Policies Needed to Capture a Demographic Dividend in Sub-Saharan Africa

Hans Groth[1] · John F. May[2] · Vincent Turbat[2]

Abstract

In recent years, discussions on how to capture a demographic dividend (DD) have come to dominate the debate on international development in sub-Saharan Africa (SSA). The model is that of the East-Asian countries that benefitted from a DD at the end of the twentieth century. Nowadays, the goal is to replicate a similar process in SSA. For this to happen, however, SSA countries will need to implement a number of policies, which we classify into policies fulfilling necessary conditions and policies fulfilling sufficient conditions required to capture a DD. These necessary and sufficient conditions aim at improving the demographic dependency ratio (DDR) but also, as importantly, the employment dependency ratio (EDR) and the socioeconomic dependency ratio (SDR), each ratio being more stringent than the previous ratio. In addition to the formulation and implementation of adequate policies in the area of population, education, health, and gender equity, SSA countries will need to design and implement sound economic policies and improve good governance. To achieve this tall order, it will be crucial to adopt an "integrated approach" in order to foster socioeconomic development across all sectors and muster the full commitment of both the African leadership and the donors' community.

Keywords Sub-Saharan demography · Demographic transition · Fertility transition · Demographic dependency ratio · Employment dependency ratio · Socioeconomic dependency ratio · Demographic dividend · Population policies

✉ John F. May
  jfm74@georgetown.edu

  Hans Groth
  hgroth@wdaforum.org

  Vincent Turbat
  vmt24@georgetown.edu

[1] World Demographic & Ageing Forum (WDA Forum), St. Gallen, Switzerland

[2] Georgetown University, Washington, DC, USA

⚡ Springer

1 Introduction

In recent years, discussions about international development have focused on the formulation of policies that would help countries in sub-Saharan African (SSA) replicate the conditions that enabled East-Asian countries to capture a demographic dividend (DD) during the period covering the early 1960s to the 1990s (World Bank 2015; Thakoor and Wakeman-Linn 2016; World Bank/International Monetary Fund 2016). The DD can be defined as an economic surplus triggered by an increase of the employed working-age population relative to the dependent population (Turbat 2017; see also Lee and Mason 2006).

This paper focuses on the public policies that are needed to capture a DD in SSA. We submit that these policies can be differentiated between those fulfilling the necessary conditions and those achieving the sufficient conditions to capture a DD.

DD-friendly policies should start by aiming at accelerating the demographic transition, which is a necessary condition to open the demographic window of opportunity and reap the benefits of a DD. These demographic policies should be accompanied by a set of socioeconomic policies designed to improve education, health, and gender equity outcomes, which would foster an enabling environment.

We call *necessary conditions* the set of policies that are needed to improve the demographic dependency ratio (DDR). In other words, these are the policies that would lead to a fast and sharp decline in fertility levels, would improve the relationship between active adults and young dependents, and, eventually, would open the demographic window of opportunity.

Once the demographic window of opportunity is opened, other conditions are required. We call *sufficient conditions* the set of policies that are needed to improve the employment dependency ratio (EDR) and the socioeconomic dependency ratio (SDR).[1] The sufficient conditions include the employment policies (targeting full employment for the newcomers on the labor market) as well as the policies dealing with salaries and social issues. These policies should also address the productive use of the economic surplus, which is freed by the decrease in the number of young dependents. Therefore, these policies encompass economic, education, health, gender, and governance issues (Gribble and Bremner 2012; Zuber et al. 2017).

The first section of the paper provides key definitions and describes the conceptual framework. The second section reviews the public policies, i.e., the population policies, which are needed to open a demographic window of opportunity. In this section, attention is paid to policies needed to improve the DDR. In the third section of the paper, the emphasis is on the policies that aim at improving the EDR and the SDR, essentially the employment policies as well as the policies on salaries and social issues. Finally, in the fourth section, we look at the way forward and suggest policy priorities for the SSA governments and their development partners.

The paper is based on the findings of the new book edited by Hans Groth and John F. May, published by Springer (Groth and May 2017). This volume, which offers a state of the art of the current thinking on the DD and related policies in sub-Saharan Africa, is the result of a 3-year effort by 50 international scholars, of which more than one-third are working in, or are linked to, African institutions. The theoretical chapter by Turbat

---

[1] It should be noted that each ratio is more stringent than the previous ratio.

published in this volume offers the basic conceptual framework, which was refined when preparing this paper (Turbat 2017).

2 Conceptual Framework

As mentioned, the demographic dividend (DD) can be defined as an economic surplus resulting from a relative increase of the employed working-age population as compared to the dependents, in particular, the young dependents (Turbat 2017). This economic surplus is generated by two elements: the freeing up of resources due to a decrease in the dependency ratio and an increase in gross domestic product (GDP) due to the arrival of the "boom generation" on the labor market. This economic surplus translates into a greater amount of resources, expressed in terms of GDP. These additional resources are in excess of what is needed to cover the current needs of the dependents and are available either for investment in both fixed and human capital and/or for additional consumption (May and Turbat 2017: 83, Note 1).

The concept of the demographic dividend was formulated after an examination of the East-Asian "economic miracle," which occurred in the years 1960s to 1990s. To fully understand this phenomenon, economists, demographers, and social scientists were compelled to factor in the demographic changes in these populations, namely the rapid shift in the age structure that was brought about by fast fertility declines. It is estimated that the demographic dividend in East Asia triggered a boost in the economic growth of about 40% (May and Turbat 2017: 79).[2]

However, a major issue lies in the correct calculation of the dependency ratio. Demographers propose a classic definition of what we will call the "demographic" dependency ratio. The "demographic dependency ratio" (DDR) is the number of people that are not of working age *divided* by the number of people that are of working age.

The formula might read as follows (under the assumption of a working age 15–64):

$$\frac{(\text{Number of people aged 0 to 14 and 65 and over}) \times 100}{\text{Number of people aged 15 to 64}}$$

In fact, this crude measurement needs to be re-examined for two main reasons. First, children remain dependents well beyond age 15, and older people often fall again in the dependents' category before they reach the age of 65. Second, not all adults are actively employed. Therefore, unemployed adults should be added to the dependents in the numerator and subtracted from the number of people aged 15 to 64 in the denominator. It could be argued that people who are underemployed should be treated similarly, although accurate data on underemployment are usually hard to obtain. Therefore, we propose to calculate an "employment dependency ratio" (EDR), which we define as the number of people that are unemployed (or inactive), whatever their age, *divided* by

---

[2] This paper will exclusively focus on the first demographic dividend, i.e., the fostering of an economic surplus following a change in the age structure. A second dividend, namely an increased capital accumulation obtained through savings and investment, may occur after a first dividend has been captured (Lee and Mason 2006).

number people that are working (or active), whatever their age. The formula is as follows:

$$\frac{(\text{Under } 15 + \text{Over } 65) - (\text{Unemployed } 15 \text{ to } 64) - (\text{Employed U15 and } 65+) \times 100}{(15 \text{ to } 64) - (\text{Unemployed } 15 \text{ to } 64) + (\text{Employed U15 and } 65+)}$$

or in short, unemployed/employed.

However, this is not sufficient to fully assess the dependency burden (i.e., the burden on the active people who need to support the dependents). We, therefore, propose to calculate what we call a "socioeconomic dependency ratio" (SDR) which we define as the number of people that have a total consumption higher than their total income—generated by a productive activity—*divided* by the number of people that have a total income—generated by a productive activity—higher than their total consumption.

The socioeconomic dependency ratio (SDR) formula reads as follows:

$$\frac{(\textit{Number of People whose Income is} < \textit{Consumption}) \times 100}{(\textit{Number of People whose Income is} > \textit{Consumption})}$$

This dependency ratio is similar to the "support ratio" as spelled out in the National Transfer Accounts (NTA) Manual[3] and, for instance, calculated by the CREFAT[4] for the SWEDD[5] countries.

The support ratio as defined in the NTA is similar to an approach introduced by Cutler et al. (1990). The ratio of the number of workers, weighted to incorporate age-variation in labor income, to the number of consumers, weighted to incorporate age-variation in consumption. More precisely, the effective number of workers (L) incorporates age-variation in labor force participation, hours worked, unemployment and productivity or wages, and the effective number of consumers (N) includes age-specific variation in consumption.

The support ratio formula is L/N where L is the number of workers and N the number of consumers. In other words, it provides an estimate of the number of consumers supported by the workers. One can, therefore, write the consumption per consumer (C/N) as follows:

$$\frac{C}{N} = \frac{(1-s)Y}{L} \times \frac{L}{N}$$

where C is the total consumption, Y the total income, and s the average propensity to save (c, the propensity to consume = $1-s$).

The SDR that we are proposing is different from the support ratio in that we are having the workers in the denominator and the "dependent" consumers (not the total consumers) in the numerator. It is built as a dependency ratio and not as a support ratio.

In order to capture a demographic dividend, a country will need not only to improve the DDR but also the EDR and the SDR. As explained in the Introduction, this paper

---

[3] *National Transfer Accounts Manual: Measuring and Analyzing the Generational Economy*, New York: United Nations, 2013.
[4] Centre de Recherches en Économie et Finance Appliquées de Thiès, Sénégal.
[5] The *Sahel Women's Empowerment and Demographic Dividend* (SWEDD) is a World Bank project that includes six countries: Burkina Faso, Chad, Côte d'Ivoire, Mali, Mauritania, and Niger.
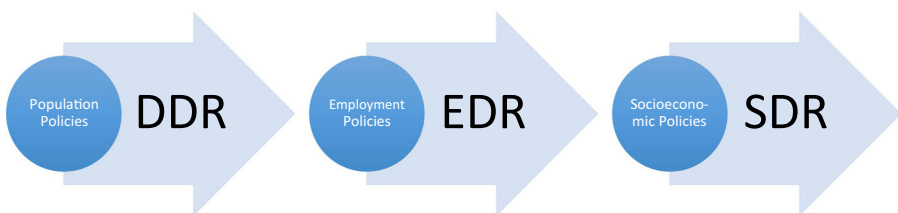
will focus on the necessary conditions, as well as the sufficient conditions needed to achieve these goals. The fulfillment of the arrays of these various necessary and sufficient conditions follows a logical, as well as a chronological, sequence. Figure 1 offers a sketchy summary of the conditions that policymakers will need to meet in order to capture a (first) demographic dividend.

3 Policies to Achieve the Necessary Conditions

A rapid and sharp decrease of fertility is the most important policy lever to open a demographic window of opportunity and benefit from a demographic dividend (DD) (May and Turbat 2017). Such a fertility decline is necessary in order to positively impact the demographic dependency ratio (DDR). The DDR will improve (decrease) when active adults are growing faster than their dependents, especially their young dependents below age 15 or below age 20 (both dependency ratios are routinely calculated by the United Nations Population Division). However, the demographic window of opportunity will not last forever because the population will inexorably start to age. The older dependents will eventually grow faster than the working age population and therefore the DDR will increase again.

3.1 Family Planning Coverage

The key public policy challenge is to trigger a rapid and sharp fertility decline (Guengant 2017). To achieve this, the first step will be to improve and expand the supply of family planning services through programs that offer reliable information and quality services. The current level of contraceptive use for modern methods in sub-Saharan Africa is currently estimated at 26% (Population Reference Bureau 2017), whereas it will be necessary to reach a contraceptive prevalence rate (CPR) of at least 75% to achieve the contraceptive revolution and attain replacement level fertility. Despite some exceptions (e.g., Ethiopia, Malawi, and Rwanda), most sub-Saharan African countries currently experience very low growth rate of their CPR, to the tune of about 0.5 percentage point per year. Therefore, it is necessary to increase the uptake of modern contraception. A rate of increase of contraceptive coverage of at least 1.5 percentage points per year appears to be an ambitious but feasible target. The programmatic challenge is not only to attract new family planning acceptors but also to retain current users.

Source: The authors.

Fig. 1 Policies impacting respectively the demographic dependency ratio (DDR), the employment dependency ratio (EDR), and the socioeconomic dependency ratio (SDR)

3.2 Demand Creation for Smaller Family Size

A faster fertility decline will also require a much higher demand for smaller family size, i.e., the creation of a larger demand for lower fertility. The anticipated mortality decline, especially of infant and child mortality, should help foster smaller family size. However, specific programs will also be required to change perceptions and attitudes about family size. Information, education, and communication (IEC) programs, as well as behavior communication change (BCC) campaigns will need to be expanded. Such communication programs must be innovative, repetitive, and sustained over time. The Animas Sutura program in Niger appears to be a sterling example of a successful communication program, although it currently covers less than 5% of the population of the country (Guengant and Issaka Maga 2017).

In addition, female education and women's empowerment programs will reinforce communication efforts. As such, the *Sahel Women's Empowerment and Demographic Dividend* (SWEDD) project funded by the World Bank Group in six Western Africa countries (Burkina Faso, Chad, Côte d'Ivoire, Mali, Mauritania, and Niger), represents a new generation of projects linking women's empowerment to the capturing of a DD.

3.3 African Leadership and Donors

The two-pronged effort to expand family planning access and create a stronger demand for smaller family size will also necessitate a much stronger commitment of the part of the African leadership (May 2017a). The attitudes of African policymakers have started to change in recent years because African leaders are interested in capturing a demographic dividend. However, African leaders and policymakers have not yet fully internalized the need to reduce fertility levels rapidly and significantly to achieve this goal. Moreover, the institutional capacity of many SSA countries to implement population policies and programs remains weak (May 2017b).

The donors' community should also be more proactive on the front of fertility reduction. In this respect, the 2012 pledge (reiterated in 2017) of the Bill and Melinda Gates Foundation to provide funding for access of modern family planning methods to an additional 120,000 couples is a major step in the right direction. Last but not least, past family planning efforts have suffered from shifting policies and priorities. The HIV/AIDS epidemic has defunded many family planning programs. Therefore, it is essential that future efforts to expand family planning coverage be sustained over time with appropriate funding (May 2017a).

4 Policies to Achieve Sufficient Conditions

If properly implemented, the population and supportive policies discussed in the previous section should result in a decrease of the demographic dependency ratio (DDR), a necessary condition for the opening of the demographic window of opportunity.[6] However, these

---

[6] The demographic window of opportunity opens when fertility declines. This window of opportunity may last for a period of 40 to 50 years, until the proportion of the older population (65+) starts to increase rapidly, a phenomenon known as "population aging."

policies are insufficient to significantly impact the employment dependency ratio (EDR) and/or the socioeconomic dependency ratio (SDR).

If the DDR is often calculated according to the formula (U15 + 65 and over)/15–64, the EDR takes into account employment by subtracting the U15 and 65+ that are employed from the numerator (dependents) to add them to the denominator (active persons), and subtracting the unemployed 15–64 from the denominator (active persons) to add them to the numerator (dependents), or [(U15 + 65 and over) − (employed U15 + employed 65 and over)]/[(15–64) − (unemployed 15–64)].

As can be seen in Table 1, which is based on data for 2015 and 2016 that were collected by the International Labour Organization (ILO), the United Nations Development Program (UNDP), and the World Bank Group (WBG), the DDR grossly underestimates the real dependents' burden on the economy of a country, when it is compared to the EDR. The latter is no doubt a much better, albeit insufficient, indicator of the "dependency burden" than the former.

The number of working people, and therefore, the EDR (via variations in both numerator and denominator), is directly impacted by the employment policy. The average income of the working population is directly impacted by the salary policies (especially by the minimum wage policy). Through a variation in the number of people who spend less than their income—generated by a productive activity—this will directly impact the SDR.

If the three selected indicators (DDR, EDR, and SDR) are extremely relevant to assess the likeliness of reaping a DD, other elements need to be considered as well. For example, the number of assisted people does not only depend on age or employment but also on social and health status (handicap, for example). Also, the average dependency subsidy is directly impacted by social policies. An increase in the number of people covered by the social safety net would result in an increase in money transfers from the "surplus providers" to the "surplus users." The same result would be observed if there was an increase in the average subsidy allocated to the dependents.

In this section, we will underline the main elements that each of the main socioeconomic policies should include with the view of freeing up resources currently allocated to dependents and therefore of improving the EDR and the SDR, respectively. However, it must be kept in mind that these policies cannot be fully successful without simultaneous policies in education, health, youth and gender (which help create an enabling environment), and macroeconomic policies.

As suggested by the International Labour Organization (ILO 2013): "Possible policy directions need to take into account the complementarities between employment and social protection policies for all age groups spanned over the life cycle. They should build upon inter-generational solidarity".[7]

4.1 Employment Policies

To improve the EDR, a government's priority should be to increase the labor market's absorptive capacity to the level of the bulge of youth that will reach the working age as a result of the demographic transition and thus modification of the age structure (Eberstadt 2017; Lee et al. 2016). If this is not done, the youth will end up reacting

---

[7] Social protection includes policies and programs designed to reduce poverty and vulnerability.

Table 1 Comparison between the 2016 demographic dependency ratio (DDR), the 2016 employment dependency ratio (EDR), and the estimated 2015 socioeconomic dependency ratio (SDR)

Country	DDR	EDR	Estimated SDR
Western Africa			
Benin	82	224	244
Burkina Faso	92	154	222
Gambia, The	92	225	N/A
Ghana	72	96	244
Liberia	82	189	N/A
Mali	102	178	250
Senegal	89	191	233
Sierra Leone	82	155	N/A
Total	85	147	N/A
Central Africa			
Cameroon	85	127	N/A
Gabon	72	201	N/A
Sao Tome and Principe	85	111	200
Total	84	130	N/A
Eastern Africa			
Ethiopia	80	106	204
Madagascar	82	98	N/A
Mauritius	41	71	N/A
Mozambique	94	203	208
Rwanda	79	122	N/A
Seychelles	133	182	N/A
South Sudan	83	171	N/A
Tanzania	67	118	N/A
Zambia	96	150	N/A
Zimbabwe	82	116	N/A
Total	79	120	N/A
Southern Africa			
Botswana	56	164	N/A
Lesotho	67	160	N/A
Namibia	68	178	N/A
South Africa	52	149	182
Total	53	151	N/A
Eastern Asia			
China–Hong Kong SAR	37	54	189
Japan	58	72	222
Korea, Republic of	39	85	192
Mongolia	100	184	179
Total	59	76	195

Some important sub-Saharan countries, such as Kenya and Nigeria, have not been included in this table because the data are either not available or unreliable

Source: authors' calculations based on ILO, UNDP, and WBG data collected for years 2015 and 2016

to chronic unemployment either through out-migration and/or social unrest. In both cases, this would negatively impact the capturing of a DD.

The International Labor Organization (ILO) estimates that the global youth unemployment rate in developing countries is expected to reach 9.4% or 7.9 million youth in 2017. In addition, "Across most labour market indicators, wide disparities exist between young women and men, underpinning and giving rise to wider gaps during the transition to adulthood. In 2016, for instance, the labour force participation rate for young men stands at 53.9 per cent compared to 37.3 per cent for young women—representing a gap of 16.6 percentage points" (ILO 2016). Also, millions of young people in low-income countries continue to leave school to take up jobs when they are too young. According to the ILO report, 31% of youth in low-income countries have no educational qualifications at all compared to 6% in lower-middle-income countries and 2% in upper-middle-income countries.

The youth are more likely to be unemployed than the other age groups and, when employed, more likely to be in the informal sector,[8] at a low wage, and without social protection. Moreover, there are large discrepancies within the youth. Kipesha and Msigwa (2013) list five criteria, namely gender, geographical location, education, skills, and marital status as significant factors explaining the difference in youth employment status.

A relevant employment policy should, therefore, focus on the youth and not only when they arrive on the labor market. It should start much earlier through their education, with a special focus on girl's education, their skills, and their health. Rural labor markets need to be boosted to slow down the current out-migration flows that start from the remotest areas of sub-Saharan Africa to end up in European camps, if not in the sea, via the slums of the African capital cities. Also, the plague of informality needs to be effectively addressed at the level of urban labor markets. Data clearly show that most people, and especially the youth, that are "employed" in the informal sector live under the poverty line.

4.2 Salary Policies (Minimum Wage)

Even if a government succeeds in increasing youth employment, the impact on the SDR might be moderate because of the "working poor". The poor quality of employment continues to disproportionately affect the youth, albeit with considerable regional differences. For example, sub-Saharan Africa continues to suffer the highest youth working poverty rates globally at almost 70%.

As observed in many economies, there is growing evidence of a shift in the age distribution of poverty, with youth taking the place of the elderly as the group at highest risk of poverty (defined for developed economies as earning less than 60% of the median income). The challenge is particularly acute in some countries where the "poverty risk" for young workers exceeds 20%.

Cunningham (2007) suggests that the minimum wage is an attractive policy tool for governments that aim at reducing poverty and promoting social justice as "it does not require significant direct government expenditures ..." However, because the minimum

---

[8] The informal sector, as opposed to the formal sector, encompasses economic activities, enterprises, jobs, and workers that are not regulated or protected by the state.

wage is often tied to social programs, an increase in minimum wage might exacerbate deficit issues.

Therefore, should a government enact and enforce minimum wage legislation? Would it result in an increase in the national income per capita? Would it impact negatively the employment level?

Cunningham (2007) notes that the salaries of workers both in the formal and informal sector increase as a result of a rise in the minimum wage. Moreover, "the minimum wage is more binding in the informal than the formal sector."

Terrell and Almeida (2008) confirm this conclusion, "the evidence strongly suggests that an increase in the minimum wage tends to have a positive wage effect," and find "a small negative employment effect among workers covered by minimum wage legislation," noting that "the effects tend to be stronger among low-wage workers."

4.3 Social Policies

Barrientos and Hulme (2008) acknowledge the growing consensus around the view that social protection constitutes an effective response to poverty and vulnerability in developing countries, and an essential component of economic and social development strategies. Social protection is now better grounded in development theory as a result of the identification of the factors preventing access to economic opportunity and sustaining persistent poverty and vulnerability.

The remarkable economic successes of East-Asian countries have been achieved through state-led macroeconomic and development policies in which social policies played a fundamental role. As Cook (2013) comments, "These late industrialisers adopted social policies at earlier stages in their development...challenging the notion that more expensive social policies are a luxury of richer economies. Instead, their experience demonstrates the intrinsic role of such policies in development processes."

New social programs, such as the well-known conditional cash transfers (CCTs), are aimed at both reducing poverty and promoting development, taking into account the strong relationship between poverty, inequality, and growth.

With regard to employment, considering that one of the major obstacles is the nature of employment, the structural change process will need accompanying social policies: "structural transformation requires deliberate policies to invest in sectors that can create jobs, and in the labour force to ensure skills appropriate to these new sectors" (Cook 2013).

The social policies needed to improve the SDR will have to: (i) change focus from short-term social safety nets and social funds to a much broader range of mid- to long-term policies and programs that combine interventions protecting basic levels of consumption among poor; (ii) facilitate investment in human capital and other productive assets; (iii) strengthen the agency of those in poverty, including the "working poor" (Barrientos and Hulme 2008); and (iv) include all dependents' categories, including the unemployed.

4.4 Education and Gender Policies

Education policies, especially those geared at young girls, are an essential element of the policies needed to fulfill the necessary conditions to capture a demographic dividend, namely to reduce high fertility levels. In addition, female education programs will facilitate the expansion of family planning coverage. It has been demonstrated in

Ethiopia that female education brings also positive externalities, even for women without education (World Bank 2007). However, for female education to fulfill its purpose with respect to capturing a DD, it must be stressed that young girls should pursue their schooling until the completion of the secondary level. Another key dimension of education, which has often been overlooked, is the quality of education (a phenomenon which is independent of the length of education).

These education policies geared at young girls are predicated on gender equitable policies. When combined with women's empowerment policies, female education programs will be more effective to entice young women to reduce their family size and participate in the economy. Finally, education and gender policies, when geared at young girls, also help fulfill the sufficient conditions to capture a demographic dividend.

5 The Way Forward

In addition to the management of fertility, public policies should focus on the other drivers that must be put in place to capture a DD, mainly employment, salary, and social policies. However, these policies would fall short without the right enabling environment. This means that relevant policies in the areas of education, health, gender, macroeconomics, and good governance need to be implemented as well.

At this stage, it seems that the first stumbling block to accelerate the fertility transition in sub-Saharan Africa is the lack of a strong commitment toward a rapid fertility decline on the part of African leaders, policymakers, and stakeholders (May 2017a). The authors view this as perhaps the most important challenge that must be addressed in order to capture a DD in the region. The second stumbling block is the low absorptive capacity of the labor market and its discrimination of the youth and women. The third stumbling block is the low level of salaries, especially in the informal sector, again for the youth and the women. And the fourth stumbling block to capture a DD is the lack of social protection of the dependents and the "working poor."

There is a growing consensus among development specialists working in sub-Saharan Africa—and this could be called the "integrated view" or the creation of an enabling environment—that in addition to the expansion of family planning coverage sustained fertility declines in SSA will depend also on much lower infant and child mortality levels, substantial improvements in female literacy and education (especially at the secondary level), empowerment of women, and greater participation of women into the labor force (May 2017a).

The task ahead to implement this "integrated approach" to socioeconomic development is formidable because most necessary and sufficient conditions to capture a DD have yet to be met in many SSA countries. Indeed, the relevant policies have yet to be designed and, thereafter, these policies will need to be implemented *simultaneously*.

References

Barrientos, A. & D. Hulme (2008). Social protection for the poor and poorest in developing countries: reflections on a quiet revolution. In *Brooks World Poverty Institute*, working paper no. 30. Manchester, GB: The University of Manchester.

Cook, S. (2013). Rescuing social protection from the poverty trap: new programmes and historical lessons. In K. Bender, M. Kaltenborn, & C. Pfleiderer (Eds.), *Social Protection in Developing Countries. Reforming System*. London: Routledge.

Cunningham, W. (2007). *Minimum wages and social policies. Lessons from developing countries*. Washington, DC: World Bank.

Cutler, D. M., Poterba, J. M., Sheiner, L. M., Summers, L. H., & Akerlof, G. A. (1990). An aging society: opportunity or challenge? *Brookings Papers on Economic Activity, 1990*(1), 1–56.

Eberstadt, N. (2017). Manpower, education, skills and jobs in sub-saharan africa: past trends and future outlook. In H. Groth & J. F. May (Eds.), *Africa's population: in search of a demographic dividend* (pp. 225–250). Cham: Springer.

Gribble, J. N., & Bremner, J. (2012). Achieving a demographic dividend. *Population Bulletin, 67*(2).

Groth, H., & May, J. F. (2017). *Africa's population: in search of a demographic dividend*. Cham: Springer.

Guengant, J.-P. (2017). Africa's population: history, current status, and projections. In H. Groth & J. F. May (Eds.), *Africa's population: in search of a demographic dividend* (pp. 11–31). Cham: Springer.

Guengant, J.-P., & Issaka Maga, H. (2017). Bilan des activités de planification familiale au Niger depuis les années 1990. In *Monographie Sud-Nord* No. 4. Paris: Université Paris-I "Panthéon-Sorbonne". Institute of Economic and Social Development Studies (IEDES).

ILO. (2013). Employment and social protection in the new demographic context. In *Report IV, International Labour Conference, 102nd Session*. Geneva, CH: International Labour Organization.

ILO. (2016). *World employment social outlook: trends for youth 2016*. Geneva: International Labour Organization.

Kipesha, E., & Msigwa, R. E. (2013). Determinants of youth unemployment in developing countries: Evidences from Tanzania. *Journal of Economic and Sustainable Development, 4*(14), 67–76.

Lee, R., & Mason, A. (2006). What is the demographic dividend? *Finance & Development, 43*(3), 16–17.

Lee, M., Christianson, H., & Bietsch, K. (2016). Global employment and the sustainable development goals. *Population Bulletin, 71*(2), 24.

May, J. F. (2017a). The politics of family planning policies and programs in sub-Saharan Africa. *Population and Development Review, 43*(Suppl), 308–329.

May, J. F. (2017b). The role of institutional factors on fertility outcomes in sub-Saharan Africa. *Population Horizons, 14*(1), 1–8.

May, J. F., & Turbat, V. (2017). The demographic dividend in sub-Saharan Africa: two issues that need more attention. *Journal of Demographic Economics, 83*(1), 77–84.

Population Reference Bureau. (2017). *2017 World Population Data Sheet*. Washington, DC: Population Reference Bureau.

Terrell, K., & Almeida, R. K. (2008). *Minimum wages in developing countries: helping or hurting workers? Employment policy primer* No. 10. Washington, DC: World Bank.

Thakoor, V., & Wakeman-Linn, J. (2016). Surf the demographic wave. *Finance & Development, 53*(1), 22–25.

Turbat, V. (2017). The demographic dividend: a potential surplus generated by a demographic transition. In H. Groth & J. F. May (Eds.), *Africa's population: in search of a demographic dividend* (pp. 181–195). Cham: Springer.

World Bank. (2007). *Capturing the demographic bonus in Ethiopia: gender, development, and demographic actions*. Washington, DC: World Bank.

World Bank. (2015). *Africa's demographic transition: dividend or disaster? Africa development forum*. Washington, DC: World Bank.

World Bank/International Monetary Fund. (2016). *Global monitoring report 2015/2016: development goals in an era of demographic change*. Washington, DC: World Bank.

Zuber, A., Blickenstorfer, C., & Groth, H. (2017). Governance, transparency, and the rule of law. In H. Groth & J. F. May (Eds.), *Africa's population: in search of a demographic dividend* (pp. 367–384). Cham: Springer.