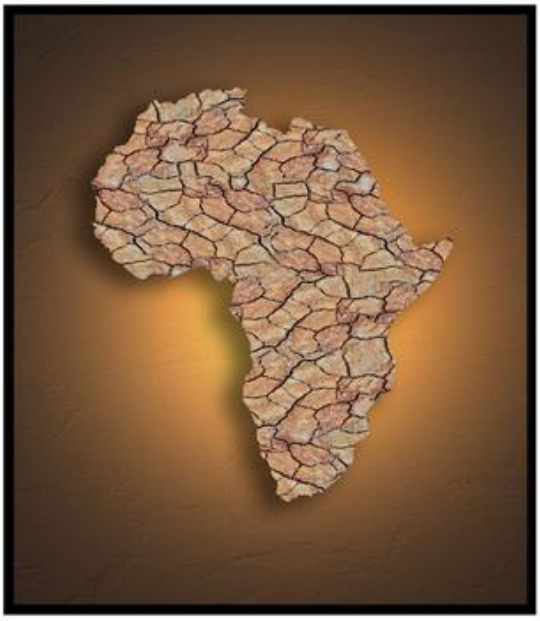
The Demographic Dividend in Africa: Old Wine in a New Bottle?



Summary:

- **The recent years have witnessed a renewed attention to the consequences of the demographic transition in developing countries, Sub-Saharan African countries particularly;**
- **There is a consensus that investing in people, i.e. investments in education and health are keys for harnessing the demographic dividend in Africa;**
- **Recent evidence suggests that the demographic transition may induce gains in terms of human development regardless of its economic returns;**
- **The estimation of a demographic dividend is particularly challenging for both micro and macro level studies;**
- **Early evidence suggests that the adoption of a combination of micro and macro level data may allow reconciling analytical rigor and macro-level implications.**

Keywords: Africa ; Demographic Dividend ; Demographic Transition ; Fertility Transition ; Education ; Health ; Human Capital accumulation.

Since several years, there is a renewed attention to the consequences of the demographic transition in developing countries, Sub-Saharan African countries particularly. As suggested by an increasing number of scientific articles and reports on the issue of the demographic dividend in Africa, the demographic changes in African countries comes with promising signs in terms of economic growth and development.

The demographic transition refers to changes in the population size and age structure due to a shift from both high fertility and mortality to low fertility and mortality. The demographic transition, the change in age structure particularly, is expected to have positive effects on economic growth and development. Conceptualized as the demographic dividend, these potential benefits may arise through a "mechanical'' increase in the output per capita, as well as through behavioral changes (e.g. human capital investments and savings behaviors) (see Bloom et al., 2003; Eastwood and Lipton, 2011).

Because these gains are not automatic, policies have a great role to play in the realization of the demographic dividend in African countries. While specific contexts may needs specific policies to reap the benefits of the demographic transition, there is a consensus that investing in people, i.e. investments in education and health, are keys for harnessing the demographic dividend in Africa. Moreover, recent evidence suggests that the demographic transition may induce gains in terms of human development regardless of its economic returns (Eloundou-Enyegue and Giroux, 2013). Given the importance of human capital accumulation for African countries, this article revisits the links between demography and human capital accumulation through mainly a literature review. I build on a work in progress by Arestoff et al. (2016) who investigate the impact of demographic conditions at birth on children's health and education.

Demography and Human capital: macro and micro perspectives

The theoretical literature on the links between demographic variables and human capital investments suggests two main channels through which the demographic transition may affect these investments. First, the literature suggests that longer life (or lower mortality rate) increases the horizon over which the returns to education can be reaped off and induces higher investment in education and health. Second, a decline in fertility (which is expected to be largely driven by the decline in child mortality1) is expected to affect parents' investment in child's quality in accordance with the model introduced by Becker (1960) (see for example Kalemli-Ozcan, 2002, 2003; Soares, 2005).

Although the empirical evidence from micro-and macroeconomic studies mainly suggests a positive impact of the demographic transition on human capital investments (e.g. Jayachandran and Lleras-Muney, 2009) this link has been challenged recently by a number of papers using different methodologies or using alternatively adult mortality or child mortality as demographic variables of interest.

1 Other explanations for the observed fertility decline include higher levels of income, technological progress, education, etc. (for a review of theories of demographic transition, see Galor, 2011).

For instance, at the macro level, Acemoglu and Johnson (2006) and Lorentzen et al. (2008) find no effect of life expectancy and adult mortality, on school enrolment in cross-sectional data. These results are explained theoretically by Hazan and Zoabi (2006) who argue that, when parents choose fertility and the education of their children, a rise in life expectancy could increase not only the returns to quality (more schooling) but also the returns to quantity (more family income), mitigating the incentive to invest more in the children's education. Moreover, findings by Hazan (2012) suggest that an increase in life expectancy is positively correlated with schooling when life expectancy is taken at birth, but negatively correlated if life expectancy is taken at age 5.

At the micro level, recent studies investigating the existence of a trade-off between the number of children and parents' investment in each child do not confirm the existence of the quantity-quality trade-off (Black et al., 2005; Angrist et al., 2010). These results reflect cross-country differences, as well as differences across time periods. They further highlight empirical challenges in estimating the effects of demographic variables on human capital investments due to endogeneity issues and data limitations. For example, at the micro-level, studies on the quantity-quality trade-off must deal with the fact that parents may choose both the number of children and the level of investments in each child, and that child mortality may be endogenous to child quality through investments in child health and nutrition.

Human capital dividend: what about a micro-macro perspective?

As suggested by the literature review above, the estimation of a human capital dividend is confronted to challenges related to the level of analysis (micro versus macro) and its implications. According to Eloundou-Enyegue and Giroux (2013), the question is whether "studies can reconcile the analytical rigor of micro-level studies with the policy interest in macro level implications"?

Arestoff et al. (2016) add to the literature by combining micro and macro level data to provide evidence on the impacts of demographic conditions on human capital accumulation in Africa, Asia and Latin America. While preliminary, their results point towards important differences across the regions and across indicators. First, the results suggest that Africa is the region that suffers the most for the demographic pressure. Second, although the analyses suggest a dividend in terms of health during the study period in Africa, demographic changes do not seem to have produced an education dividend. These results have important policy implications. For instance, they call for an increase in spending in social sectors.

Conclusion

The Demographic Dividend in Africa: Old Wine in a New Bottle? The logic answer to the question in the title of this article would have been to rephrase the sentence as follows: "Old Wine in a New Bottle and New Perspective". The focus on human development as well as methodological contributions in the measure of the gains related to demographic changes are contributing to inform and design policies to reap the potential benefits of the transition. Although caution is needed in designing policies to reap these benefits, I would like to share the words of a participant in the 7th African population conference who pointed out that if the perspective of a demographic dividend

may encourage African governments to invest in sectors such as education and health, we as researchers might not be wrong in emphasizing these potential benefits.

Estelle KOUSSOUBÉ

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