Population Change and Economic Development: Case Studies and Reflections on the Ethiopian Demographic Transition

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Abstract

While population growth has a large negative effect on per capita income growth, this effect is counteracted by large positive effect from growth in the share of the population that is economically active. Thus, the effect of population growth on economic development depends largely on the proportions of the working age and the policy mixes used to encourage people to work, save and invest. Accordingly, this paper assesses the experiences of representative countries in the world with respect to their population change, policy mixes used and how these impact on their economic developments. The paper is organized into four sections. The first section assesses how population change affects economic developments followed by section 2 presenting selected countries' case studies to see how their demographic transitions have been proceeding and what policy mixes was used to reap the demographic dividends that the age structure offers. The third section deals with the discussion of possible lessons learned from those case studies that Ethiopia may consider as benchmarking. The fourth section examines the Ethiopian demographic transitions, the associated policy mixes being implemented and apparent policy effects. The final section concludes the paper.

Introduction

Since 1798, the time when Thomas Malthus formally warned that excessive population growth would eventually outpace food production, there has been contentious debate on the role of population growth on economic development. Overall, there have been three perspectives that dominated the debate for long time. These perspectives are (1) the one that views population growth as hindrance for economic development (pessimistic view); (2) the view that population growth promotes economic development (optimistic view), and (3) the view that population growth is independent of economic development (population neutralism view). All of these perspectives have common limitation: merely focusing on population *size* and *growth rate* by ignoring the role of age structure of the population and how such change in age structure affects economic development. Since recent years, however, interest in demographic dynamics and their interactions with other policy mixes on the economic development has been increasingly dominating the debate. Accordingly, the current central debate focuses on the relationships that connect changes in population age structure to economic development. Demographers and other social scientists are showing greater interest in examining the extent to which interactions between population age structures and both fertility and mortality declines yield increases in aggregate income levels (Bloom et al, 2001; Kelley, 2001; Ashford, 2007; United Nations, 2007; World Bank, 2007). Understanding age structure and population dynamics will help policy makers what types of policy mixes to use with the ever changing demographic transitions so as to convert the possible challenges of population changes into productive assets. The objective of this paper is to assess the demographic transitions of some selected countries and to examine the policy mixes they used to promote (retard) their economic developments. We will also examine the implications of the Ethiopian demographic transitions in the light of lessons drawn from the case studies.

The paper proceeds in four sections. The first section assesses how population change affects economic developments. This is followed by selected countries' case studies to see how their demographic transitions have been proceeding and what policy mixes was used to reap the demographic dividends that the age structure offers. The third section deals with the discussion of possible lessons learned from the case studies that Ethiopia may consider as benchmarking. The fourth section examines the Ethiopian demographic transitions and the associated policy mixes undertaken. The final section concludes the paper.

The Implications of Population Change and the age Structures

Since very recently, population debate seems to involve the role of population change and the evolving age structures in economic development. Many social scientist argue that improvements in medicine and public health, including the introduction of antibiotics such as penicillin, treatments for diseases such as tuberculosis and diarrhea and the use of DDT which helps control malaria have contained or eradicated diseases that once killed millions of people (Kelley, 2001; Bloom, et al, 2001; Sachs, 2002; World bank, 2007). This was accompanied by improved sanitation, nutrition, and the wider practice of healthier behaviors. Furthermore, fertility decisions seem to respond strongly to changes in child mortality as parents realize that if fewer children are likely to die in childhood, they can give birth to fewer children to attain their desired number of offspring

(Ashford, 2007; United Nations, 2007; World Bank, 2007). The combined effects of decline in both mortality and fertility rate results in population change and ever evolving age structures, which in turn, have interesting socio-economic implications.

Demographic transition refers to the transformation of the population from the regime of high fertility and high mortality to one of the low mortality and low fertility. This demographic transition causes change in the age structure distributions. Although there could be a country specific difference in the timing and speed of such changes, these days, many developed and developing countries are experiencing rapid decline in fertility and mortality rate, slower population growth rate and hence change in population age structure. The different stages of the demographic transition give rise to various changes of the age distribution over time. Change in the age distributions, in turn, requires different policy mixes and hence different implications for economic development (United Nations, 2007).

In terms of its effects on the age structure, demographic transition can be distinguished into three stages. During the first stage, there is a transformation of the age distributions as the proportions of the children increases owing to high fertility and low mortality rate. During the second stage, however, the proportion of the children in the population begins to decline due to low fertility while the proportions of the adults and older persons continue in rising. During the third stage, the proportions of both children and adults of working age declines while the proportion of the older continue rising. However, transitions from one stage to the next may take many years (from 70 to 100 years) depending on the demographic policy environments of each country (Bloom, et al, 2001; United Nations, 2007).

During the second stage of the transition, when infant and child mortality rates drop rapidly in the face of fertility rates continued at their high levels followed by rapid decline in fertility rate, it will result in an unprecedented baby boom generation with the number of working age population reaching historically high levels and very few dependents to support with the same income and assets. These results in the working-age populations continue to grow, typically quite rapidly, as large cohorts of youth enter the working ages replacing the much smaller cohorts that preceded them. The child-dependency ratio and the overall dependency ratio are declining and the percentage of the population in the working ages is increasing. This opportunity is usually described as "demographic dividend," "demographic bonus," "window of opportunity" or "economic gift". According to Ashford (2007), demographic dividend is defined as a window of opportunity that a large workforce with fewer children to support creates to save money on health care and other social services; improve the quality of education; increase economic output because of more people working; invest more in technology and skills to strengthen the economy; and create the wealth needed to cope with the future aging of the population.

However, the benefits associated with the "demographic dividend" are not something certain and automatic. It needs to be earned with applications of proper policy mixes. The second stage of the demographic transition involves not only larger number of working age population but also entails a rapidly growing population of young people (aged 15 to 24) who need to be educated and provided with gainful employment in order to become assets for society (United Nations, 2007; Ashford, 2007). Furthermore, it needs investment in their health conditions because it is only the healthy workforce that can be gainfully employed and sustain the desired economic development. There is no doubt that such investments entails fiscal pressure on the part of government. The demographic bonus may provide an opportunity for speeding development by reinvesting the increase in per capita income in infrastructures and productive assets that is earned as a result of demographic dividends rather than merely increasing current consumptions. However, realizing those benefits depends on the adoption of macroeconomic policies that promote savings, productive investment, increase employment opportunities and in general ensuring a stable social and economic environment favorable for sustained economic growth and sustainable development (Ogaw and Matsukura, 2005; Mason, 2005).

There are also potential challenges when the demographic transition enters into the third stage. In the face of continues decline in fertility combined with increased life expectancy, demographic bonus eventually gives way to the third stage of the transition where the proportion of adults of working age stops increasing while the proportion of older persons continues increasing. For example, the proportion of older above 65 years is already exceeding the proportion of children less than 15 years in Japan, Sweden, and most East Asian countries. This period of rapid population ageing poses new challenges. It requires the development of sound public policy to facilitate the adjustments that will be necessary in a variety of spheres, including the provision of health care and old-age support. The need for such adjustments raises not only fiscal questions but also questions of intergenerational equity in meeting the needs of persons at different stages of life and of the roles of the State, the private sector and the family in providing such support (Mason, 2001,2005; Ogaw and Matsukura, 2005; United Nations, 2007). Different policy mixes to address the problems are likely to entail different distribution of wealth, opportunities and burdens that cut across age and gender groups within societies.

Different countries in the world are found at different stages of the demographic transition. The different stages of the demographic transition give rise to various changes of the age distribution over time.

Change in the age distributions, in turn, requires different policy mixes and hence different implications for economic development. For example, most countries in Europe and specifically, Japan are well into the third stage and facing the aging population challenges. North America, Australia and New Zealand are also approaching to their third stage of demographic transition. Most countries in the East Asia, Latin America and the Caribbean find themselves in the second stage of the transition and are enjoying the benefit from the demographic bonus. Most Sub-Saharan African countries are yet struggling to reduce their higher fertility rate and are in their first demographic transition (Ogaw and Matsukura, 2005; Mason, 2005; Ashford, 2007; United Nations, 2007). The next section is devoted to the assessments of some selected regions' (country's) experience in managing their demographic transitions.

Case studies
In this section, the case studies of five specific areas of the world will be reported. We emphasize on the interplay between demographic change and economic growth in each of the case study areas selected: East Asia, Japan, Latin America, the Middle East and North Africa, and Sub-Saharan Africa. In all cases, our discussion focuses on the population and health policies used to facilitate the demographic transitions; public policies used to encourage investment in educations and technologies; policy environments used to encourage the people to engage themselves in gainful employments and policies to encourage savings and conducive environments created to invest in their economies. Lessons drawn from such analysis will help us to reflect on the Ethiopian demographic transitions which will be dealt in the next section after the case studies.

East Asia
During the late 1940s, East Asia experienced dramatic improvements in public health largely brought through improved sanitation, safer water, and the development of broad-spectrum antibiotics and antimicrobials which resulted in a sustained decline in infant mortality rate. Infant mortality rate in Asia as a whole dropped from 182 per 1,000 in 1950 to 34 per 1,000 in 2000 (Phang, 2005, Mason, 2005; Bloom et al, 2001; Kelley, 2001). Accompanying the declining infant mortality rate, there was rapid decline in fertility, which was assisted by easier and acceptable birth control mechanisms of family planning programs. Furthermore, fertility decisions seemed to respond strongly to changes in child mortality as parents realize that if fewer children are likely to die in childhood, they can give birth to fewer children to maintain their desired number of offspring (Ashford, 2007; World Bank, 2007). These measures have assisted East Asia to have the lowest fertility rate in the developing world (1.66 children per woman), next to Japan with fertility rate of 1.3 children per women. The combinations of low mortality and low fertility have resulted in the transition from high to replacement level fertility within less than 30 years. Population growth has also slowed dramatically from a peak of 2.4 per cent a year in the late 1960s, to 0.66 percent per year in 2001, and it is predicted to be only 0.2 per cent by 2025. Overall, according to Bloom et al (2001), East Asia has registered the fastest demographic transition to date (only 50 to 75 years). Life expectancy has also risen from around 43 years in 1950 to 72 years in 2001.

In between the declining mortality and fertility rates, baby boom generated. The working-age population rose from around 57 percent of East Asia's total population in 1965 to around 68 percent in 2000. As a result, the region's working-age population grew nearly four times faster (an average of 2.4% a year) than its dependent population between 1965 and 2000. The entry of these working ages into the workforce markedly changed the proportion of workers to dependents in the population.

The rapid demographic transitions accompanied by proper policy mixes helped the East Asia to earn the 'demographic dividends'. With the benefits of a good education and a liberalized trade environment, this generation was absorbed into the job market and into gainful employment thereby increasing the region's capacity for economic production. Although the demographic transition was the base, there were three factors which appear to be the key for earning the 'demographic dividends': the human resource base, success at employment growth, and high rates of saving and investment.

The high levels of literacy and educational attainment combined with health advantage built strong human resource base. This strong human resource bases helped the East Asia to generate rapid growth in employment and labor productivity. During 1960 to 1990s, the region has registered annual labor force growth rate of 2.7 percent while the population growth rate was only 1.9 percent, making the difference of 0.8 higher labor force growth per year. At the same time, East Asia has able to achieve strong growth in its labor productivity and in its wages rate. This successful labor market development was attributable to three factors: The first was successful research programs that led to enormous gains in agricultural productivity. As agriculture was the dominant economic sector both in terms of employment creations and GDP contributions during the period, it has attracted the government attention and hence huge budget was allocated to the sector for research and development (R&D) which, in turn, resulted in enhanced productivity. As productivity rose, the increase in wage rate followed. Secondly, East Asia was very successful at creating new industries and new jobs in the service and manufacturing sectors of the economy. The prudent macroeconomic policy aimed at export

promotions and maintaining minimum level of inflation created a favorable investment environment for such development of non-farm job opportunities. This has helped the East Asia to replace the foreign capital sources initially needed to expand manufacturing capacity by domestic sources. Finally, East Asia was also successful in investment in human resource development. As a result of well managed demographic transition, the school-age population stopped growing during 1960s while the working-age population and the tax-base continued to grow quite rapidly. This trend had two economic implications: firstly, the government easily reshuffled the resources to other economic sectors, such as building of economic infrastructures from the education sector, the budget that otherwise should have been used to build primary and secondary schools and related expenditures. Secondly, parents had very few children to educate and hence got the chance to undertake productive investments which boosted the overall economy of the region (Phang, 2005; Wang, 2005; Ashford, 2007; World Bank, 2007). Furthermore, as the baby boom generation entered the workforce and parents had fewer children to take care of, saving rates in East Asia also rapidly rose during 1965 to 1990, which further relaxed its resource constraints.

Many observers argue that the East Asian demographic transition was one of the critical factors in the region's spectacular economic growth (Bloom and Sachs, 1998; Bloom and Williamson 1998; Ashford, 2007; World Bank, 2007). According to these observers, the region has registered per capita income growth of 6 percent per year between 1965 and 1990, of which demographic dividend accounts for between one-fourth and two-fifths. This has gradually created virtuous spiral, whereby population change increased income growth, and income growth pushed down population growth and hence sustained socio-economic development was ensured.

Demographic transition provides not only economic opportunities to utilize, but also challenges which should be managed. As baby boom cohort ages, it is inevitable that the demographic dividend gradually decline as the number of working age decreases while the number of aged increases. This trend will change the ratio of dependents to workers again, and bring added challenges to policy makers and the economy. Pensions and health care for the elderly will come under strain and economic growth is likely to shrink as the labor force declines. Thus, policy makers need to ensure that the challenge of an aging society does not become a source of socio-economic crises.

Japan

Japan was the first non-western country to experience a rapid decline in fertility after the Second World War and that decline was more rapid than it had been in any of the industrialized countries of the time (Ogawa and Rikiya, 2005). Within ten years, total fertility declined by more 55 percent, from 4.54 in 1947 to 2.04 children per woman in 1957. By 2005, fertility rates were the lowest in the world at 1.3 children per woman, much lower than the replacement fertility rate of 2.1. The dramatic decline in the fertility rate combined with the decline in child mortality rate led to baby boom generation entering into workforce during early 1960s.

In addition to this baby boom generation entering into the working force, with a series of policies concentrating on building modern factories and a well-educated and highly literate work force, Japan was able to push its economy to the forefront of technology and modernity, establishing itself as one of the world's most powerful economies (Ogawa and Rikiya, 2005; Ashford, 2007; World Bank, 2007). Per capita income of Japan was drastically reduced during the Second World War and it was only $153 in 1950s from which it continually grew at 11 percent starting from 1960s. The first dividend contributed markedly to this growth since a substantial part of the first dividend was saved and invested. This in turn, has helped to strengthen the country's infrastructure and to increase the productive capacity of the firms. Moreover, government/industry cooperation combined with the well-educated and motivated work force assisted with modern technologies and a comparatively small defense allocation (1 per cent of GDP) contributed to Japan's economic success (Bloom et al, 2001; Ogawa and Rikiya, 2005).

Although the demographic transitions and change in the age structure are preconditions for the first demographic dividend to happen, the actual impact this first dividend on economic development largely depends also on the socio-economic and political environment. Accordingly, during the 1960s, the Government of Japan promoted an export-oriented development strategy. In addition, the government demonstrated outstanding leadership by importing an optimal mix of advanced technology from other industrialized countries. More importantly, investments in education and the availability of a well educated and highly trained labour force as early as the 1950s also contributed to this success. The political stability that Japan has enjoyed since 1950 also provided a further incentive for investment (Ogawa and Rikiya, 2005).

The unique feature of the demographic transition in Japan was its age specific decline in mortality rate. Life expectancy at birth rose from 50.1 to 67.7 years for men and from 54.0 to 72.9 years for women during 1947-1965. In 2004, male life expectancy at birth reached 78.6 years to become the second highest in the world, following that of Iceland, and female life expectancy reached 85.6 years, the highest in the world (Ogawa and Rikiya, 2005). Moreover, between 1964 and 2004, life expectancy at age 65 increased substantially, from 12.2 to 18.2 years for men and from 14.8 to 23.3 years for women. This implies a marked lengthening of life after

retirement and of the joint survival of husbands and wives, which has increased the dependent to the worker ratios.

Japan is coming towards the end of its demographic transition, having enjoyed the economic successes of its demographic dividends combined with strong policies. The proportion of children below 14 years has been steadily declining while the proportion of elders above 65 years (the retired proportion) has been increasing thereby steadily rising the total dependency ratios over time. In contrast, the proportion of working age (between 15 and 64) was initially increasing at increasing rate reaching its peak of 69.7 percent during 1990s, and started decline then after.

Such aging population has numerous economic implications: decline in labor force, increasing pressure on government budget through rising pension fund requirements, increasing dependency ratios as the number of working age gradually retire and lead to increase in number of dependent elders, social distraction etc. In terms of labor force, it is estimated that Japan's labor force will fall by 13% between 2005 and 2050 and income growth will slow to 0.25% by 2040 (Bloom et al, 2001). With the drop in fertility rates, and many people retiring, the number of people working will become smaller, further challenging Japan's economy and slowing growth. Pensions are a particular challenge, given the fact that pensions are financed from current taxations. Thus, it was estimated that with a smaller young workforce supporting large number of elder pensioners, spending on pensions could push Japan's budget deficit up to 20 per cent of GDP by 2030 (Ogawa and Rikiya, 2005). Given the declining number of working age, pension contributions will have to increase to 35 per cent of salaries to maintain the current level of payouts. In terms of social distractions, it was estimated that 40 per cent of the population above 65 years in Japan live either alone or as a couple. With the breakdown of extended families, the elderly cannot depend on their families to provide for them, and the state must prepare to step into the gap. These are some of the aging population challenges that the policymakers strive to manage in Japan these days.

Latin America

The demographic transition in the Latin America is similar to that of East Asia. Infant mortality decreased from 91 deaths per 1,000 live births in 1965 to 32 in 2000, a figure very similar to that of East Asia's 34 during the same period (Bloom et al, 2001; Kelley, 2001; Mason, 2005). Although there were significant country specific variations, on an average, the fertility rate has also fallen from around 5 children per woman in 1975 to 2.5 child per women in 2001. These two conditions, decline in fertility and infant mortality rate, have resulted in rapid demographic transitions in the Latin America.

Unlike the East Asia and Japan, Latin America was not successful in utilizing the economic opportunities that the demographic transitions could provide. Although Latin American demographic changes have been favorable for growth since 1970, economic growth registered during the period was disappointing. Between 1975 and 1995, Latin America's per capita annual growth rate was only 0.7 percent, which is one-eighth of that of the East Asia, which was 6.8 percent over the same period (Bloom et al, 2001). Such sluggish economic development was mainly attributed to the policy failures in Latin America. As military juntas and dictators ruled much of Latin America until the late 1970s, there was no effective leadership in the region. Furthermore, most countries in the Latin America followed closed economy before the 1990s Washington consensus. These combinations of weak governance and a lack of openness to trade appear to have slowed the potential growth that demographic changes might have brought to Latin America.

The interaction between changing age and policy mixes are important. Analysis shows that the direct effect of changing age structure accounts for only 11 per cent, or 0.6 percentage points of the growth gap between Latin America and the fastest-growing East Asian economies. However, when the interactive effect of policy and demography are also accounted for, some 50 per cent of the gap is accounted for (Bloom et al, 2001). Countries in East Asia pursued a range of policies (especially trade policies that created substantial numbers of new jobs, new technologies etc) that allowed them to take much fuller advantage of their demographic dividend. In contrast, Latin America failed to reap such advantages due to its misguiding policies. While the demographic transition produces favorable conditions, it does not guarantee that an increased supply of workers will be gainfully employed. Nor does it ensure that those who wish to save will find themselves encouraged to do so. Neither can it provide institutions to press home health advantages or to create the educated population vital to a high-value society (Bloom et al, 2001). In Latin America, over-reliance on domestic demand, corrupted governance, and repeated financial disasters which discouraged savings are the major causes for failure to reap the demographic dividend.

Middle East and North Africa

Countries in this region are relatively at their early stages of demographic transitions. Although infant mortality rate declines, fertility rates, however, remains relatively high. This is on an average, over four children per women, the highest next to the Sub-Saran Africa region.

Although countries in this region have healthy economic growth over the last three decades, they could not take the full advantage that the demographic transition could offer them mainly due to their high fertility rate. If fertility rates do not fall, the ratio of workers to dependents will not change dramatically, and the region will experience rapid population growth without the opportunity for dramatic economic growth. For example, in Syria, economic growth could be raised significantly (1.62 percentage point on the annual growth rate of GDP) if the ratio of working-age to total population was changed during 1990s.

In addition, policy will be a significant factor in determining the degree to which a country can enjoy its demographic dividends. As the experiences of East Asia and Japan show, openness to global trade, as well as policies to support employment and education can help countries to absorb the baby boom generation of workers into productive and remunerative employment. In Saudi Arabia, however, the policies are not creating conducive environment for reaping demographic dividend. As of 2001, Saudi Arabia was facing the prospect of mass unemployment among graduates and school leavers. Sixty per cent of the population was under 25 years during 2001, which implies significant younger dependency ratio. Furthermore, it was argued that foreign investment was trickling out of Saudi Arabia, owing to an outdated education system, which failed to equip Saudi nationals for work in a global economy. The rigidity of labor laws in Saudi Arabia was also claimed to discourage private companies from employing Saudis because it is extremely difficult to dismiss a Saudi national who is not doing his job (Bloom et al, 2001).

Overall, the region needs to avoid factors which stifle the people's opportunities to work, if it is to reap its potential in demographic dividends. These factors include unproductive bureaucracy, uncompetitive environments, lack of available capital for investment, or an absence of skills. The region needs to work towards more liberal labor markets, while also investing in education and training to ensure wider access to opportunities. It will also need to encourage foreign and internal investment. If it can achieve these changes, combined with decreasing fertility, then the Middle East and North Africa could benefit from its dividend (Bloom et al, 2001).

Sub-Saharan Africa (SSA)
By the mid-1990s, the period when the world experienced dramatic reductions both in fertility and child mortality rate, SSA was lagging behind in all indicators. During the period, Latin America registered fertility rate of as low as 3.0 children per woman, South Asia 3.8, and East Asia 2.2 children per women. During the same period, however, SSA registered the highest fertility rate of 5.7 children per women. Furthermore, during the same period, all three comparison regions saw a surge in contraception use: the percentage of married women aged 15-49 using contraception rose from around 13 percent to 80 percent in East Asia, from 7 to 40 percent in South Asia, and from 14 to 67 percent in Latin America. The figures for SSA over the same period are much less dramatic, rising from around 5 percent to just 18 percent, with fertility remaining at 5.7 children per woman (Bloom et al, 2001; Kelley, et al, 2001; Ashford, 2007; World Bank, 2007).

There are various reasons for this persisted high fertility, of which poverty has been the major one. Given the limited financial infrastructure in the region in general and in rural areas in particular, there is little incentive or means to save in the form of cash. Thus, children are still viewed in this region as saving in kind as insurance against old age. Children are also a key source of labor since most of their livelihoods are labor intensive than capital. Furthermore, despite medical advances, infectious disease is still widespread causing the SSA region where infant mortality rate is still rampant, particularly in rural areas. As a result, cultural norms and policies seem to encourage high fertility in order to achieve the desired family sizes by compensating for the expected high infant mortality rate in the region. In addition, in areas where land distribution is based on family sizes, parents seem to decide to have more children so as to get sufficient farmlands (Bloom et al, 2001; Ashford, 2007). This is especially true in most of the rural Ethiopia.

With 41 percent of its population under age 15, SSA is the youngest region of the world. In Asia, Latin America and the Caribbean, about 30 percent of the population was under age 15; while in Europe this figure was only 16 percent of the population during 2005. In Ethiopia, 48 percent of its population was under 15 during the same period. Furthermore, in SSA, total fertility rate was 5.5 children per women, which was the highest in the world during 2005. These fertility levels have had greater impact than mortality rates on population size and growth and they have been the driving force behind Africa's youthful population (Ashford, 2007). While infant mortality rate has declined by 43 percent from1960 to 2000, fertility rate declined only by 19 percent during the same period. The baby boom generation entering into the working-age population in most comparison areas grew 0.35% per year faster than the total population during 1960s to 2000s, in Sub-Saharan Africa labor force growth was slower than population growth by 0.3 percent per year during the same period. Furthermore, whereas in most comparison areas working-age (15-64 year old) population makes up 60% to 70% of the total, only 53% of Sub-Saharan Africa's people are in this age group. Currently, this age group accounts to only 51.8 percent in Ethiopia. Thus, SSA region has not yet experienced a typical demographic transition.

There are also other factors which diminishes the limited working age population in SSA. Despite some impressive health gains over the last century, malaria, HIV/AIDS, and TB are just three of the big killers

that are not yet successfully controlled in SSA. Malaria and HIV alone account for 3-4 million of Sub-Saharan Africa's roughly 10 million annual deaths during 1990s (Bloom et al, 2001). Specifically, AIDS mortality is disproportionately selective of adults. The majority of people dying of AIDS are between 20 and 59 years of age. In other words, it is a disease that particularly hits those who should be economically productive and threatens not only health, but also the economic stability and potential of the region (Bloom et al, 2001; Ringheim, 2009). Ill health undermines a nation at every level, and precipitates and contributes to a vicious downward development spiral. Poverty increases susceptibility to illness, at the same time, illness is a prime cause of poverty. High mortality and fertility rates discourage investment in human capital: a family cannot afford to spend its limited resources on only one or two children, because their survival rate is relatively low. The reduced incentive to invest in the future threatens the economy as well as the political stability of a nation. Furthermore, SSA has been facing a series of prolonged and debilitating civil and international wars. Those wars not only kill and injure soldiers and civilians alike; they also destroy infrastructure and social structures, which in turn have a negative impact on a population's health. With these factors killing off large sections of the working population and actually bringing average age down in many countries of SSA, the region has no demographic dividend to reap (Bloom et al, 2001).

Hence, there are two most critical policy actions to be taken today throughout sub- Saharan Africa to seize upon the potential of young people to improve future development prospects: policy actions aimed at growth in the working-age share of the population and institutional quality. The latter includes factors such as a strong rule of law, efficient bureaucracies, government stability, lack of corruption, and a stable business environment that encourages domestic and foreign investors. Furthermore, Boosting economic growth in SSA would depend on expanding infrastructure, improving the investment climate, harnessing new innovations, and building institutional capacity (Ashford, 2007; World Bank, 2007; Ringheim et al, 2009).

Lessons from the Case Studies

As case studies from those successful regions (such as East Asia and Japan) show, demographic transitions affects economic development through its effect on age structure which in turn, affects labor supply, savings patterns and human capitals.

Demographic transition affects labor supply in two ways. Firstly, the regular and inevitable aging of the baby boom generation when it is between 15 and 64, it is more likely to be working, thus lowering the ratio of dependents to non-dependents. During the peak working years of 25 to 59, this effect is especially strong. The number of people who would like to work (labor supply) therefore gets bigger and exceeds the total population growth rate, provided that the labor market can absorb the larger numbers of workers, per capita production increases. This results in higher per capita income, which is usually described as the first demographic dividend. Secondly, as the fertility decline and family sizes become small, women are more likely to enter the workforce. This effect is more pronounced under the assumption that adult women themselves are more likely to have been brought up in small families and hence most probably with adequate education. This increases their productivity in the labor market and hence the overall economic development (Bloom et al, 2001; Ogaw and Matsukura, 2005; Mason, 2005; Ashford, 2007; United Nations, 2007).

Demographic transition also affects saving behaviors of the society. People below 15 and the old above 65 usually consume more than they generate, unlike working-age people between 15 and 65 years, who tend to have a higher level of economic outputs and hence higher level of savings at a given dependency ratio. Furthermore, people tend to save more between the ages of 40 and 65, when they are less likely to be investing in their children and the need to prepare for their retirement is becoming more pressing (Bertranou, 2005; Wang, 2005; Mason, 2005; United Nations, 2007). Provided that the source of elder finance is through capital accumulation rather than transfers, when large numbers of baby boomers start hitting their forties, national savings will tend to rise. This of course, requires well functioning financial markets and prudent macroeconomic management.

Finally demographic transitions affect the economic development through its effects on human capital development. The demographic transition begins with changes in mortality that results in a population that lives longer and stays healthier, which in turn, brings fundamental changes in the way that people live (United Nations, 2007). In general, attitudes to education, family, savings, retirement, the role of women and work all tend to shift. If a society is taking full advantage of the demographic dividend, it is certain to experience deep-rooted changes in its culture as its people become more valuable assets for future economic building.

Although the demographic transitions have paramount influence, all these mechanisms are heavily dependent on the policy environment. A large number of children during the first demographic stage can enter the work force during their adulthoods if they are well trained and healthy. Furthermore, a growing number of adults will only be productive if there is sufficient flexibility in the labor market to allow its expansion, and macroeconomic policies that permit and encourage investment. Similarly, people will only save if they have access to adequate saving mechanisms and have confidence in domestic financial markets. Finally, the

demographic transition creates conditions where people will tend to invest in their health and education, offering great economic benefits, especially in the modern world's increasingly sophisticated economies. Thus, governments invariably play a vital role in creating an environment where high quality health and education provision is possible − necessary steps to make the most of their country's demographic opportunities (United Nations, 2007).

Demographic Transitions in the Ethiopia

The current Ethiopian government has issued population policy in 1993. It seems that the government has recognized the population growth as one of the challenges to poverty reduction. The main objective of the policy was to balance population growth with the limited resources. The specific target of the policy includes, raising the contraceptive prevalence rate among the married women from 4 percent in 1990 to 44 percent by the year 2015 and reducing fertility rate from 7.7 children per woman in 1990 to approximately 4.0 by the year 2010 and closing the gap between boys' and girls' education. These efforts were driven in part by concerns over food insecurity, population pressure on the land, low incomes in rural areas, and youth unemployment in urban areas.

As the population policy and demographic factors are fully recognized and incorporated in formulating multisectoral development strategies and put into practices, there has been success stories of its results. This is evidenced by the periodically released publications of Central Statistical Authority (CSA) of Ethiopia and international organizations. As the Ethiopia Demographic and Health Survey (DHS) of 2014 reports, nearly 42 percent of married women use either a traditional or a modern method of contraception, mostly modern contraception method (40 percent). This figure shows that Ethiopia is very close to achieve its target expressed in the policy document (44 percent using contraception method at the end of 2015). However, there were significant spatial variations in this contraceptive use ranging from 64.1 percent among women in Addis Ababa areas to 1.7 percent Somalia region and on average 39 percent among the rural areas of Ethiopia. There appears to be substantial unmet demand for contraceptive distributions and family planning, especially in the rural areas.

Currently, Ethiopia is the second-largest country next to Nigeria in Africa, with an estimated population of nearly 90 million and a growth rate of 2.6 percent per year. As of 2014 DHS, the total fertility rate[1] (TFR) for Ethiopia as a whole declined between 2005 and 2011, from 5.4 children per woman to 4.8, and then decreased further to 4.1 children in 2014. This declining trend implies effective implementation of the population policy. However, there has been wide difference in fertility levels of women depending on locations and socio-economic characteristics. This difference ranges from a low of 1.7 children per woman in Addis Ababa to a high of 7.3 children per woman in Somalia region. As expected, total fertility rate is higher in the rural areas than the urban areas with 4.5.0 and 2.2 births per women respectively. This means the fertility rate in the rural areas is more than two times higher than the urban areas. With the exception to Addis Ababa, Dire Diwa and Harari, Oromia and Amhara regions, the fertility levels in the other regions were higher than the national average of 4.1. The level of fertility is inversely related to women's educational attainment, decreasing rapidly from 5.1 children among women with no education to 1.7 children among women who have at least some secondary education. It seems that fertility rate is inversely and linearly related to the educational levels of the women as the rate significantly drops for additional educational achievements. Fertility is also associated with wealth quintile. Women in the lowest wealth quintile have a TFR of 5.6, twice as high as that of women in the highest quintile 2.4. This finding implies that economic empowerment is important not per se but also as a means to reduce fertility and hence such household will have the opportunity to educate their few children with their limited resources. This in turn will have virtuous cycle as fertility rate is inversely and linearly related to the educational levels.

Overall, the total fertility rate (TFR) has declined gradually, from 7.7 in the late 1990s to 5.4 children per woman in the 2005 period, 4.8 in 2011 4.1 in 2014. However, this decline in fertility rate is very insignificant when compared with the total fertility drops that Japan has achieved during 1960s. In Japan, total fertility declined by 55 percent, from 4.54 in 1947 to 2.04 children per woman in 1957. Similarly, in Latin America, total fertility rate has also fallen from around 5 children per woman in 1975 to 2.5 child per women in 2001.

Infant and child mortality rates are basic indicators of a country's socioeconomic situation and quality of life (UNDP, 2007). Thus, the other measure of demographic transition is childhood mortality rate trends. Since the primary causes of childhood mortality such as biological factors and environmental factors change as children age, childhood mortality rates are expressed by age categories and we may not have a single indictor. For this reason, childhood mortality is usually measured at five different levels: neonatal mortality is the probability of dying within the first month of life; post-neonatal mortality is risk of dying within the next 11 months of the year for child who survived the first month; infant mortality is the probability of dying between

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[1] *Total fertility rate (TFR) is defined as the total number of births a woman would have by the end of her childbearing period if she were to pass through those years bearing children at the currently observed age-specific fertility rates.*

birth and the first birthday; child mortality is the probability of dying between exact ages one and five; and under-five mortality is the probability of dying between birth and the fifth birthday.

According to the 2011 Ethiopian DHS, Neonatal mortality is 37 per 1,000 live births. This rate is relatively lower in the case of post neonatal deaths which are 22 per 1,000 live births during the same period. Thus, above 63 percent of infant deaths in Ethiopia occur during the first month of life. Similarly, the infant mortality rate was 59 and under-five mortality was 88 deaths per 1,000 live births for the same period. This means that 5.9 percent of Ethiopian children die before reaching age one, while 8.8 percent does not survive to the fifth birthday. The following table shows the early childhood mortality rate and changes over time

Table 1: Early childhood mortality rate Changes				
Assessment periods			Mortality reduction in mortality	
Mortality stages	2005 DHS	2011 DHS[1]	in number	in percent
Neonatal	39	37	2	5%
Post-neonatal	38	22	16	42%
Infant	77	59	18	23%
Child	49	31	18	37%
Under-five	123	88	35	28%

Source: author compilation

Our data shows that neonatal mortality rate is still rampant in Ethiopia. During the past 2005DHS survey period, only about 50 percent of infant deaths in Ethiopia occur during the first month of life while the percent has increased to above 63 percent in the recent 2011 DHS. However, the 2011 EDHS show a rapid decrease in infant and under-five mortality during the five years prior to the survey compared to the 2005DHS period. The levels are also considerably lower than those reported in the 2005 EDHS. For example, infant mortality has decreased by 23 percent, from 77 to 59 deaths per 1,000 births, while under-five mortality has decreased by 28 percent, from 123 to 88 per 1,000 births. Relatively better achievement was reported in the case of post neonatal mortality rate showing rapid decline from 38 in 2005 DHS just to 22 in 2011DHS, which is about 42 percent decline.

Infant mortality rate in Ethiopia is still high when compared with the achievements of East Asia and Latin America during 2000, ten years before the Ethiopian DHS of 2011 which was 3.2 and 3.4 respectively. This further show us that there remains long strides to make for Ethiopia to accelerate its demographic transitions and hence to reap the same demographic dividends that the East Asians and Japan have been enjoying. However, it should be noted that accelerating the demographic transition is not a guarantee for enjoying the demographic dividends: it requires designing and effectively implementing appropriate policy mixes accompanying the demographic transitions.

Usually, aggregating of demographic data at the national level conceals some policy relevant variations. There is no doubt that infant and child survival is influenced by the socioeconomic characteristics of mothers, which in turn may vary from place to place. However, the recent 2011DHS failed to present such segregated information by locations. However, according to 2005DHS, mortality in urban areas is consistently lower than in rural areas. For example, infant mortality in urban areas was 66 deaths per 1,000 live births compared with 81 deaths per 1,000 live births in rural areas. The urban-rural difference was even more pronounced in the case of child mortality, which was 34 for urban and 58 deaths per 1,000 live births for rural areas. Furthermore, very wide regional differentials were observed in infant and under-five mortality rates. For example, neonatal, post neonatal and infant mortality rates were the highest in the Amhara regions which were 50, 44 and 94 deaths per 1,000 live births while these figures were the lowest in Addis Ababa 23, 22 and 45 deaths per 1,000 live births respectively. Furthermore, under-five mortality varies from region to region ranges from a low of 72 per 1,000 live births in Addis Ababa to a high of 157 per 1,000 live births in Benishangul-Gumuz, 156 per live births in Gambella and 154 per 1,000 live births in Amhara.

According to the Ethiopian Central Statistical Authority (2007), Ethiopian population grew at an average annual rate of 2.6 percent between 1994 and 2007. This means, there was a moderate decrease by 0.2% from the annual growth rate during the previous period of 1984-1994. As in the case of fertility rate and childhood mortality, there were significant variations in the population growth rate across the regions. The highest annual growth rate for the period 1994-2007 was observed for Gambella region (4.1), followed by Benishangul-Gumuz (3.0%), SNNP and Oromia (2.9 %), while the lowest growth rate during the period was observed in Amhara region (1.7%) followed by Addis Ababa (2.1%). These regional variations in the population growth rate may be explained by various demographic factors such as fertility rate, childhood mortality rate, perinatal mortality rate, etc. The lowest fertility rate in Addis Ababa might have contributed for the very low

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[1] As mini Ethiopian Demographic and Health survey of failed to assess the early child mortality rate status, our recent data for this section is the 2011 DHS.

population growth rate next to Amhara region. On the contrary, the lowest population growth rate in Amhara region could be best explained by the high childhood mortality and high perinatal mortality rates. According to the 2005DHS, childhood mortality as measured in terms of neonatal, post neonatal and infant mortality rates are more rampant in Amhara region than the others. According to the 2005 DHS report, under-five mortality rate was also rampant in Amhara region (154 per 1,000 live births) next to Benishangul Gumuz (157 per1, 000 live births) and Gambella (156 per 1,000 live births). Similarly, perinatal mortality[1] rate was most rampant in the Amhara region (56 per 1,000 stillbirths and live births) while this figure was the lowest in Afar (16 per 1,000 stillbirths and live births) followed by Gambella (24 per 1,000 stillbirths and live births). These factors may explain why the population growth rate in the Amhara region was the lowest during the period. If so, it could be misleading to try to attribute the decline in population growth rate of the region to the alleged reduced early marriages in the region, population out migration and increased contraceptives uses. There were no such evidences which support the notion that early marriage was the lowest in the Amhara region between 1984 and 1994. The same is true for the alleged population out migration and contraceptive use rate. Thus, it would be wise to reconsider the public policies implementation status such as population policy, education policy and health policies in the region as well as traditional cultural practices which put disproportionately higher burdens on the females in this region rather than trying to wrongly justify the unprecedented population reduction in the region merely in a politically palatable ways. It is not clear why should some leaders gaze at the dark room while they are actually in a class with ample lights to see things clearly!

As explained above, Ethiopia has made good progress in reducing the overall fertility rate compared with its progress in infant and child mortality rates. Contrary to the expected effects of the birth rate and mortality rates (decline in fertility rate on one hand and high mortality rates on the other hand is expected to lead to low population growth rate), there has been unprecedented population growth in Ethiopia. With the present growth rate, Ethiopia's population could double in size in less than 30 years due to the population momentum. In addition to the population momentum, without a faster decline in fertility, whatever impressive gains Ethiopia makes in reducing infant and child mortality might cause the rate of population growth to increase.

Currently, Ethiopia adds approximately, 2 million people every year. What is more disturbing is the age distributions of the populations, its pace of growth and imbalanced distribution of this population growth rather than the ultimate size of the population. As the following figure shows, the proportions of population under 15 years accounts for 45 percent of the population, which is the highest both in SSA and the world.
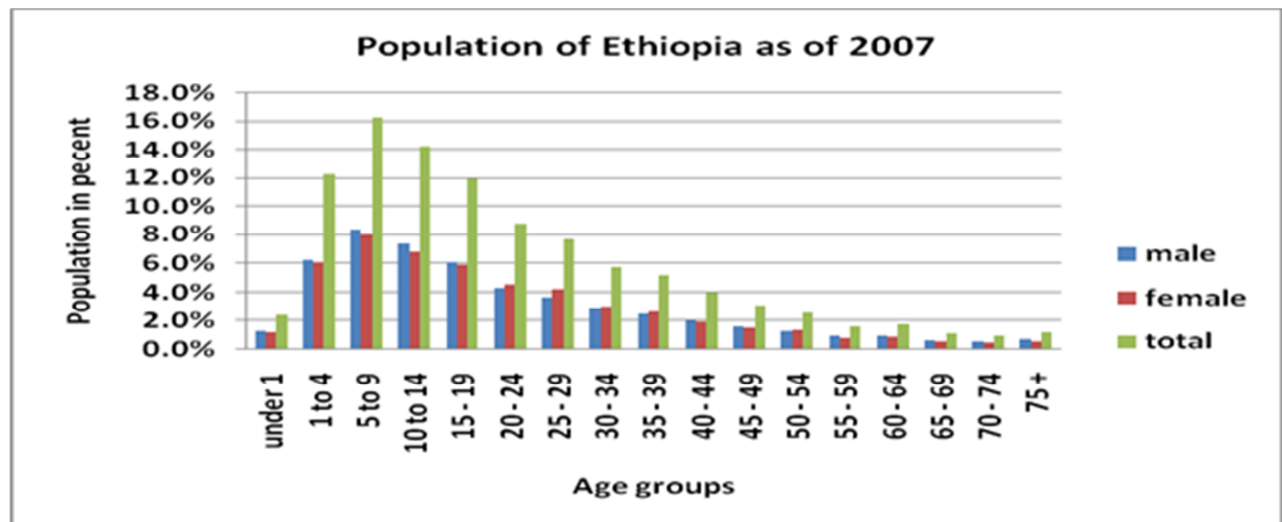

Figure1. Population of Ethiopia by age
Source: own calculation from the CSA data of 2007

As it is usually the case, aggregations conceals regional and locational variations in the demographic data. To further shade lights on these variations, the following table 2 shows populations by age categories for some regions in the Ethiopia. As it can be inferred from table 2 below, Addis Ababa (24%) has the lowest under-age 15 population proportion followed by Amhara (42.2%) region, both below the national average of (45%), while SNNP (47.9%) and Oromia (47.6%) have the highest population proportions under-15 age.

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[1] *Perinatal deaths include pregnancy losses of at least seven months' gestation (stillbirths) and deaths to live births within the first seven days of life (early neonatal deaths). Note that perinatal mortality rate is the sum of stillbirths (foetal deaths occurring in pregnancies of seven or more months duration) and early neonatal deaths divided by the sum of all stillbirths and live births.*

Table 2: Percentage distributions and dependency rate of some regions by age categories				
Age groups	0-14	15-64	above 64	Total dependency
National	45	51.8	3.2	93%
Amhara	42.6	53.4	4.0	87%
Benishangul G.	45.5	52.1	2.4	92%
Oromia	47.6	49.2	3.2	103%
Addis Ababa	24.0	72.7	3.3	38%
SNNP	47.9	49.7	2.4	101%

Source: Own calculation from the CSA raw data of 2007

Similar to the population growth rate variations explained above, the regional variations in the under-15 age proportion may be explained by various demographic factors such as fertility rate, childhood mortality rate, perinatal mortality rate, etc. As expected, those regions with observed lower population growth rate were also found to be regions with the lower under-15 age proportions of the population (with minor change in the order of Addis Ababa and Amhara region). The lowest under -15 age proportion is observed in Addis Ababa, which may be explained by immigrations of large numbers of working- ages from the regions due to push and pull factors thereby resulting in the highest rate of working age (15 to 64) proportion, which was 72.7 percent of the population in Addis Ababa.

Regional variations in population age distributions have fascinating socio-economic policy implications: in the regions where the under-15 age proportion is larger than that of the comparable national average, it means that there are many young people who need to be fed, clothed, housed, cared for medically, and educated and hence calls for more public expenditures in education sector, health sector as well as more stringent population policy to reduce the future fertility rate. It also calls for building recreational facilities and heavy investment in the employment creating activities.

On the contrary, in Ethiopia, the proportions of the working age groups (15 to 64 years old) accounts to only 51.8 percent, the lowest in the world. These age categories are adults who are more likely to engage themselves in works and spend only part of the income they generate on their own needs. The rest is used to provide for children or is saved, most often for retirement. Of course, these decisions largely depend on the macroeconomic stability and the availability of the financial institutions, (the effectiveness of these factors in motivating individuals to work, save and invest are highly questionable in the present Ethiopian context). Finally, the proportions of elders above 64 years accounts for 3.2 percent on an average. These are cohort of elderly people who work less or not at all and become dependent again. They either live off their own savings or are supported by their families or the state through pension funds. There are also regional variations in both the working age population proportions and elder proportions, which calls for different socio-economic policy implementations. Addis Ababa has the highest working-age population proportions (72.7 %) followed by Amhara region (53.4), both above the national average of 51.8 percent. Amhara region and Addis Ababa have also the highest elder population proportions of above 64 ages, which is 4 percent and 3.3 percent respectively.

According to Table 2 above, total dependency rate of 93 percent indicates that there are 93 dependents per 100 of working age of 15 to 64 years old. This ratio is the highest in the world. More disturbingly, total dependency ratio in some regions (Oromia and SNNP) exceeds 100 percent implying that for each active labour force in the region, there was more than one person to be supported by the income of the productive workforce. There is no shadow of doubt that such highest dependency ratio will result in discouraging household savings and hence result in lower capital accumulations and lower investment.

There seems a unique feature in the Ethiopian demographic transition: for age brackets beyond 59 years old, the proportions of female in each age brackets are found to be consistently below their corresponding male proportions. This means, of the total of 36,621,848 females reported to exist as of the 2007, the proportion of these who lived beyond 59 years old were consistently lower than their corresponding males. This may imply that the life expectancy of males exceeds that of their corresponding females'. The following graphs depict this trend more clearly.
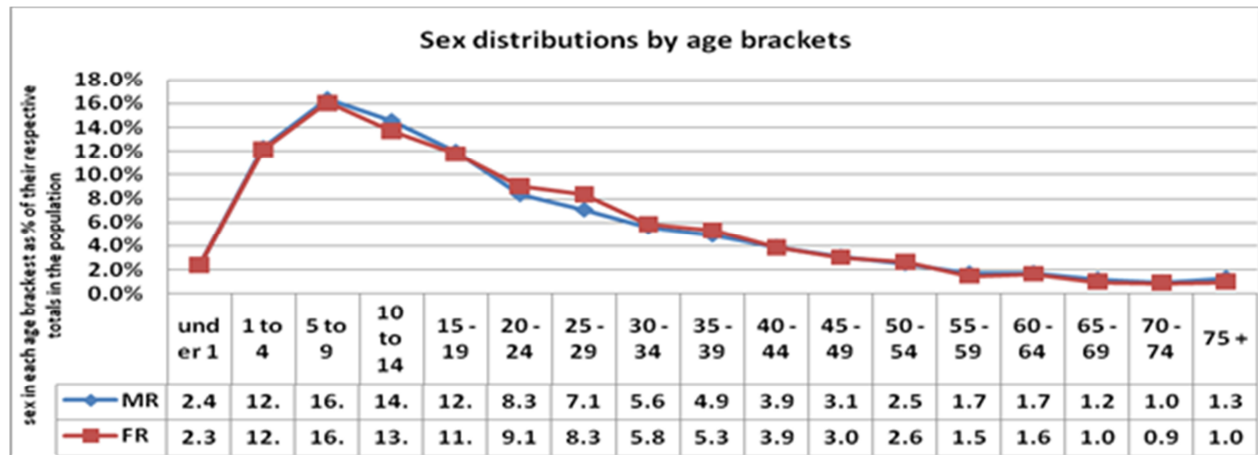
Figure 2. Distributions of sex by age categories
Source: Own calculation from the CSA data of 2007

The gap in the life expectancy of female and males may be further explained just by dividing the number of females in each age brackets by the total population in the respective age brackets. The following table shows this result.
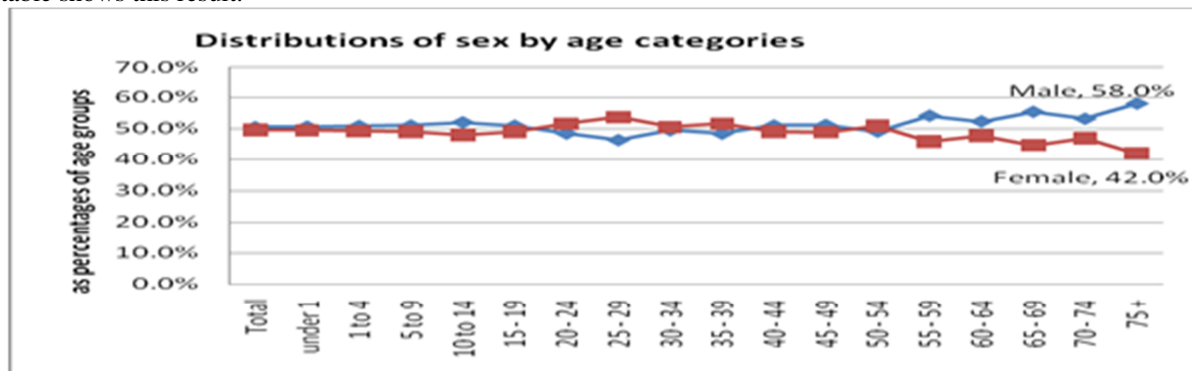

Figure3. Distributions of sex by each age brackets.
Source: own calculation from the CSA data of 2007

As can be seen from the above graph, as the age increases beyond 39 years old, the proportions of females in each age brackets consistently decline showing that males live longer than females in Ethiopia. This trend is true for all regions in Ethiopia except for Addis Ababa.

The other important issue in the Ethiopian demography is its distributions. Ethiopia remains one of the least urbanized countries in the world, with on an average 84 percent of its population residing in rural areas. Population growth in rural areas adds to the growing number of rural residents who are land-short and landless. This in turn, creates pressure on the land and natural resources and hence environmental degradations and climate change. The urban/rural distribution of people varies by sex and age as the following graphs show.
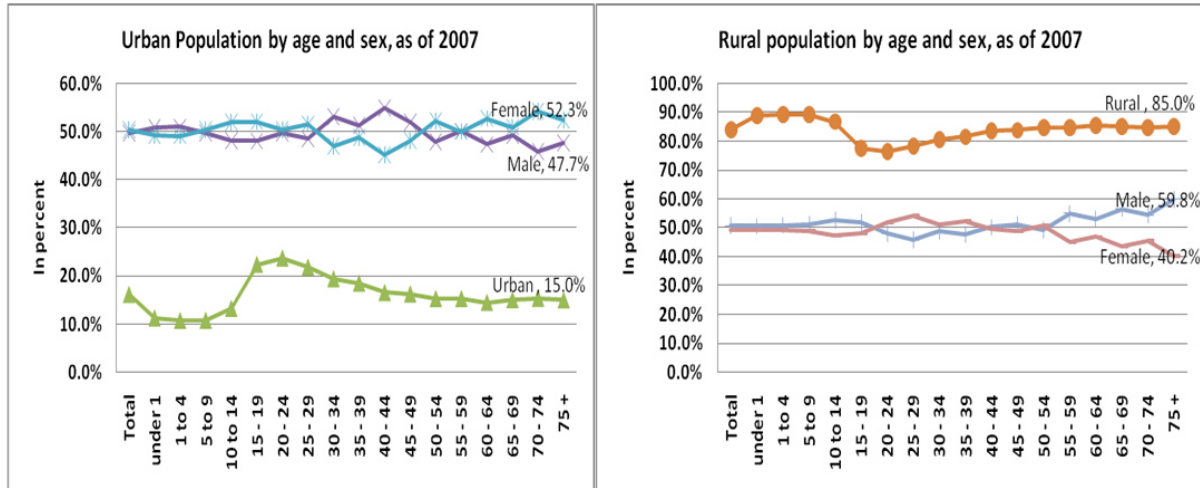
Figure 4. Distributions of population by sex and between urban vs rural
Source: own calculation from the CSA data of 2007

The above figure 4 show that the economically active population, especially between the age of 15 to 34 are more likely to reside in urban areas than rural. This coud be attributable to two major reasons. The first one is that due to shortage of arable land in rural areas combined with the limited availability of non-farm activites in the rural areas, those economically active people may be forced to migrate to urban in search for non farm jobs. The second possible reason is that after completeion of the high school, most students move to the urban areas for education at various expanding higher institutions. Note also that the urban/rural distributions of sex varies by age. The only clear pattern is, however, after 54 years of age, female dominate the urban dewellers whereas the reverse is true in the rural areas. Note also that the figures imply that the life expectncy of females in the rural area is significantly lower than their male counter part in rural areas. Data from the recent Ethiopian demographic and health survey (2014) also confirms the trend as shown below (Table 3).

Percent distribution of the de facto household population by five-year age groups, according to sex and residence, Ethiopia 2014

Age	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
<5	10.6	9.2	9.9	13.9	14.5	14.2	13.5	13.8	13.6
5-9	9.8	9.4	9.6	17.2	17.0	17.1	16.2	16.0	16.1
10-14	12.5	12.2	12.3	16.1	16.1	16.1	15.7	15.6	15.6
15-19	12.1	14.8	13.5	11.5	8.7	10.1	11.6	9.6	10.6
20-24	11.8	12.3	12.1	7.4	6.5	7.0	7.9	7.3	7.6
25-29	12.5	10.9	11.7	5.8	7.8	6.8	6.7	8.2	7.4
30-34	7.6	6.6	7.1	5.0	6.1	5.6	5.4	6.2	5.8
35-39	6.4	6.1	6.2	4.8	5.4	5.1	5.0	5.5	5.3
40-44	4.9	3.7	4.3	4.0	3.2	3.7	4.2	3.3	3.7
45-49	3.0	3.2	3.1	2.9	2.6	2.8	2.9	2.7	2.8
50-54	2.0	3.0	2.5	2.1	3.7	2.9	2.1	3.6	2.8
55-59	1.5	2.5	2.0	2.0	2.6	2.3	2.0	2.6	2.3
60-64	2.0	2.4	2.2	2.1	2.0	2.1	2.1	2.1	2.1
65-69	1.1	1.6	1.4	1.8	1.2	1.5	1.7	1.2	1.5
70-74	1.3	1.1	1.2	1.3	1.0	1.1	1.3	1.0	1.2
75-79	0.3	0.5	0.4	0.8	0.5	0.6	0.7	0.5	0.6
80 +	0.7	0.7	0.7	1.1	0.9	1.0	1.1	0.9	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Weighted number	2,557	2,721	5,279	17,586	17,174	34,759	20,143	19,895	40,038
Unweighted number	4,507	4,952	9,459	15,268	14,542	29,810	19,775	19,494	39,269

Source: Ethiopian Mini Demographic and Health Survey (2014DHS).   Male   Female   Male   Female

As we observe from the above table, the percent distributions of females after the age of 64 decreases both in the rural population and total national sample compared to their male counterparts. However, there is no as such vivid difference in the percent distributions of male and female with repect to age after 64 in the urban areas. Our analysis show that such variations are also common in the regional states. This is intriguing finding which largely contradicts the available documents evidencing life expectancy of females exceeding that of their corresponding males'. This could be because of lack of genuine demographic data in Ethiopia as birth certificate is not common in most Ethiopian regions. In the absence of factual data, females in the rural areas tend to under

report their ages than their male counter parts. This is just personal observation and hence this issue needs more elaborated research to either refute or admit the widely held consensus that accepts the life expectancy of females to exceed their corresponding males'. To summarize, Ethiopia is just beginning its demographic transition when measured in terms of all the indicators: there is still high fertility rate; althogh on decling trend, there is still rampant childhood mortality and overall population growth rate is very rapid. The proportions of the under-15 age population proportion is is 45 percent (the highest in the world) whereas the proportions of population in the working age (15 to 64 years old) is on the avaerage 51.8 percent, which is the lowest in the world. Thus, Ethiopia is far from enjoying the demographic dividend.

Conclusion

While population growth has a large negative effect on per capita income growth, this effect is counteracted by large positive effect from growth in the share of the population that is economically active. In other words, the effect of population growth on economic development depends largely on the proportions of the working age and the policy mixes used to encourage people to work, save and invest. If the age structure remains constant, therefore, the effect of population growth is neutral, but as the proportion of workers rises or falls, so do opportunities for economic growth.

However, increase in the working age proportion is not a guarantee for earning the demographic dividend in the absence of proper policy mixes. If an increase in the working-age population is not matched by increased job opportunities, they will face costly penalties, such as rising unemployment and perhaps also higher crime rates and political instability. As the experiences of East Asian region and Japan show, reaping the demographic dividend appears to depend on several factors: strong public health systems that improve child survival and health in general; widespread availability and social acceptability of family planning; rapid and steady declines in childbearing; improvements in educational enrollments and quality; and stable economic conditions conducive to growth and job creation. On the contrary, rigid labour market regulations, low investments in human capital, tax evasion, socioeconomic inequality, and lack of well regulated capital markets are some of the constraints that limit the ability of developing countries such as Latin America, Middle -East and North African regions to benefit from changes in population age structure.

There are some most critical policy actions to be taken today throughout Sub- Saharan Africa in general and Ethiopia in particular to seize upon the potential of young people to improve future development prospects. These important policy environments includes: health policies to improve public health and access to care; family planning and related reproductive health policies to help families achieve their desired size; education policies to increase access to schooling; and economic policies that promote labor-market flexibility, openness to trade, adequate credit and savings. Furthermore, SSA need to improve institutional qualities which includes factors such as a strong rule of law, efficient bureaucracies, government stability, lack of corruption, and a stable business environment that encourages domestic and foreign investors.

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