2013 compared to UGX 338,000 in 2017. The relatively lower per capita spending on education for the primary school age group may be attributed to the subsidized primary education through Universal Primary Education. After age 27, private education expenditure is relatively very small, with many age groups indicating no consumption of private education. This is not surprising given that majority of Ugandans who join tertiary education complete between ages 24 to 26 years. As was the case with health, the spending patterns for private spending on education seem to have remained relatively the same between 2012 and 2017.

Figure 4-6: Age profile for per capita private education spending: 2012/13*—2016/17



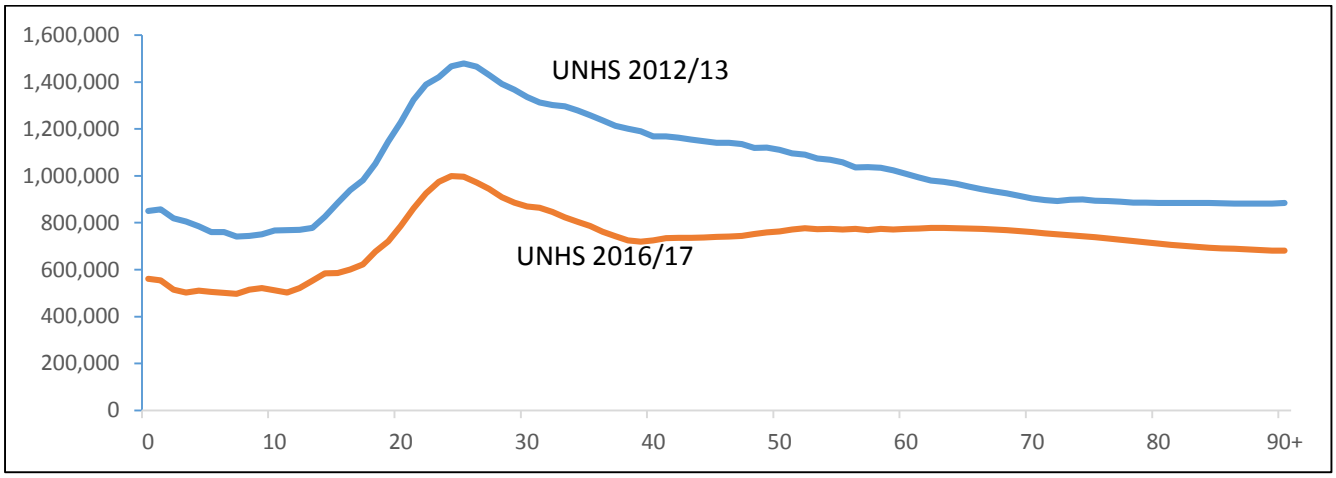
*Source: UNHS 2012/13 and 2016/17. Notes: *Inflated to 2016/17 prices using consumer price index (CPI).*

In general, the age profile of private education expenditures shows that the youth are the major beneficiaries of the transfers from older age groups since students are part of the non-working population. On the other hand, UBOS (2017) reported that 64 percent of youth were unemployed. This raises questions on whether the youth shall have the ability to earn incomes to support themselves or other age groups.

A comparative analysis of the private education profile of Uganda and other countries may provide some insights on the trajectory of the country towards realization of demographic dividends. For instance, Amporfu.et.al (2014) showed that in Ghana, private education expenditure peaked at about 375,000 Ghana cedi. Notwithstanding the differences in purchasing power of the currencies, the average private expenditure on education as illustrated in Figure 4-6 is very low. This raises concern about optimal human capital investment necessary for reaping demographic dividend in Uganda, relative to other developing countries.

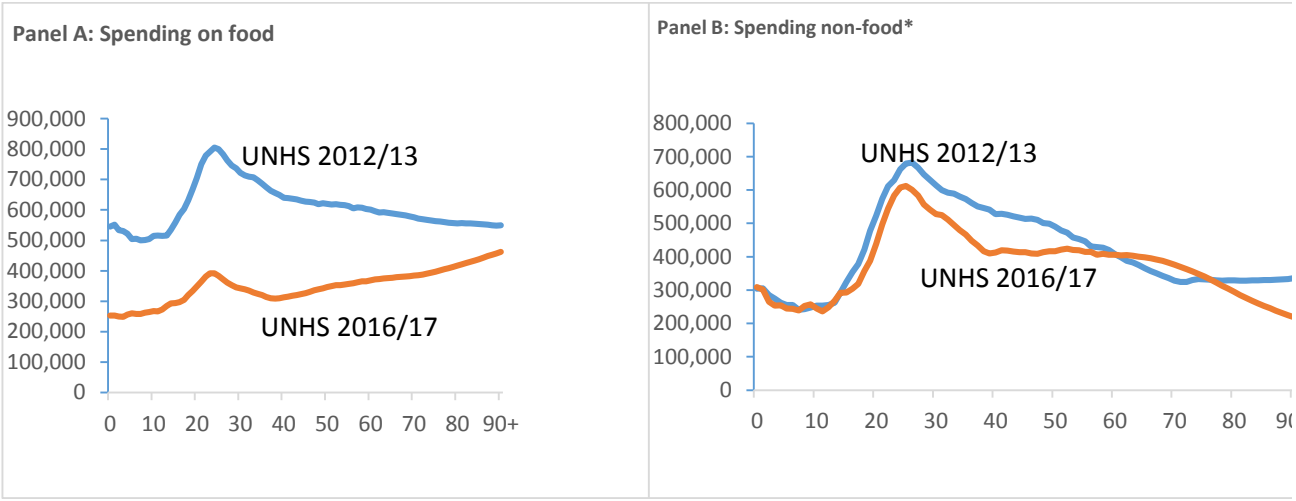
Other private consumption, which includes food and other non-education and health expenditures, is shown in Figure 4-7, and indicates that other private spending patterns for 2016/17 are lower than those of 2012/13. However, since food normally takes a bigger share of a household's budget, it can easily influence the observed patterns. Figure 4-8 isolates spending on food from the non-food. The findings show that even after isolating food, spending patterns for 2016/17 are still lower than those of 2012/13 and the general conclusion still holds.

Figure 4-7: Per Capita other private consumption*:2012/13#—2016/17



*Source: UNHS 2012/13 and 2016/17. Notes: * Other private consumption excludes education and Health consumption. # Inflated to 2016/17 prices using consumer price index (CPI).*

Figure 4-8: Per capita spending on food and non-food: 2012/13#—2016/17



*Source: UNHS 2012/13 and 2016/17. Notes: * Excludes spending on eduation and health; # Inflated to 2016/17 prices using consumer price index (CPI).*

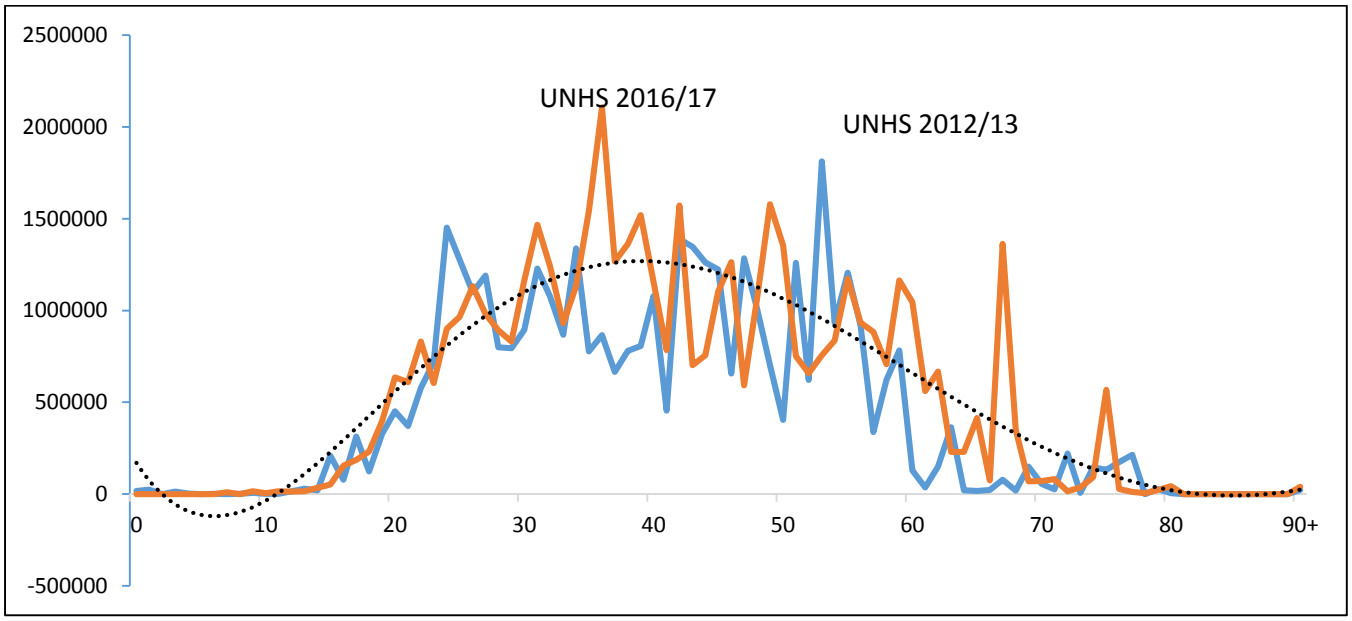
Error! Reference source not found. presents total private consumption (includes food, education, health, and other private consumption expenditure). The figure portrays a steady rise in total private consumption spending in the early stages for the working age population (17 to 30 years), peaking at 25 years and stabilizing around age 35. This is, however, not surprising because most people find themselves establishing their households and families and hence incur higher social expenditures such as wedding expenses and expenditure on early childhood education and primary education for the their children.

Error! Reference source not found. What is interesting however, is that both total per capita expenditure (see **Error! Reference source not found.**) and other private expenditures (Figure 4-7) for 2016/17 seem relatively lower than those of 2012/13 (i.e. 5 years earlier). Several reasons could be responsible for the observed finding. First, there was a sharp increase in education and health expenditures in 2016/17, perhaps leaving little income to be spent on consumption of food and other goods and services. Second, the cost of living (as measured by the CPI) increased from 134.5 in 2012/13 to 164.1 in 2016/17, representing nearly a 30-percentage point's increase. Third, some individuals and households that initially had higher consumption spending levels in 2012/13 could have fallen into poverty in 2016/17, meaning they experienced much lower consumption spending levels. This is possible since according to recent UNHS2016 poverty estimates by UBOS, the proportion of the population living in poverty increased from 19.7% in 2012/13 to 21.4% in 2016/17, an equivalent of about 10 million Ugandans living below the poverty line.

4.3 Labour Income Profiles

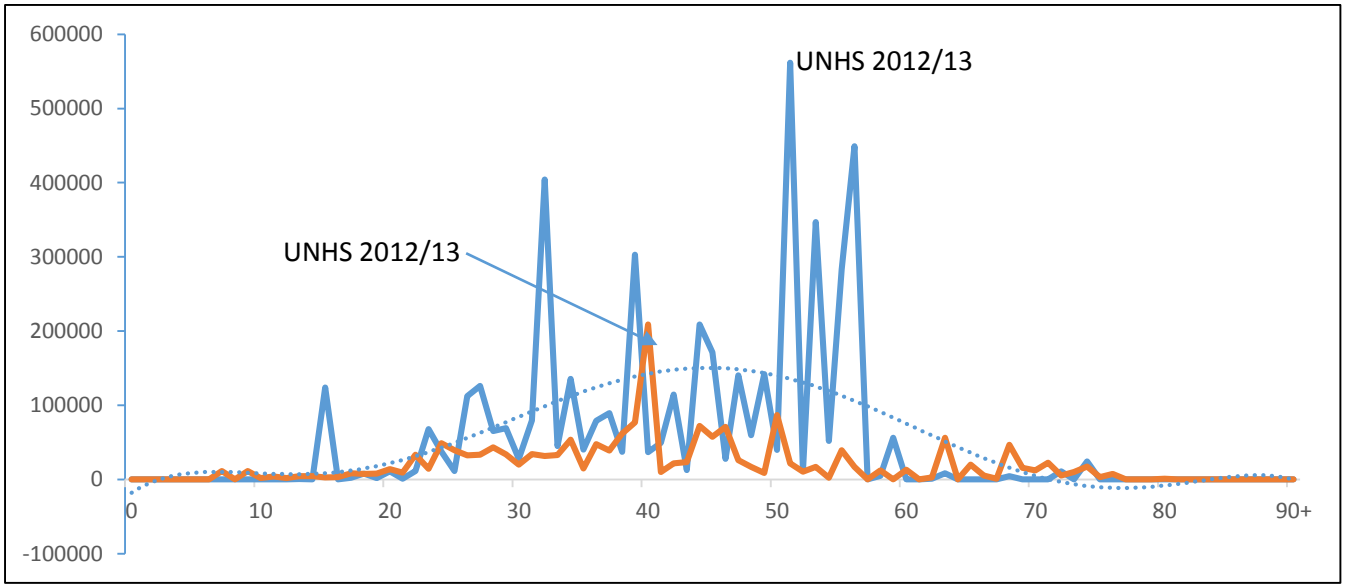
Labour income is the value of the work effort of resident employees, the self-employed and unpaid family workers. Figure 4-9 and Figure 4-10 shows the income profiles for wage earners and self-employed income earners in Uganda between 2013 and 2017. Figure 4-9 shows that the compensation of employees (earnings) profile starts at age 14 and ends at age 64 in line with the compulsory retirement of formal workers around age 60. However, some individuals especially in public service are eligible for contracts that may stretch up to ten years after the official retirement age. This could partly explain the observed compensation to employees up to the age of 81. The self-employment income profile starts at age 14 but is more pronounced between ages 25 and 58. Surprisingly, self-employment labour income suggests that there is early retirement from work in the informal sector, starting to occur at age 62 years. This result is not surprising. The Ugandan Labour Force has remained predominantly self-employed (80%) with the majority in the Agricultural Sector (72%) which is largely subsistence and requires uses a lot of energy. The policy implication for this finding is that there is need for Government to invest in modernization of the Agricultural Sector to absorb the large proportion of the unemployed but also improve the livelihoods of those that are mainly engaged in subsistence farming. Also, the younger ages in the labour income profile suggests the prevalence of child labour or a relatively high proportion of economically active children in Uganda. This is not surprising though, since the situation is normal mostly in the rural areas of Uganda where children are actively engaged in agricultural activities. However, in the urban areas, a significant proportion of these children are engaged in some form of petty trading whilst others are engaged in running errands in hotels and restaurants (GLSS, 2005).

Figure 4-9: Age profile of wage compensation to employees: 2012/13#—2016/17



Source: UNHS 2012/13 and 2016/17. Notes: # Inflated to 2016/17 prices using consumer price index (CPI).

Figure 4-10: Age profile of earnings for self-employed: 2012/13#—2016/17



Source: UNHS 2012/13 and 2016/17. Notes: # Inflated to 2016/17 prices using consumer price index (CPI).

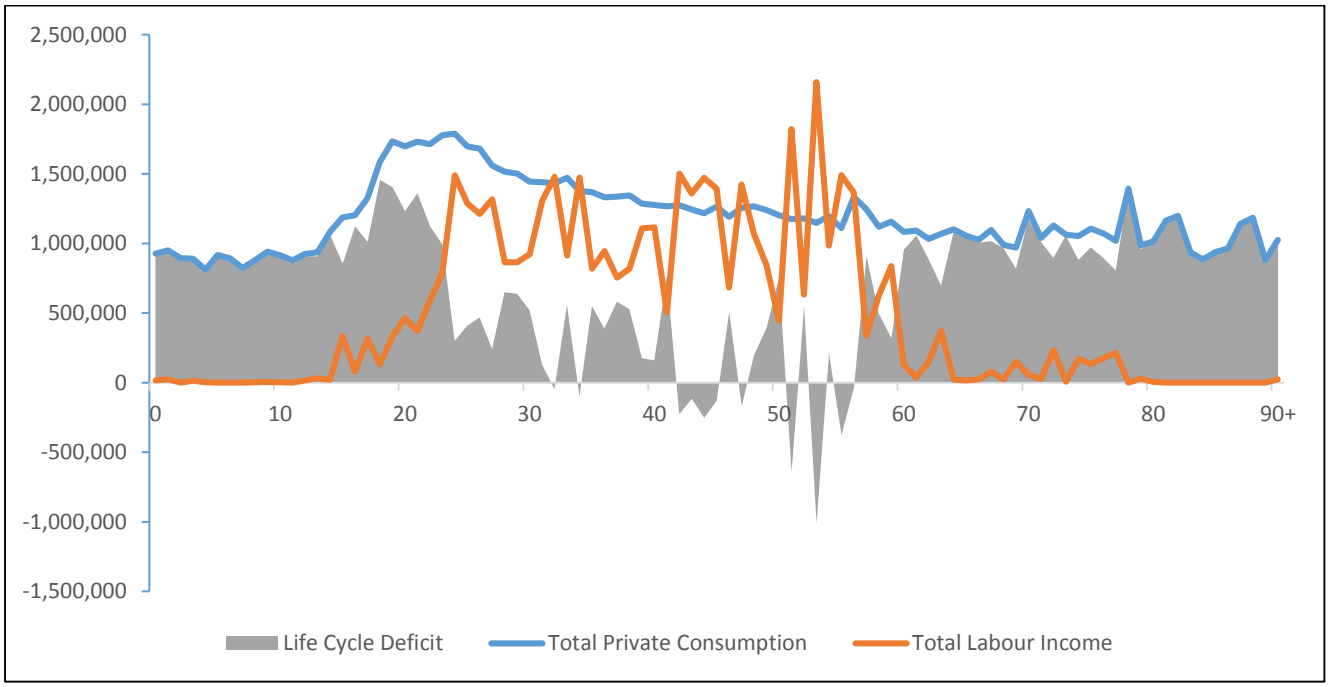
Findings in Figure 4-10 are quite shocking. The figure indicates that on average, self-employed earnings for 2012/13 were much higher than those of 2016/17. This finding seems to resonate well with the weaker economy and poor business conditions that Uganda has been experiencing in the last five years. The observed low earnings for the self-employed may also explain the observed lower consumptions patterns on other goods and services. The policy implication is that there is need for

government to support the self-employed earners through improving business climate and boosting economic growth.

4.4 The Life Cycle Deficit

Figure 4-11 and Figure 4-12 displays the labour income, consumption expenditure and the lifecycle deficit for 2013 and 2017 respectively. Essentially, we obtain a surplus for the working-age adults and a deficit for the depende nt age groups–children and the elderly, in accordance with theoretical expectation. There are minimal differences between the lifecycle deficit for children and the elderly, which is contrary to what is expected. However, the contrast could be due to the large children population (about 51% of the population are children). The deficit for young adults starts to drop quite sharply after age 17 when individuals have started earning income but not sufficient to outweigh their consumption. In Uganda, there is no clear pattern of the lifecycle surplus. However, estimates seem to suggest a very short window of surplus. In 2013, a clear surplus window was observed between ages of 50—55 years, suggesting that Ugandans aged between 50 and 55 years earned more income than they consume (Figure 4-10).

Figure 4-11: Age Profile of Per Capita Lifecycle deficit: Uganda, 2013#

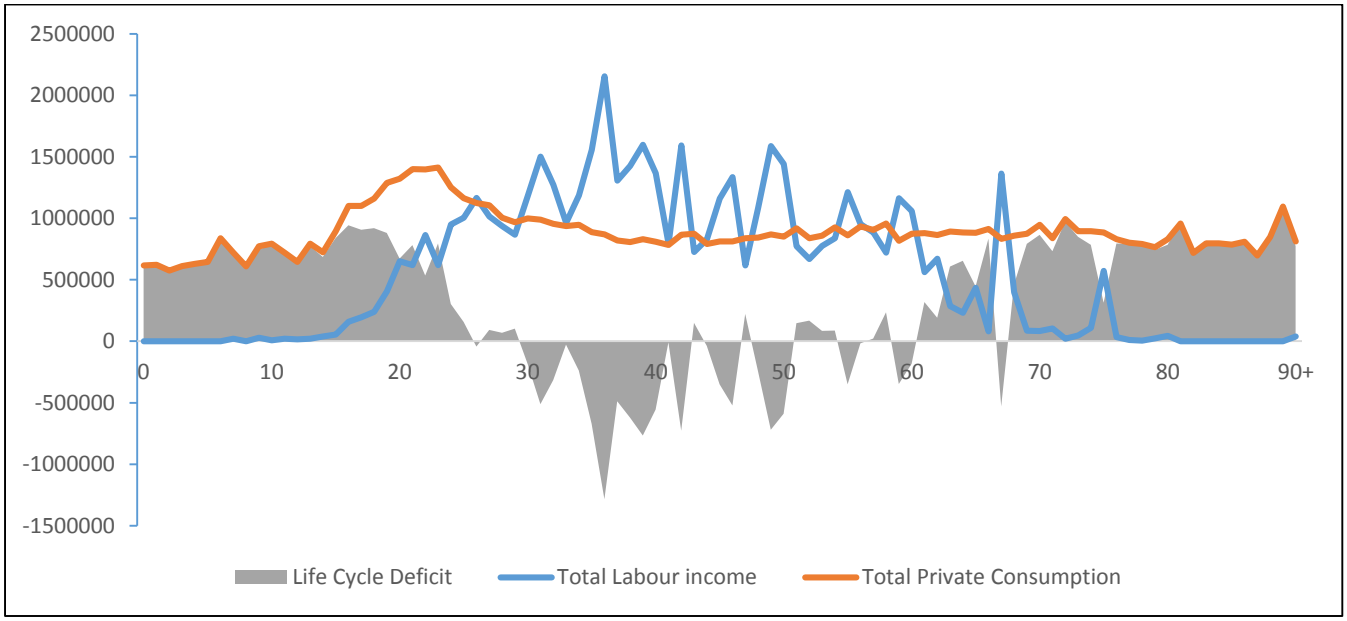


Source: UNHS 2012/13 and 2016/17. Notes: # Inflated to 2016/17 prices using consumer price index (CPI).

The surplus window seem to have increased between 2012 and 2017, albeit still short (only about 16 years of clear surplus) in 2017, starting at age 30 and ending at age 46, averaging only UGX 420,000 (or USD 120). However, overall, there seem to be some surplus window between ages of 30 and 56 years (Figure 4-11). The findings in Figure 4-10 and Figure 4-11 highlight the

magnitude of the unemployment challenge. It is very difficult for the youth to find a decent job, which consequently would allow them to be self-governing in achieving their consumption needs. Uganda fares poorly compared to countries like Ghana and South Africa with a lifecycle surplus of about 27 years that starts at age 33 and ends at age 60 years.

Figure 4-12: Age Profile of Per Capita Lifecycle deficit: Uganda, 2017



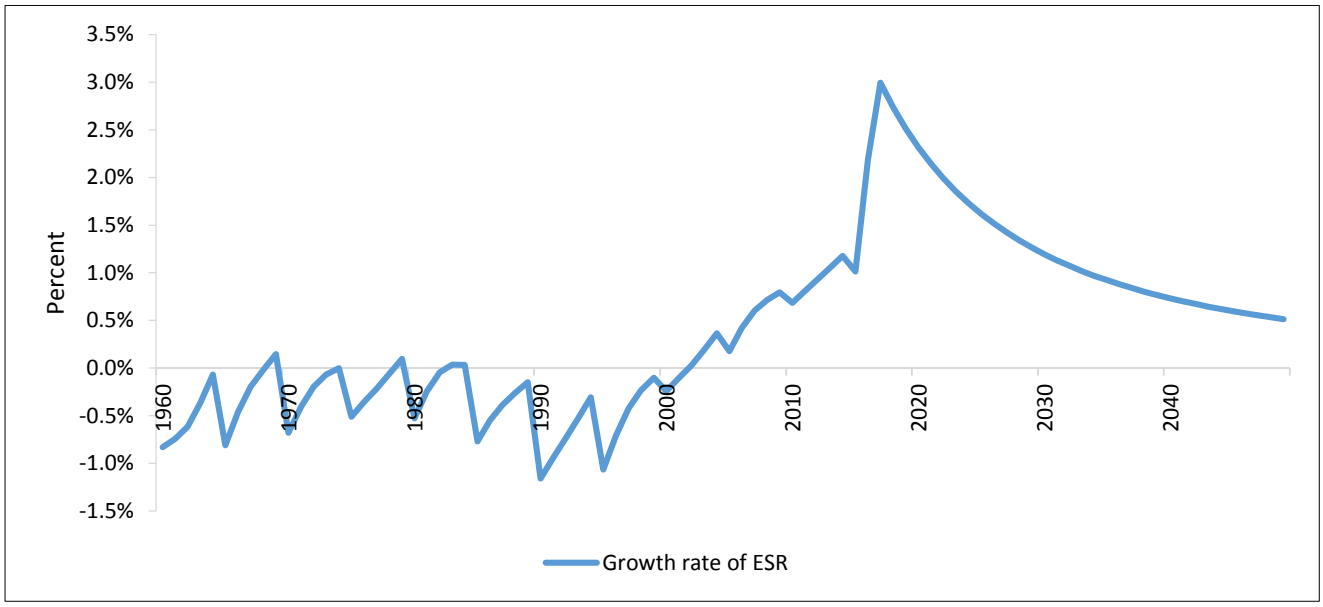
Source: UNHS 2012/13 and 2016/17

4.5 Uganda's First Demographic Dividend

The lifecycle deficit estimates presented in section 6 makes it possible for us to estimate the first demographic dividend for Uganda, as determined by the economic support ratio. The support ratio is the ratio of the effective number of producers to the effective number of consumers (United Nations, 2013). It is computed as the inverse of the dependency ratio. It shows how workers have to support non-workers. For example, a support ratio of 0.5 means that each worker is, on average is supporting himself or herself plus one other consumer.

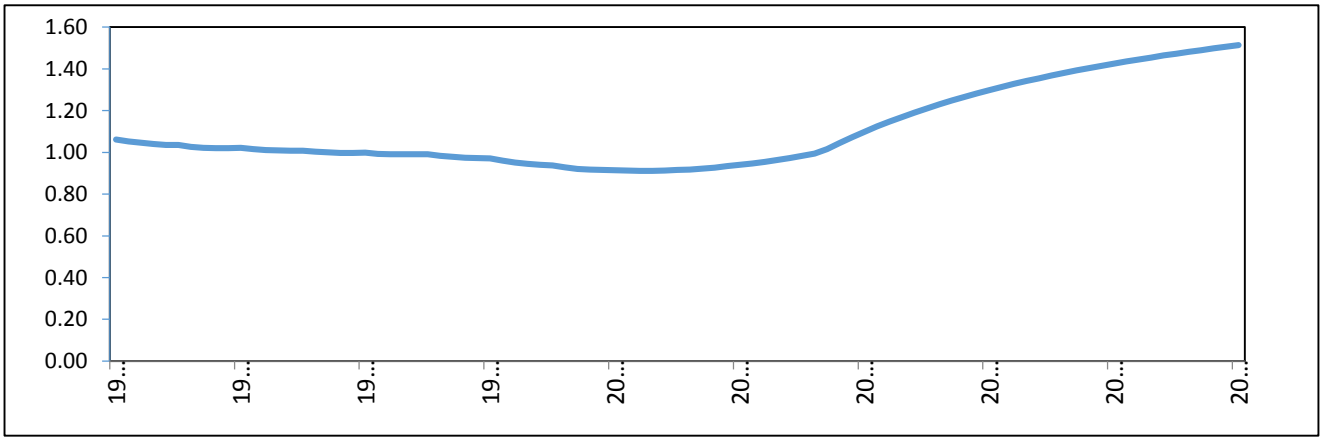
Uganda's support ratio from 1960-2050 is illustrated in Figure 4-14 which is drawn from the difference between the growth rates of the number of effective producers and effective consumers (Figure 4-13)

Figure 4-13: Growth Rates of Effective consumers, effective producers and Economic support ratio, Uganda



As shown in Figure 4-14, the country started experiencing the first demographic dividend since 2002 and it is expected to peak in 2020 when at the same time Uganda is expected to become a middle-income status country. Our findings are similar to some African countries like Nigeria and Senegal whose demographic dividend started periods after the year 2000 but differ from others like Ghana whose demographic dividend started in early 1990s. Between 1960 and 2006, the support ratio was declining. This implies that in that period, workers had to struggle to support more people. The support ratio starts to increase from 2006, which consequently implies that each effective worker is supporting fewer effective consumers.

Figure 4-14: Economic Support Ratio, Uganda 1960 – 2050



The finding in Figure 4-14, is consistent with the decline in fertility rates in Uganda, from 6.7 children per woman in 2006 to 6.2 children per woman in 2011.

An increase in the support ratio potentially frees up resources that can be used to raise per capita consumption, increase saving, or both and hence leading to the enjoyment of the first demographic dividend.

5 Conclusions

The main objective of this paper was to use the National Transfer Accounts (NTA) methodology to assess how Uganda will potentially be able to benefit from the demographic dividend given the current lifecycle behavior of individuals. Other specific objectives included assessing the current dependency and support ratios of individuals by examining their consumption and incomes over their life-cycle; the intra-household transfers as well as transfers between government and individuals and the extent to which these transfers could be used to accelerate achieving the demographic dividend; and assessing the savings and assets accumulation process of individuals and whether the current savings behavior would support the expected growth in per capita income by 2040.

To a large extent this paper finds that the country started experiencing the first demographic dividend since 2002 and it is expected to peak in 2020 when at the same time Uganda is expected to become a middle-income status country. Declining trends in fertility rates has resulted into positive trend of the support ratio. Uganda's support ratio from 1960-2050 indicates that between 1960 and 2006, the support ratio was declining. This implies that in that period, workers had to struggle to support more people. The support ratio starts to increase from 2006, which consequently implies that each effective worker is supporting fewer effective consumers. This is consistent with the decline in fertility rates from 6.7 children per woman to 6.2 children per woman in 2011. An increase in the support ratio potentially frees up resources that can be used to raise per capita consumption, increase saving, or both and hence leading to the enjoyment of the first demographic dividend. Our findings are similar to some African countries like Nigeria and Senegal whose demographic dividend started periods after the year 2000 but differ from others like Ghana whose demographic dividend started in early 1990.

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