

The disparate roles of migration, reclassification and vital rates in the urban transition in sub-Saharan Africa

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Introduction

Rural to urban migration is often considered the driving force behind urbanisation, yet shifts in the proportion of the population living in the urban sector can also result from reclassification (shifting boundaries or definitions of settlements), and from changing birth and death rates. Evaluating the roles of demographic (vital) and mobility transitions is fundamental for understanding urbanisation as well as many socio-economic and environmental phenomena especially relevant when formulating policies. The endogeneity of these demographic processes – declining mortality and fertility along with migration – means that they cannot be studied separately (Bocquier and Costa 2015; Dyson 2011; Farrell 2017). We thus aim to identify the contribution of these demographic forces and examine the trends in the roles they play in urbanisation in sub-Saharan Africa (SSA). The contribution of migration (and reclassification) has been examined in relation to urban growth in SSA but little is known about the contribution to urbanisation (percent of total population that is urban) - that is, growth of both the rural and urban populations.

Migration played a large role in historic urban transitions in 19th century Europe (Bocquier and Brée 2018; Bocquier and Costa 2015). Yet in developing countries, around 40% of urban growth is attributable to migration and reclassification (Preston 1979; United Nations 2001). Examining three large countries at different stages of development, migration has been found to contribute in early stages of urban growth, but declines in importance as the demographic and mobility transitions proceed; the role of reclassification increases with urban growth and natural increase grows and then declines in later stages of urban growth (Jiang and O'Neill 2018).

Using multiple data sources we directly estimate the rural-urban migration flows to clearly ascertain the disparate roles of rural-urban migration, reclassification and natural increase in urbanisation. We further examine the role of migration in urbanisation by breaking down the urban sector into capital city compared to other urban settlements allowing a more nuanced understanding of migration trends. We look at both in and out migration rates, in addition to net, which allows us to examine the flows that mostly contribute to urbanisation, and those that slow it down.

Methodology

Estimating internal migration flows in sub-Saharan Africa is challenging as direct migration data is scarce. For a set of countries however it is possible to use census data, available from IPUMS (Minnesota Population Center 2018), for 15 SSA countries (39 censuses). Although limited, these censuses cover all regions of SSA, from 1976 to 2011. Using this data we estimate in- and out-migration rates for both sexes between the rural and urban sectors, over one, three or five years, according to the measure of migration (residence one year ago, five years ago or previous residence which is most reliable for the last three years). In addition to IPUMS, we utilise the Demographic and Health Surveys (DHS) (ICF International 2018), covering 33 countries (80 surveys) between 1987 and 2016 to estimate rural-urban in- and out-migration for women aged 15-45 over the last three years (Bocquier 2016). Based on these estimates combined with the IPUMS, we model in-, out- and net migration rates in SSA. In addition to rural-urban migration flows, we also account for the primacy of capital cities and diversity in what is termed urban by examining rural-capital city, rural-other urban, and other urban- capital city flows. We also predict age- and sex-specific net migration rates.

We compare the above with indirect estimations of net rural-urban migration based on the United Nations urban-rural population by age and sex (URPAS) data covering 1980-2015. The Census Survival Ratio Method (CSRM) applied to this data allows for annual estimates of natural growth by area of residence (urban and rural), net migration over five-year periods, including reclassification (Menashe-Oren and Stecklov 2018). The difference between the net estimates from the indirect URPAS and the direct IPUMS and DHS allows us to estimate the contribution of reclassification to urban growth and urbanisation.

Preliminary Results

When modelling the contribution of migration and natural increase to the difference between urban and rural growth (urbanisation), the predicted contributions follow different directions (Figure 1). Natural growth is negligible at the beginning of the urban transition, and then becomes dominant once the percent urban exceeds 30%. In contrast, the contribution of rural-urban migration actually declines becoming negative when percent urban exceeds 40%. Urban growth is therefore driven by high urban crude birth rates – as a consequence of the stalled fertility transition in SSA (Schoumaker 2017).

Figure 1: Predicted urban-rural difference in natural (nNG) and migration-reclassification (dMRG) contributions over percent urban in SSA (limited census sample)

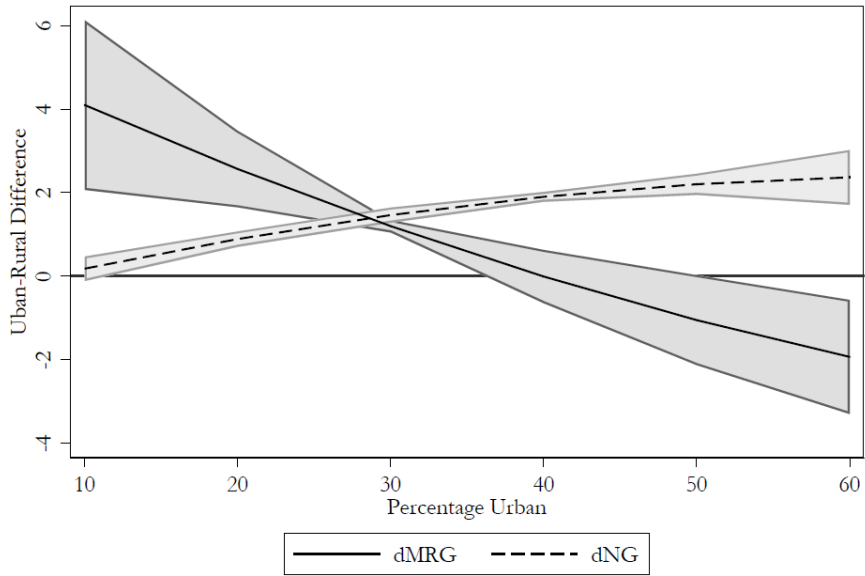
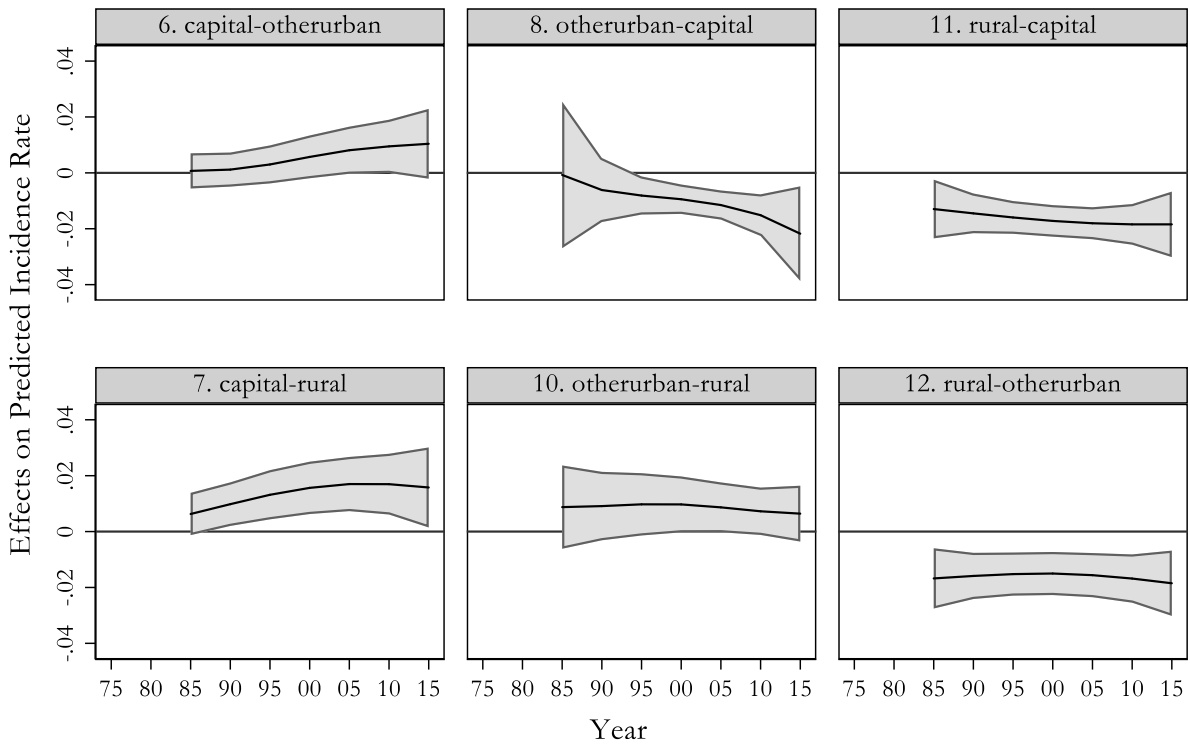


Figure 2: Predicted female net migration rates in sub-Saharan Africa from 1985 to 2015, using shifting percent urban over time (DHS only)



In light of these trends, we examine the net migration rates in SSA between rural, other urban, and capital cities (Figure 2). Since the contribution of rural-urban migration flows declines with percent urban, it is likely that there are greater other urban- capital migration flows, as described by the mobility transition (Zelinsky 1971). Indeed, over time - and as the percent urban increases – capital-other urban female net

migration increases. The capital plays a prime role in receiving migrants, while the other urban settlements do gain migrants from the rural sector, net migration flows between other urban and capitals are negative.

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