Rural-urban synergies in development and propensity to migrate

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UN-WIDER Conference on Migration and Mobility
Accra, Ghana
October 6th, 2017
Overview

- **Objective**: examine drivers of rural-urban migration in developing countries and link to structural transformation.

- Provide a **framework** that enables the estimation of the incentives to migrate and the propensity of people to respond to such incentives (in a broad set of countries).

- The presentation will cover:
  - Introduction to the approach
  - A graphical illustration of the framework
  - Preliminary results based on estimations at the regional level
  - Advantages and caveats of the approach
Introduction

• “macro” perspective using aggregate data at the country level to look into the main drivers of rural-urban migration

• Some share of the population that is at a disadvantage migrates in response to the rural-urban breakdown of population that is “advantaged”.

• The starker the rural-urban divide, and more people affected, the more migration there will be.

• The model is compatible with the Harris-Todaro approach, but is designed to take into account multiple drivers
The basics of the approach

• The basic premise of the approach is that there is a cut-off income level separating the poor from the non-poor.

• We will be operating with shares of the national population that are above or below the poverty line, both in rural and urban areas.

• Will be dealing with net migration rates between rural and urban areas.

• The rest is best explained graphically...
A graphical view of incentives to migrate: the short term

TPL: Total population line

% of Rural population in total population

% of urban population in total population

L₀

H₀

RU₀
A graphical view of incentives to migrate: the short term

TPL: Total population line

% of Rural population in total population vs. % of urban population in total population
A graphical view of incentives to migrate: the short term

TPL: Total population line

% of Rural population in total population

% of urban population in total population

Rural-urban shift due to migration

\( \Delta \text{URB} \)
A graphical view of incentives to migrate: the longer term

- TPL: Total population line
- Natural urban increase
- Rural-urban shift due to migration
- \( \Delta URB \)
migration rate = a \cdot |L| \cdot |H| \cdot \sin \theta
Measuring the incentive to migrate

\[
migration \ rate = a \cdot |L| \cdot |H| \cdot \sin\theta
\]

- Parameter “\(a\)” represents the propensity to migrate
- **Larger** \(|L|\) means larger shares of population are poor and thus more people may try to improve livelihoods migrating
- **Larger** \(|H|\) implies that the higher income population is large, meaning that improving livelihoods is a possibility
- **Larger** \(\sin\theta\) means unequal distributions of poor and non-poor between rural areas and urban areas
- Goes beyond “push-pull” narrative, capturing the nuance of differentials
Putting real data to the graphical approach

Data on rural/urban poverty breakdown provided by IFAD and World Bank 2016
Putting real data to the graphical approach

Data on rural/urban poverty breakdown provided by IFAD and World Bank 2016
## Evolution of the incentive to migrate

<table>
<thead>
<tr>
<th>China (year)</th>
<th>Incentive to migrate</th>
<th>India (year)</th>
<th>Incentive to migrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>0.060</td>
<td>1994</td>
<td>0.025</td>
</tr>
<tr>
<td>1996</td>
<td>0.098</td>
<td>2005</td>
<td>0.028</td>
</tr>
<tr>
<td>2008</td>
<td>0.109</td>
<td>2010</td>
<td>0.034</td>
</tr>
<tr>
<td>2011</td>
<td>0.083</td>
<td>2012</td>
<td>0.028</td>
</tr>
</tbody>
</table>

- Magnitude of incentive to migrate to urban areas very different in China and India
- Despite very different development paths the relative impact on the incentive to migrate are similar
From incentives to actual flows: Propensity to migrate

\[ \text{migration rate} = a \cdot |L| \cdot |H| \cdot \sin \theta \]

- Parameter “a” represents the propensity to migrate and it can be estimated if data on migration rate, \( L \) and \( H \) are available.

- Propensity to migrate depends on cultural norms:
  - barriers to women migrating for educational purposes.
  - the age profile of the population, since younger people tend to have a higher propensity to migrate
An empirical application

• Sources used for estimating number of migrants as shares of total population:
  – **UN DESA Population** data on fertility and mortality at national level
  – **Demographic and Health Surveys (DHS)** for fertility and mortality (infant mortality) rates at rural and urban level

• Differentials between infant mortality in rural and urban areas as reported in the DHS are considered as proxies for mortality for the total population

• Migrant shares are estimated as the share of total population growth that is not due to natural population growth
## Propensity to migrate: preliminary estimates

**Dependent variable:** share of migrants in the total population in the following year

<table>
<thead>
<tr>
<th>Region</th>
<th>Value of the coefficient</th>
<th>R Squared</th>
<th>Fisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian countries (35 obs)</td>
<td>0.0484 (.016) ***</td>
<td>0.203</td>
<td>8.41 ***</td>
</tr>
<tr>
<td>Latin American countries (20 obs)</td>
<td>0.1941 (.0385) ***</td>
<td>0.58</td>
<td>25.32 ***</td>
</tr>
<tr>
<td>Sub Saharan African countries (36 obs)</td>
<td>-0.12473 (.0417) ***</td>
<td>0.2076</td>
<td>8.91***</td>
</tr>
</tbody>
</table>

- Propensity to migrate should be estimated at country level, or at least in homogenous regions.
- Paper extends approach also to access to education and health services.
Advantages

• The parameters being estimated have a clear interpretation and have a structural relationship to drivers

• It captures in a continuous manner the push-pull dynamics linked to differences in rate of development between rural and urban areas

• It can be extended beyond segmenting the population into just two categories

• *Differentials in amenities can be included in the approach* – in paper focused on poverty, education, and health services differentials, but...
Caveats

• Three sources of potential errors in estimating the model:
  – Model misspecification (eg. omitted variables)
  – Threshold to distinguish between “advantaged” and “disadvantaged” is not reflective of drivers
  – Migration flows: disentangling natural growth rates, and also reclassification of rural areas to urban

• Assumed propensity to migrate is a fixed parameter to be estimated… but maybe not stationary
  – affected by laws restricting rural-urban migration, such as the Hukou system in China of allocating residence permits
  – Can separate propensity to migrate from migration costs
To conclude...

- Very much work-in-progress driven by need to do a global report on rural migration
- Interested in the feasibility of the approach and possible sources of data
- Suggestions on moving forward are welcome
Thank you!

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