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Secondary Towns and Poverty Reduction: Refocusing the Urbanization Agenda

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ABSTRACT

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This review is framed around the exploration of a central hypothesis: A shift in public investment towards secondary towns from big cities will improve poverty reduction performance. Of course the hypothesis raises many questions. What exactly is the dichotomy of secondary towns versus big cities? What is the evidence for the contribution of secondary towns versus cities to poverty reduction? What are the economic mechanisms for such a differential contribution and how does policy interact with them? We find preliminary evidence and arguments in support of our hypothesis, but the impacts of policy on poverty are quite complex even in simple settings, and the question of secondary towns and poverty reduction is an open area for research and policy analysis.

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1. Introduction

At the start of this decade, around 45% of the population of developing countries was urban. By 2030 the number will have increased by around 10 percentage points (Figure 1). Africa's urbanization is particularly rapid; it is twice as fast as that of Europe during its early urbanization (Figure 2). The spread of urban agglomerations in Africa is indeed quite dramatic (Figures 3a, 3b and 3c).

With this background, it is now accepted that urbanization is (i) a defining feature of development, (ii) proceeding at a very rapid pace and, furthermore, (iii) central to poverty reduction strategies. However, the urbanization discourse tends to take place at an aggregative level, with the overall national rate of urbanization taking center stage, both as an outcome to be explained, and as a causal variable explaining growth, inequality and poverty. This obscures key analytical features of the *composition* of the urban landscape, and often narrows the urbanization policy debate simply to the issues relating to large cities.

The rapid emergence of large and mega cities in the developing world[1] has indeed been spectacular, with their numbers doubling from 22 large cities and 14 megacities in 1995, to 44 and 29 in 2015 (UN-Habitat, 2016). Nonetheless, although these cities are in many ways the leading edge of urbanization, grasping the limelight because of their influence and economic importance, they are not the fastest growing, nor do they represent the majority of the urban population. Worldwide, the fastest growing urban centers are also those with less than one million inhabitants (UN-Habitat, 2016). Similar observations hold in Africa. While two fifths of its urban population is in cities larger than 1 million, two fifths is also in small towns—those with population less than 250,000 (Figure 4), with urban centers less than 1 million absorbing as much as 75 percent of urban population growth (UN-Habitat, 2014).

In addition to the growing planning challenges these developments pose for governments, there is also a growing recognition that the distinction between secondary towns and large cities is a central one for analysis and for policy (Roberts, 2014). Our central tenet is that the composition of urbanization is at least as important as its aggregate rate, for growth and for distribution. In particular, we wish to explore the key role of secondary towns, urban agglomerations far smaller than the usually focused upon large cities, megacities, or capital cities. To do so, we frame the discussion by one central hypothesis: "A shift in public investment towards secondary towns from big cities will improve poverty reduction performance." Of course the hypothesis raises many questions. What exactly is the dichotomy of secondary towns versus big cities? What is the evidence for the contribution of secondary towns versus cities to poverty reduction? What are the economic mechanisms for such a differential contribution and how does policy interact with them?

The plan of the paper is as follows. Section 2 considers at a conceptual and empirical level the dichotomy between big cities and secondary towns. How and where is the line to be drawn, and does it matter? Section 3 turns to mainly reduced form evidence on how big cities and secondary towns contribute differentially to poverty reduction. Section 4 asks how the models of secondary town and big city development might help us in understanding the poverty gradient between towns and cities, and

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[1] Defined as housing between 5 and 10 milllion and more than 10 million urban dwellers respectively (UN-Habitat, 2016).

their differential contribution to poverty reduction performance. It also considers a policy oriented framework for assessing the poverty consequences of reorientation towards job creation in towns rather than in cities. Section 5 concludes.

2. Secondary Towns and Big Cities

What exactly is the dichotomy of secondary towns and big cities? One answer is that there is not a dichotomy, there is rather a continuum. Indeed the best known regularity in urban economics is that "the number of cities with a population larger than S is approximately proportional to S^{-a} with a quite close to 1" (Krugman, 1996, p. 399).[2] There is of course a huge literature on this "Zipf's law" and we will return to it presently, but a size distribution of cities raises the question first of how exactly size is determined, and where we draw the line between big cities and secondary towns.

Of course, the population size of a spatial unit depends on how that unit is defined. The most commonly used definitions are based on administrative jurisdictions, and it is well known that this causes a host of comparability problems across countries and over time. A recent attempt to derive comparable urban size through the concept of a functional urban area (FUA) is provided by OECD (2012), and described in Veneri (2013):

"The OECD's methodology applied in this work starts with the identification of the urban core/s of each area. The cores are identified using residential net density thresholds for each 1-square-kilometre cell of a regular grid structure. More specifically, all cells with a population of at least 1,500 inhabitants have been selected as urban core cells. Then, the final identification of the urban core is made by aggregating all contiguous…. regions whose share of area covered by urban core cells is higher than 50% and whose total population is higher than 50,000 inhabitants….[T]wo or more cores are considered as part of the same functional region if at least 15% of resident population in one core commute to the other core…All municipalities whose shares of resident population that commute to the core exceed 15% are considered as composing the hinterland of the metro region."

Veneri (2013) finds that this new way of defining city size makes a difference. In fact, for the countries under consideration Zipf's law fits the new data better than traditional city sizes based on administrative definitions. However, the focus of the analysis is OECD countries--the data requirements for the new definition would be a tall order for many developing countries, for which the administrative jurisdictions will continue to structure the data used in the analysis. In any event, policy design must at the very least take into account administrative structure, and may even be constrained by it.

Whatever the definition of population units, we are still left with the question of how, if at all, to draw a line between big cities and secondary towns. Largest city versus the rest? Largest X cities versus the rest? Cities whose population share exceeds Y% versus the rest? The largest city versus the rest is a comparison which often animates the policy discourse. Zipf's law suggests that the largest city would be twice as large as the second largest city and so on down. But Zipf's law appears to apply only for economically well integrated units (and the units as a whole), which may explain why it works when you

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[2] Put differently, according to Zipf's law, when ranking urban centers, each center would be about twice the size of the center that precedes it.

look at cities in the United States or a given European nation, but not for the European Union as a whole (or by US states separately) (Cristelli, Batty and Pietronero, 2012).

Some geographers use a stronger definition, and define a "primate city" as one which is larger than the second and third cities combined (Jefferson, 1939). Thus Paris and Bangkok are primate cities in their respective countries, but Mumbai is not a primate city in India even though it is the largest city in that country, because Kolkata and Delhi together eclipse it in size. Of course the cities forming the nodes of the "golden quadrilateral" in India (Delhi, Mumbai, Chennai and Kolkata) would have some claim to be four of the big cities to be distinguished from the secondary towns, but this leaves open the question of how many are included in this category. The cutoff will vary from country to country and will depend on the purpose at hand.

The issue of a continuum versus dichotomy of urban agglomeration raises a question about another famous dichotomy in development economics, that between urban and rural. Where exactly does rural end and urban start? According to the OECD (2012) definition, a one square kilometer core cell would not be urban, and would thus be rural, if its population were less than 1,500 inhabitants. While low population density might indeed be thought of as a characteristic of rural areas, rural-urban data for most developing countries are generated by administrative jurisdictions.

Leaving to one side fine questions of data, however, the rural-urban dichotomy is absolutely central to the positive and normative development discourse. The Lewis (1954) model of dualistic development is a model where the dichotomy is introduced and used to characterize the development process. Lipton (1977) famously coined the term "urban bias", meaning by this: "(a) an allocation, to persons or organizations located in towns, of shares of resources so large as to be inefficient and inequitable, or (b) a disposition among the powerful to allocate resources in this way." (Lipton 2005). Thus Lipton was, strictly speaking, putting together secondary towns and big cities on one end of the balance and contrasting this with rural areas at the other end. Presumably he would think of the dichotomy as being sharper and more relevant if the contrast was between big cities on their own and rural areas, and might agree that the very small towns may have more in common with the rural than with the very large cities. We are back then to the question of a continuum, the conceptual value of a dichotomy, and where exactly to draw the line.

Give this development of the literature, let us start conceptually with a continuum from low population density to high density along the lines of the OECD analysis, combined with size criteria to give us units which range from rural, to mid-sized urban agglomerations which we can label as "secondary towns", to large cities. Mindful of the many data issues, and without getting too precise at this stage about specific cutoffs which will have to be country specific, let us think of a division of the population into these three categories—rural, secondary or intermediate towns/cities[3] towns, and big cities. Another way to characterize these might be as zero, low and high urbanization. The ultimate policy question is where and how public investment should be directed across these three categories of population agglomerations if the objective is poverty reduction at the national level. In order to answer this question, a first question is how these three categories of urbanization are associated with poverty reduction.

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[3] In what follows, we will use "secondary towns" as shorthand to indicate this middle group.

3. Poverty Gradients and Poverty Reduction

A long maintained hypothesis in the development literature is that urban areas as a whole have higher per capita income but greater inequality than urban agglomerations. Most famously, Kuznets (1955), had the following characterization of stylized facts of distribution, dividing the national population into rural/urban or agricultural/non-agricultural sectors:

"An invariable accompaniment of growth in developed countries is the shift away from agriculture, a process usually referred to as industrialization and urbanization. The income distribution of the total population, in the simplest model, may therefore be viewed as a combination of the income distributions of the rural and of the urban populations. What little we know of the structures of these two component income distributions reveals that: (a) the average per capita income of the rural population is usually lower than that of the urban;' (b) inequality in the percentage shares within the distribution for the rural population is somewhat narrower than in that for the urban population-even when based on annual income; and this difference would probably be wider for distributions by secular income levels (Kuznets, 1955, pp 7-8)"

Following this hypothesis, if average income and inequality both increase along the continuum from more rural to more urban, with small towns occupying the middle stratum between rural and big cities, what happens to poverty? The outcome of the tension between higher mean and higher inequality is an empirical matter. But one of the great stylized facts from around the world is that the rural poverty rate is higher than the urban poverty rate. For example, in their comprehensive study, Ravallion, Chen and Sangraula (2007, p.676) find that:

"…rural poverty incidence is appreciably higher than urban. The "$1 a day" rural poverty rate in 2002 of 29 percent is more than double the urban rate. Similarly, while we find that 70 percent of the rural population lives below $2 a day, the proportion in urban areas is less than half that figure."

This pattern of rural-urban disparity is repeated in countless national studies using national poverty lines. There is far less evidence, however, on such a "poverty gradient" between secondary towns and cities. One of the reasons is that sample sizes in household surveys are not large enough to permit such disaggregation within the urban population. In the best known study in this area, Ferre, Ferreira and Lanjouw (2012) use small area poverty estimation methods to examine the poverty gradient, and to assess whether there is in fact a "metropolitan bias" in eight countries: Albania, Brazil, Kazakhstan, Kenya, Mexico, Morocco, Thailand and Sri Lanka. They analyze the gradient for both money metric poverty measures and data on access to public services, and find that:

"In all cases, poverty is lowest and service availability is greatest in the largest cities – precisely those where governments, the middle-classes, opinion-makers and airports are disproportionately located." (Ferre, Ferreira and Lanjouw, 2012, p. 353)

Leaving to one side the theory implicit in the above statement, which they characterize as "metropolitan bias" to contrast with Lipton's (1977) "urban bias", there is still the dynamic question to answer. Levels of poverty may be lower in areas of high urbanization, but what is the role of urban agglomeration in poverty reduction? Ravallion, Chen and Sangraula (2007) conduct some cross-country

regression analysis to try and answer this question, using both the incidence of poverty and a poverty gap measure:

"…we regressed urban and rural poverty rates on the urban population share including additive fixed effects (a dummy variable for each region or country): that is, the mean level of poverty at a given urban population share is allowed to vary by region or country….Both poverty measures tend to decline as the urban population share rises, although the effects are generally smaller (but more significant) for the country data…. Among the six regions of the developing world, sub-Saharan Africa is an exception to our finding that urbanization has been accompanied by falling overall poverty…. All we can reasonably claim from these results is that the data are consistent with the view that the economic changes accompanying urbanization play a generally positive role in overall poverty reduction." (pp 690-691).

We will discuss specific mechanisms underlying these types of findings, which are quite common in the literature. However, they still only address urbanization in the aggregate. What about the composition of urbanization, in particular, the relative growth of small towns and big cities? This is more difficult to assess—the greater is the level of disaggregation, the weaker is the availability and quality of relevant data. However, Christiaensen and Todo (2014) use such disaggregated data from 51 countries to ask the following question: "….if two economies were to grow at the same speed, would the rate of poverty reduction be faster when people move out of agriculture to larger cities (empirically defined as exceeding 1 million people) or when they move out of agriculture into small towns and the surrounding rural economy?" (Christiaensen, De Weerdt and Kanbur, 2015, p. 3). For 1980-2004, Christiaensen and Todo (2014) find that there is indeed an additional effect on poverty reduction when people move into secondary towns and the rural non-farm economy from agriculture (Table 1). Of course growth matters for poverty reduction. But for given growth rate migration to secondary towns matter more than migration to large cities.

But even when leaving growth out, using a totally reduced form as in Ravallion, Chen and Sangraula (2007) cited above, the authors find that it is moves to secondary towns that reduce poverty, not population expansion of the cities. This suggests that the inclusive nature of growth patterns associated with secondary town expansion outweighs the possible loss in terms of growth, at least on average, in this sample of experiences from across the developing. This is somewhat surprising as larger cities are considered to yield faster economic growth because of larger agglomeration economies, as emphasized by the New Economic Geography School. Yet, recent evidence looking at the effect of average city size on economic growth suggests that this may not hold to the same degree in developing countries as in developed countries. If anything, the relationship in developing countries may even be negative (Frick and Rodriguez-Pose, 2016) (see further below).

This differential effect on poverty of migration to small towns versus big cities is an important phenomenon which needs to be explored and interrogated further, with cross-country and country specific data. It is starting to attract attention (Sekkat, 2016; Datt, Gibson, Murgai and Ravallion, 2016; Dorosh and Thurlow, 2013; 2014). One such country specific exercise, for Tanzania, a country in which the composition of urbanization has some expected and perhaps some striking features, is particularly illustrative. The capital city, Dar es Salaam, had a population of 4.5 million according to the 2012 census. It constitutes 10% of the national population, it is the largest urban agglomeration by a huge margin, and it has grown dramatically over the past fifty years, driven largely by in-migration. Yet as Figure 5

(taken from Wenban-Smith and Ambroz, 2014) shows, the composition of urbanization throws up some interesting patterns. In 2012 Dar accounted for about one third of the urban population. But it also accounted for about one third of the urban population half a century ago. Further, towns other than district capitals (average population around 20,000) account for a growing proportion of the urban total. There is surely a lot of migration into Dar, but movement out of rural areas is as much to small towns as to the capital city.

A unique lens on the poverty impacts of migration from rural areas to the city versus small towns is provided by the Kagera Health and Development Survey (KHDS) which tracks migrants from this remote rural region in North-West Tanzania. While it is only focused on out-migrations from one region, we have information on 4,339 individuals, first interviewed in their baseline communities in the early nineties and then re-interviewed nearly two decades later in 2010. The data set is unique not only with respect to its long time frame, but also because it has tracked migrants to rural areas, towns and cities (Beegle, De Weerdt and Dercon, 2011). There was a considerable amount of income growth and poverty reduction in the KHDS sample over its 18-year span and Christiaensen, De Weerdt and Kanbur (2015) decompose total income growth and the total number of people exiting poverty into that realised by people making the transition to (or staying in) the rural areas (further split into its agricultural and non-agricultural sectors), to secondary towns, or to cities (Table 2).

This decomposition analysis is interesting from an analytical and a policy perspective. It shows that moves to the city led to large income increases and poverty decreases on average more for those who made the move. However, even in the presence of larger migration premiums from moving to the more distant cities, most people engage in the surrounding nonfarm economy or move to secondary towns. Thus moves to secondary towns make up a much larger share of total growth and poverty reduction than moves to cities.

Other emerging country and cross-country evidence confirms the relevance of the composition of urbanization for poverty reduction. Recent econometric findings from India, for example, using satellite observations of night lights as measure of urban growth, show that growth of secondary towns has a larger direct and indirect effect on rural poverty than does big city growth (Datt, Gibson, Murgai and Ravallion, 2016). Similarly, and directly accounting for growth linkages and foreign trade as well as internal migration and agglomeration effects in an economy wide dynamic recursive computative general equilibrium model for Ethiopia, Dorosh and Thurlow show that a 10 percentage point reallocation of public investment from cities (and rural areas) to towns leads to faster poverty reduction than when reallocating public investment from towns (and rural areas) to cities[4], though the latter yields faster overall growth. Applied to Uganda, on the other hand, where rural areas are already more diversified, public investment shifts towards cities also yielded faster poverty reduction, underscoring the importance of context specificity. Importantly though, in these simulations, public investment is taken away from both towns and the rural area and reallocated to the cities, while it is in fact the reallocation of public investment (from cities and towns) to the rural economy that still yielded the most poverty reduction (in both countries).

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[4] Cities are defined here as centers housing more than 250,000 inhabitants (of which there were three at the time in each country: Addis Ababa, Dire Dawa and Harar in Ethiopia; Kampala, Entebbe and Mukono in Uganda).

We thus have a range of evidence on the composition of urbanization and poverty reduction. Urbanization per se reduces poverty, but migration to and investment in smaller towns and intermediate cities can account for more poverty reduction. What might be the policy implications of these emerging empirical regularities? Before this question can be answered, however, we have to consider the underlying economic mechanisms which might be generating these patterns.

4. **Economic Mechanisms and Policy**

The reduced form evidence on poverty seems to send a number of, perhaps mixed, messages. On the one hand, there is a declining poverty gradient running from rural areas, through secondary towns, to big cities (Ferre, Ferreira and Lanjouw, 2012). This gradient is the accounting resolution of an increasing per capita income gradient and an increasing inequality gradient. Further accounting exercises might then suggest that a reallocation of population share to cities, from rural areas and from small towns, would reduce overall poverty holding everything else constant. This is indeed suggested by Ravallion, Chen and Sangraula (2007) for a rural-urban divide, who find a correlation between national poverty reduction and the share of the urban population. However, Christiaensen and Todo (2014) find that, holding overall growth constant, more migration to small towns reduces poverty more. And Christiaensen, De Weerdt and Kanbur (2015) find that although moves from rural areas to the city reduce poverty much more than moves to small towns, there are so many more of the latter that as a whole they contribute more to total poverty reduction.

One way to begin to make sense of these multiple findings on poverty, location and migration is to start with the FGT family of poverty indices P_α, where α is the index of poverty aversion:

$$P_\alpha = (1/n) \sum [(z-y_i)/z]$$

where i is the index for the n individuals in the economy. As is well known, this measure is decomposable across mutually exclusive and exhaustive groups indexed by j with population weight x_j:

$$P_\alpha = \sum x_j P_{\alpha, j}$$

Consider now dividing the economy up into three locations--cities, towns and rural. Further, if we have a panel data set at time t and t+1, we can divide the population up into 9 mutually exclusive and exhaustive groups of movers and stayers in each location, and these are the nine groups in the poverty decomposition. Change in national poverty is then simply given by:

$$\Delta P_\alpha = \sum x_j \Delta P_{\alpha, j}$$

Thus national change in poverty is a weighted sum of the change in poverty of those who were and stayed in rural areas, those who moved from rural areas to cites, those who moved from rural areas to towns, those who were and stayed in towns, those who moved from towns to rural areas, those who moved from towns to cities, and the corresponding three categories for cities, making 9 groups in total.

The contribution of each category to national poverty reduction is:

$$c_j = [x_j \Delta P_{\alpha, j}]/[\Delta P_\alpha]$$

Consider now a division of the population into stayers (3 groups) and movers (6 groups). The relative contribution of each group to poverty reduction depends both on x_j and on $\Delta P_{\alpha,j}$. As is the case in the Kagera sample, even if $\Delta P_{\alpha,j}$ is relatively small for a particular group of movers (rural to town compared to rural to city), x_j can be relatively so large (number of rural to town moves compared to number of rural to city moves), that $x_j \Delta P_{\alpha,j}$ for this group can be larger than for another group of movers.

In a purely accounting sense, then, national poverty reduction is greatest when (i) poverty reduction is greatest in that group where the stayers are relatively large in number and (ii) moves are numerically greatest where the location-destination combination gives the highest reduction in poverty. A preliminary policy conclusion might then be to invest resources in reducing poverty where the number of stayers is relatively large, and to also invest resources in poverty reduction in locations where most people are moving to. In a standard rural-urban dichotomy this leads to the classic tradeoff in some countries between investing in rural areas because that is where the bulk of the population resides versus investing in urban areas because that is where the population is moving to. In a three location characterization, with a rural-town-city distinction, the same tradeoff exists but is manifested in many more dimensions. In particular, there is the tradeoff between investing in small towns versus big cities if the objective is poverty reduction. But the accounting framework, while highlighting possible tradeoffs, cannot directly help in its resolution because it has nothing to say about the economic mechanisms which underlie the population movements and poverty shifts within the groups, nor on the potential feedback effects between the two.

The issue of economic mechanisms was also brought up by Krugman's (1996) famously referred to "mystery of urban hierarchy". He posed three questions, referring en passant to the work of Simon (1955) and Henderson (1974):

"The first question is why city sizes are persistently unequal, why there is no typical size of a city. Economic analysis has made considerable progress on this issue: the classic Henderson-type urban systems model has now been complemented by an analysis that makes sense of the geographers' concept of a central-place hierarchy.....The second question is why the sizes of large cities are so well described by a power law. Simon's unjustly neglected random-growth model offers a potential explanation.....but it is hard to see how to reconcile the types of model that might explain a power law with the urban system models that are otherwise so persuasive. Finally, the power law on city sizes is a disturbing one: the exponent is very close to one....it is still hard to see why 1 should consistently be the exponent." (Krugman, 1996, p 417)

There has of course been an explosion of literature in the last ten years taking up Krugman's challenge. Productivity and innovation shocks underlie the generation of city size distribution in Eeckhout (2004), Rossi-Hansberg and Wright (2007) and Duranton (2007). Hsu (2012) is only one recent example of attempts to derive the city size distribution from some combination of agglomeration economies. There is, however, little discussion in the literature of the relationship of city size to inequality and poverty. One recent exception is Behrens and Robert-Nicoud (2014, p. 1371):

"We develop a framework that integrates natural advantage, agglomeration economies and firm selection to explain why large cities are both more productive and more unequal than small towns. Our model highlights complementarities among those factors and matches a number of key stylized facts about cities. A larger city size increases productivity via selection and higher urban productivity provides

incentives for rural–urban migration. Tougher selection increases the returns to skills and earnings inequality in cities."

The initial model in the Behrens and Robert-Nicoud (2014) is one where a single city emerges from a rural start given natural advantage, and the city has higher productivity and greater income than the countryside. The model is then extended to the case of a single rural hinterland with many cities of different city sizes.

A general framework for economic mechanisms and policy is to start with the three locations—rural, town and city—and consider interactions between the actions of three types of agents—individuals (migration decisions), enterprises (firm location decisions), and government (public investment decisions). The earliest literature linking location and migration relates to the work of Todaro (1969) and Harris and Todaro (1970). More recent literature brings in enterprise decisions along with agglomeration economies and selection processes to generate cities emerging from a rural setting, and city size and urban systems structures (for example, Henderson, 1974; Duranton, 2007, and Behrens and Robert-Nicoud, 2014).

Turning specifically to our central hypothesis, that public investment should be reoriented away from big cities towards small towns, there is some support for it from the literature on economic mechanisms which identify big cities as being inefficiently large, thereby affecting growth prospects in that city and in the surrounding hinterland. A good example of such an analysis is provided in Duranton (2008). Building on Henderson (1974), a number of arguments are developed as to why the primate city might be "too large":

"Primate city favouritism can work through a myriad of small decisions from underpriced gasoline and better provision of local public goods to better business opportunities for government cronies in the primate city (Henderson and Becker 2000; Henderson 2002a,b).....Earnings are higher than they would otherwise be in the favoured cities. …. It is then easy to see that the equilibrium size of the favoured city is larger than that of the non-favoured city…. The potentially large misallocation of resources associated with primate cities suggests that some effective policies to reduce urban primacy are needed. However, dealing effectively with this problem is going to be hard. First, primate city favouritism manifests itself in many different ways and there is no definite evidence at this stage about which channel(s) matters most…. Second, the political economy associated with urban primacy may be very difficult to break. …Third, the theoretical findings of Henderson and Venables (2006) suggest that governments may play a role in anchoring expectations about which secondary cities will get developed." (Duranton, 2008 pp. 709-710).

Emphasizing average city size as opposed to urban primacy instead[5], Frick and Rodriguez-Pose (2016) further show that, unlike in developed countries, larger average city size has on the whole not led

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[5] Jedwab, Christiaensen and Gindelsky (2015) also emphasize the need to look at urban growth (an absolute measure of urban expansion) as opposed to urbanization (or urban concentration) (both relative measures), when examining the effect of urban expansion on measures of congestion. As relative measures, urbanization (and urban concentration) hide the challenge in absolute terms the rapid expansion of cities poses. To see this, note that if the rural population were to grow at three percent, an expansion of the urban population at 3 percent would correspond to zero change in the rate of urbanization. In the developing world, urban growth has been 3.8 percent on average during 1960-2010, rising to 4.9 percent for Africa (or about a doubling of the urban population every 15 years).

to faster growth in developing countries. If anything, the correlation may be negative. Faster urban growth, partly due to faster innate urban population growth (Jedwab, Christiaensen and Gindelsky, 2015), at lower income levels and lower institutional capacity makes it much harder to keep up the public capital stock needed to capture the agglomeration economies. With a greater share of workers and growth generated in non-traded services, as opposed to manufacturing, following the spending of resource rents in cities, many cities in developing countries may also not stand to benefit to the same degree of the economies of agglomeration than those in developed countries (Gollin, Jedwab, and Vollrath, 2016).

The above arguments captures a broad consensus about the need to invest in smaller cities and towns from the efficiency perspective (see also Duranton, 2015), but has little to say about inequality and poverty. As already noted, the model and mechanisms set out in Behrens and Robert-Nicoud (2014) identify a rising per capita income and rising inequality gradient from rural areas to cities of increasing size. There are also some policy implications in this work since "everything that makes cities more productive and urban life more desirable, makes the emergence of cities more likely and allows for larger cities" (Behrens and Robert-Nicoud, 2014, p. 1372). One implication of this is that the government could in principle make small towns more attractive than cities and encourage their development. These would have lower inequality but also lower per capita income (unlike the efficiency arguments of Duranton, 2008).

An alternative approach, and one which may bring many of these arguments together in somewhat tractable form, is to go back to the formulation of Todaro (1969) and Harris and Todaro (1970) and bring together migration and distribution into a common framework, relying on the rest of the literature to provide insights into elements that the Harris-Todaro framework does not emphasize. In the simple two sector story of Todaro (1969) there is a single rural income but two urban incomes—a high modern sector outcome if such employment is secured, and low informal sector fall back in case of unemployment. The three incomes are taken to be exogenous in the simplest model. Migration equilibrium is then given by equality of expected utility across the two sectors, and this specifies a three point income distribution giving shares of the population with the rural sector income, the urban modern sector income, and the urban informal income. Anand and Kanbur (1985) provides an early explicit analysis of the behavior of poverty in this simple model as urban modern sector jobs increase.

Christiaensen, De Weerdt and Kanbur (2016) expand the simple framework to the case of a rural area with two destinations-town and city. The rural area still has a single income. Each destination has two incomes, a modern sector income and an informal sector income. In keeping with the stylized facts, the mean income of the city is higher than the mean income of the town, but income inequality is greater in the city. Further, there is a migration cost which is higher for migration to the city than for migration to the town. With this datum, migration equilibrium is specified as equality of expected utility across the three sectors, it being assumed that the high income in the urban destinations can only be secured with a probability given by the employment rate in each area—if an incoming migrant fails to secure this job they get the low informal income of that area. With this specification, equilibrium now ties down a five point income distribution, with population shares for the rural income, the city high and low incomes, and the town high and low incomes.

The policy question can now be posed as follows, in a similar spirit to the primate city discussion in Duranton (2008): if the objective is poverty reduction, would it better for the government to help

create a new job in the modern sector of the city or the town? The answer to this question depends on a number of factors, including where the poverty line is drawn relative to the five incomes in question, and the specific poverty index. However, under certain conditions it can be shown that the impact on poverty of job creation in either location is exactly the same. To see the intuition behind this, take the head count ratio as the poverty index, and let the rural income and the two informal incomes be below the poverty line. Creating an additional job in the city pulls in the migrant who is lucky enough to get that job, but also many more migrants who come in the hope of getting that job but are unsuccessful. The head count goes down by one for the migrant who is lucky enough to get the new modern sector job, but the unlucky migrants do not change the head count because they start and finish below the poverty line. The same argument holds for the creation of a new modern sector job in the town. Poverty falls as a result of urban growth through modern sector job creation, but by the same amount in either of the two urban location—the decision then depends on the relative cost to the public purse of creating a job in the city versus the town.

If the poverty index is not P_0 (the head count ratio) but is P_1 (sensitive to the depth of poverty), the argument is somewhat more complicated. The creation of a new job in the modern sector of the city changes the poverty gap of the lucky migrant who gets this job by the poverty line minus the rural wage. But it also changes the poverty gap of the unlucky migrants who are attracted by the prospect of the new job but failed to secure it, and ended up with the informal sector income. The overall effect on P_1 poverty is complicated because the population reallocation necessitated by the migration equilibrium condition is itself dependent upon the informal sector income in each sector. But the effect can be calculated (see Christiaensen, De Weerdt and Kanbur, 2016). The comparison depends among other things on the gap between the rural income and the informal income (net of the respective migration cost) in the two locations. In the case where urban informal incomes are lower than rural incomes, as in the standard Todaro (1969) model, the smaller is the gap between the two the better will be the impact of modern sector job creation on poverty. In the case where urban informal incomes are higher than rural incomes, the larger is the gap between the two the better will be the impact of modern sector job creation on poverty. The public policy choice thus depends not only on the cost of creating a modern sector job in town versus city, but also on the characteristics of the informal sector in that location.

Clearly, policy interventions which improve wellbeing in a location will make the inhabitants of that location better off, and this will attract more migrants to that location. The policy questions then are (i) what sorts of intervention will achieve this change and (ii) what will be the impact of the change on poverty once all economic responses are taken into account? The literature is still some way from providing clear and specific answers to these questions. In this section we have thought of the change as improving modern sector job prospects in urban locations, and have begun the analysis of the poverty impacts of such changes. However, these impacts are quite complex even in simple settings, and how exactly the job prospects are improved by what sorts of policy intervention (including reducing the cost of migration), is still an open question for research and analysis. The computable general equilibrium models developed by Dorosh and Thurlow (2013, 2014) and applied to Ethiopia and Uganda go one step in this direction, but much more theoretical and empirical evidence is needed to elicit and quantify the channels and simulate the general equilibrium effects.
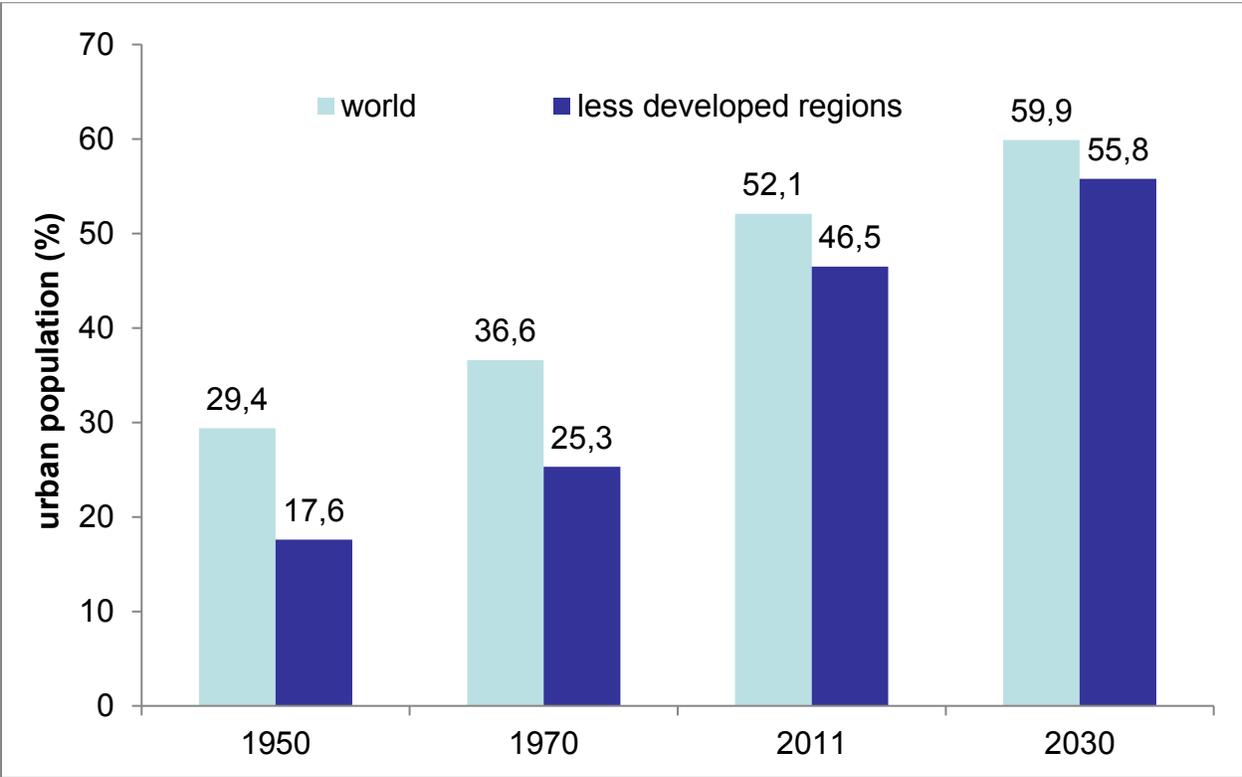
5. Conclusion

The question of reorienting public investment from big cities to smaller secondary towns in order to achieve greater poverty reduction, itself raises many more questions. Among these: What exactly is meant by a secondary town or a small town? How do they differ across a range of socio-economic indicators and in access to public services? How important are these smaller entities in explaining the rate of urbanization, economic growth and poverty reduction? What determines migration to secondary towns compared to large cities? What is the growth potential of secondary towns relative to large cities? How different are their distributional characteristics? Does growth in secondary towns create more jobs, especially for the bottom forty percent of the income distribution, compared to the growth of large cities? How should governments decide on the allocation of public investment across different sized urban agglomerations? What are effective policies to promote secondary town development? What can be learned from the history of urbanization in developed countries with regard to these questions?

This paper attempts to pose our central hypothesis and to begin providing answers to some, very few, of these questions. While there is an open research agenda, we believe that the literature provides at least preliminary support to the hypothesis. This in turns leads, through the above questions, to an open research and policy agenda to further document the nature of the poverty gradient between rural areas, small towns and cities, to investigate the economic mechanisms which generate these patterns, and to explore policy options for reorienting public policy towards secondary towns so as to further enhance poverty reduction.
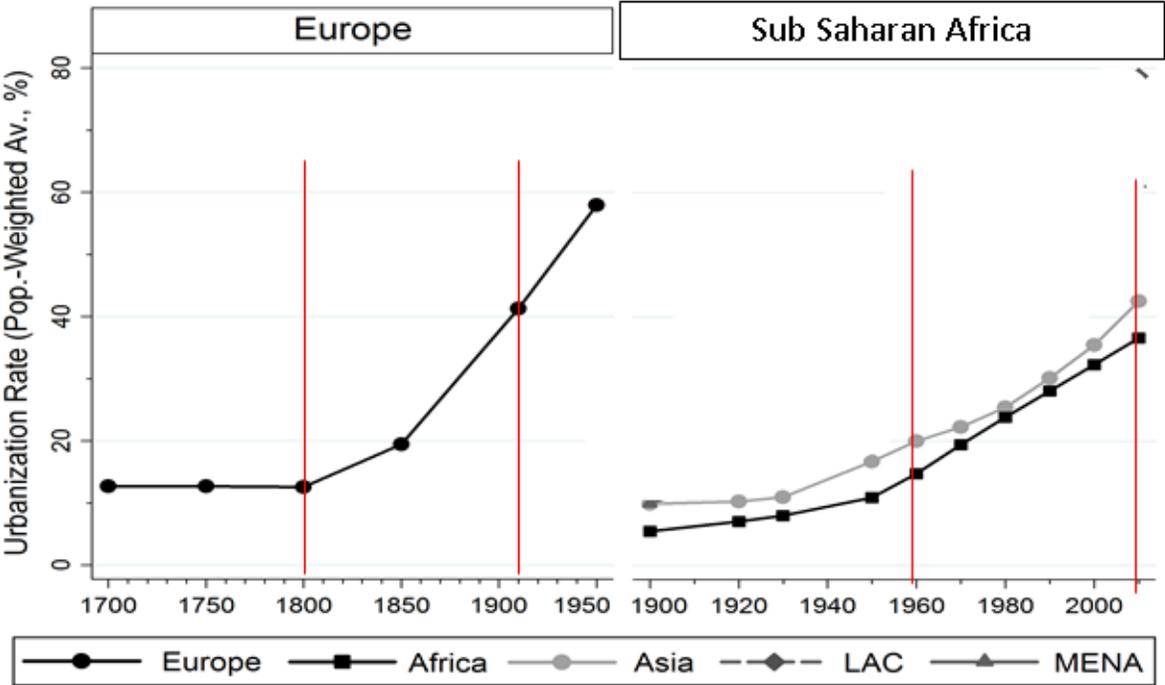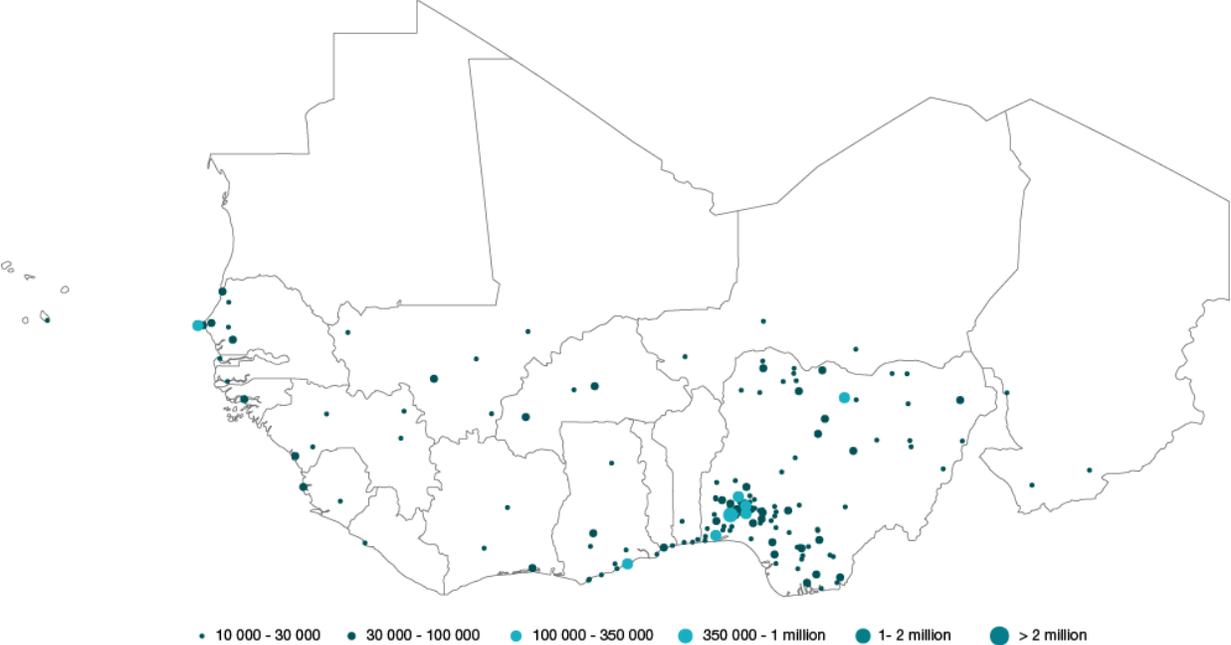
FIGURES

Figure 1: The World Is Urbanizing

Source: United Nations, 2011
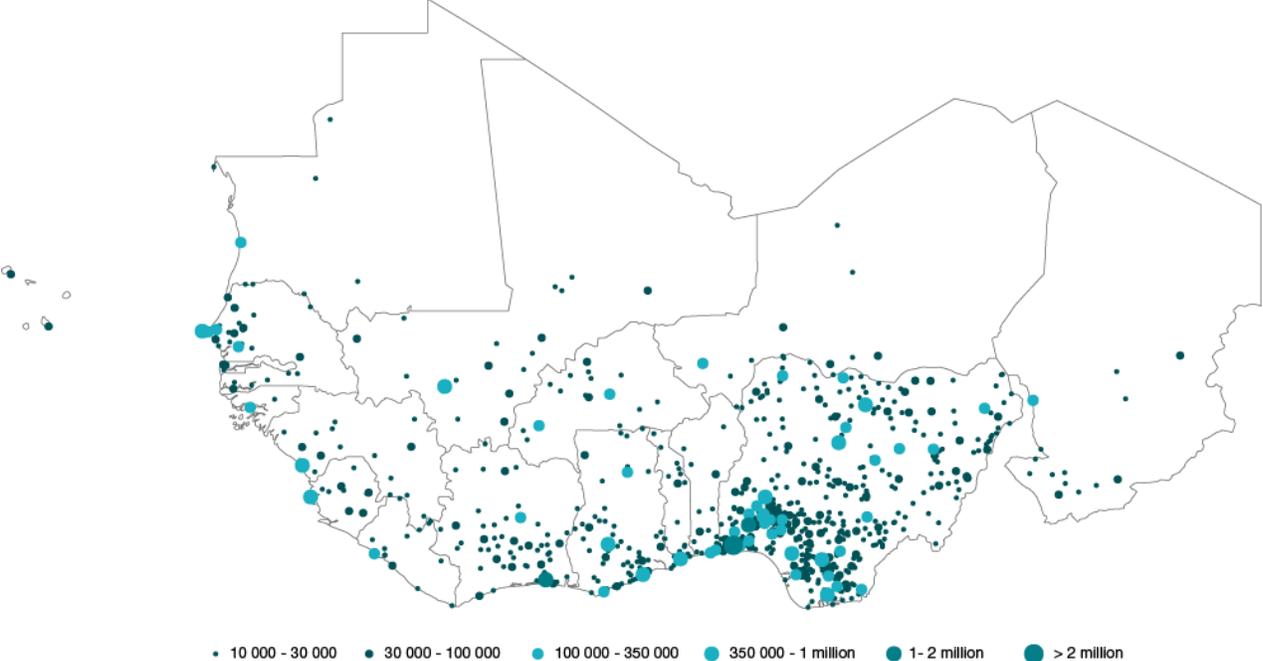
Figure 2: Africa's Urbanization is Rapid

Source: Jedwab, Christiaensen and Gindelsky, 2015.
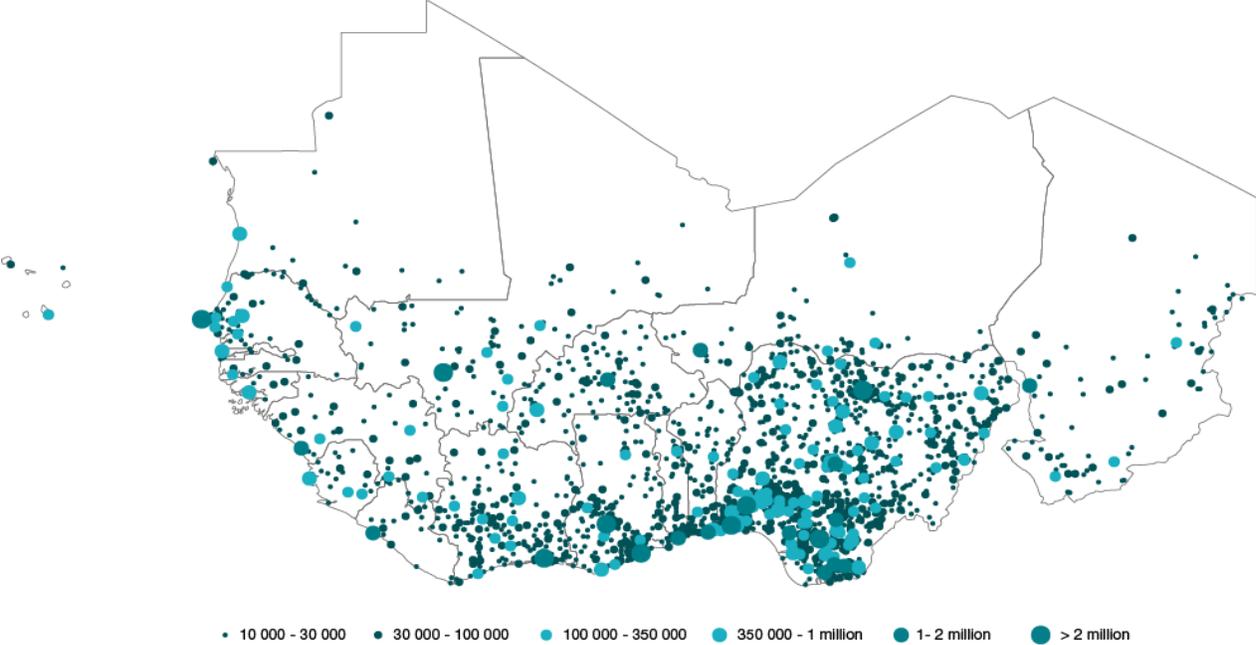
Figure 3a: Africa Urbanization in 1950

● 10 000 - 30 000   ● 30 000 - 100 000   ● 100 000 - 350 000   ● 350 000 - 1 million   ● 1- 2 million   ● > 2 million

Source: Moriconi-Ebrard, Harre and Heinrigs, 2016.

Figure 3b: Africa Urbanization in 1980

● 10 000 - 30 000   ● 30 000 - 100 000   ● 100 000 - 350 000   ● 350 000 - 1 million   ● 1- 2 million   ● > 2 million
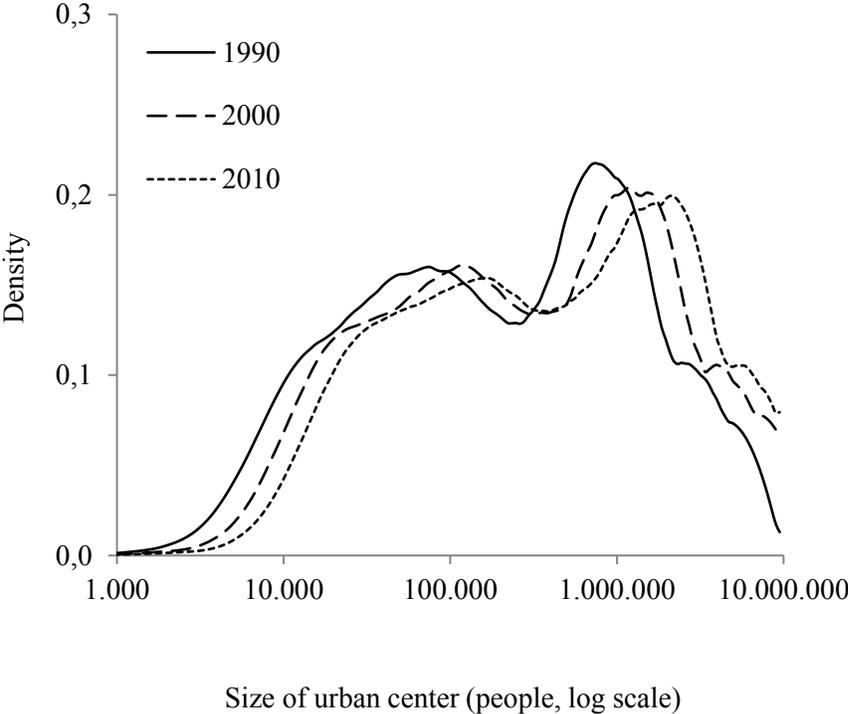
Source: Moriconi-Ebrard, Harre and Heinrigs (2016).

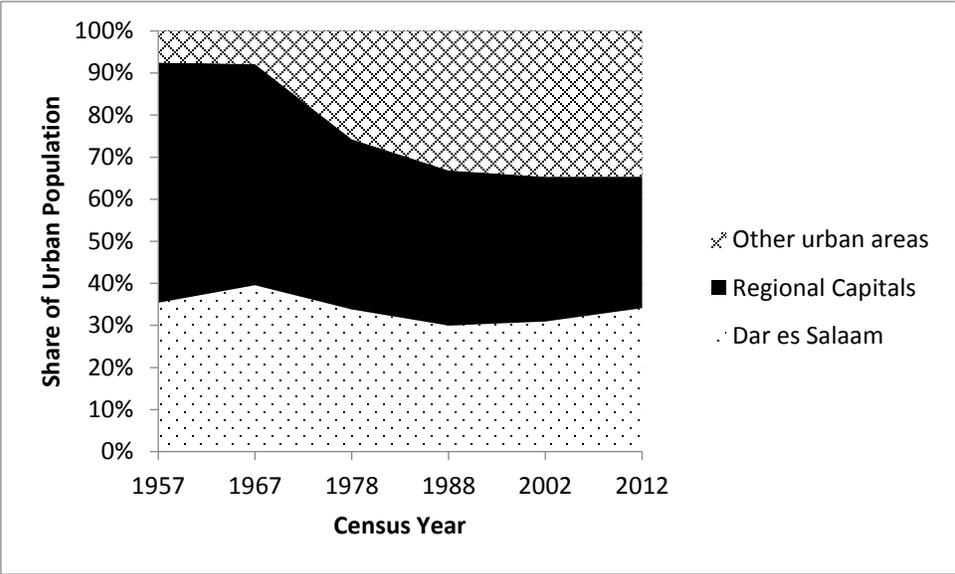Figure 3c: African Urbanization in 2010

Source: Moriconi-Ebrard, Harre and Heinrigs (2016).

Figure 4: Population in Small Towns and Big Cities: Africa

Source: Dorosh and Thurlow (2013)

Figure 5: The evolution of urban composition in Tanzania

Source: Wenban-Smith and Ambroz (2014)

TABLES

Table 1: Moving to the "middle" has larger effect on poverty reduction, controlling for growth

Change rate of the poverty headcount ratio		
(Poverty line)	$1	$2
Change rate of the share of people in the middle	-9.7***	-3.5***
Change rate of the metropolitan share of the population	-5.4	-2.9
GDP growth per capita	-2.3**	-1.4***

Note: GDP growth, flood, country fixed effects and time dummies as controls

Source: Christiaensen and Todo (2014).

Table 2: Decomposing growth and poverty reduction from migration, Kagera, Tanzania

2010 location	N	Poverty headcount			
Migrants only Destination		1991-94	2010	Change in Poverty headcount	Share in poverty headcount change
Rural	1086	0.56	0.35	-0.21	0.40
Town	720	0.45	0.14	-0.31	0.38
City	285	0.45	0.02	-0.42	0.21
Total	2073	0.50	0.23	-0.27	1.00

Source: Christiaensen, De Weerdt and Kanbur (2015).

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