

**Understanding internal migration to urban areas:
Evidences from censuses and surveys from the developing world**

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Abstract

The literature on internal migration to cities and towns is marked by ambiguous and even misleading measures of migration. The “migration-defining” spatial boundaries and time periods often vary not only among countries but also between censuses and surveys for the same country, which hinders consistent estimation. Using 136 census microsamples and 189 Demographic and Health Surveys from developing countries in Africa, Asia and Latin America, this paper compares a range of measures of internal urban in-migration. The results show that in general, surveys tend to produce higher estimates of migration than censuses. This paper also attempts to present an overview of what censuses and surveys each can contribute to studies of urban in-migration, by drawing evidence from censuses and DHS to clarify puzzles in the literature regarding whether the majority of urban in-migrants are from rural areas in developing countries, as well as whether most urban female in-migrants go into domestic work.

Key words: urban in-migration, census, DHS, migration measures

Overview

Migration has been an important factor of demographic transition all over the world, and it is increasingly important for urbanization and city growth in most developing countries. As fertility falls, migration may play an even more substantial role in city growth. Good estimates of migration has long been valued for making sensible population forecasts (Heide, 1963). It is important to determine whether rates of migration to urban areas are increasing or falling, the demographic characteristic of migrants and so forth. However, there is no single source to supply estimates for all countries. The “migration-defining” spatial boundaries and time periods often vary not only among countries but also between censuses and surveys for the same country, which hinders consistent estimation (Bell, 2009). The literature on internal migration to cities and towns is marked by ambiguous and even misleading measures of migration. Literature has largely focused on reasons of migration, migrant experience, and rural to urban migration as an important part of economic development, but there is a lack of systematic comparison of migration measures in literature, and also lack of discussion of implication of different measures used in census and surveys. *(More References are to be added in the final paper)*

In this paper, we compare estimates from census micro-data samples with those of the Demographic and Health Survey(DHS). By using all censuses and DHS data available for developing countries in Africa, Asia and Latin America from 1970 to 2010 (as shown in Figure 1, *to be updated with the newest round of DHS and IPUMS datasets released in 2014*), we believe this is one of the first few studies that provide a comprehensive overview of migration measures used all over the world, as well as one of the few studies that attempts to compare urban in-migration estimates from a large scale of census and surveys. Also, we seek to inspect how the estimates based on census and surveys differ from one another(*specifically, why surveys tend to yield much higher urban in-migration estimates, based on our preliminary findings*), whether they are different overall or by demographic composition. Further, we try to explore the causes behind the different estimates of migration rates, by compare the sampling universe and geographic specificity of the census and surveys, as well as how migration questions are asked– any migration vs migration between minor admins vs migration between major admins, and duration of migration.

Not only different migration estimates are produced by census and surveys, different conclusions are often drawn on internal urban migration patterns and migrant experiences based on different data sources. By using more than 200 census microsamples and Demographic and Health Surveys from all developing countries in Africa, Asia and Latin America for which some census or survey data are available, this paper also attempts to provide evidence to answer some of controversies

and puzzles in the literature on internal urban in-migration: 1) Are the urban migrants mostly from rural areas? There is a widely accepted assumption that most urban in-migration is migration from rural to urban. But we find that in fact in a large number of countries, there is a higher proportion of urban in-migrants from urban areas rather than from rural areas. 2) Are migrants are in general worse off with lower education and work mostly as domestic workers and manufacturing workers? There is a view that most female migrants go into domestic work, but it's unclear what the evidence says. We try to sort out this puzzle by using evidence from census for a large number of developing countries.

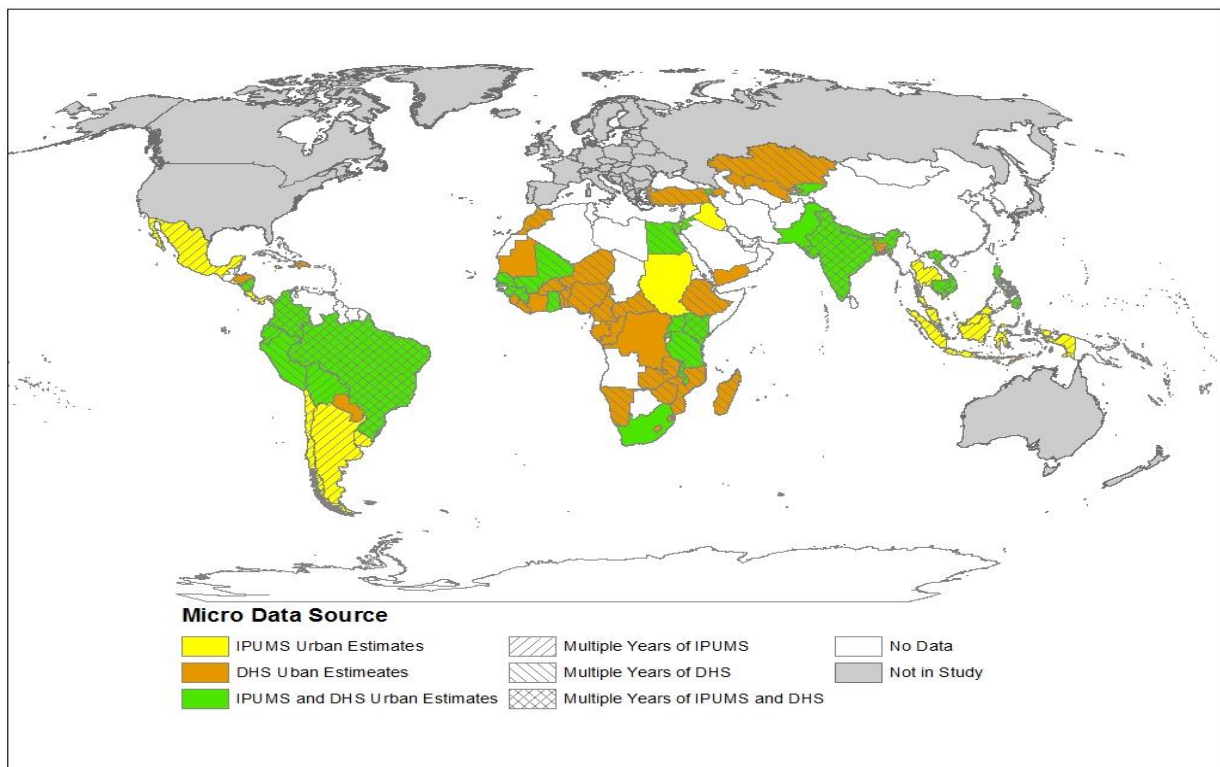


Figure 1: Using IPUMS and DHS: Countries for which URBAN in-migration estimation is possible *(To be updated with census and DHS data released in 2014)*

Data & Analysis

Internal migration measures: IPUMS VS. DHS Comparison

We measure urban in-migration as the proportion of those currently living in urban areas who have moved to their current residence within a five-year period from the point of observation (i.e., the census or survey date). This is the basic unit migration in this paper, but as we will show below, even this measure varies considerably depending upon what information is used as the basis of measurement. Appendix 1 shows different internal migration measures available from the census data (from IPUMS collection, only the most recent censuses are shown here). As we can see, different censuses often ask different migration questions, and the “migration defining” boundaries differ among countries. For some of censuses, any move between localities is defined as migration (eg, Egypt 2006); for others only migration between major administrative units (first-level admin units such as states) are counted as migration (eg, Ghana 2000). For about one third of the countries we have census microdata, we can estimate migration using more than one measures, and by comparing the urban in-migration rates generated using different measures, we hope to provide some insights on understanding the potential mis-estimation in countries where only one measure is available or where migration is too loosely defined or strictly defined. In order to compare migration measurements used in different countries, as well as censuses and surveys, we classified the measurement of migration into two major groups: direct measures, and indirect measures. Direct measurement of migration is based on MGRATE5—the variable based on census respondents being asked directly about where they lived 5 years prior—from the IPUMS collection. In contrast, indirect measures are based on questions about years having lived at the current location *mgyrs1* and previous residence MGRATEP in IPUMS. Survey data such as the DHS, rely exclusively on indirect measures as well, whereas census data almost always collect direct measures (and more precise geographic locations) in addition to numerous indirect measures.

How different urban in-migration estimates will be when different measurements of migration are used? Figure 2 compares urban in-migration estimates generated based on different migration measurements for selected countries. (*More comparisons for many other countries are available and will be synthesized by continent in the final paper*). For almost all countries, if urban in-migration estimates are generated based on indirect measures (years living in current locality), the migration estimates will tend to be higher than direct migration measures (where they lived 5 year ago). In all countries where comparison of indirect measures can be made, we find that the migration rates are either the same or higher when based only on measures of current locality. This is presumably because when the question about previous residence is omitted, any migration (even very local migration) may be reported as a move. Meanwhile, because how place of origin is specified is so important to the level of measurement, we additionally compare migration between major administrative units with moves that occur within major administrative units (typically classified as a “move within same major administrative area but different minor administrative area” but sometimes unspecified as “any migration”), using direct measures for many countries, as shown in Figure 3 (*More comparisons for many other countries are available*

and will be synthesized in the final paper). Obviously the rates of “any migration” are greater than “migration within major administrative units”. The question is how much of the difference is dependent on how major administrative units are defined (as shown in Appendix 1). Note that even the measure of “any migration”, at least as coded in the harmonized IPUMS collection, does not all possible moves since moves between minor administrative areas within a major administrative area typically exclude very local moves.

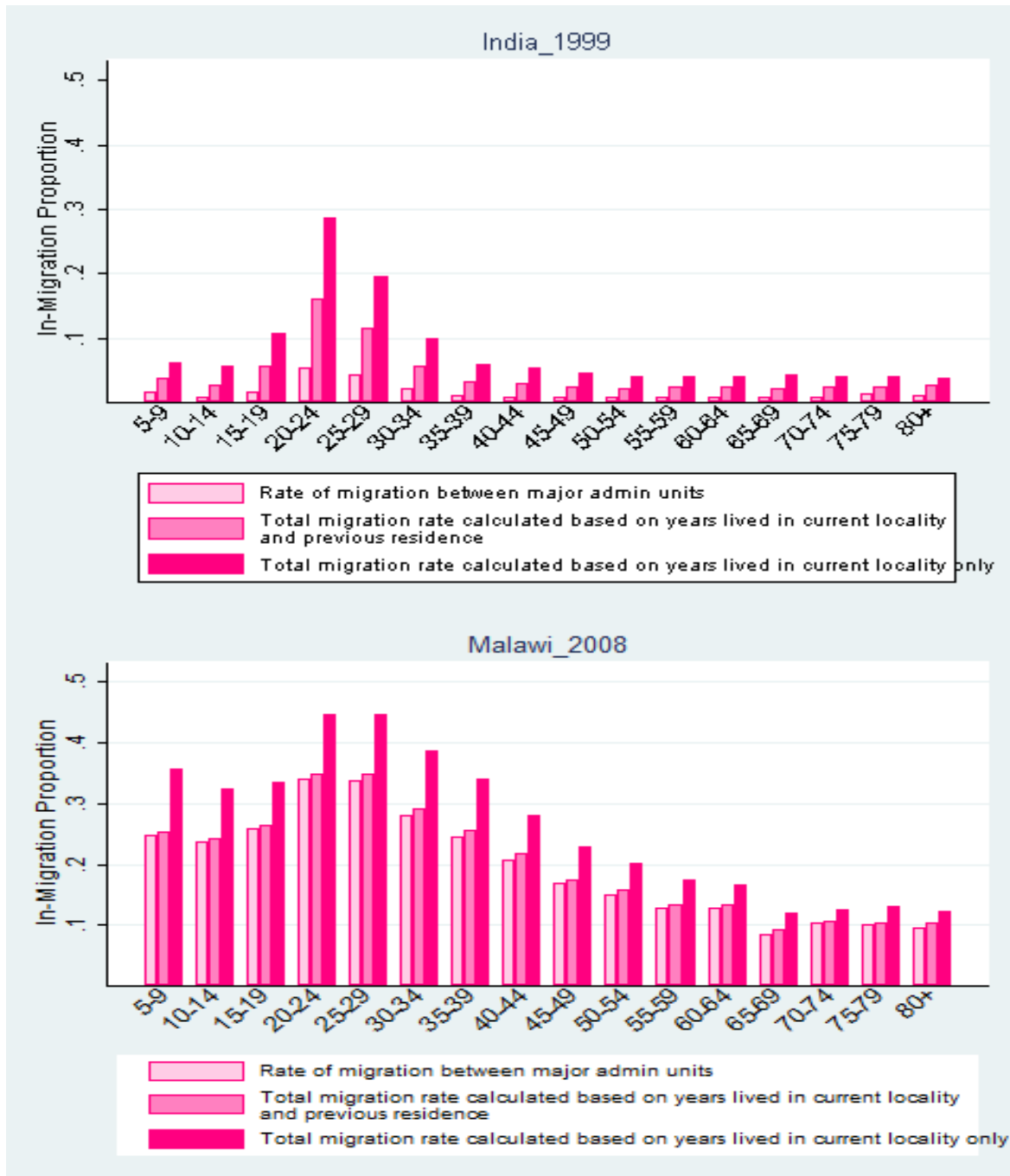


Figure 2: 5-year urban in-migration rates by age, comparing rates based on different migration measurements

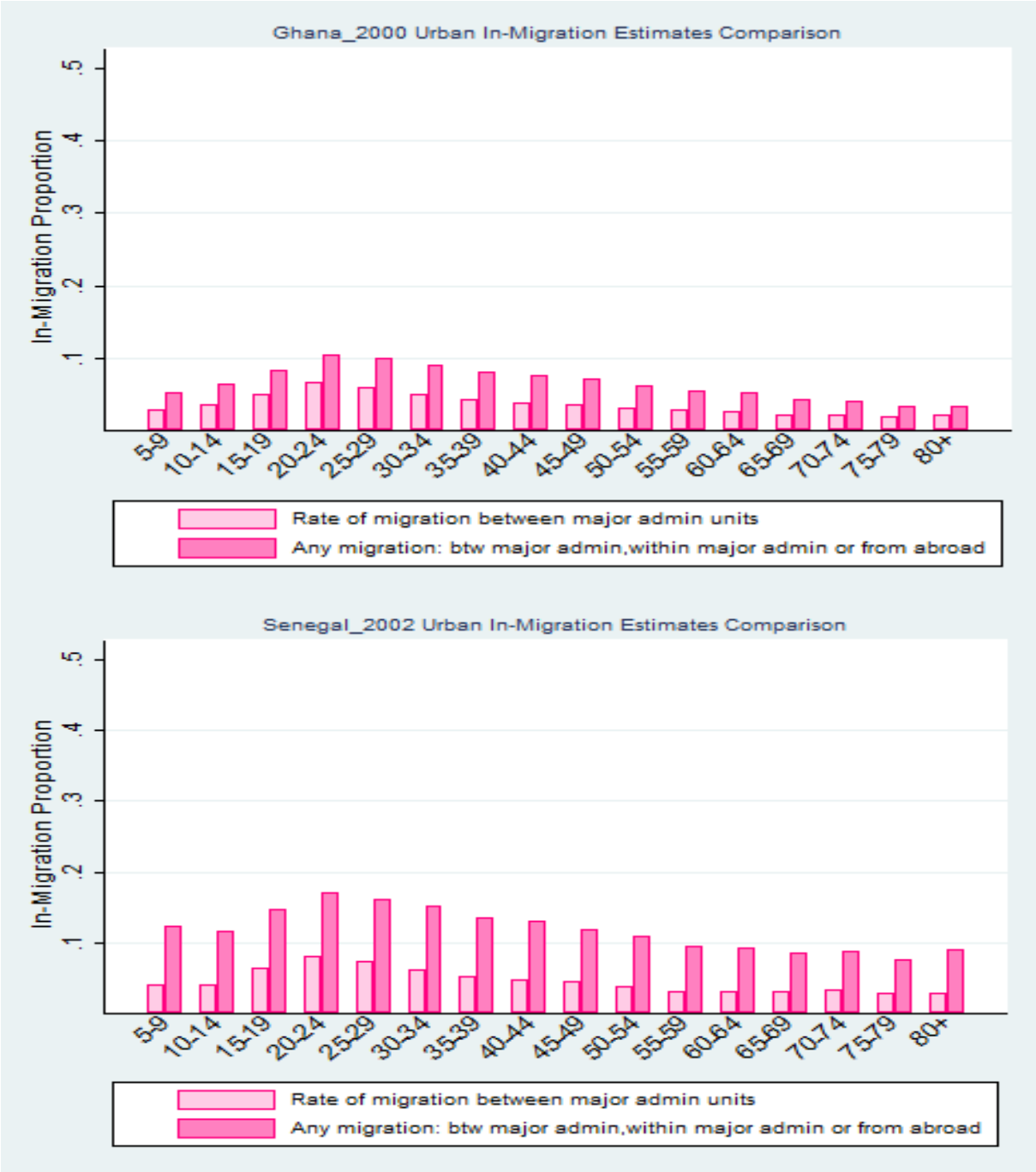


Figure 3: 5-year urban in-migration rates by age, comparing rates based on different types of migration (between major admin vs any migration)

How different urban in-migration estimations are based on census and surveys?

As discussed before, census and surveys often ask different migration questions. Thus, how different urban in-migration estimations census and surveys will be? What are the issues we should be cautious about when trying to use urban in-migration estimates for city growth or population projections? To answer the question, we compare the level and pattern of migration based on the census data to those produced by DHS data. For almost all countries, while the overall pattern appears to be about the same, the census data produce lower levels of migration at all ages than estimates based on the DHS.

Figure 4 show the different kinds of urban in-migration estimates we can generate based on the migration variables available in IPUMS and DHS(*Only Mali and Malawi are shown here, but comparison for many more countries are done, and graphs will be synthesized by continent in the final paper*). The DHS and IPUMS do not always have the same survey year, but we always choose the data of two closest years. As shown in the figures, the dark pink bar represents rate of any migration, based on DHS; while the green bar represents rate of any migration, based on IPUMS. It's found that for almost all countries the DHS and IPUMS report very different migration rates. In most countries, **DHS report much higher migration rates**. Also, estimates between DHS and IPUMS are most comparable when an "any migration" (or more local moves are the basis of the estimates) indication is used. Also, we find that the biggest differences between DHS and IPUMS estimates seem to exist for the 15-19 and 20-24 years olds. That's probably because DHS captures these two age groups better, and if this two age groups are likely to move a lot (as shown in the migration by age pattern part), DHS will also captures the migrations better.

What then results in the remarkable difference in urban in-migration rates generated based on census and DHS data? We find that a key contributor to these differences is the sampling universe. In some countries, the DHS is administered only to married women. When we restrict the estimates of migration from the IPUMS sample to ever-married women only, there is a considerable improvement in the comparability of estimates produced from these two difference sources, especially in the young age groups with the highest rates of migration, as shown in the India example (Figure 5). We think that is probably because when surveys are targeted at married women, they are more likely to capture migrants, since it is not uncommon that women migrate for marriage, such as in India. In other words, the DHS data probably pick a marriage selection effect: the sample selection criteria of married women produces much higher rates of migration because women migrate for the purpose of marriage. Migration estimates from DHS samples based on ever-married women, therefore, should be interpreted with caution.

Another factor contributing to these differences is how migration is measured. Some censuses only record moves between major administrative regions but even when comparing any move recorded in the census (where possible), differences emerge. Moves between major administrative areas occur in the smallest proportions, whereas moves that are calculated based on current locality of residence produce much high measures of migration. The DHS uses a "current locality" approach in its questions and whether the respondent previously resided in city, town or rural area. We consider this type of move consistent with an "any" move measure,

and in reality may only be an indicator of residential mobility than migration. (More investigation of these differences are to be done).

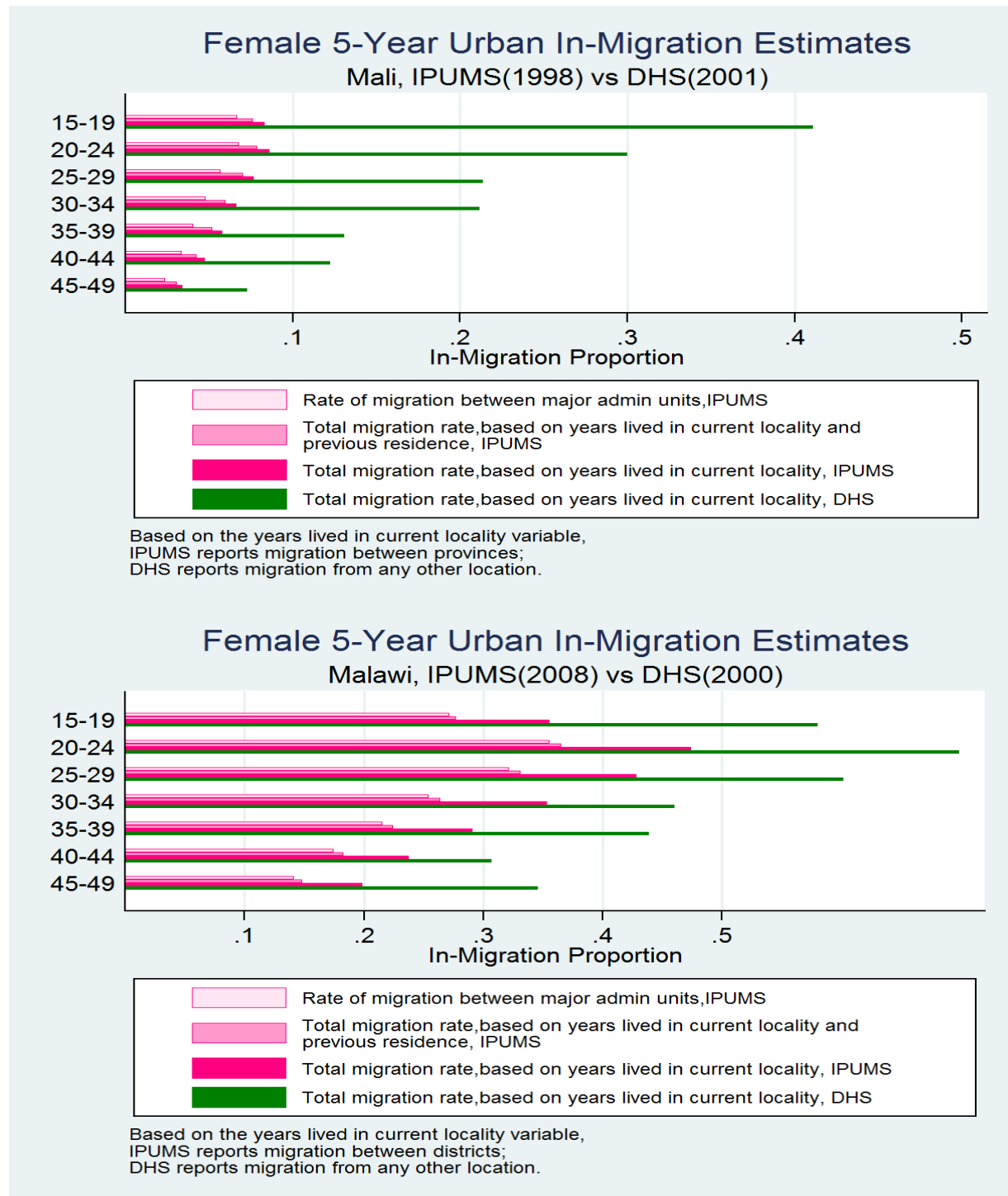
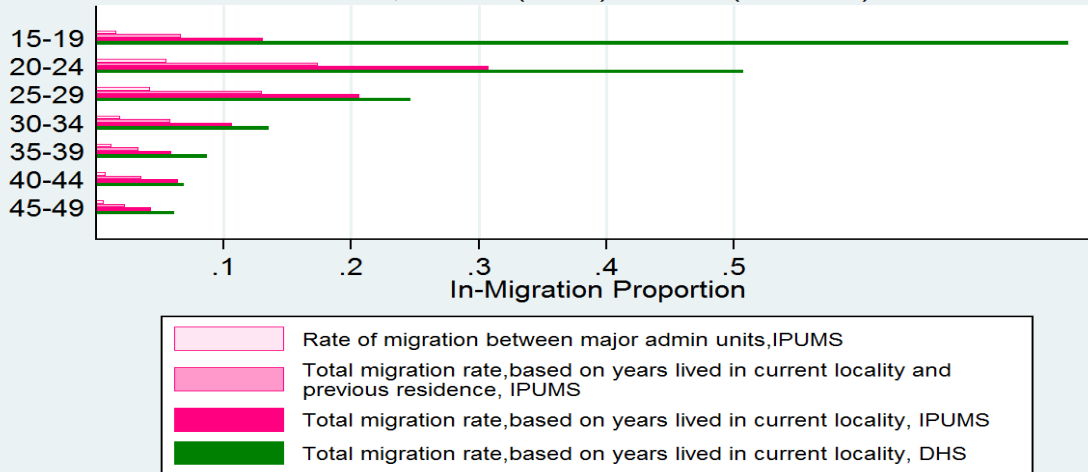


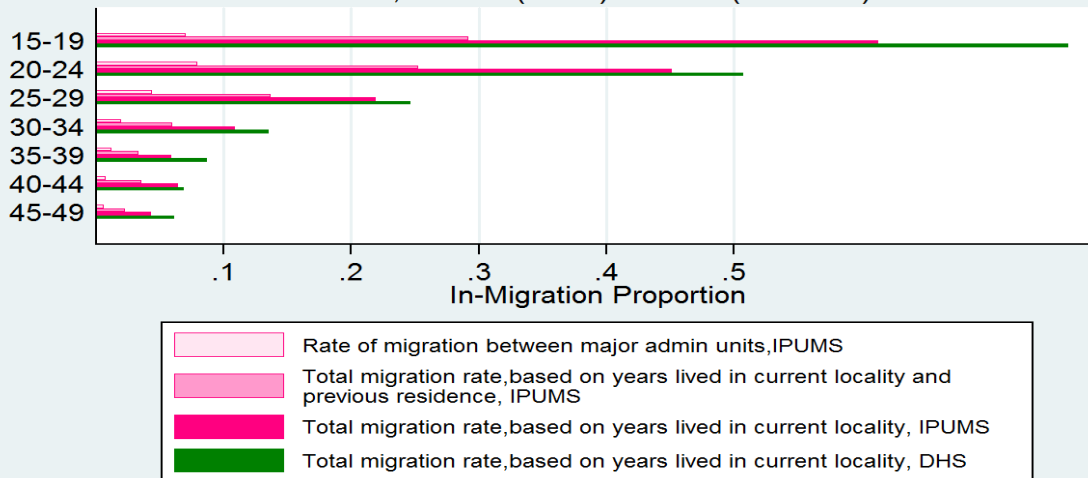
Figure 4: Comparison of urban in-migration rates generated by different measurements from IPUMS and DHS (comparison is done for more than 20 countries. results not shown here)

Female 5-Year Urban In-Migration Estimates India, IPUMS(1999) vs DHS(1998-00)



Based on the years lived in current locality variable, IPUMS reports migration between the places of enumeration, which are the sample villages/towns where the survey was carried out; DHS reports migration from any other location.

Female 5-Year Urban In-Migration Estimates India, IPUMS(1999) vs DHS(1998-00)



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Figure 5: IPUMS & DHS Sample selection: Comparison of urban in-migration estimates for all female (upper figure), married females (lower figure). Difference much smaller when comparison is restricted to married females only.

What can census and surveys each contribute to understand puzzles in urban in-migration literature?

Rural to urban migration has been paid a lot of attention to in recent migration literature, and there is often a view that the majority of the urban in-migration is contributed by rural to urban migration. In this paper, we seek to understand whether that view is true for most of the developing countries.

Where are the urban in-migrants from?

Censuses and the DHS program have taken different approaches to characterizing migration. Census generally provide the geographic location where migrants move from, but most of them do not describe whether it is urban or rural. Meanwhile, DHS generally do describe the rural-urban status of the origin community, which can help to understand where the urban in-migrants are from. As shown in Figure 6, we found that for most of the countries, the majority of urban in-migrants are from towns and cities, instead of rural countryside, except for some countries in Africa (Rwanda and Kenya). Interestingly (and probably quite different from the popular view), we find that the flows of urban in-migration (even in largely non-urban countries) are between cities and other cities and towns, not primarily from rural areas.

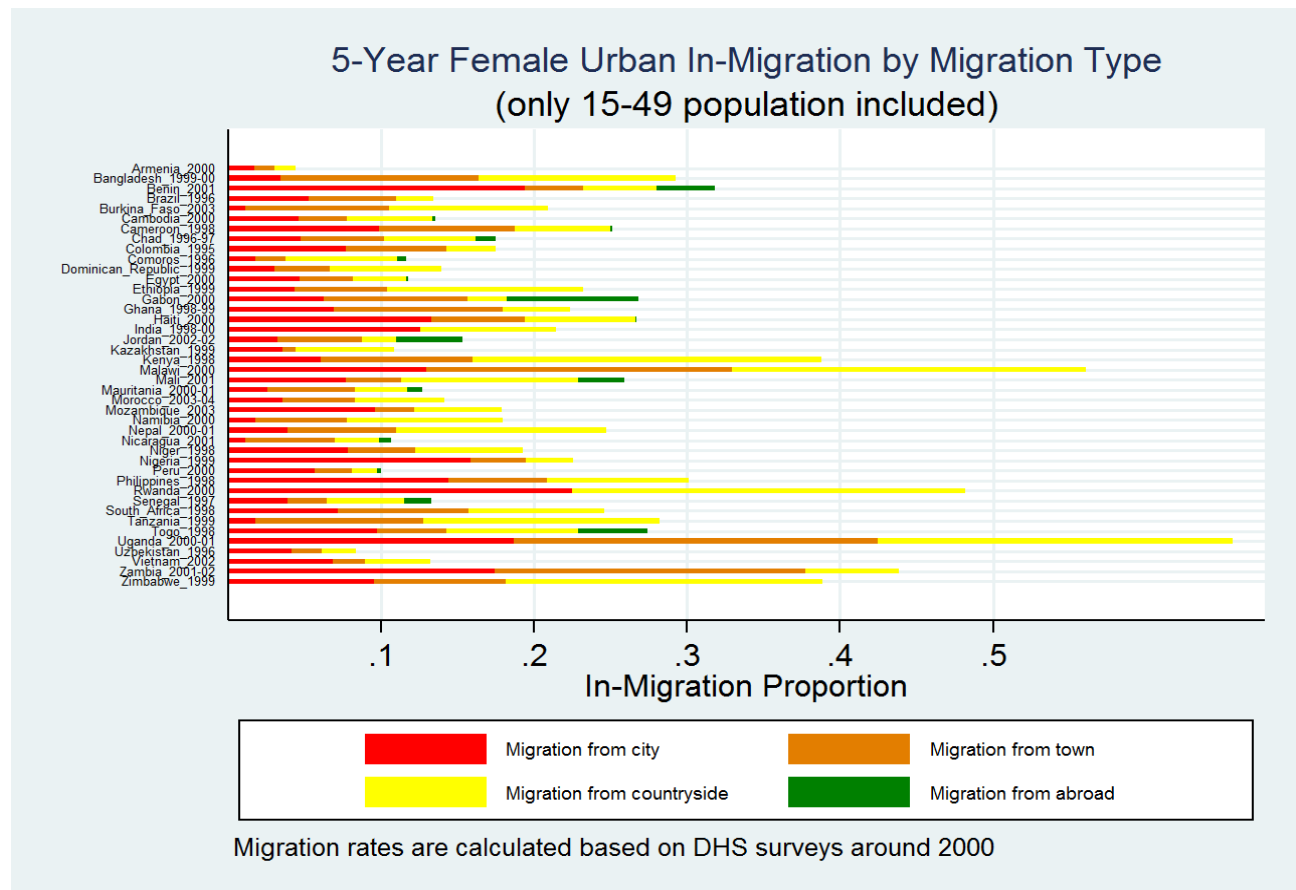


Figure 6: Urban in-migration rates by urban/rural status of origin

At the same time, we do find evidence that support the popular view that there seem to be more rural to urban migration than urban to rural migration. Figure 7 compares the share of rural population who migrate to urban and the share of urban population who migrate to rural, using DHS data available around 2000(1997-2003) for developing countries in Africa, Asia and Latin America. We can see that for most developing countries, there is more rural to urban migration than urban to rural migration.

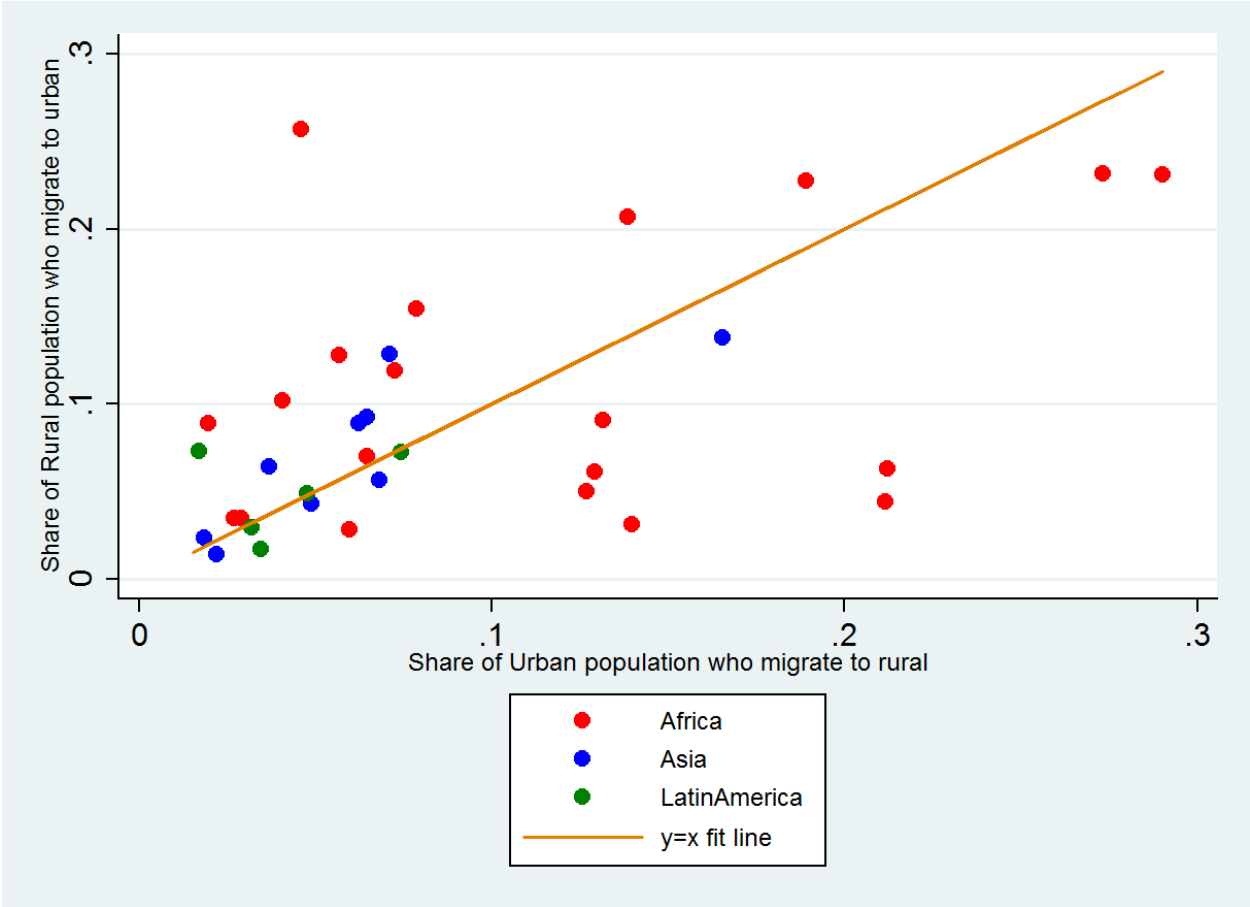


Figure 7: Comparison of urban to rural and rural to urban migration, using evidence from DHS data(1997-2003)

Are most female urban migrants domestic workers?

Another puzzle we try to sort out is related to the occupation choice of migrant workers. This is a view that migrant workers mostly end up in poorly paid/labor intensive occupations such as domestic work or factory work. Census is a great source to test this hypothesis. Almost all censuses in the IPUMS collection provide occupation information. Using the latest censuses available for developing countries, we try to find out whether most of female urban migrants are domestic workers, or whether most domestic workers in the urban areas are migrants. As shown in Figure 8, domestic work is an occupation that houses higher percent of female urban migrants (15+

years older with a job), compared to other occupation, and urban female migrants are more likely to be domestic workers than non-migrants. But the majority of female household workers are not migrants. The percent of urban female domestic workers that are migrants is quite high in some countries: more than 30% in Vietnam, based on 2009 census; and more than 40% in Malaysia based on 2000 census, but still none of the censuses shows that domestic workers are mostly migrants.



Figure 8: Do most female urban migrants go into domestic work? Evidence from census.

Concluding remarks

Censuses and surveys take different approach to asking migration questions and also often have different sampling universe, and therefore provide inconsistent migration estimates. Migration might be defined fundamentally different depending on the measurements (eg duration, geographic reference) used in censuses and surveys. While we use urban in-migration estimates for city growth and urbanization projections, we should always be aware of how migration is measured in a specific country and local context. Also, though censuses and surveys often measure migration in different ways, they also complement each other. Censuses generally provide more detailed information on geographic origin of migrants so that we have a clear idea about “migration-defining” boundaries, but they do not report geographic unit in urban/rural terms. Meanwhile, DHS data provide on urban/rural origin of migrants which are valuable to understand flows of migration, but they are less clear about the specific location/distance of migration. Lastly, while many studies rely on different singular sources to understand urban migration and thus reach different conclusions, a large scale study utilizing multiple censuses and DHS surveys can contribute to clarify some controversies by providing a fuller picture with evidences from multiple countries and multiple measures. Urban in-migration is an essential factor driving city growth and urbanization in the developing world. It is important that we understand how it is measured and thus make valid inference and predictions.

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(More to be added in the final paper)

Appendix 1: Migration Measurements Available from Census (IPUMS)

Description of inputs that are used to generate migration estimates													Country-specific definitions		
Continent	Country	Year	Migration Status Question		Duration			Previous Residence Question	Previous Residence Classifications (aka 'distance of move')				Definition of "Major Administrative" and "Minor Administrative" units*		
			Have you moved within the past X years? (Direct measure, mgrate5)	mgys1: How long have you lived at your current locality? (Indirect measure, mgys1)	1	5	10		Any but unclear of previous residence	between major admin	within major admin, between different minor	from abroad	Major Admin	Minor Admin	
Africa	Egypt	2006		x	x	x	x			x		x		Governorat	
Africa	Ghana	2000	x			x		x		x	x	x		Region	District
Africa	Guinea	1996		x	x	x	x	x		x		x		Prefecture	
Africa	Kenya	1999	x	x	x	x	x	x		x	x	x		Province	District
Africa	Malawi	1987	x		x			x		x	x	x		Region	District
Africa	Malawi	2008		x	x	x	x	x		x		x		District	
Africa	Mali	1998		x	x	x	x	x		x		x		Province	
Africa	Morocco	1982	x	x	x	x	x	x		x	x	x		Region	Province
Africa	Senegal	2002	x			x		x		x	x	x		Region	Department
Africa	Sudan	2008	x	x	x	x	x			x		x		State	
Africa	Tanzania	1988	x				x	x		x		x		Region	
Africa	Tanzania	2002	x			x		x		x		x		Region	
Africa	Uganda	1991		x	x	x	x		x						
Africa	Uganda	2002		x	x	x	x		x					District	
Asia	Armenia	2001		x	x	x	x	x		x		x		Province	
Asia	Cambodia	1998		x	x	x	x	x		x	x	x		Province	District
Asia	Cambodia	2008		x	x	x	x	x		x	x	x		Province	District
Asia	China	1990	x			x		x		x	x	x		Province	County
Asia	India	1999		x	x	x	x	x		x	x	x		State	District
Asia	Indonesia	2010	x			x				x	x	x		Province	Regency/Mu
Asia	Iran	2006	x	x	x	x	x		x	x		x		Shahrestan(
Asia	Jordan	2004		x	x	x	x		x						
Asia	Kyrgyz	1999		x	x	x	x	x		x	x	x		Region	District
Asia	Malaysia	2000	x			x		x		x	x	x		State	District
Asia	Mongolia	2000	x	x	x	x	x	x		x		x		Province	
Asia	Nepal	2001	x			x		x		x	x	x		Administrat	
Asia	Philippine	2000	x			x	x	x		x	x	x		Province	Municipality
Asia	Thailand	2000		x	x	x	x	x		x		x		Province	
Asia	Vietnam	2009	x			x		x		x	x	x		Province	District
LAC	Argentina	2001	x			x		x		x	x	x		Province	Locality
LAC	Bolivia	2001	x			x		x		x	x	x		Departmen	Province
LAC	Brazil	2000	x	x	x	x	x	x		x	x	x		State	Municipality
LAC	Chile	2002		x		x		x		x	x	x		Province	Municipality
LAC	Colombia	2005	x			x		x		x	x	x		Departmen	Municipality
LAC	Costa Rica	2000	x			x		x		x	x	x		Province	Canton
LAC	Cuba	2002		x	x	x	x	x		x	x	x		Province	Municipality
LAC	Ecuador	2001	x	x	x	x	x	x		x		x		Province	
LAC	Jamaica	2001		x	x	x	x	x		x				Parish	
LAC	Mexico	2005	x			x		x		x		x		State	
LAC	Panama	2000						x						Province	District
LAC	Peru	2007	x			x		x		x	x	x		Departmen	Province
LAC	Uruguay	2006	x	x	x	x	x	x		x	x	x		Departmen	Locality
LAC	Venezuela	2001												State	Municipality