

KNOMAD
Global Knowledge Partnership on Migration and Development



KNOMAD WORKING PAPER 6

Internal Migration in Developing Economies: An Overview

Robert E. B. Lucas

May 2015





Federal Ministry
for Economic Cooperation
and Development



Centre for International
Migration and Development
a joint operation of GIZ and the
German Federal Employment Agency



REGERINGSKANSLIET
Government Offices
of Sweden



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development
and Cooperation SDC



WORLD BANK GROUP

The KNOMAD Working Paper Series disseminates work in progress under the Global Knowledge Partnership on Migration and Development (KNOMAD). A global hub of knowledge and policy expertise on migration and development, KNOMAD aims to create and synthesize multidisciplinary knowledge and evidence; generate a menu of policy options for migration policy makers; and provide technical assistance and capacity building for pilot projects, evaluation of policies, and data collection.

KNOMAD is supported by a multi-donor trust fund established by the World Bank. Germany's Federal Ministry of Economic Cooperation and Development (BMZ), Sweden's Ministry of Justice, Migration and Asylum Policy, and the Swiss Agency for Development and Cooperation (SDC) are the contributors to the trust fund.

The views expressed in this paper do not represent the views of the World Bank or the sponsoring organizations.

All queries should be addressed to KNOMAD@worldbank.org. KNOMAD working papers and a host of other resources on migration are available at www.KNOMAD.org.

Internal Migration in Developing Economies: An Overview*

Robert E.B. Lucas†

Abstract

An overview is provided of the state of knowledge on internal migration in developing economies, with particular emphasis on recent contributions to the literature. The overview is divided into five sections. The first addresses some of the issues in collecting data on internal migration and some of the stylized facts about internal migration in developing economies, noting the differences between internal and international migrations. Ten elements that act as drivers of both rural-urban and rural-rural migrations are described next. These include the search for improved income opportunities and the development strategies shaping these; the role of education and dispersal of amenities; the underlying effects of climate change, natural disasters and violence; as well as the concern for family unification. Five sets of constraints upon such movements are then outlined: financial constraints, distance, incomplete information and intervening opportunities, mitigated by the influence of social networks. Some of the methodological difficulties in deducing the effects of internal population movements on production and income generation are considered in the third section, as well as the available evidence of these impacts in China, India and Sub-Saharan Africa. In particular, this section looks at productivity gaps between sectors and the links between migration and structural transformation; the selectivity of migration, the commensurate patterns of remittances and hence inclusiveness in any benefits from internal migration; and external costs potentially imposed through internal migration and the growth of mega cities specifically. The final section offers some thoughts on migration-related policies, noting that the most pertinent policies are those which address the drivers and constraints outlined in the earlier sections.

Keywords: Internal migration, Drivers of migration, Constraints on migration

* Paper produced for KNOMAD's Thematic Working Group (TWG) on Internal Migration and Urbanization. KNOMAD is headed by Dilip Ratha, the TWG on Internal Migration and Urbanization is chaired by Chowdhury Abrar and Rosemary Vargas-Lundius, and the focal point is Soonhwa Yi. The author appreciates helpful comments from Dilip Ratha, an anonymous external referee and from participants in the KNOMAD conference on Internal Migration and Urbanization held on April 30-May 1, 2014, in Dhaka, Bangladesh.

† Robert E.B. Lucas is Professor of Economics at Boston University. The author may be contacted at rlucas@bu.edu.

Table of Contents

1. Introduction	1
2. Data and Magnitudes.....	1
3. The Drivers of Migration	6
3.1 Development strategy and employment creation.....	6
3.2. Spatial gaps in earnings.....	6
3.3. Rural-rural relocation for work	7
3.4. Risk strategies.....	8
3.5. Availability and quality of amenities	9
3.6. Education.....	9
3.7. Climate change and natural disasters	10
3.8. Forced migration and violence.....	11
3.9. Return and circular migration	11
3.10. Family accompaniment and formation.....	12
4. Constraints on Migration	12
4.1. Financial constraints on moving.....	12
4.2. Social networks	13
4.3. Distance	14
4.4. Information	14
4.5. Intervening opportunities	14
5. Migration, Production and Incomes	15
5.1. Productivity gaps and structural transformation.....	15
5.2. Migration, transfers and inclusion	17
5.3. External costs and megacities	19
6. Policy Options	21
References	23

1. Introduction

Over the last decade or so, considerable attention has been given to international migration. More recently, the pendulum has begun to swing back, a little, to the more traditional focus upon internal migration. The aim of this paper is to offer a brief overview of some of the drivers of internal migration and the consequences of these movements for production and income generation, with particular attention to some of the contributions from the more recent literature.

Much of the interest in internal migration in developing countries has focused upon population movements from the rural to urban sectors. Whether this is the dominant direction of relocation varies considerably across countries, depending largely upon the state of urbanization reached. In predominantly rural societies, the most common place-to-place movements are often rural-rural; in Latin America, where urbanization rates are extremely high, most movements are urban-urban. The following overview looks first at some of the drivers or correlates of migration and factors that constrain these movements. Some of the economic consequences of internal migration are then examined in Section 3. A few thoughts on policy implications close the paper.

2. Data and Magnitudes

Although most of the discussion and interest with respect to internal migration in developing countries addresses rural-urban migration, as far as I am aware, no systematic compilation of the magnitudes of these movements exists. Indeed, measuring rural-urban migration presents a number of difficulties. (UN Population Division, 1970; Lucas, 2000; Carletto et al., 2013).

First, it should be clear that the rate of urbanization is a very imperfect reflection of the extent of rural-urban migration. (a) Natural growth of the population, from births minus deaths, expands the urban population in existing urban areas, without any contribution from migrants. (b) Similarly, population growth of villages can push them over the cut-off defining an urban settlement. (c) Urban sprawl may swallow neighboring villages, effectively turning them into urban areas even if the village population never expanded. Distinguishing how much of urban expansion is due to these factors is tricky.

Asking respondents in surveys or censuses whether they were born or ever lived in an urban or rural area must resort to one of two approaches. One is to rely upon self-reporting that the place of birth or previous residence was a village or town, which can vary with the respondent's perceptions of how a town is defined. The other is to ask the name of the place then recode these answers as rural or urban during post-enumeration; this not only presents a large exercise in recoding, but spellings of place names vary, several villages may well have similar or even the same name, and whether the specific place should be coded as a village or town may depend, for example, upon the year of birth or of prior residence in question.

The data available are disparate and adopt differing approaches and definitions. Some of the Demographic and Health Surveys (DHS) ask whether the sampled adults spent most of their time before they were

twelve years old in an urban or rural setting, relying upon self-reporting. In more recent rounds of the DHS surveys, this question seems to have been dropped. A subset of the surveys does ask about the previous place of residence of each adult, though none appear to ask the status of the place where the person was born. This latter omission entails the possibility that children who spent most of their time in town before the age of 12 may, for example, be from rural families but attending school and staying with kith or kin. Coverage in the Living Standards Measurement Surveys (LSMS) is similarly mixed. Only a few distinguish whether the place of birth was rural or urban, though again previous residence is asked in some. The other common sources are the micro census data, though again the coverage is rather spotty. Moreover, where previous residence is asked in any of these sources this may refer to one year ago, five years ago or be open ended.¹

Each of these sources that actually distinguish urban versus rural settlements typically refers to place-to-place movement defined by some sense of moving residence. The incidence of seasonal or other temporary migration is thus typically neglected (and commuting is fairly uniformly omitted). A few sources do ask how many months a person has been absent during the year, though any indication as to whether this involved temporary transition between rural and urban sectors is not commonly collected.

The result is that the only systematic global comparisons ignore the rural-urban distinctions and, instead, resort to measuring migration rates by the propensities to cross some administrative boundaries, such as regions, provinces or districts. Not surprisingly the extent of migration revealed proves very sensitive to how finely the country is divided into these administrative entities; where data refer to counties or districts one does not have to move far to cross the boundary; where only major regions are distinguished, a good deal of the internal migration occurs within the region – distance does matter. For example, data from the 2010 census round indicate that 10.1 percent of the population at risk² moved, over their lifetimes to date, between the five Major Regions of Brazil and 15.4 percent between the 27 Estado, but 37.5 percent moved between 1520 sub-divisions that are distinguished. (UN Population Division, 2013).

The United Nations Population Division (2013) has, however, drawn together the available evidence on internal migration across administrative boundaries for a wide range of countries. Portions of this evidence, together with measures of urbanization rates are summarized in Table 1. According to these estimates in 2005 there were about three fourth of one billion internal migrants in the world, based on lifetime reported migration. This amounts to some 12 percent of the global population at risk. In the Latin America and Caribbean region (LCR), the estimated intensity of internal migration is some 50 percent higher than the global measure, while Asia has much lower rates. Overall, about half of the world population was in areas deemed urban in 2010. Not surprisingly, the fraction urbanized is somewhat lower in the developing regions, though this masks considerable variation; for the LCR, the urbanized rates are reported to be on a par with the higher income countries, while Southern Asia in particular has far lower rates.

¹ A small number of far more detailed national migration surveys, or multipurpose surveys containing migration modules, also exist.

² Calculated as 95 percent of the mid-year population.

Table 1. Estimated Number of Lifetime Internal Migrants, Migration Intensity and Urbanization Rate: Major Developing Regions

	2005		2010
	Migrants, millions	Intensity, %	Urbanization rate, %
Africa	113.5	12.5	39.2
Northern Africa			51.2
Sub-Saharan Africa			36.3
Asia	282.1	7.2	44.4
Eastern Asia			54.4
Southern Asia			32.2
South-Eastern Asia			44.1
Latin America and Caribbean	100.2	18.0	78.8
Caribbean			66.6
World	762.6	11.7	51.6
Less developed regions			46.0

Sources: UN Population Division (2013) Table 9, UN World Urbanization Prospects Revision.

Table 2 presents a little more detail on these measures of migration intensity, by individual country. These measures again show a very wide range, from a high of nearly half in Chile to a low of 6.2 percent in China. The latter may seem especially surprising, but it is apparent that the rates vary with how finely countries are divided into zones.³ On the other hand, dividing a country with a population of 1 million into two zones is quite different from dividing a country of a billion into two. In partial recognition of this, Figure 1 demonstrates the association between the average population per zone within each of the countries in Table 2 and the intensity of inter-zone migration; the negative association is strongly, statistically significant. If GDP per capita is added as an explanatory factor, the negative association with population per zone survives and income per capita is significantly, positively associated with migration intensity.⁴

³ Table 2 reports only the finest zone distinctions from the UN Population Division (2013) estimates.

⁴ A simple regression generates:

$$\text{Intensity} = 18.6 - 2.69 \log(\text{pop per zone}) + 2.56 \log(\text{GDP per capita}) \quad \text{R-squared} = 0.49$$

(2.60) (5.18) (3.11) No. observations=51

T-statistics for a zero null-hypothesis in parentheses.

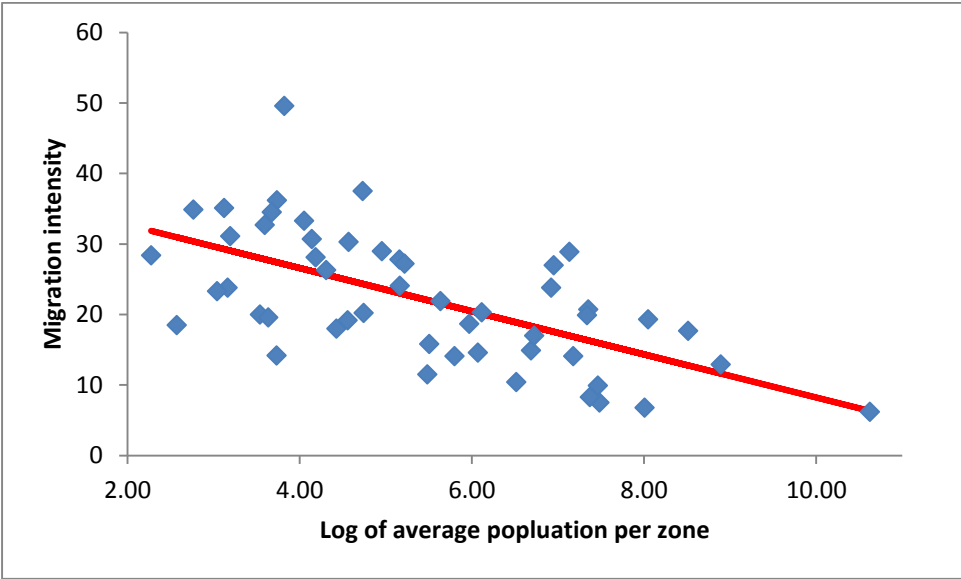
Table 2. Intensity of Lifetime Migration between Zones (percent): Select Developing Countries

	No. of zones	Intensity		No. of zones	Intensity		No. of zones	Intensity
Botswana^b	28	30.7	Bhutan^b	20	32.7	Antigua & Barbuda	8	28.4
Egypt	27	6.8	Cambodia	149	18.0	Argentina	24	19.9
Ghana	110	27.8	China	31	6.2	Barbados	11	31.1
Guinea	34	15.8	India	593	7.5	Belize	6	14.2
Kenya	69	20.3	Indonesia^b	33	12.9	Bolivia	112	26.3
Mali^a	47	11.5	Iraq	15	8.3	Brazil	1540	37.5
Malawi	24	18.7	Kyrgyz Rep	52	19.2	Chile	338	49.6
Rwanda	12	10.4	Malaysia	15	20.7	Colombia^b	1105	36.2
Senegal	34	21.9	Mongolia	21	20.2	Costa Rica^b	81	33.3
South Africa^b	9	17.7	Nepal	74	14.1	Cuba	169	28.1
Sudan	25	9.9	Philippines^a	77	14.9	Ecuador	128	30.3
Tanzania	26	14.1	Thailand	76	17.0	El Salvador^b	262	23.8
Uganda	56	14.6	Turkey	61	27.0	Guatemala	327	20.0
Zambia	72	29.0				Honduras	298	23.3
Zimbabwe	10	28.9				Jamaica	14	27.2
						Mexico	32	19.3
						Nicaragua^b	153	19.6
						Panama	75	34.5
						Paraguay	236	35.1
						Peru^b	1833	34.9
						St Lucia	12	18.5
						Uruguay	19	24.1
						Venezuela	24	23.8

Source: UN Population Division (2013) Table 7. All data for 2000 census round, except as noted:

a. 1990 census; b. 2010 census.

Figure 1. Migration Intensity in Relation to Average Population Per Zone Distinguished.



It is of some interest to look at the residuals from this regression. Table 3 presents a list of the ten countries with the lowest and highest residuals. For example, given population in the average zone distinguished and given GDP per capita, Belize has the lowest intensity of internal migration between zones; Chile has the highest.

Table 3. Ten Countries with the Lowest and Highest Migration Intensities Given GDP per capita and Population per Zone Distinguished.

Lowest	Highest
Belize	Chile
St Lucia	Zimbabwe
Egypt	Brazil
Iraq	Zambia
Guatemala	Ghana
Antigua	Colombia
Nicaragua	Bhutan
India	Paraguay
Mali	Turkey
El Salvador	Ecuador

The available data and therefore analyses of these patterns are far from perfect and cry out for closer attention.

3. The Drivers of Migration

The common distinction between push and pull factors driving migration is misplaced; private decisions to move or stay are driven by the differentials in opportunities across locations. In turn, more fundamental forces shape some of these proximate causes, representing deeper elements driving population movements.

3.1 Development strategy and employment creation

Scale economies and the demands upon infrastructure result in most industries being located in urban areas. In the low-income countries of South Asia and Sub-Saharan Africa, the overwhelming majority of employment is in, or quite directly dependent upon, the agricultural sector. Agricultural sectors rarely exhibit rapid growth, posing tensions when population expansion remains rapid. As incomes rise there is normally a sectoral shift out of agriculture into industry and various services, with commensurate movement of labor from rural to urban areas. How rapidly this transformation occurs thus depends critically upon the development strategy adopted, upon the resulting balance between industry and agriculture as well as the technologies and techniques of production adopted in both sectors. The service sectors tend to grow alongside, both to provide inputs to the production processes for agriculture and industry and to serve the demands from growing household incomes. The early import substitution strategies of the 1950s and 1960s protected the industrial sectors, in part to speed up the transformation process. However, protection of heavy, capital-intensive industries resulted in little job-creation; large portions of saving were directed into investments with little employment expansion. (Lucas, 1988, 1989). Where manufacturing sectors have proved more labor-intensive, often based on export potential, urban expansion and the transformation out of dependence on agriculture have accelerated. Witness the staggering, on-going transformation of China.

3.2. Spatial gaps in earnings

The evidence on rural-urban migration points fairly unanimously to the differences in earning opportunities between village and town as an important factor driving relocation. Most of this evidence is confined to differences in earnings or rates of pay, though occasionally the likelihood of finding employment is also represented. Although the association may be positive, measuring just how responsive are migration flows to such earnings gaps proves difficult. Surveys of migrants normally tell us nothing about their pay prior to moving; surveys of non-movers can, at best, ask impressions of what might be earned if they move. Typically, earnings foregone at origin or potentially available at destination are imputed, raising problems of whether non-movers would actually earn as much as their measurably equivalent counterparts in town; perhaps migrants are more enterprising and hence earn more.

A simple view of the migration process suggests that it would result in wage convergence; the diminished supply of labor in rural areas and the swelling ranks of workers arriving in town should push wages closer together across space. Yet a large wage gap between rural and urban areas seems to persist and migration is an on-going phenomenon. At a more fundamental level, the driver is then whatever is at work,

sustaining the substantial gap in real earnings. At least three groups of explanation may be distinguished, though the three need not be mutually exclusive.

First are a number of arguments raised to suggest downward rigidity in urban wages, at least in the formal sector, or upward inflexibility in rural pay levels. Among the latter are the early surplus-labor models, perhaps buttressed by family income sharing, though these seem difficult to square with attempts to maximize family income. Some of the contentions with respect to downward rigidity in the urban sector reflect the nature of the formal labor markets; the presence of collective bargaining, a minimum wage law enforced only in formal settings, or some variant on the efficiency wage theories. A popular form of the last of these, efficiency wage theories, is the notion that employers pay above the norm to hold a threat over workers caught cheating or putting in little effort.

Second is a suggestion that the rural-urban wage gap largely reflects differences in skills. Young (2013) uses the Demographic and Health Surveys for 65 countries to show that the urban-rural wage gap accounts for about 40 percent of within-country consumption inequality on average. From the same data Young (2013, p. 1,727) also notes that

“One out of every four or five individuals raised in rural areas moves to urban areas as a young adult, where they earn much higher incomes than nonmigrant rural permanent residents. Equally, one out of every four or five individuals raised in urban areas moves to rural areas as a young adult, where they earn much lower incomes than their nonmigrant urban cousins.”

It is not quite clear whether these two directions of flow are within the same country and at the same time, but Young goes on to postulate that this pattern depicts a process of sorting; those with higher skills and human capital move to town, while those with lesser skill levels move to rural areas. The gap in wages is then maintained by the differences in skills. Given substantial evidence that measurably equivalent persons earn considerably more in town than in the countryside, presumably the gap in skills that Young has in mind must remain unobserved by researchers, rendering testing of the proposition difficult.

A third, alternative explanation for a persistent wage gap is the existence of various barriers to migration, preventing full factor-price equalization. Section 2 returns to consider some of these potential barriers.

3.3. Rural-rural relocation for work

There is far less evidence on earnings-differentials as a driver of rural-rural migration. Indeed, seasonal movements are probably driven more by the availability of work than by pay differentials among wage workers. Whether taking up jobs on public works projects requires migration obviously depends upon the policy strategy with respect to locating such projects.

Land markets are typically very thin; selling land in one place and buying elsewhere is rarely an option, severely limiting mobility of self-employed farmers. Kondylis (2008) examines a context in which land was made available to returning refugees in Rwanda. Since this land was not necessarily in the refugees' home territories, this amounts to internal migration via refugee status. Several reasons for skill loss among the refugees are posited: from the trauma of displacement, from lack of relevant on-the-job experience while

out of the country, and from inability of parents to pass along skills to their children. Here productivity of the returned refugees became greater if they were surrounded by stayers rather than fellow refugees, suggesting an ability to learn from their new neighbors who had remained in Rwanda.

Bazzi et al. (2014) examine a quite different context in which access to new land did prove feasible; the transmigration experiment in Indonesia, in which families from Java and Bali were voluntarily relocated to the outer islands. The evidence compiled by Bazzi and his co-authors shows that if the agroclimatic conditions from the migrants' origin match those in their new homes then farming productivity is greater than when agroclimatic conditions differ. Moreover the differential in agricultural productivity persisted. This suggests that acquired skills that are specific to a particular agroclimate are important and that learning new skills may be a protracted process. More generally an inability to transfer skills to a new setting, especially if learning such skills is very protracted, points to a limiting factor in rural-rural migration, presumably leading to sorting on similar agroclimatic zones.

3.4. Risk strategies

The seminal paper of Harris and Todaro (1970) inserted the risk of finding a job in town as a factor in affecting rural-urban migration. The notion is that search for an urban job is more effectively conducted by being present in town. Migrants therefore move to seek a job but the likelihood of not finding employment deters movement for search. Lucas (1985) tests and supports this model in the context of rural-urban migration in Botswana, but adds the probability of finding employment in the rural area as well as that in town.

More generally, in many contexts, livelihoods are at greater risk in the rural sector than in town. The vagaries of the weather, prices, and crop and animal diseases render farming a risky proposition. Lucas and Stark (1985) explore the idea that rural-urban migration may be part of a strategy to spread risk when other forms of insurance are incomplete. Provided that fluctuations in urban and rural areas are not highly, positively correlated, placing some family members in both sectors reduces the variance in family income. Remittances may be sent home during bad times in the village; they may be sent to town, particularly in the phase of settling in when the migrant has not yet found a job. Lucas and Stark test this on remittance data in Botswana and find that remittances are indeed greater to families suffering during a period of drought. Subsequently this has received support from a number of related studies on remittances, particularly in the context of Sub-Saharan Africa.⁵ However, in their survey, Rapoport and Docquier (2006) outline the difficulties of distinguishing mutual insurance from five other potential motives for remitting; altruism, exchange, strategic behavior, repayment of loans, and aspirations to inherit. There is considerable overlap in the directions of association predicted between various observables and remittances across these six alternatives, making identification problematic. Just how important it is to discern amongst the potential motives is not obvious; indeed the paper by Lucas and Stark (1985) emphasizes the multiplicity of motives; such as the aspiration to inherit as an enforcement mechanism in a dynamic framework of mutual insurance.

⁵ More direct testing of whether migration, as opposed to remitting behavior, reflects a strategy of risk spreading is far less common.

3.5. Availability and quality of amenities

Improved amenities in a location may attract industry or permit agricultural expansion. To the extent that this results in employment expansion or higher wages, out-migration may be discouraged and in-migration encouraged. Improved local amenities, such as better schools, health centers, electricity, and greater security, may also have a direct effect upon migrants' decisions, simply by making life in this setting more attractive. On the other hand, some forms of improved local amenities could exacerbate net out-migration. It is feasible that improved rural transport could act in this fashion, by affecting local production patterns and hence perhaps reducing the local demand for labor, and possibly by making departure and return visits easier (though commuting also becomes an easier alternative to migration). Similarly, improved educational access may facilitate easier movement into town or even abroad.

Very little evidence exists on the effects of amenities on migration outcomes in the developing countries. An exception is the work of Fafchamps and Shilpi (2013) who include measures of travel time to the nearest paved road and to the nearest bank in their analysis of the determinants of location decision among internal migrants in Nepal. Proximity to a paved road, though not to a bank, proves significantly, positively correlated with selection as a destination, though the authors note the potential for reverse causality when a concentration of migrants induces amenity installation.

Lall et al. (2009) adopt a more detailed vector of amenities (the number of hospitals available, access to electricity, piped water and sewage) in examining the choice of destination among both better-educated and less-well-educated, Brazilian migrants. The authors note the potential bias from omitted variables (including other amenities) and hence prefer a first-differenced approach across two censuses, with the result that, for the most part, the expected signs are confirmed; better amenities do attract.

Ackah and Medvedev (2010, p.1) report, upon examining internal migration in Ghana, that "The probability of migration is higher for younger and more educated individuals, but communities with higher levels of literacy, higher rates of subsidized medical care, and better access to water and sanitation are less likely to produce migrants".

The little evidence we have thus suggests that better amenities both attract migrants and discourage out-migration, though more analysis of the extent to which these associations are actually causal would be valuable, given the potential for policy implications.

3.6. Education

De Vreyer et al. (2009) show that the returns to education are a key factor in driving two-way migration patterns amongst the capital cities of Benin, Burkina Faso, Côte d'Ivoire, Mali, Niger, Senegal and Togo. The private rate of return to education in rural areas of developing countries is more difficult to measure. Most existing studies focus exclusively on off-farm wages. However, in contexts where self-employment in farming is the norm, such a focus offers a biased impression; selection into types of employment is not random. For example, De Brauw and Rozelle (2008) show that the returns to education in off-farm wages in rural China are greater after adjusting for selection (and defining measures and sampling more

carefully). Estimating the returns to education in farming is even more difficult, though most micro-level studies do indicate a positive return.⁶

Although the returns to education among rural inhabitants are positive, the returns are greater still in urban areas and education of individuals is accordingly, positively correlated with their propensity to migrate into town. Including these migrants in computing the returns to rural education would raise the estimated returns on rural schooling. More generally, education is often found to be correlated with more distant moves, including emigration. Rural education can thus offer a key to the transition out of rural life.⁷ Most likely it also increases social mobility, reducing the strong influence of farming family background on outcomes of the next generation, though no tests of the link between migration and inter-generational mobility appear to exist, either in the high-income or developing economies.

3.7. Climate change and natural disasters

Global temperatures are clearly rising. The only serious debate is over how much of this is attributable to human activities. The long-term consequences of this are profound, including rising sea level and major shifts in cropping and livestock rearing. The Stern Report (2007) anticipates that more than 60 million people will be at risk of displacement in South Asia alone as a result of these trends in climate changes.

Meanwhile people are also being displaced by shorter-term weather anomalies and natural disasters, both hydrometeorological (droughts, floods and windstorms) and geological (earthquakes and volcanoes). Kondylis and Mueller (forthcoming) report estimates that about 14 million people were displaced in the short-term by the 2010 floods in Pakistan, of whom some 200,000 moved to internal displacement camps. Many returned home after the floods subsided, though some did not. Those who moved during the disaster proved weakly better off, in terms of asset possession a couple years after the flood, than those who stayed. (These results instrument for displacement and include controls describing both the household and the setting). This suggests a fairly rapid recovery, in part because the movers were often able to bring their livestock with them. Whereas the case studied by Kondylis and Mueller resulted very largely in temporary rural-rural relocation, most analyses focus on rural-urban migration induced by weather anomalies and environmental change. For example, Marchiori et al. (2012) estimate a three-equation model in which weather anomalies in Sub-Saharan Africa affect GDP and the extent of urbanization, then GDP and urbanization in turn affect the rate of net international migration. From the results, Marchiori and his co-authors argue that rainfall and temperature anomalies induce additional rural-urban migration, which in turn feeds international migration from these urban areas.⁸

⁶ See, for example, Foster and Rosenzweig (1996), Knight et al. (2003), Asadullah and Rahman (2009).

⁷ See Lucas and Verry (1999) on Malaysia, Duflo (2001) on the role of school construction in Indonesia, and Pekkala and Lucas (2007) on Finland in its early stages of development.

⁸ See also Findley (1994) on Mali and Barrios et al. (2010) on Africa in general. Henry et al. (2003) examine rainfall variation and inter-regional migration in Burkina Faso while Saldaña-Zorrilla and Sandberg (2009) look at climate-related disasters and the spatial distribution of population in Mexico. Brown (2008) offers a more general view, distinguishing between "*climate processes* such as sea-level rise, salinization of agricultural land, desertification and growing water scarcity, and *climate events* such as flooding, storms and glacial lake outburst floods" (ibid., p.9) in

3.8. Forced migration and violence

The global total of refugees assisted or protected by UNHCR is down from its peak in 1992. However, the number of Internally Displaced Persons (IDP) fleeing conflict, violence and persecution has meanwhile expanded, overtaking the number of refugees since 2006. By 2012, the number of IDP stood at over 19 million, some 83 percent larger than the stock of refugees.

As one form of forced migration, the traditional perception, amongst economists at least, is that the flight of refugees and internally displaced persons leaves no margin for choice; that there is little option but to flee. (Davenport et al., 2003). In the last few years this view has begun to change. It is clear that flight in the face of violence and conflict is selective; not all families flee; not all members of each family flee. Indeed, flight is only one of the survival strategies explored in the face of conflict. (Justino, 2011). In the light of this, a new literature has begun to emerge on the role of economic factors upon the selection of who flees and such factors as whether to attempt a border-crossing.⁹ Lozano-Gracia et al. (2010) model selection as stemming from a trade-off between income and security; Czaika and Kis-Katos (2009) incorporate a risk-aversion factor into the household calculus; and Williams (2013) explores the role of community networks as an ameliorating factor in Nepal. Ibáñez (forthcoming) provides an excellent survey of this burgeoning literature and notes that the perpetrators of the violence also make choices, partly shaped by economic factors, about who to attack to best further their cause.¹⁰

3.9. Return and circular migration

Return and circular migration are described as being common in many countries, ranging from commuting, to seasonal migration, to repeat migration, to one sojourn elsewhere, to returning home upon retirement. Data on the magnitudes involved are scarce, however, in part because of the difficulties of measurement. Surveys and censuses that only ask place of birth and current location will capture only a portion of such movements; those who have been home and again migrated will not typically show up. It is also difficult to disentangle who is simply paying a brief visit home and who has returned more permanently.

Any easing in the opportunity to return may well enhance the initial propensity to move and, in this sense, this opportunity becomes a driving force behind migration. In turn, several theories have been put forward as driving forces behind these patterns of return migration, including a preference to consume at home, differences in complementary capital, or differences in relative prices at home. In these frameworks, migrants are typically target savers, planning to return as part of a dynamic strategy.

viewing the potential for global climate migration. A series of case studies of climate migration, written by an interdisciplinary set of authors, is contained in Piguet et al. (2011).

⁹ See, for example, Moore and Shellman (2006), Engel and Ibáñez (2007), Ibáñez and Velez (2008) and Bohra-Mishra and Massey (2011).

¹⁰ See also Steele (2009) on this latter point, and Ruiz and Vargas-Silva (2013) for a more general review of the economics of forced migration.

Alternatively the conditions at the destination or home area may shift, or the migrant may have proved unlucky or poorly informed in his or her options in their place of choice.¹¹

Circular migration within a country may be between any combination of rural and urban places. Rural-rural seasonal migration tends to be common, following different cropping cycles. Seasonal migration between village and town may be occasioned by the need to return home at harvest time. Some forms of circular migration may, however, result in more permanent relocation. For instance it is not unusual to find migrants who have gone abroad from a rural setting deciding to return to an urban location in the home country upon return.

3.10. Family accompaniment and formation

An important, and rather neglected, driver of the extent of migration is the familial circumstances of those migrating for work. Most families probably prefer to remain together, but the cost of living is generally lower in rural areas. Accordingly, Agesa and Kim (2001) find that the larger is the family of a rural-urban male migrant in Kenya, the more likely is it that the family remains in the village.

Migration for marriage is obviously common and social norms typically dictate which spouse is to relocate, rather than considerations of relative earnings in the two locations. Rosenzweig and Stark (1989) treat the choice of marital partner's location as endogenous. The idea is that rural Indian families select a bride for their sons in an effort to spread risks of rainfall failure across villages, resulting in a pattern of migration between locations with lower correlation in rainfall.

Lastly, the fertility rates of migrants clearly impact the demographic effects of migration, even though the children may not, themselves, be migrants. Three effects are distinguished in the literature: disruption (separation of couples), selection (of more or less fertile migrants) and adaptation (changes in migrants' behavior). The findings tend to favor adaptation. For example, female, rural-urban migrants undergo a reduction in total fertility rates upon relocation, contributing to the lower birth-rates in urban Sub-Saharan Africa compared to rural areas. (Brockerhoffa and Yang, 1994; Chattopadhyay, 2006).

4. Constraints on Migration

It is apparent that a range of factors play roles as drivers of the desire to migrate, but the decisions to relocate are also constrained by a number of factors.

4.1. Financial constraints on moving

One such possibility is the financial cost involved in moving. Transport costs tend to be low (especially when riding on a train roof without a ticket is common), though costs of supporting oneself in town while seeking a first job tend to be more substantial. In the context of India, attention has also been drawn to

¹¹ Djajic and Milbourne (1988) and Galor and Stark (1991), Borjas and Bratsberg (1996), Mesnard (2004), Dustmann and Weiss (2007), Wahba (forthcoming).

the costs and exploitation involved in recruiting workers for internal migration. “Migration flows are mediated by an elaborate chain of contractors and middlemen who perform the critical function of sourcing and recruiting workers. The lowest links in this chain are most often older migrants who are part of the same regional or caste based social network in the rural areas. The chain, then progresses toward destination- based contractors who aggregate workers from different geographies and link them finally with the principal employers. While these networks do serve the purpose of providing migrants with information and subsequent access to work opportunities, they largely operate in the informal economy.” (Abbas and Varma, 2014, pp.7-8). Although recruiting of international migrants is common in many countries, it is less clear just how prevalent is recruiting of internal migrants other than in the Indian context.

Where costs of moving to town are significant the ability to finance a move becomes more critical. In the context of international migration, where costs of emigration are indeed high, the concept of a migration ‘hump’ has evolved; namely that emigration may increase with rising incomes among poor countries as they become better able to finance moving; beyond some turning point emigration rates then decline as folk have less need to move. (Martin and Taylor, 1996; Lucas, 2005, chapter 2; Clemens, forthcoming). This concept has received less attention in the context of internal migration. There are even counter arguments; some of the early Indian village studies suggested it was the very poor and the relatively well-off who move; the former have little choice and nothing to lose and the latter can afford to move. (Connell et al., 1976; Mahapatro, 2014).

Bryan et al. (2013) report on an interesting experiment in rural Bangladesh. Families that are near subsistence are reluctant to take on the risk of seasonal migration, even in the lean season before harvest. Bryan and his co-authors offered a random set of families in Bangladesh an incentive of \$8.50 to out-migrate to town during this lean season. “The incentive induces 22% of households to send a seasonal migrant, their consumption at the origin increases significantly, and treated households are 8-10 percentage points more likely to remigrate 1 and 3 years after the incentive is removed.” (Bryan et al. 2013, p.1). It seems even a small addition to income can induce migration and that this results in a learning experience and improved living standards of the family at origin.

4.2. Social networks

Having a group of people from one’s own village or community already established in a particular destination is clearly, positively associated with the current likelihood of an individual moving to this same destination. The network that is set up by the prior movers can help with finding an initial job and housing. They can also offer more familiar surroundings, diminishing the sense of alienation in the new setting. In a sense the existence of such a network is not a separate driver of migration; what matters is the earlier drivers of the migrants who set-up the network. However, the lack of a network can certainly act as a constraint on today’s migrants.

Munshi and Rosenzweig (2013) investigate instead a context in which the existence of a social network, rather than its absence, may diminish migration. In particular, Munshi and Rosenzweig emphasize the importance of mutual insurance provided by networks at origin; the decision to migrate then involves

weighing the trade-off between an income-gain from moving to town, versus the lower risk from staying at home. The estimates in this study suggest that even a small increase in formal insurance in a village setting in India would greatly increase rural-urban migration. The model also notes that wealthier individuals rely less upon networks to insure them and hence are more likely to migrate.

4.3. Distance

The deterrent effect of distance upon migration is well established; the reasons underlying the observed negative correlation are less clear. (Lucas, 2001). Alternative possibilities range from transport costs, to lack of information, to greater alienation. The last of these, alienation, arises from the likelihood that more distant locations are less likely to possess the same culture, including differences in language, religion and ethnicity.

Whatever the underlying cause, the net effect is that urban migrants are more likely to be drawn from nearby villages than from more remote locations. This is particularly true of smaller towns, whereas large cities may draw at least small numbers of migrants from remote places.

The deterrent effect of distance, combined with a positive role from an established network in town, raises an important point. An idiosyncratic decision to move to where no one has gone before initiates the establishment of a network. The cumulative effect of this is to have places of origin with very high levels of out-migration whereas other, similar places may experience no out migration. Given that distance acts as a deterrent we tend to see remote rural settlements that become isolated from the migration process. This cumulative inertia then denies these more remote locations any of the benefits that may emerge from having fellow villagers or family members in town, leaving them as pockets of poverty, disconnected from any trickledown effects from progress in the central core of the economy.

4.4. Information

While some migrants move to town in order to seek a job, others remain at home hoping that they will hear about a job opportunity. The chances of identifying such opportunities from home probably depend upon contacts in town, which in turn may diminish with distance from town.

The importance of such information is brought out in Aker et al. (2011) who report on an experiment in Niger to distribute cell phones to part of a random sample and not to the control group. Those who received the phones and were able to keep in immediate contact with friends in town increased their seasonal migration into town significantly. (See also Sabates-Wheeler et al., 2009).

4.5. Intervening opportunities

In the literature on bilateral trade flows, the trade between any pair of countries is thought to be potentially affected by trading opportunities with third parties. (Anderson and van Wincoop, 2003). Such effects are referred to in that context as multilateral-resistance. In the migration literature a related concept has been referred to as one of intervening opportunities. (Stouffer, 1940). The idea is that migration, say, from a village to the capital metropolis may be impacted by how many job opportunities

present themselves along the way between origin and destination. Yet this has received little attention to date in the empirical literature on migration. (See, however, the methodology developed by Kennan and Walker, 2011, and their application to US internal migration). Learning how important opportunities are in small towns, as a distraction from moving into the capital city, may prove an important line of research in future work on internal migration in the developing nations.

5. Migration, Production and Incomes

Rural-urban migration attracts much of the attention in part because it is a key element in the structural transformation of economies, from agriculture to industry and services, as development proceeds. With the emergence of urban slums and pressure on social services in cities, policy makers often perceive the swelling of urban populations through migration as problematic. Yet transferring workers from low to higher productivity settings clearly represents an efficiency gain. Gollin et al. (2013) demonstrate, using aggregate data on 151 countries, that the “productivity gap” between the agricultural and non-agricultural sectors is large, and particularly so among developing countries. Using household survey data on a subset of some 51-56 countries, Gollin and his co-authors demonstrate that this gap is not merely a result of differences in education of the labor force or in hours worked. Note, however, that the measure of productivity gap adopted in this study is the ratio of average products of labor in the two sectors; this may not be a good indicator of the aggregate productivity to be gained in moving workers between sectors, though estimating the marginal products of labor in either sector is clearly far more difficult.

The nature of sectoral transformation is considered first in this section. Since the early contributions of Kuznets, it has been recognized that the initial stages of such transformation can be accompanied by rising income inequality. The second part of this section therefore turns to the implications of migration out of the rural sector for inequality, for incomes of the migrants themselves and of those left behind.

5.1. Productivity gaps and structural transformation

The process of structural transformation and associated migration is by no means uniform across the developing regions. The experiences of three contexts are considered here: China, India and Sub-Saharan Africa.

The growth and transformation of the Chinese economy has been extraordinary since the beginning of reform around 1980. By the end of 2012, the National Bureau of Statistics in China counted more than 260 million migrant workers. This represents one of the largest migrations in the history of mankind, and the urban fraction in the population has risen from 19.4 percent in 1980 to 49.2 percent in 2010. The productivity gap between the rural sector (with its surplus labor) and the export manufacturing sectors in the eastern portion of the country remains large.¹² The extremely rapid growth of the Chinese economy owes much to the mass migration of workers to higher productivity settings. Yet the government has

¹² The rural sector of China is typically assumed to possess surplus labor, though Rozelle et al. (1999) find that the combined effects of out-migration and remittances can serve to diminish maize yields in China.

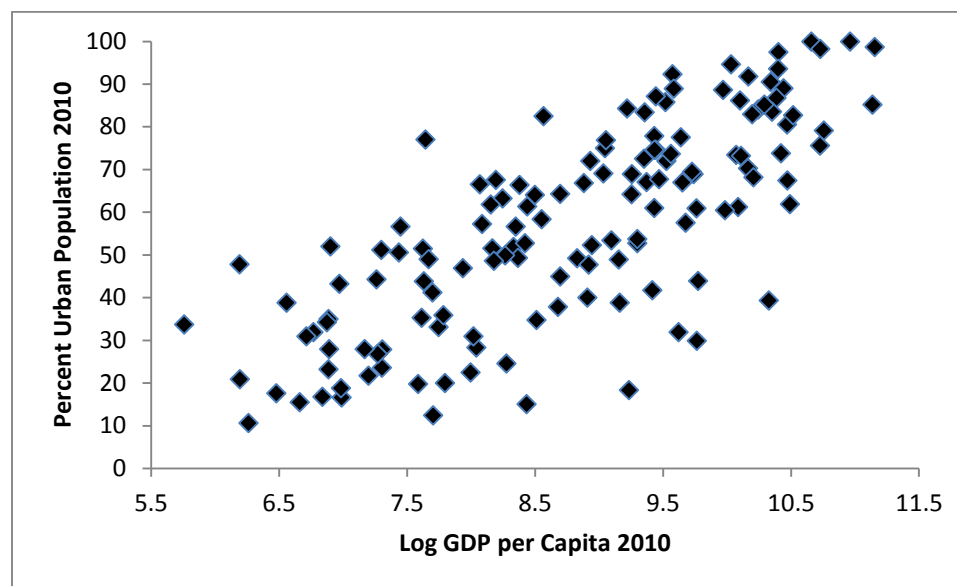
sought to limit movement. The Hukou system entitles families to particular services only in their place of registration. One result is that migrant workers in urban China may not be entitled to education for their children, which may well prove a long run constraint on growth for China. Au and Henderson (2006) explore worker productivity across the cities of China. Controlling for the extent of foreign investment, public infrastructure and education of the labor force, they find that productivity follows an inverted u-shape against the size of labor force in each city. The majority of China's cities prove to be below the 95 percent confidence lower bound on the estimate of the peak productivity city size. In other words, despite the massive migration that has occurred it remains too little for most cities to have achieved peak productivity, which in part reflects the effects of the Hukou system of registration.

India's economic growth has been far more rapid over the last two decades than in the first couple of decades after independence, yet structural transformation has been slow. The portion of urban population rose only from 23.1 percent in 1980 to 30.9 percent by 2010. Relatively little job creation has occurred in the formal manufacturing sector and it is the rural nonfarm sector that has had to absorb much of the expanding population. (Binswanger–Mkhize, 2012). The result, as we have seen, has been limited rural-urban migration. Instead, taking up rural non-farm work has contributed to the dominance of rural-rural migration, particularly among males.

Potts (2009) notes that the urban populations of much of Sub-Saharan Africa are growing very slowly, though the overall fraction of urban population has actually risen slightly faster than in India, from 23.9 percent in 1980 to 36.3 percent in 2010. Potts attributes at least part of the slow urban population growth in SSA to a rise in circular migration instead, plus a poor growth performance from the urban industrial sectors. In contrast, De Brauw et al. (2013, p.6) "ascribe high urbanization rates observed in some African countries to a focus on resource exports. The legacy of the 1970s oil boom in Nigeria was a large increase in government revenue, followed by investment in the development of urban centers. Rural–urban migrants were therefore drawn to employment opportunities in the construction and service sectors". (See also Akpan, 2012). De Brauw and his co-authors also compute rural-urban wage gaps for 12 African countries, with gaps ranging from urban formal sector wages at more than 220 percent of rural wages in Togo to almost no gap in Gabon. Without being able to control for such factors as differences in education, however, one cannot be certain how much of this reflects a productivity gap for comparable workers.

It is clear in Figure 2 that the extent of urbanization and income levels are positively correlated in a cross-section of countries. Yet there is considerable dispersion about this association. Some low-income countries have relatively high urbanization rates (such as Central African Republic, Guinea-Bissau and Liberia); and some higher income countries do not have particularly high urbanization rates (Equatorial Guinea, Croatia and Greece, for example). Moreover there is no significant association between the level of income in 1975 and the increment or growth in urbanization over the next quarter century. Nor is the growth rates in incomes correlated with the increases in urbanization over this interval. A good deal apparently depends upon the nature of economic growth and not just its speed.

Figure 2. Urbanization and Income Level



5.2. Migration, transfers and inclusion

Almost everywhere, migrants are the big winners in the migration process. For example, Beegle et al. (2011) track migrants leaving villages in the Kagera district of Tanzania; from 1991 to 2004, consumption growth was 36 percentage points greater among migrants than among stayers; among migrants to places connected to urban areas the difference was 66 percentage points as compared to stayers. Moreover, these differences hold up even controlling for an extensive vector of demographic characteristics of the migrants and stayers. Similarly, De Brauw et al (2013) track both migrants and non-migrants from 18 villages in Ethiopia between 1994 and 2009. Controlling for gender, age and education of individuals, and for initial family fixed effects, they estimate that both rural and urban migrants from these villages gained significantly in their consumption levels, compared to stayers.¹³ Indeed, the estimated gains are large; rural migrants' consumption growth was more than 100 percent greater than for stayers; this difference for urban migrants was nearly 200 percent.

It is less clear what happens to the incomes of those left-behind as a consequence of out-migration. The withdrawal of labor might be expected to raise wages and employment levels amongst those remaining at home. Remittances from the absent migrants should help to enhance living standards. On the other hand, if there is positive selection of migrants with the best and brightest departing, issues of brain drain effects may be raised with respect to internal migration and not only in the context of emigration. From the literature on the latter we know that elements of brain-gain may be important too: induced education amongst those hoping to leave but actually remaining at home; transfers of knowledge back to the village;

¹³ De Brauw and his co-authors explore both instrumenting for the migration selection and matching methods to eliminate endogeneity at least with respect to observables.

enhanced trading opportunities for the village from the bridging of information gaps and informal contract enforcement.

These effects of out-migration upon those left behind are extremely difficult to disentangle. There is a great deal of interdependence: income and the incidence of poverty depend, in part, on migration and remittances; the propensity to migrate is affected by family income; receipts of remittances are selected on migration and conditioned by family income. Little progress has been made in identifying these interactions. Nonetheless, the extant evidence at least offers some interesting descriptive information.

The rapid structural transformation in China has been accompanied by sharpening inequality overall, as well as within both the urban and rural sectors.¹⁴ Nonetheless growth has resulted in a very large reduction in the incidence of poverty. Ravallion and Chen (2007) undertake a decomposition of the change in overall poverty, using both an accounting and a regression approach applied to panel data on the provinces of China. In both approaches they find that rural-urban migration has served to diminish poverty but the reduction in poverty within the rural sector has been far more important. In further analysis, Luo and Yue (2010) maintain that the massive rural-urban migration has indeed been a contributing factor to this reduction in rural poverty, largely through the remittances to rural families. Knight (2013) goes on to note the importance also of growth in non-farm incomes in rural China and hence the role played by rural-rural migration, in part to take up work in village enterprises.

Chaudhuri and Ravallion (2006) and Bardhan (2007) both take up comparisons of China and India in terms of poverty reduction. Trade reforms begun in the 1990s in India, combined with labor regulations, have resulted in relatively little job creation in manufacturing and hence limited rural-urban migration. Although poverty has declined in India, it seems unlikely that urban expansion has played any major part in reducing rural poverty; rather, as noted previously, rural non-farm activities seem to have been the employer of last resort, though how much rural-rural migration this has entailed is unclear.

In Africa, much of the evidence points to the bridging role that rural-urban migration plays between the two sectors. Families are commonly separated across this divide and offer each other mutual insurance. Although remittances from internal migrants are far smaller than from those who migrate overseas, these transfers do aid in diminishing poverty and supporting rural family members. (See, for example, Adams et al., 2008; Wouterse, 2010; and the survey in Lucas, forthcoming). In consequence, Ackah and Medvedev (2010) find that rural households in Ghana are better off if they have a family member who has migrated into town, even after controlling for the endogeneity of this migration decision. In contrast, Ackah and Medvedev find that households with members elsewhere within the rural sector are no better off than those without migrants at all.

¹⁴ The examination of urban incomes is complicated in China by the fact that some of the data sets count urban migrant workers as resident in their place of registration under the Hukou scheme.

5.3. External costs and megacities

Any process of transformation is likely to encounter costs, and migration is no exception. In the absence of compulsion, the decision to migrate is a private one taken by individuals and/or their families. In making these decisions, their private costs are, no doubt, weighed: the likelihood of protracted unemployment, living in an unfamiliar setting, and any costs and risks in moving. But, by definition, any external costs associated with those decisions are not taken into account. A good deal of literature exists pointing to these external costs associated with urbanization, including over-crowding, pressure on infrastructure such as roads and schools, pollution and inadequate waste disposal. These problems are deemed particularly severe in the megacities (those cities and conurbations with populations in excess of 10 million).

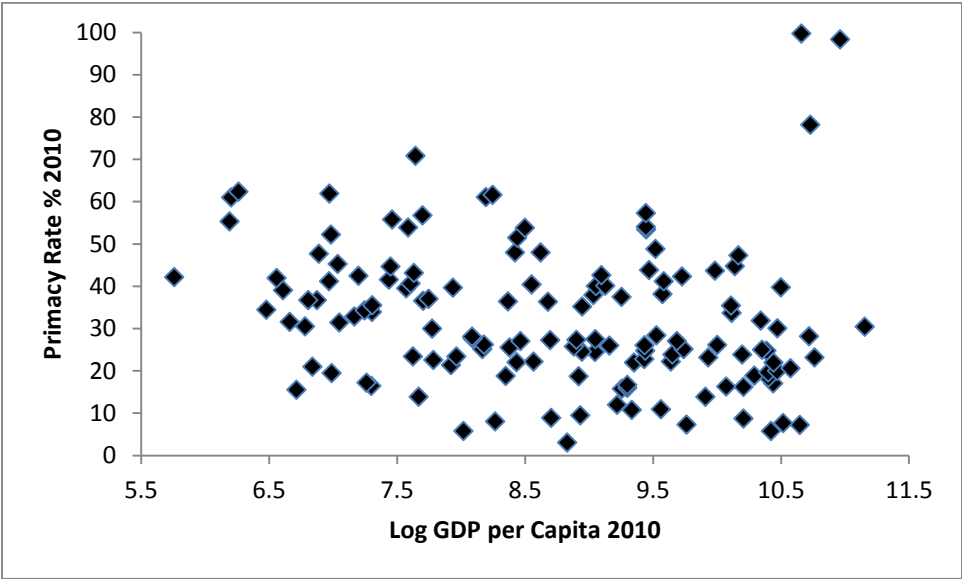
Gravity models of migration teach us not only that distance deters movement, but that places with larger populations attract more migrants; mass matters to gravitational pull. Rural-urban migration may thus result in particularly rapid growth in the large cities, exacerbating the negative effects of external costs associated with such centers. In his review, Henderson (2002) concludes, “The rapid urbanization in many developing countries over the past half century seems to have been accompanied by excessively high levels of concentration of the urban population in very large cities... The costs of excessive concentration (traffic accidents, health costs from exposure to high levels of air and water pollution, and time lost in long commutes) stem from the large size of megacities”.

Certainly the number of megacities in the world has increased rapidly. In 1950, New York was the sole megacity in existence; by 2014 there are some 33, with a combined population of over half a billion, though much depends upon where boundaries are drawn. Nearly two-thirds of the megacities are actually in the upper-middle and high-income countries. Only 12 of today’s megacities are in the lower-middle and lower-income countries; nine in Asia and three in Africa.¹⁵ More generally, the primacy rate is defined as the population of the largest city as a fraction of total population. As of 2010, this primacy rate does indeed decline slightly with higher incomes across countries, as may be seen in Figure 3.¹⁶

¹⁵ Bengaluru, Delhi, Dhaka, Jakarta, Karachi, Kolkata, Lahore, Manila, Mumbai; Cairo, Kinshasa and Lagos.

¹⁶ Overall this association is not statistically significant. On the other hand, if the three obvious outliers (Hong Kong, Macau and Singapore) are omitted a significant negative association prevails; each 1 percent increase in GDP per capita is then associated with a 3.7 percentage point decline in the primacy rate. Note that only countries where the largest city had more than 300,000 inhabitants are included.

Figure 3. Primacy and Income Level



In the end, policy makers must weigh the net effects of two sets of externalities: the costs of over-crowding versus the benefits from agglomeration. (Duranton, 2014). Both present measurement challenges. Moreover, the combined existence of positive agglomeration externalities and the attraction to move to larger places make kick-starting the expansion of competing, smaller cities difficult. Meanwhile, the large cities continue to attract migrants; while adding to any external costs, private decisions to move persist despite what might seem appalling conditions. Life in the rural areas of the low-income countries should not be over-romanticized; these remain the seats of the deepest poverty.¹⁷ Choices may be between over-crowded schools for one’s children versus none at all.

¹⁷ “Over 1993-2002, the count of the “\$1 a day” poor fell by 150 million in rural areas but rose by 50 million in urban areas. The poor have been urbanizing even more rapidly than the population as a whole... Looking forward, the recent pace of urbanization and current forecasts for urban population growth imply that a majority of the world’s poor will still live in rural areas for many decades to come”. Ravallion et al. (2007, abstract).

6. Policy Options

There is barely such a thing as an economic policy that does not touch upon migration, ranging from macro strategies to micro interventions. Fortunately, only a couple of countries (North Korea and China) attempt to control internal migration directly today.¹⁸ However, any policies that reshape either the drivers or barriers to movement can potentially reshape its magnitude, inclusion and nature. It would be impossible to discuss the entire gamut of policy actions at stake within the confines of this paper, but a few may be mentioned.

The transition out of agriculture and into urban-based economies seems quite inevitable. The speed of this transition is, however, affected by the extent of employment creation in urban areas. In turn this is shaped by policies ranging from trade and exchange rate strategies to labor market interventions. Jobless growth may well limit the degree of rural-urban migration, as illustrated by the example of India. On the other hand, the Harris-Todaro model teaches us that urban job creation without counter-balancing improvements in the rural sector may simply result in larger slums and greater urban poverty.¹⁹ At a macro level, the effective protection offered to industry through trade barriers or an over-valued exchange rate is a major determinant of this balance. At a more micro level, rural public works projects can, potentially, act as one such counter-balancing force, but much depends upon the design and location of these schemes; low-wage schemes may be better able to target the poor, for example.²⁰ On the other hand, any efforts targeted at keeping specific groups in the rural areas may also deny them the opportunity to benefit from dynamic growth in town. (Lucas and Verry, 1999).

Munshi and Rosenzweig (2013) note that community social safety nets act as a significant constraint on migration. Provision of public safety nets may thus enable even the risk-averse to make a transition into town. It is, however, well documented that such public safety nets may serve to diminish private efforts, such as the use of remittances as an insurance device. (Cox et al., 2004).

Too little is known about the influence of amenity availability upon migration in the developing countries to warrant any sweeping conclusions. Nonetheless, some observers do note the importance of public provision of transport and communication. “There are good reasons why migrant networks may be weak in many African countries: road networks are poor, implying that travel is often costly, particularly relative to rural household income”. (De Brauw et al., 2013, p.7). Several authors also note the important role that mobile phones have come to play, in the absence of sufficient land-line coverage, rendering permits to

¹⁸ Some of these attempts have been abandoned, such as the pass system under the South African apartheid regime. Others remain in place, notably the Hukou policy in China. In other contexts, controls exist but are not effectively implemented. See, for example, De Brauw et al. (2013) on Ethiopia.

¹⁹ Ghana, for example, has followed a program of decentralizing services to small towns in a conscious effort to limit growth of the larger cities. (Owusu, 2005). De Brauw and Mueller (2012) report evidence that establishing clearer rights to land has served (weakly) to limit out-migration in Ethiopia. Taylor et al. (1999) stress the importance of removing various market imperfections imposed, in part by policy, on Chinese agriculture, especially with respect to credit.

²⁰ Zimmermann (2014) examines India’s National Rural Employment Guarantee Scheme, concluding that it has probably acted successfully as a safety net but has done little to add to employment in total.

build cell-phone towers important. (Muto, 2009; Klonner and Nolen, 2010; Aker et al., 2011). But it is certainly not necessary to avoid depopulation everywhere by placing amenities in increasingly remote locations.

Evidence on the extent to which financial constraints represent a major barrier to internal migration remains thin. Thus, whether efforts to improve rural credit access might encourage more rapid population movement is quite uncertain. Moreover, the effect of formal banking expansion upon economic opportunities in rural areas, presumably diminishing pressures to migrate into town, remains contentious. (Burgess and Pande, 2005; Young, 2014). On the other hand, improving the rural population's access to education and the quality of that education more clearly offers a passport out of poverty, both through enhanced earnings among those who stay in the rural sector, and even more so for those who are able to migrate into town as a result of their education. (Timmer and Akkus, 2008).

Any major economic transition is typically associated with increased inequality, as noted by Kuznets a half-century ago. The extent to which a transition to rapid urbanization proves inclusive may well depend upon the family links sustained or demolished in the process. It is the young who typically move, which can result in abandonment of the elderly. Whether migration of the household head results in concurrent or subsequent family accompaniment, and whether absent heads provide for their families left behind, affects the incidence of poverty of those remaining in the home areas. In addition, some locations, especially more remote areas, are likely to remain isolated from migration and hence the trickle-down benefits of urban growth. These are not causes for slowing population movements, however, but rather call for parallel policies to address more directly these pockets of poverty.

References

- Abbas, Rameez, and Divya Varma, (2014), "Internal Labor Migration in India Raises Integration Challenges for Migrants." Migration Information Source, Migration Policy Institute, Washington, DC.
- Ackah, C., & Medvedev, D. (2010). "Internal migration in Ghana: Determinants and welfare impacts". Policy Research Working Paper Series No. 5273. Washington, DC: World Bank.
- Adams, R.H., Jr., Cuecuecha, A., Page, J. (2008). "The impact of remittances on poverty and inequality in Ghana". Policy Research Working Paper Series No. 4732, World Bank, Washington DC.
- Agesa, R.U., Kim, S. (2001). "Rural to urban migration as a household decision: evidence from Kenya". *Review of Development Economics* 5, 60-75.
- Aker, J.C., Clemens, M.A., Ksoll, C. (2011). "Mobiles and mobility: the effect of mobile phones on migration in Niger". Preliminary draft at <http://www.csae.ox.ac.uk/conferences/2011-EDiA/papers/401-Aker.pdf>
- Akpan, N. S. (2012). "From agriculture to petroleum oil production: What has changed about Nigeria's rural development?" *International Journal of Developing Societies*, 1(3), 97–106.
- Anderson, J.E. and E. van Wincoop (2003). "Gravity with gravitas: a solution to the border puzzle", *American Economic Review*, 93(1), 170-192.
- Asadullah, M. N., and S. Rahman (2009). "Farm Productivity and Efficiency in Rural Bangladesh: The Role of Education Revisited." *Applied Economics*, 41(1): 17-33.
- Au, Chun-Chung and J. Vernon Henderson (2006). "How migration restrictions limit agglomeration and productivity in China", *Journal of Development Economics*, 80, 350– 388.
- Bardhan, Pranab (2007). "Poverty and Inequality in China and India: Elusive Link with Globalisation", *Economic and Political Weekly*, September 22nd.
- Barrios, S., Bertinelli, L., and Strobl, E. (2010). "Trends in rainfall and economic growth in Africa: A neglected cause of the African growth tragedy." *Review of Economics and Statistics*, 92(2): 350–366.
- Bazzi, Samuel, Arya Gaduh, Alexander Rothenberg and Maisy Wong (2014). "Skill transferability, migration, and development: evidence from population resettlement in Indonesia", unpublished paper.
- Beegle, K., de Weerd, J., and Dercon, S. (2011). "Migration and economic mobility in Tanzania: Evidence from a tracking survey. *Review of Economics and Statistics*, 93(3), 1010–1033.

- Binswanger–Mkhize, Hans P. (2012). "India 1960-2010: Structural Change, the Rural Nonfarm Sector, and the Prospects for Agriculture", Seminar Paper presented at University of California at Berkeley, <http://are.berkeley.edu/documents/seminar/Binswanger.pdf>
- Bohra-Mishra, P. and D. S. Massey (2011). "Individual Decisions to Migrate during Civil Conflict." *Demography* 48(2): 401-424.
- Borjas, G. and B. Bratsberg (1996), "Who Leaves? The Outmigration of the Foreign-Born", *Review of Economics and Statistics*, 78(1), 165-76.
- Brockerhoffa, M., Yang, X. (1994). "Impact of migration on fertility in Sub-Saharan Africa". *Biodemography and Social Biology* 41, 19-43.
- Brown, O. (2008). "Migration and climate change". IOM Migration Research Series No. 31, International Organization for Migration, Geneva.
- Bryan, Gharad, Shyamal Chowdhury and Ahmed Mushfiq Mobarak (2013). "Escaping famine through seasonal migration", Yale University Economic Growth Center Discussion Paper, No. 1032.
- Burgess, Robin, and Rohini Pande (2005). "Do Rural Banks Matter? Evidence from the Indian Social Banking Experiment". *American Economic Review* 95(3), 780-795.
- Carletto, C., A. De Brauw, and R. Banerjee (2013), "Measuring Migration in Multi-topic Household Surveys" in *Handbook of Research Methods in Migration*, C. Vargas-Silva (ed.), Edward Elgar, Cheltenham UK and Northampton USA.
- Chattopadhyay, A., White, M.J., Debpuur, C. (2006). "Migration and fertility in Ghana: beyond rural-urban differentials". *Population Studies* 60, 189-203.
- Chaudhuri, Shubham, and Martin Ravallion (2006). "Partially Awakened Giants: Uneven Growth in China and India", Berkeley Electronic Press at http://works.bepress.com/martin_ravallion/3
- Clemens, Michael A. (forthcoming). "Does Development Reduce Migration?", in Robert E.B. Lucas (ed.), *International Handbook on Migration and Economic Development*, Edward Elgar, Cheltenham UK and Northampton USA.
- Connell, J., B. Dasgupta, R. Lashley, and M. Lipton (1976). *Migration from Rural Areas: The evidence from village studies*. Oxford University Press, Oxford, UK.
- Cox, Donald, Hansen, Bruce E. and Jimenez, Emmanuel (2004). "How responsive are private transfers to income? Evidence from a laissez-faire economy," *Journal of Public Economics*, 88(9-10), 2193-2219.
- Czaika, M. and K. Kis-Katos (2009). "Civil Conflict and Displacement: Village-Level Determinants of Forced Migration in Aceh." *Journal of Peace Research* 46(3): 399-418.

- Davenport, Christian A., Will H. Moore and Steven C. Poe, (2003). "Sometimes You Just Have to Leave: Domestic Threats and Forced Migration, 1964-1989." *International Interactions* 29: 27-55.
- De Brauw, A., and Mueller, V. (2012). "Do limitations in land rights transferability influence low mobility rates in Ethiopia?". *Journal of African Economies*, 21(4), 548–579.
- De Brauw, A., V. Mueller, and H.L. Lee (2013). "The Role of Rural-Urban Migration in the Structural Transformation of Sub-Saharan Africa," *World Development*. Article in press: <http://dx.doi.org/10.1016/j.worlddev.2013.10.013>.
- De Brauw, A., Mueller, V., and Woldehanna, T. (2013). "Does internal migration improve overall well-being in Ethiopia?" IFRPI Ethiopia Strategy Support Program Working Paper No. 55, Washington DC.
- De Brauw, Alan, and Scott Rozelle (2008). "Reconciling the Returns to Education in Off-Farm Wage Employment in Rural China," *Review of Development Economics*, 12(1), 57-71.
- De Vreyer, P., Gubert, F., Roubaud, F. (2009). "Migration, self-selection and returns to education in the WAEMU". *Journal of African Economies* 19, 52-87.
- Djajic, S., R. Milbourne (1988). "A General Equilibrium Model of Guest-Worker Migration: A Source-Country Perspective", *Journal of International Economics*, 25, 335-351.
- Duflo, Esther (2001). "Schooling and Labor Market Consequences of School Construction in Indonesia: Evidence from an Unusual Policy Experiment", *American Economic Review* 91(4), 795-813.
- Duranton, Gilles (2014). "Growing through Cities in Developing Countries". Policy Research Working Paper Series No. 6818. Washington, DC: World Bank.
- Dustmann, C. and Y. Weiss (2007). "Return migration: theory and empirical evidence from the UK", *British Journal of Industrial Relations*, 45(2), 236-256.
- Engel, S. and A. M. Ibáñez (2007). "Displacement Due to Violence in Colombia: A Household Level Analysis." *Economic Development and Cultural Change* 55(2): 335-365.
- Fafchamps, Marcel and Forhad Shilpi (2013). "Determinants of the Choice of Migration Destination". *Oxford Bulletin of Economics and Statistics*, 75(3), 388-409.
- Findley, S. (1994). "Does drought increase migration? A study of migration from rural Mali during the 1983-1985 drought." *International Migration Review*, 539–553.
- Foster, A. D., and M. R. Rosenzweig (1996). "Technical Change and Human-Capital Returns and Investments: Evidence from the Green Revolution." *The American Economic Review*, 86(4): 931-953.
- Galor, O. and O. Stark (1991), "The probability of return migration, migrants' work effort, and migrants performance", *Journal of Development Economics*, 35, 399-405.

- Gollin, Douglas, David Lagakos and Michael E. Waugh (2013). "The Agricultural Productivity Gap," NBER Working Paper No. 19628, National Bureau of Economic Research, Inc.
- Harris, J.R. and Todaro, M.P. (1970). "Migration, unemployment and development: a two-sector analysis". *American Economic Review* 60, 126-142.
- Henderson, V. (2002). "Urbanization in Developing Countries". *World Bank Research Observer* 17(1), 89-112.
- Henry, S., Boyle, P., Lambina, E.F. (2003). "Modelling inter-provincial migration in Burkina Faso, West Africa: the role of socio-demographic and environmental factors". *Applied Geography* 23, 115–136.
- Ibáñez, A. M. (forthcoming) "The growth of forced displacement: cross-country, sub-national and household evidence on potential determinants", in Robert E.B. Lucas (ed.), *International Handbook on Migration and Economic Development*, Edward Elgar, Cheltenham UK and Northampton USA.
- Ibáñez, A. M. and C. E. Velez (2008). "Civil conflict and forced migration: the micro determinants and welfare losses of displacement in Colombia," *World Development* 36(4), 659-676.
- Justino, Patricia (2011). "War and Poverty", in M. R. Garfinkel and S. Skarpedas (eds.) *Oxford Handbook of the Economics of Peace and Security*, Oxford, Oxford University Press.
- Kennan, John and James R. Walker (2011), "The effect of expected income on individual migration decisions", *Econometrica* 79(1), 211-251.
- Klonner, Stefan and Patrick J. Nolen (2010). "Cell Phones and Rural Labor Markets: Evidence from South Africa", *Proceedings of the German Development Economics Conference, Hannover 2010* 56, Verein für Socialpolitik, Research Committee Development Economics.
- Knight, John, (2013). "Inequality in China: An Overview". Policy Research Working Paper No. 6482, World Bank, Washington DC.
- Knight, J., S. Weir, and T. Woldehanna. (2003). "The Role of Education in Facilitating Risk-Taking and Innovation in Agriculture". *Journal of Development Studies*, 39(6): 1-22.
- Kondylis, Florence and Valerie Mueller (forthcoming). "Economic consequences of conflict and environmental displacement", in Robert E.B. Lucas (ed.), *International Handbook on Migration and Economic Development*, Edward Elgar, Cheltenham UK and Northampton USA.
- Lall, S., Timmins, C. and Yu, S. (2009). "Connecting lagging and leading regions: the role of labor mobility". *Brookings-Wharton Papers on Urban Affairs*, pp. 151–174, The Brookings Institution, Washington, DC.

- Lozano-Gracia, Nancy, Gianfranco Piras, Ana Maria Ibáñez and Geoffrey J. D. Hewings (2010). "The Journey to Safety: Conflict-Driven Migration Flows in Colombia". *International Regional Science Review* 33(2): 157-180.
- Lucas, R.E.B. (1985). "Migration amongst the Batswana". *Economic Journal* 95, 358-382.
- Lucas, R.E.B. (1988). "India's Industrial Policy", in The Indian Economy: Recent Development and Future Prospects, eds. R.E.B. Lucas and G.F. Papanek, Oxford University Press: Delhi, 1988.
- Lucas, R.E.B. (1989). "Liberalization of Indian Trade and Industrial Licensing: A Disaggregated Econometric Model with Simulations". *Journal of Development Economics* 31, 141-175.
- Lucas, R.E.B. (2000). "Migration", in *Designing Household Survey Questionnaires for Developing Countries: Lessons from Ten Years of LSMS Experience*, Margaret Grosh and Paul Glewwe, (eds.), World Bank, Washington, DC.
- Lucas, R.E.B. (2001). "The Effects of Proximity and Transportation on Developing Country Population Migrations", *Journal of Economic Geography*, 1, 323-339.
- Lucas, R.E.B. (2005). *International Migration and Economic Development: Lessons from Low-Income Countries*, Edward Elgar Press, Cheltenham, UK and Northampton, MA.
- Lucas, R.E.B. (forthcoming). "African Migration", in *The Handbook on the Economics of International Migration*, Barry R. Chiswick and Paul W. Miller, (ed.), Elsevier Science.
- Lucas, R.E.B., Stark, O. (1985). "Motivations to remit: evidence from Botswana". *Journal of Political Economy* 93, 901-918.
- Lucas, R.E.B. and D. Verry (1999). *Restructuring the Malaysian Economy: Development and Human Resources*, MacMillan Press: London, 1999.
- Luo, Chuliang, and Ximing Yue. (2010). "Rural-Urban Migration and Poverty in China." In *The Great Migration: Rural-Urban Migration in China and Indonesia*, eds. X. Meng and C. Manning, 117-134. Cheltenham: Edward Elgar.
- Mahapatro, Sandhya (2014). "Contemporary Patterns and Issues of Internal Migration in India: Evidence from NSSO", paper presented to the KNOWMAD conference on Internal Migration and Urbanization, Dhaka, May 1st.
- Marchiori L., J.-F. Maystadt and I. Schumacher (2012). "Weather Variations and Migration in Sub-Saharan Africa". *Journal of Environmental Economics and Management* 63(3):355-374.
- Martin, Philip L. and J. Edward Taylor (1996), "The Anatomy of a Migration Hump", in Taylor, J. Edward (ed.), *Development Strategy, Employment and Migration: Insights from Models*, Paris: OECD, pp. 43-62.

- Mesnard, A. (2004). "Temporary migration and capital market imperfection". *Oxford Economic Papers* 56, 242-262.
- Moore, W. H. and S. M. Shellman (2006). "Refugee or Internally Displaced Person? To Where Should One Flee?" *Comparative Political Studies* 39(5): 599-622.
- Munshi, Kaivan and Mark Rosenzweig (2013). "Networks and Misallocation: Insurance, Migration, and the Rural-Urban Wage Gap," Unpublished Manuscript, Yale University.
- Muto, M. (2009). The impacts of mobile phone coverage expansion and personal networks on migration: Evidence from Uganda. Paper presented at the International Association of Agricultural Economists Conference, Beijing, China, August 16–22, 2009.
- Owusu, G. (2005). "Small Towns in Ghana: Justifications for their promotion under Ghana's decentralisation programme". *African Studies Quarterly*, 8(2), 48–69.
- Pekkala, S. and R.E.B. Lucas (2007). "Differences across Cohorts in Finnish Intergenerational Income Mobility", *Industrial Relations: A Journal of Economy and Society*, Symposium: Trends in Intergenerational Mobility, 46(1), January 2007: 81-111.
- Piguet, E., Pécoud, A., de Guchteneire, P.F.A. (2011). *Migration and Climate Change*. Cambridge University Press for UNESCO, Cambridge and New York.
- Potts, D. (2009). "The slowing of sub-Saharan Africa's urbanization: Evidence and implications for urban livelihoods". *Environment and Urbanization*, 21, 253–259.
- Rapoport, H., Docquier, F. (2006). "The economics of migrants' remittances". In: Kolm, S., Ythier, J.M. (Eds.), *Handbook of the Economics of Giving, Altruism and Reciprocity*, North Holland, Amsterdam.
- Ravallion, Martin, and Shaohua Chen (2007), "China's (uneven) progress against poverty", *Journal of Development Economics*, 82, 1– 42.
- Ravallion, Martin, Shaohua Chen and Prem Sangraula (2007). "New Evidence on the Urbanization of Global Poverty." Background paper for the World Development Report, 2008. World Bank, Washington, DC.
- Rosenzweig, Mark R. and Stark, Oded, (1989). "Consumption Smoothing, Migration, and Marriage: Evidence from Rural India," *Journal of Political Economy*, 97(4), 905-926.
- Rozelle, S., Taylor, J. E., and de Brauw, A. (1999). "Migration, remittances, and agricultural productivity in China". *American Economic Review*, 89(2), 287–291.
- Ruiz, I. and C. Vargas-Silva (2013). "The economics of forced migration," *The Journal of Development Studies* 49(6), 772-784.

- Sabates-Wheeler, R., Taylor, L., Natali, C. (2009). "Great expectations and reality checks: the role of information in mediating migrants' experience of return". *The European Journal of Development Research* 21, 752-771.
- Saldaña-Zorrilla, S. and Sandberg, K. (2009). "Impact of climate-related disasters on human migration in Mexico: a spatial model." *Climatic Change*, 96(1):97–118.
- Steele, A. (2009). "Seeking Safety: Avoiding Displacement and Choosing Destinations in Civil Wars." *Journal of Peace Research* 46(3): 419-430.
- Stern, Nicholas Herbert, (2007). *The Economics Of Climate Change: The Stern Review*, Cambridge, UK: Cambridge University Press.
- Stouffer, S.A. (1940), 'Intervening opportunities: a theory relating mobility and distance', *American Sociological Review*, 5(6), 845-867.
- Taylor, J. Edward, Scott Rozelle and Alan de Brauw, (1999). "Migration, Remittances, and Agricultural Productivity in China," *American Economic Review*, 89(2), 287-291.
- Timmer, C. Peter, and Selvin Akkus, (2008), "The Structural Transformation as a Pathway out of Poverty: Analytics, Empirics, and Politics", Working Paper No. 15, Center for Global Development, Washington DC.
- United Nations Population Division, (1970), "Methods of Measuring Internal Migration." *Manuals on Methods of Estimating Population*, Manual VI, UN, New York.
- United Nations Population Division, (2013), "Cross-national Comparisons of Internal Migration: An Update on Global Patterns and Trends." *Technical Paper 2013/1*, UN, New York.
- Wahba, Jackline, (forthcoming) "Return Migration and Economic Development", in Robert E.B. Lucas (ed.), *International Handbook on Migration and Economic Development*, Edward Elgar, Cheltenham UK and Northampton USA.
- Williams, N. E. (2013). "How Community Organizations Moderate the Effect of Armed Conflict on Migration in Nepal." *Population Studies* 67(3): 353-369.
- Wouterse, F. (2010). "Remittances, poverty, inequality and welfare: evidence from the Central Plateau of Burkina Faso". *The Journal of Development Studies* 46, 771-789.
- Young, Alwyn, (2013). "Inequality, the urban-rural gap, and migration," *Quarterly Journal of Economics*, 2013, 128 (4), 1727–1785.
- Young, Nathaniel, (2014). "The Effect of Formal Banking on Agricultural and Industrial Growth: Dynamic Evidence from a Regression Discontinuity Analysis in India", paper presented at the Northeast Universities Development Consortium Conference, Boston University, Boston MA.

Zimmermann, Laura, (2014). "Why Guarantee Employment? Evidence from a Large Indian Public-Works Program." Unpublished paper, University of Georgia.

