Working Papers

Migration transitions

A theoretical and empirical inquiry into the developmental drivers of international migration

Hein de Haas

DEMIG project paper 1

Abstract

This paper aims to advance a conceptual framework on the developmental drivers of international migration processes and to provide an empirical test drawing on the global migrant origin database. Conventional ideas that development in origin countries will reduce international migration are ultimately based on "push-pull", neoclassical and other equilibrium models which assume an inversely proportional relationship between absolute levels and relative differences of wealth and migration. By contrast, another group of theories postulate that development leads to generally *increased* levels of migration and that societies go through migration transitions characterised by an inverted U-shaped pattern of emigration.

The paper discusses as yet unobserved conceptual parallels and differences between separately evolved 'transition' theories. It subsequently amends and synthesises prior theories, based on a criticism of their evolutionary character and sedentary bias, their inclination towards demographic determinism, their limited conceptualisation of structure and agency as well as the causal mechanisms underlying the correlations they describe. Sen's capabilities-based development concept is applied to migration to create analytical room to analyse most forms of migration within a single perspective. Structure and agency are incorporated by conceptualising migration as a function of (1) capabilities, (2) aspirations and, on a macro-level, (3) opportunity rather than income differentials.

Because of the contested nature of migration transition theory, the paper provides an empirical test. Drawing on the World Bank/University of Sussex global migrant origin database, it estimates the effect of theoretically relevant development indicators on immigrant, emigrant, net immigrant and total migrant stocks. The results largely confirm transition theory. Higher levels of economic and human development are associated to higher overall levels of migration and have the predicted U-curve effect on emigration. The results also suggest that demographic factors do not have a direct effect on migration. Although several empirical puzzles remain, particularly on the effects of political freedoms, the results suggest that take-off development in the least developed countries is likely to lead to take-off emigration. The analysis exemplifies the need to conceptualise migration as an integral part of broader development processes rather than as problem to be "solved".

Keywords: migration theory, migration determinants, migration transitions, development, capabilities, structure-agency.

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1. Introduction [1] [2]

Conventional wisdom holds that international migration is mainly driven by global differences in levels of wealth and human development. Subsequently, the reduction of such differences by boosting development in poor countries is often seen as the most effective way to reduce international migration. While the latter proposition is problematic in its own right, because it presumes *a priori* that migration reduction is desirable, this paper discusses the problematic nature of the first proposition.

Few would disagree that most people migrate in the generally realistic expectation to improve their long-term wellbeing. However, this proposition is so general that it resembles a truism rather than an empirically verifiable theoretical statement. It is therefore not particularly helpful to understand the intrinsically complex and patterned nature of real-life migration. However, it is important to note that this proposition still underlies neoclassical migration theory and popular push-pull models. In line with equilibrium assumptions, they presume an inversely proportional relationship between development differentials and volumes of migration. This leads to the hypothesis that most migration occurs between the poorest and wealthiest places and countries. The idea that migration and development are *substitutes* also leads to the hypothesis that wealthy societies have lower overall levels of migration than poorer societies.

Yet, a quick glance at global migration patterns seems to defy both hypotheses. Most migrants do not move from the poorest to wealthiest countries. In addition, highly developed societies tend to experience not only high immigration, but also substantial emigration and internal movement. However, migration scholars have unfortunately been more skilful in rejecting push-pull and neo-classical migration theories than in formulating alternative, empirically verifiable theories on the drivers of migration processes. Simply rejecting these theories risks throwing the baby out with the bath water. There is no reason not to retain the basic assumption that people generally move in the expectation to improve their wellbeing. What we need is to elaborate more refined theories which are able to grasp actual migration patterns and trends as well as their links to broader processes of social and economic change.

In this context, it is striking that actual migration *processes* have remained under-theorized. While there is a wealth of theoretical literature on migration-related topics such as immigrant integration, transnationalism and remittances, surprisingly few attempts have been made to theorise on the nature and drivers of *migration processes*

themselves. Attempts at theorisation have remained rather scattered across various disciplines and a coherent body of theory has yet to emerge. Although there have been some excellent *reviews* of migration theories (notably Massey et al. 1993), to our best knowledge no attempts have been made to synthesise these insights from different theories into more coherent conceptual frameworks.

Perhaps deterred by the post-modern taboo on 'grand' theory, and with some notable exceptions (cf. Hatton and Williamson 1998, Massey 1988, Skeldon 1997), there has been a lack of systematic attempts to discern spatio-temporal regularities beneath the complexity and diversity of migration processes. Studies tend to be descriptive and rarely explicitly aim at theory building. If theory is used at all, its use has generally been haphazard and post-hoc, and rarely guides empirical research through more systematic hypothesis testing (Arango 2000: 294). As Bakewell (2008) argued, we tend to choose the theory that fits the context. But, we can only know what fits once we have done the empirical research and, if we do put forward any predictions, we blame it on the wider context when they fail to materialize. So, the theory remains untarnished by failure and we develop another theory to cope with the next dataset. This state-of-the-art is unfortunate, because despite the complexity, the strong regularities and patterned nature of global migration call for better theorising.

Faced with the daunting complexity and diversity of migration processes, migration scholars have (perhaps wearily) argued that an all-encompassing and all-explaining theory of migration will never arise (Castles and Miller 2009, Salt 1987, Van Amersfoort 1998). Unfortunately, this probably sensible observation has coincided with a strong tendency to abandon attempts at theorising migration altogether. Migration, like almost any other social phenomenon, is a complex and 'messy' process. It is therefore unrealistic to expect a once-size-fits-all theory explaining migration at all places and at all times will ever arise. However, the same could be said for virtually all social processes. However one should not infer from this that migrant movement is completely arbitrary, and that no regularities can indeed be identified.

More generally, "totality" is probably not what social theory should be about in the first place. This would leave us reiterating truisms such as 'most people migrate to improve their wellbeing.' These are so universal that they become rather meaningless because they do not help us much to understand real-world, strongly patterned and structured migration processes. Social theory formation is precisely about striking a delicate balance between the desire to acknowledge the intricate complexities and the richness of social life on the one hand and the scientific need to discern underlying regularities, patterns and trends on the other. Theory formation is exactly about *generalising*, which is a reductionist process by definition, where the exception may well prove the rule.

To further illustrate this, it is useful to make an analytical distinction between the *unique* and the *singular* (Johnston 1984). The unique can be defined as something which is peculiar, because there is no other instance of it, but whose peculiarity can be accounted for by a particular combination of general processes embodying structure and individual responses embodying agency. The singular is something that is entirely remarkable, because no general statements can be made in reference to it (Johnston 1984). Within this perspective, patterns and trends can still be discerned and

generalizations can still be made despite the unique nature of particular migration *events*. The crucial issue for successful social theory formation is to find the optimal level of generalisation that allows for complexity and diversity to a certain extent without going down the sterile path of relativism and exceptionalism (Skeldon 1997, Tilly 1984).

Although it would thus be naïve to assume that an all-encompassing and all-explaining meta-theory on migration will ever arise, there is undoubtedly more room for theorizing on processes and how they connect to broader processes of social and economic transformation or 'development'. This paper attempts to fill part of this gap by advancing a conceptual framework on the drivers of international migration processes. The analytical starting point of this paper is that advancement in migration theory is only possible if we conceptualise migration as an *intrinsic* part of broader processes of social[3] change, usually embodied in the concept of 'development'. This creates the required analytical room for establishing a firmer connection between the descriptive field of migration studies and more general social and development theory.

By embedding migration theory within more general social and development theory, the paper aims at achieving an improved explanation of (1) why development is generally associated with *higher* overall levels of migration and mobility, (2) why the relation between migration and broader development processes is fundamentally *non-linear*, and (3) why societies tend to go through a sequence of migration transitions. The second aim of this paper is provide an empirical test for migration transition theory drawing on the global migrant origin database.

The first section will review the strengths and weaknesses of conventional, functionalist migration theories which are based on familiar push-pull and equilibrium assumptions. The second section will review several 'transition' theories which have a superior ability to describe patterns and trends of real-life migration processes, but are weaker at theorizing the causal mechanisms underlying these spatio-temporal regularities. The third section incorporates this critique by amending and synthesising prior migration theories. It will then formulate a set of hypotheses on the interrelations between levels of development and the occurrence of particular forms of migration. The last sections will provide a first empirical test based on newly available global migration data. The paper will conclude by summarising the findings and identifying useful lines of future empirical inquiry in order to advance our theoretical understanding of the drivers of migration processes.

2. Equilibrium theories: 'push-pull' and neoclassical perspectives

Common views that development and migration are substitutes are ultimately based on place-utility theories which assume an inversely proportional relationship between

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[3] 'Social' here includes all aspects of human life, including economic dimensions. We can only develop a truly comprehensive theoretical perspective on migration if we integrate social, cultural, cultural and political dimensions.

income and other opportunity differentials and migration rates. This perspective, in which people are expected to move from low income to high income areas, has remained dominant in migration studies since Ravenstein (1885, 1889) formulated his laws of migration. The idea that migration is a function of spatial disequilibria constitutes the cornerstone assumption of so-called 'push-pull' models which still dominate much gravity-based migration modelling as well as commonsensical and non-specialist academic thinking about migration. Lee (1966), who revised Ravenstein's migration laws, stated that migration decisions are determined by 'plus' and 'minus' factors in areas of origin and destination; intervening obstacles (such as distance, physical barriers, immigration laws, and so on); and personal factors. Although Lee did apparently not use the term himself[4], his analytical framework is commonly referred to as the 'push-pull' model (Passaris 1989). Push-pull models usually identify various economic, environmental, and demographic factors which are assumed to push migrants out of places of origin and lure them into destination places.

For several reasons, the analytical value of the push-pull model is limited. First, it is a static model which does not specify how migration reciprocally affects the initial conditions under which it took place. Second, it is a descriptive, post-hoc device to explain migration, in which various 'migration determinants' at different levels of aggregation are lumped together in a relative arbitrary manner, without specifying or measuring their relative weight. Third, push-pull models often commit a classical "ecological fallacy" by confounding macro-level migration determinants (e.g., population growth, environmental degradation, climate change or variability) with individual migration motives. This also reveals the assumptions that particular factors ('root causes') directly 'cause' migration, without taking into consideration their interactions with other factors affecting people's livelihoods. For instance, population growth or environmental degradation do not necessarily need to result in a Malthusian worsening of rural livelihoods (and, hence, migration[5]) because technical innovation may enable farmers to maintain or even increase productivity (cf. Boserup 1965)..

While neo-classical migration theory is equally based on equilibrium assumptions, it is much more sophisticated than push-pull models. Neo-classical migration theory was pioneered by Todaro (1969) and Harris and Todaro (1970) to explain rural-urban migration in developing countries but has also been applied to international migration (cf. Borjas 1989, Todaro and Maruszko 1987). Neo-classical economic theory sees migration as a function of geographical differences in the relatively scarcity of labour and capital. The resulting wage differentials cause workers to move from low-wage, labour-surplus regions to high-wage, labour-scarce regions. Refinements of this model incorporate costs and risks of migration, and interpreted migration as an investment in human capital (Bauer and Zimmermann 1998, Sjaastad 1962). Within this perspective, individual migration decisions are made by rational actors who are guided by comparing present discounted value of lifetime earnings in alternative geographic locations, with migration occurring when there is a good chance of recouping human capital investments. This points to the importance of looking at the

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[4] The push-pull polarity has commonly, but undeservedly, been attributed to Lee (1966). For instance, Petersen (1958) already used the push-pull terminology, without however specifying its origins, which probably go back to the early twentieth century.
[5] Leaving aside the question that impoverishment can lead to less migration if people cannot afford the costs and risk of migrating.

structure of labour markets, skill sets and income distributions in both sending and receiving societies in order to explain the volume and selectivity of migration.

In contrast to push-pull models, neo-classical theory is dynamic because it predicts how migration affects the initial, general conditions under which it occurred.[6] Neo-classical theory views migration as a process which optimizes the allocation of production factors – with free migration leading to more efficient aggregate outcomes. *Ceteris paribus*, migration will cause labour to become less scarce at the destination and more scarce at the sending end. Capital is expected to move in the opposite direction. This process of 'factor price equalization' (also known as the Heckscher-Ohlin theorem) will result in growing convergence of wages and decreasing migration (Harris and Todaro 1970, Lewis 1954, Ranis and Fei 1961, Schiff 1994, Todaro and Maruszko 1987). In the long run, migration will cease once wage differentials equal the (social, economic and psychological) costs of migration.

It is crucial to observe that, notwithstanding their differences, both push-pull models and neo-classical migration theory are rooted in functionalist social theory, according to which social processes, including migration, are expected to tend towards equilibrium. The logical inference is that most migration is expected to occur between the poorest and wealthiest places and countries, although distance is expected to play an intervening role. Thus, the assumption is that migration is a predominantly linear and inversely proportional function of wage differentials and that, hence, there will be no migration under equilibrium conditions. This also underpins the prevailing assumption that boosting development in poor countries is the most effective strategy to reduce migration.

However, as Stark (1991) already observed, real-world migration does not typically resemble the flow of water. This observation poses a formidable challenge to conventional equilibrium models and functionalist migration theory. Although empirical tests of 'gravity models' routinely confirm that opportunity differentials are positively correlated to migration, this is hardly surprising. In many ways, such gravity tests seem to state the obvious and cannot come to grips with the non-random, patterned and geographically clustered nature of real-world migration, with most migration *not* occurring along the steepest opportunity gradients and where wage convergence often coincides with *increasing* migration. Migration is a strongly *patterned* process because people's individual choices are constrained by structural factors such as social stratification, market access, power inequalities as well as cultural repertoires affecting preferences.

This exemplifies the need for viable migration theory to incorporate meaningful notions of agency and structure. The main reason why equilibrium-based migration theories have difficulties in explaining real-world migration patterns is the absence of meaningful notions of structure and agency. Migration flows are seen as the aggregate outcome of decisions made by individuals made having full access to information and operating under perfect market conditions. As far as they attribute *any* role to structure, equilibrium theories see structure as the aggregate of individual behaviours. At best, structure is the sum of the parts instead of a *pattern* of social relations constraining individual behaviour. Equilibrium theories also fail to incorporate a

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[6] As we will see, another question is whether these predictions are empirically valid.

meaningful notion of agency – that is, the ability of social actors to make independent choices, to impose those on the world and to alter structure (cf. Emirbayer and Mische 1998). This also reveals a mechanistic concept of agency, in which macro-level change is only brought about by shifts in labour supply. Migrants are effectively reduced to passive pawns or 'atoms' propelled around by macro-level push and pull forces and making perfectly rational and predictable decisions based on individual utility maximisation. Hence, the inability of these theories to explain transformations (i.e,. fundamental structural shifts beyond incremental, linear change (cf. Castles 2010)) in established migration patterns.

Fortunately, over the past half century, some scholars have advanced theoretical frameworks that analyse the complex relation between migration and broader development processes through space and/or over time. Notwithstanding their differences, 'spatio-temporal' migration theories all conceptualise migration as a constituent part of broader transformation processes usually associated with the parallel processes of modernisation, capitalist economic development, urbanisation and demographic transitions. The following section will review these theories and explore their conceptual links.

3. Spatio-temporal 'transition' migration theories

3.1. The temporal dimension: mobility transitions

In his seminal article *The Hypothesis of the Mobility Transition*, the geographer Zelinsky (1971) linked the concept of the 'vital transition' to that of the 'mobility transition'. He proposed a *spatio-temporal* model by integrating demographic transition theory with the theory of the spatial diffusion of innovations. Zelinsky argued that it was surprising how little effort had been made to treat the demographic transition as a process diffusing outward through space and time. He also went beyond the conventional focus on demographic factors in migration theory by advancing the concept of the *vital transition*, by means of which he broadened the concept of demographic transition by linking it to general processes of modernization and economic growth. In many respects, this *vital transition* embodies what is usually referred to as 'development' or 'modernization'.

Zelinsky distinguished five phases of the vital transition: (a) The pre-modern traditional society (high fertility and mortality, little natural increase if any); (b) The early transitional society (rapid decline in mortality, major population growth); (c) The late transitional society (major decline in fertility, significant but decelerating natural increase); (d) The advanced society (fertility and mortality stabilised at low levels, slight population increase if any); and (e) A future "superadvanced" society (continuing low fertility and mortality). The core of Zelinsky's argument was that

> there are definite, patterned regularities in the growth of personal mobility through space-time during recent history, and these regularities comprise an essential component of the modernization trend (Zelinsky 1971: 220-222).

Zelinsky (1971:230-1) argued that there has not only been a *general* and spectacular expansion of individual mobility in modernizing societies, but also that the specific

character of migration processes tends to change over the course of this vital transition. So, each phase of the vital transition is linked to distinct forms of mobility in a process Zelinsky coined as the mobility transition.

The left hand side of table 1 depicts these different stages of the vital and mobility transitions and reveals the links to the classical demographic transition model. While pre-modern societies are mainly characterised by limited circular migration, all forms of internal and international mobility increase in early transitional societies. In late transitional societies, international migration decreases rapidly. The *rural exodus* (i.e., large-scale rural-to-urban migration) significantly decreases at the end of this phase, when the number of those employed in agricultural production approaches the minimum level associated with optimum economic return. Although rural-to-urban internal migration slackens, internal migration remains at high levels and circular movements further increase and grow in structural complexity.

Zelinsky hypothesized that in advanced societies rural-to-urban migration continues, though at a reduced scale, while residential mobility, urban-to-urban migration and circular movements increase significantly. Moreover, in this phase countries transform themselves from being net labour-exporting to labour-importing countries. There is a significant net immigration of unskilled and semi-skilled workers from developing countries next to limited emigration and circulation of skilled and professional workers. In 'superadvanced' societies, Zelinsky predicted that most internal migration will be urban-urban, residential and circular mobility decreases due to better communication technology, while immigration of unskilled labour will continue.

3.2. The spatial dimension: shifting migration frontiers

The geographer Skeldon (1990, 1997) has further elaborated Zelinsky's seminal work, particularly by reinforcing the spatial dimension of transition theory and applying it to actual world migration. The core of his argument was that

> there is a relationship between the level of economic development, state formation and the patterns of population mobility. Very generally, we can say that where these are high, an integrated migration system exists consisting of global and local movements, whereas where they are low the migration systems are not integrated and mainly local (Skeldon 1997:52)

While this largely echoes Zelinsky's earlier argument, Skeldon introduced the vital role of state formation in forging inter-spatial social, economic and political connections, which tend to boost migration. This introduced *structure* into a hitherto rather sterile focus on demographic and economic transitions. It is difficult to understand current global migration patterns without taking into account the process of nation state formation in Europe and elsewhere, in which processes of colonisation and decolonisation played a preponderant role in forging cultural and linguistic links as well as structural interdependencies and inequalities which have strongly encouraged migration along particular spatial pathways or clusters. The Francophone/Anglophone divide of African migration to Europe (i.e., the UK and France) is a case in point.

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More or less in the same vein, Massey (1988) argued that capitalist development and migration are intrinsically related because the processes of capital accumulation and substitution, enclosure, and market penetration destroy the foundations of the peasant economy. This process creates a pool of displaced persons who seek better opportunities elsewhere, while at the same time the persistence of wage differentials and declining transport costs fuel migration. Hatton and Willamson (1998) seminal analysis of the great European migrations to the Americas confirmed this hypothesis while Massey (1988) argued it can also be applied to a contemporary emigration country such as Mexico.

In his analysis of the contemporary global migration geography, and drawing on Zelinsky's original categorisation, Skeldon (1997) proposed a global regionalization of migratory movements, in which he distinguished five 'development tiers': the (1) old and (2) new core countries (e.g., Western Europe, North America, Japan) characterized by immigration and internal decentralization; (3) the 'expanding core' (e.g., eastern China, southern Africa, eastern Europe), where we find both immigration and emigration and internal centralization (i.e., urbanization and rural-to-urban migration); (4) the 'labour frontier' (e.g., Morocco, Egypt, Turkey, Mexico, the Philippines, and, until recently, Spain and Italy), which are dominated by emigration and internal centralization; and the (5) 'resource niche' (e.g., many sub-Saharan countries, parts of central Asia and Latin America), with variable, often weaker forms of migration.

Table 1 reveals the strong conceptual links between the spatio-temporal migration models elaborated by Zelinsky and Skeldon, and their conceptual links to more general transition, modernization and world systems theory. Skeldon's *spatial* development tiers correspond rather neatly with Zelinsky's *intertemporal* stages of the mobility transition. Skeldon's regionalisation also points to the functional, migratory relations between geographically adjacent development tiers. For instance, the predominant origin countries of labour migrants in core countries (e.g., US and EU) tend not to the poor 'resource niche' countries – as neoclassical or push-pull models would predict – but rather the moderately developed 'labour frontier' countries (e.g., Mexico and Morocco). The rapid economic and demographic transitions characterising such countries are typically associated to a surplus of young and unemployed young adults who are prone to migrate. In addition, such countries are better connected to core countries in terms of infrastructure and flows of information, capital, goods and tourists.

The combination of functional economic and demographic complementarities and high levels of connectivity between 'core' and 'labour frontier' countries are therefore likely to lead to the formation of migration systems. The geographer Mabogunje (1970), the founder of migration systems theory, theorised how the migration processes *themselves* tend to strengthen these initial structural interdependencies through several feedback mechanisms. Drawing on Mabogunje, a migration system is a set of places (within or across state borders) linked by flows and counter-flows of people, goods, services, and information, which tend to facilitate further exchange, including migration, between the places.

Table 1. The conceptual links between temporal and spatial migration models

THE TEMPORAL DIMENSION DEMOGRAPHIC AND VITAL TRANSITONS			THE SPATIAL DIMENSION REGIONALISATION	
Stages of the demographic transition model	*Vital transition (Zelinsky)*	*Mobility transition (Zelinsky)*	*World systems theory (Wallerstein)*	*Development tiers (Skeldon)*
High stationary (high fertility and mortality, roughly in balance, little natural increase if any)	**Pre-modern traditional society** (pre-industrial)	Mobility mainly limited to circular migration	**External areas** (e.g., many sub-Saharan African countries, parts of central Asia and Latin America)	**Resource niche**, with variable, often weaker forms of migration.
Early expanding (Rapid decline in mortality due to improvements in food supply, sanitation and health care and education; but no corresponding fall in birth rates leading to major population growth)	**Early transitional society** (urbanising / industrialising developing country)	All forms of mobility (circular, rural colonisation frontiers, internal rural-urban, international) increase	**Periphery** (e.g., Morocco, Egypt, Mexico)	**Labour frontier**, dominated by emigration (to core) and internal centralisation
Late expanding (major decline in fertility due to access to contraception, economic growth, wage increases, urbanization, increase in the status and education of women, increases in investment in children's education, value change and other social changes → Population growth begins to level off, significant but decelerating natural increase	**Late transitional society** (mature industrial country)	International migration decreases, rural-to-urban internal migration stagnates but remains at high levels, circular movements increase and grow in structural complexity, towards the end of phase the 'rural exodus' decreases	**Semi-periphery** (e.g., eastern China, South-Africa, eastern Europe, Turkey)	**Expanding core**, co-existence of immigration and emigration and internal centralisation (i.e., urbanisation and rural-to-urban migration);
Low stationary (fertility and mortality stabilised at low levels, slight population increase if any)	**Advanced society** (post-industrial society)	Residential mobility, urban-to-urban and circular migration increase, transformation from emigration to net immigration countries immigration of unskilled and semi-skilled workers .	**Core areas** (e.g., Western Europe, North America, Japan, NICs)	**Old and new core countries** characterised by immigration and internal decentralisation;
Declining? (continuing low fertility and mortality; birth rates may drop below replacement level leading to shrinking population)	A future **"superadvanced"** society	Most internal migration is urban-urban and residential, immigration of labourers continues.	**? (Core)**	**Old/Declining core (?)**

Once a certain number of migrants have settled, migration alters the structural conditions under which migration initially took place through various endogenous and contextual feedback mechanisms (for an overview, see de Haas 2010a). In a process also known as 'cumulative causation' (a concept borrowed from Myrdal (1957) by Massey (1990) to explain the continuation of migration), these feedback mechanisms often make additional migration more likely. For instance, networks and counter-flows of remittances, information and ideas ('social remittances', cf. Levitt 1998) often encourage and facilitate more migration, while labour market segmentation generates a structural demand for migrant labour (de Haas 2010a). This results in a rather neat geographical structuring and clustering of migration, which is far from the random state (Mabogunje 1970) assumed by push-pull models. However, major weaknesses of such theories on the internal dynamics of migration processes is that it cannot explain endogenous breakdown of migration systems and that which feedback mechanisms may discourage further migration, turning migrants from 'bridgeheads' into gatekeepers (de Haas 2010).

At first sight, Skeldon's regionalisation seems a migration-specific application of centre-periphery models and world-systems theory in particular, which are rooted in structuralist and neo-Marxist theory. Wallerstein's (1974, 1980) world-systems theory analyses the historically grown structural interdependencies between developed and less developed regions. Wallerstein distinguished between the capitalist 'core' nations, followed by the 'semi-peripheral', 'peripheral', and, finally, isolated nations in the 'external' area, which were not (yet) included in the capitalist system. According to world-systems theory, the incorporation of the peripheries through the process of global capitalist expansion is associated with increasing migration to core countries. Thus, growth of the core is a function of the further marginalisation and impoverishment and structural dependency of the peripheral areas.

This reveals a fundamental difference between world-systems theory and Zelinsky's and Skeldon's transition theories. It is inherent to world-systems theory that peripheral states can never reach core status. They are structurally disadvantaged and, particularly, wealth accumulation in core countries is assumed to be a function of the impoverishment of the exploited periphery. Migration transition theories, on the other hand, seem more akin to Rostowian modernization theory by (mostly implicitly) assuming that all societies can evolve towards high development levels.

However, transition theories are not explicit about the underlying causal mechanisms of the migration trends they describe and they do not clarify how migration would look like in a post-transition world. This also shows the limitations of both theories, which seem rather determinist and ahistorical. After all, the experience of capitalist development and recent globalization indicates the picture is more complex than either set of the theories suggest. In essence, globalization has led to a process of uneven economic inclusion. While the inclusion of 'peripheral' countries and societies in global structures has led to rapid growth in some countries and regions (e.g., East and South-East Asia), it has also coincided with a lack of growth and even impoverishment of others (e.g., much of sub-Saharan Africa)[7].

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[7] I thank Stephen Castles for drawing my attention to this point.

3.3. The migration hump

Unfortunately, there is a strong tendency in the literature to confuse the concept of migration transitions with that of the migration hump, because they refer to very different processes. Whereas the migration transition is a concept used to explain *long-term* structural changes in migration patterns associated with social and economic transformation processes, migration hump theory as originally formulated by Martin (1993) and Martin and Taylor (1996) refers to relatively *short- term* hikes in migration in the wake of trade reforms. In the context of expectations in the 1990s that trade liberalisation (through NAFTA) will reduce migration (from Mexico) to the US, Martin (1993) and Martin and Taylor (1996) put forward several compelling arguments why trade and migration can be complements in the short to medium run.

First of all, adjustment to new market conditions is never instantaneous. For instance, while the negative impacts of trade liberalisation (particularly on protected sectors) are often immediate; the expansion of production in sectors potentially favoured by trade reforms always takes time. There may be a long lag between investment and the creation of new jobs, which seems a recipe for a migration hump in the wake of trade reforms (Martin and Taylor 1996: 52). Besides trade reforms, migration hump theory can also be applied to (temporary or more structural) dislocations created by other structural changes in resource flows, such as through foreign direct investment (FDI) and aid (de Haas 2007).

However, Martin and Taylor (1996) also argued that the migration hump is not inevitable, and that increases in migration might even be structural, resulting in a 'migration plateau' of sustained out-migration (Martin and Taylor 1996). Higher productivity and efficiency, technological advantages, and economics of scale in the North may harm the competitiveness of the South even in the production of labour-intensive goods (cf. Krugman 1995). Under such circumstances, trade liberalisation can paradoxically lead to concentrations of highly productive economic activities in the North along with more immigration of labourers to support them. Interestingly, this comes surprisingly close to Myrdal's (1957) original theory of cumulative causation[8], which, in the absence of active government intervention, predicts increasing spatial inequalities rather than factor price convergence predicted by neoclassical models[9].

4. A critique of existing theories

Although transition theories yield valuable insights on the structured regularities in migration patterns and trends, they have certain weaknesses and omissions which

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[8] Myrdal's general cumulative causation theory on national and international economic development should be distinguished from the specific way in which Massey (1990) has employed the concept of cumulative causation to explain why the social and economic effects of migration make additional migration likely.

[9] Myrdal argued that, without strong state policy, the capitalist system fosters increasing regional and international inequalities, and is therefore diametrically opposed to standard neoclassical models predicting economic forces tend towards stable equilibrium and that laissez-faire economic policies will decrease economic inequalities.

need to be addressed in order to make them more realistic. First, transition theories are largely *post-hoc* generalisations of empirically observed regularities between demographic and economic transitions on the one hand and migration patterns on the other. Consequently, they have a limited ability to specify the *causal* mechanisms underlying the correlations they describe.

The confusion between correlation and causality is particularly evident in the importance migration studies attribute to demographic factors.[10] Although demographic and migration processes are often strongly correlated, it is less clear why there would be a *direct* causal link. At best, the link between demographic change and migration is probabilistic and indirect. After all, people do not migrate "because of" population growth. This will only happen if population growth goes along with sluggish economic growth and high unemployment. In their quantitative study of the great European Migrations to the Americas in the second half of the 19th and early 20th century, Hatton and Williamson (Hatton and Williamson 1998) found a positive effect of 20 years lagged fertility on emigration rates through the mass arrival on labour markets of young, migration-prone cohorts. Although fertility transitions *tend* to go along with migration transitions, this is not necessarily the case. If high population growth coincides with rapid economic growth, such as in most oil-rich Gulf states, emigration will be low. The other way around, ageing, stagnant and even declining populations may experience high emigration under unfavourable economic conditions, which is the case in several East European countries.

A more fundamental weakness of transition models is their evolutionary character, which is related to the (Hegelian) teleological assumption that there is a single, unilinear path towards development and progress. In fact, not only transition theory but also neoclassical theories are profoundly rooted in modernisation theory, which postulates that economic development unfolds in a distinct sequence of successive and predictable stages (Rostow 1960). Even neo-Marxist interpretations of migration share these evolutionary assumptions, although they are diametrically opposed to neo-classical theory by predicting increasing divergence between sending and receiving countries in instead of convergence-through-factor-price-equalization.

These *evolutionary* assumptions have been challenged by evidence that the sequence modernization and concomitant mobility change as experienced in Europe does not necessarily apply to contemporary developing countries (Skeldon 1992). Also the demographic transition has shown considerable diversity in different historical and geographical settings (Hirschman 1994). More in general, we can question the assumption that all countries will follow the same path of Western-style modernization.

However, this seems to point to gradual rather than *fundamental* differences. Although the conditions under which migration in the developing world occurs are obviously different from those of the nineteenth and early twentieth century Europe, and might in that sense be *unique*, there seems to be little that is *singular* about these processes and the way they are an intrinsic part of broader technological change and concomitant social, economic and demographic transformations. For instance,

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[10] This often feeds into public discourses with strong Malthusian overtones referring to high population growth or ageing 'causing' emigration and immigration, respectively.

developing countries tend to experience much *faster* demographic transitions than was the case in northern Europe (Kirk 1996:368), but the overall characteristics and drivers of demographic transition processes seem to be near universal.

Much the same can be said of migration. The best and least contested example is the essential role of rural-to-urban migration within and across borders in the shift from agrarian to industrial and, eventually, service-based economies. In many ways, modernisation processes are conditional on the transfer of surplus labour from the traditional (rural) sector to the urban economy (Lewis 1954, Todaro 1969). Although the validity of this urbanisation theory for developing countries has sometimes been questioned, actual empirical evidence overwhelmingly suggests that virtually all societies are rapidly urbanising.

Although the speed and specific forms of these processes differ significantly across space and time, urbanisation and a concomitant, temporary increase in rural-to-urban migration –*the "internal" migration transition* – seem to be universal parts of more general modernisation processes. This paper argues that the same universality applies to *international* migration transitions. Although there is little evidence to contest the links between migration and broader development transitions as such, a more fundamental weakness underlying conventional migration and modernisation theories is that all countries will *inevitably* go down the same path of development. Hence, their inability to conceptualise stagnation and the possible *reversibility* of such transitions.

Another fundamental weakness of transition theory as well as neoclassical and neo-Marxist interpretations of migration is the "myth of the immobile peasant" (Skeldon 1997: 7-8). This refers to the implicit assumption that pre-modern societies consisted of relatively isolated, stable, static, homogeneous peasant communities, in which migration was fairly exceptional (McDowell and de Haan 1997: 3, Skeldon 1997: 32-34). This reveals an implicit sedentary assumption which *all* established migration theories have in common. Neoclassical models see migration as the by-product of *temporary* disequilibria and dislocations created by economic modernisation – which is also a central feature of migration hump theory – which will largely fade once equilibrium conditions have been reached through factor prize equalization. Neo-Marxist migration models also share this assumption that migration is an outflow of the disequilibria caused by capitalist modernisation.

Functionalist (neo-classical, push-pull) and structuralist (neo-Marxist, centre-periphery) development theory are diametrically opposed in terms of predicted development effects of migration. While functionalist theory predicts convergence through factor price equalization, structuralist theory predicts divergence because migration is seen as a factor deepening spatial development inequalities through sustained impoverishment of poor countries to the benefit of the capitalist core. Notwithstanding these differences, it is crucial to observe they share two fundamental assumptions on the developmental drivers of migration:

- higher levels of absolute development lead to less migration

and the related assumption that

- higher development differentials across space lead to more migration

While structuralist migration theory criticizes the equilibrium assumptions of functionalist migration theory, it in fact *does not* challenge the cornerstone assumption that more development will lead to less migration and that, hence, migration will largely cease if equilibrium conditions ever occur. Yet there is ample reason to question these sedentarist assumptions, which are problematic, both from empirical-historical and theoretical perspectives.

First of all, sedentarist assumptions are challenged by empirical evidence. In fact, Petersen (1958: 258) already observed that the universal sedentary tendency implied in the familiar push-pull polarity has little empirical basis. Skeldon (1997: 32) pointed out that the whole idea that the Industrial Revolution uprooted peasants from their stable communities for the first time was in fact a romanticized elitist view of peasant life. Historical research on Europe and Japan and in present-day rural developing societies has shown that pre-modern and 'traditional' peasant societies have generally been highly mobile (de Haan 1999, Moch 1992, Skeldon 1997).

Theoretically, there is an uncomfortable circularity in the central argument of both functionalist and structuralist migration theory. The functionalist assumption is that factor price equalization will eventually lead migration according to the following logic:

- T_1 development disequilibria (as expressed by wage levels) $\rightarrow$ T_1 migration $\rightarrow$ T_2 lower development disequilibria $\rightarrow$ T_2 less migration $\rightarrow$ T_3 development disequilibria = migration costs $\rightarrow$ T_3 no migration

This seems as unrealistic as the structuralist assumption that migration lead to ever more migration according to the following logic:

- T_1 development disequilibria $\rightarrow$ T_1 migration $\rightarrow$ T_2 higher development disequilibria through impoverishment of sending societies $\rightarrow$ T_2 more migration $\rightarrow$ T_3 higher development disequilibria costs $\rightarrow$ T_3 more migration, *ad infinitum.*

In fact, these implicit sedentarist assumptions also apply to transition theory. After all, if migration is mainly a *transitory* by-product of the temporary disequilibria created by the process of modernization and capitalist economic development, migration will cease once the process has been completed. In fact, the very term 'transition' embodies the idea that migration is a largely temporary phenomenon and that both pre-modern and post-modern societies should be relatively immobile.[11]

While its clear that we have to reject these sedentarist assumptions – which upsets the conceptual foundations of standard push-pull and gravity models – we can still maintain that 'modern' patterns of migration are fundamentally different from those in pre-industrial societies in functional forms, geographical scope, the role of networks and possibly also in intensity. Since the late 18th century, fundamental social change created a market for commodified labour, which, alongside huge advances in modern

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[11] A related problem is that transition models cannot explain how migration looks like and where future immigrants will come from if most countries are highly developed, modernise and complete their 'vital transitions'.

science and technology, enabled the industrial revolution (cf. Polanyi 2001 [1944]). This historically unique process led to profound changes in agriculture, manufacturing and transport, which coincided with the rise of the nation state in the 19th century.

The processes of nation state building were greatly facilitated by technological progress in transportation over sea, rail, road and air as well as communication through the mail, the press and, later on, telegraph, (mobile) phone, fax and the internet. The processes of industrialisation, urbanization, modern health care and income growth as well as a massive expansion of education facilitated several demographic transition processes. These were characterised by plummeting death rates due to medical advances and better living conditions and, at a later stage, plummeting birth rates, a process which was further facilitated by women's emancipation and the advent of the contraceptive pill in the 1960s.

It would be highly naïve to assume that these processes have not led to revolutionary changes in modes and forms of migration (rural-to-urban migration tied to urbanisation being the quintessential example) and migrant identities (with assimilation into a newly constructed national identity becoming a politically charged issue and hybrid identities becoming problematized). The interrelated processes of technological, economic and demographic change embodied in the terms 'modernisation' and 'development' have fundamentally altered global migration patterns, and this is exactly where transition theory is about. This also sets the historical and analytical boundaries of this paper and, in fact, all major migration theory. So, this paper does not advocate a model pretending to explain migration at all places and at all times, but to explain the relationship between modern capitalist development and shifts in internal and international migration patterns.

Therefore, the crucial question is not whether migration is a new phenomenon or whether it is simply a linear function of development differentials (which it is evidently not) but rather in which way has the nature and scope of migration changed under the influence of modernisation (development) processes. This particularly evokes the above-mentioned need for an improved understanding of the causal mechanisms underlying these correlations.

Analogous to functionalist (push-pull and neo-classical) and structuralist migration theory, transition theories have a fundamentally limited concept of agency. Migrants are essentially portrayed as pawns passively reacting to a set of largely exogenous, mainly economic and demographic forces that 'push' and 'pull' them between places. This largely reduces migrants to atoms reacting to spatial disequilibria. To the extent that they have agency in functionalist theory, migrants react rather mechanistically and predictably to wage differentials. This rules out the fact that (1) access to information is never perfect, that (2) information is interpreted through cultural lenses and (3) that people's preferences differ. Hence, we cannot assume that individual migrants react in the same way to the same external set of 'stimuli'. Particularly, we can assume that preferences change over time and under the influence of development processes. As we will see, this insight is particularly useful for understanding why economic and human development processes often coincide with increasing migration aspirations.

This latter observation is linked to a final critique of existing migration theories, which are characterised by a rather narrow focus on the demographic and economic determinants of migration. This reveals a rather narrow concept of development, and also explains why migration theory has focused on so-called 'economic' or 'labour' migration, which is seen as largely voluntary, as opposed to 'forced' migration. This is unfortunate, because it creates an artificial separation between forms of migration based on categories, which primarily reflect the legal ticket on which people move, but which often say little about individual motives and the macro-factors driving migration. Migration is typically motivated by a mix of social, economic and sometimes political factors. For instance, family migrants might also move because of work or educational opportunities and labour migrants might also move because of family motives or educational opportunities. In the same vein, if they have choice, refugees are also more likely to migrate to places and countries that offer the better livelihood opportunities *overall*.

Most of the above critique does not necessarily undermine the central hypothesis of transition theory that there is a patterned relationship between levels and/or stages of development and the occurrence of specific forms of migrations, but can be used to amend and improve the transition models in two ways. First, existing models will be made more *explanatory* by hypothesising more systematically how development processes are causally linked to the occurrence of particular forms of mobility and migration. This will be based on a conceptualisation of individual migration as a function of *capabilities* and *aspirations* within a given set of structural constraints. Second, critique on the evolutionary character of existing transition models will be addressed through incorporating notions of stagnation and reversibility. The following section will further elaborate on such improvements.

5. Theoretical amendments

5.1. Incorporating structure and agency: migration as a function of capabilities and aspirations

In order to firmly embed more elaborate notions of structure and agency in migration theory, it is important to go beyond functionalist conceptualization of migration as the function of distance and differences in wealth or development levels and to (1) include structural constraints which might impede people from moving and tend to severely restrict the options migrants have (e.g., through physical and political barriers, limited knowledge, limited resources), while at the same time acknowledging that, within a given set of structural constraints, (2) people can make independent choices according to their own knowledge, tastes and preferences.

This paper proposes to incorporate notions of agency structure and agency in migration theory by linking migration to development theory through conceptualising migration as a function of (1) capabilities and (2) aspirations to migrate. We can define *migration capabilities* as the social, human and material capital individuals are able to mobilise in order to migrate. The greater the barriers to migration are (geographic, physical, legal, social, etc.), the more assets people need in order to

migrate and the more selective migration is likely to be. In order to achieve a broader, more contextualised and comprehensive theorisation of migration processes it is useful to adopt Amartya Sen's (1999) definition of *development*: the process of expanding the substantive freedoms that people enjoy. In order to operationalize these "freedoms", Sen used the concept of *human capability*, which refers to the ability of human beings to lead lives they have reason to value and to enhance the substantive choices they have. From this, we can hypothesize that development generally coincides with increasing capabilities to migrate across larger distances and across legal barriers.

Migration aspirations can be identified as a second key factor in determining people's inclination to migrate. So far, aspirations have remained conspicuously absent from mainstream migration theory, which generally assume that the utility people derive from migration is primarily defined by 'exogenous' factors such as income and employment differentials. This assumes that preferences are constant, and that different people will react similarly to similar external stimuli. This exemplifies the limited role these models ascribe to *agency*. However, development processes as defined above are likely to affect people's aspirations. In particular, education and improved access to information through modern mass media, the internet and (migrant) networks increase people's awareness of social, economic and political opportunities elsewhere and, hence, increase their own life aspirations. It is relevant to make a distinction between the effect of development on (1) increasing life aspirations and the effect of information transferred by media and social networks on (2) perceptions of inter-spatial (within or across borders) relative deprivation.

Figure 1 Hypothesized effect of human development on migration capabilities and aspirations
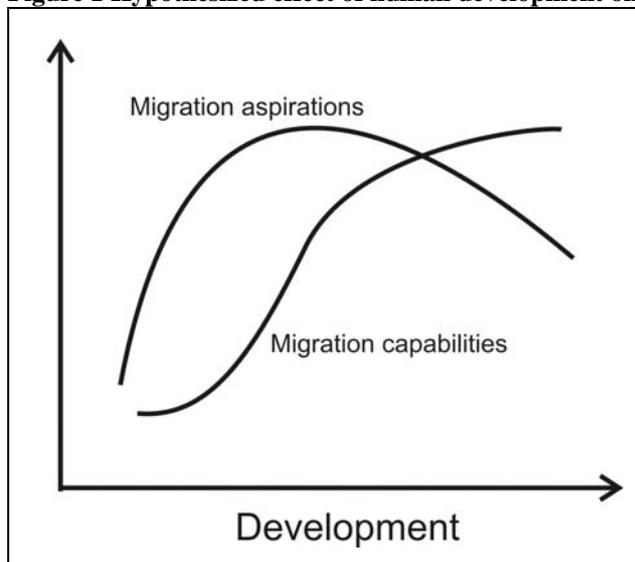
As long as aspirations grow faster than local opportunities can offer, this is likely to increase people's aspirations to migrate. So, the *combined* effect of development on increasing capabilities and aspirations explains why development initially leads to accelerating migration. This is because more people are *capable* and *aspiring* to migrate (see figure 1). While migration *capabilities* are likely to keep on increasing with development (although at a declining pace due to diffusion, see below), migration *aspirations* are likely to increase initially through a steep development-induced rise in aspirations. They will only decline when opportunity gaps with

destination areas or countries decrease significantly and development-driven increases in local opportunities start to outpace development-induced increases in aspirations.

The application of a capabilities-based development concept to migration theory also provides analytical room to go beyond income indicators and to conceptualise migration as a function of *opportunity* differentials. As has been argued above, it can be misleading to conceptualise particular macro-factors, such as high population or economic growth, as a direct 'cause' of migration because local opportunities are shaped by the interplay of a broad range of economic, demographic, political and social factors. This also exemplifies the intrinsic difficulties involved in isolating specific causes of migration and the artificial nature of conventional distinctions between (e.g., economic/voluntary vs. political/forced) migration categories. This calls for a broad conceptualisation of development which focuses on the extent to which people are actually able to fulfil their aspirations where they live.

If we conceive migration as a response to spatial *opportunity* rather than mere economic differentials, it is possible to achieve a more inclusive migration theory covering most forms of migration instead of contending with the current state of migration studies characterized by a rather artificial distinction between 'voluntary' (economic) and 'forced' migration. Rather than applying such dichotomous classifications, it seems more appropriate to conceive of a continuum running from low to high constraints, in which all migrants deal with structural constraints, although *to highly varying degrees*. For instance, many migrants who *primarily* move for work do so because they face severe constraints on personal fulfilment at home, and the range of migration options available to them tends to be constrained and structured by economic, political and social conditions. Likewise, those who are usually characterised as forced migrants, such as refugees, exercise their agency as far as possible in the face of appalling circumstances. It is only with extreme movements such as slavery and deportation that agency may be discounted almost completely.

The idea that migratory aspirations are affected by (patterned) preferences and (constrained) access to information does not necessarily undermine the central idea that individuals make *rational* migration decisions in the expectation to optimise their personal and family's expected wellbeing or 'utility'. The idea is rather one of *bounded rationality* – the notion that people's rationality is limited by access to information, cognitive limitations and the finite amounts of time (Giddens 1984), the recursive nature of social life (Gigerenzer and Selten 2002), as well as the notion that 'utility' is shaped by culturally and socially determined preferences and are, hence, not externally given or constant.

5.2. The non-linear relation between development and migration processes

If we transpose the individual-level migration decision making model elaborated in the previous section to the collective level of communities and societies, higher levels of human development are also likely to coincide with higher overall migration rates. The effect of human development on migration capabilities is likely to be positive but not linear, and hypothesised to resemble an S-curve typical for diffusion processes.

Assuming that a certain minimum ('threshold') level of social, human and/or material capital is needed in order to migrate, we can hypothesise that capabilities to migrate increase exponentially during early phases of development because relatively modest increases in development enable many more people to migrate. This migration-accelerating effect tends to be reinforced by the creation of social capital in the form of migrant networks, which tend to decrease the costs and risks of migration. Under higher levels of development most people will be already capable to migrate. When such saturation occurs, the 'returns' of development on migration capacities diminish.

Figure 2 Graphic representation of migration transition theory
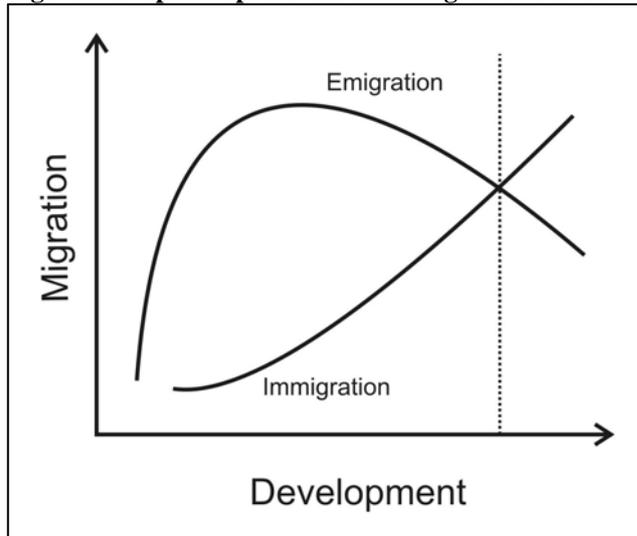
The effect of human development on migration aspirations is likely to be curvilinear: first increasing rapidly, subsequently stagnating or decreasing, but never reverting to low development values. Human development tends to increase people's life aspirations generally. This initially goes along with rapidly accelerating migration. Out-migration will only slow down when opportunity gaps with destination regions and countries decrease considerably. At the same time, as regions and countries develop they tend to become gradually more attractive for immigrants from poorer places. The relation between human development and immigration is therefore expected to be positive and linear. Adding up the effects of relative levels of human development on immigration and emigration, leads to the hypothesis that societies as they develop *tend* to go through a characteristic sequence of migration transitions, as depicted in figure 2.

It is possible to further specify the hypothesized sequencing of short- and long-distance and high- and low-skilled migration over development processes. Building on Zelinsky's work, we can hypothesize that migration transitions occur first for internal migration, then for international skilled migration, and finally for migration of the unskilled. Initially, relatively small increases in human development in poor societies are likely to lead to a rapid increase of relatively short distance migration to internal destinations or neighbouring countries with similar levels of development.

Because of the generally higher costs and risks this involved, long-distance migration towards much wealthier and/or more distant regions or countries will generally only gain full force in countries experiencing medium levels of development, when people

have better access to resources and global connectivity improves through development of infrastructure and economic ties. In such societies, an increasing population of young, educated adults will have the aspirations and capabilities to afford the risks and costs of migrating internationally while improved transport and communication infrastructure and generally improved 'global connectivity' characterising such societies tends to further facilitate migration.[12]

The functional interrelations between short- and long-distance migration can be an additional explanation for the occurrence of patterned sequencing of migration transitions. There is evidence that internal migration often functions as a precursor to international migration by allowing migrants to accumulate experience as well as social, human and financial resources to move abroad (King and Skeldon 2010). Migration to particular internal and international destinations also tends to become less selective for education and wealth over time due to threshold lowering network effects. These effects can be further reinforced by the presence of and the role models offered by successful migrants in migrant sending-communities as well as by largely remittance-driven increases in inequality and relative deprivation which can reinforce migration-prone attitudes and preferences. Such internal (feedback) mechanisms tend to give migration processes their own momentum and make migration more accessible for the relatively poor and low skilled (Castles and Miller 2009, de Haas 2010a, Massey 1990).

Emigration will decrease only if opportunity gaps with destination countries decline significantly and if societies achieve relatively high levels of human development. Beyond the immigration-emigration break-even point emigration societies transform into net immigration societies. However, as argued above, this does not imply that emigration goes back to pre-transition levels; although highly developed countries tend to be net immigration countries, this net figure easily conceals rather high underlying levels of emigration. Highly developed societies with high levels of global connectivity are predicted to be more mobile *generally* and have simultaneously high volumes of immigration and emigration.

5.3. Beyond evolutionary approaches: generic mobility increases, stagnation and reversibility

The predicted correlation between development processes and migration patterns depicted above is largely similar to the predictions of conventional transition theories. However, there are differences in the assumed underlying causal mechanisms, which compel us to reconsider which variables to consider for empirical analyses. While demographic factors are unlikely to be a *direct* cause of migration transitions,

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[12] Fischer and Straubhaar (1996) argued that unskilled international migration would peak first, but that does not seem to make much sense on theoretical grounds. Because of the higher costs and risks involved, long-distance international migration will be generally easier accessible for the high skilled, and the relatively low skilled will only be able to migrate in relatively large numbers at higher overall levels of human development. However, their prediction could hold in the case of relatively poor countries which are located in the geographical proximity of wealthy countries, where migration costs are relatively low. Mexico and Morocco seem quintessential examples of such 'labour frontier' (cf. Skeldon 1997) countries.

variables which proxy levels of education are likely to be of more direct relevance because of their presumed effect on aspirations and capabilities.

Further, building upon Skeldon's (1997:52) argument, we hypothesise that overall levels of mobility and immigration and emigration are higher in societies with high levels of human development. Despite generally being net immigration countries, emigration from *and* internal migration within developed societies are likely to remain structurally high compared to poor societies because (1) continuous increases in capabilities and overall aspirations mainly due to increased education levels and access to information, (2) the increasingly higher levels of occupational specialisation requiring more mobility and migration to enable a better fit between labour demand and supply; and (3) the migration-facilitating role of transport and communication infrastructure[13].

At this point, it is essential to distinguish between the migration effects of development on a macro-structural level (e.g. infrastructure, labour market specialization), which shape spatially differentiated opportunity structures, and the effect of development on individual capabilities and aspirations, which pertain to the levels of agency people can exert. The highest levels of migration are then likely to occur when the existence of significant spatial opportunity differentials coincide with above-migration-threshold levels of individual development, which is typically the case in societies characterised by medium levels of development.

The critique on the teleological character of transition models can be incorporated by discarding the notion of an inevitable sequence of stages through which societies 'must' pass and by incorporating the notions of stagnation and, to a certain but limited extent, reversibility in theorising migration transitions. This is achieved if we conceive migration as a response to relative rather than absolute development or opportunity levels. While internal migration transitions linked to urbanisation processes seem not structurally reversible, such reversion may occur for international migration. In the case of international migration, it is the relative position of a country in the global opportunity distribution rather than absolute development levels that matters. On the other hand, because absolute development levels affect capabilities to move, we can hypothesise that higher overall development levels are likely to coincide with higher overall levels of migratory and non-migratory mobility irrespective of relative opportunity differentials.

This creates analytical room for theorizing the occurrence of *reverse migration transitions*: A decreasing development level relative to other countries may cause a country to transform an immigration country into an emigration country, as exemplified by the case of Argentina and several other Latin American countries over

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[13] Although transport and communication technology has also enabled commuting, teleworking and outsourcing of work, which is likely to have decreased certain forms of migration, and which may have at partly or entirely counterbalanced the migration-facilitating role of technology. This may partly explain the empirical puzzle why the number of international migrants as a percentage of the world population has remained fairly stable over the 20th century. This questions the entire assumption that globalisation (fuelled by technological progress and liberal economic policies) has necessarily lead to a generic mobility increase. While human development is associated to higher migration levels at the cross section (as the analysis in this paper), this might not hold within a long-term, longitudinal perspective, in which globalization might have led to a generic decrease in migration and an increase of other forms of mobility. I will develop this point in another paper.

the second half of the twentieth century. Furthermore, completion of mobility transitions is by no means inevitable. Stagnant levels of relative development can therefore prolong certain mobility 'stages' for an indeterminate period of several decades or even centuries. Martin and Taylor (1996:57) were right in stressing that the right tail of their migration hump is by no means inevitable. They argued that, under unfavourable conditions, a trade-induced migration hump may be extended or transformed into a semi-permanent "migration plateau" of sustained emigration. The same is likely to apply to long-term migration transitions. The Philippines, southern Italy, and, until recently, Ireland are just a few examples of regions and countries which have combined structurally disadvantaged, marginal position in the global political economy with sustained large-scale out-migration.

5.4. Hypotheses

From the amended transitional framework elaborated above, we can derive the following, general hypothesis on the relation between modern-era development and migration processes. As has been argued above, these hypotheses do not form a universal theory of all migration at all times, but principally apply to modern-era migration processes associated to capitalist accumulation, (nation) state formation industrialisation and urbanisation.

(1)   Human development leads to *generally* higher levels of migration and mobility mainly through loosening constraints on movement, increasing aspirations and increasing occupational specialisation.

In addition, we hypothesize that there are patterned, non-linear regularities between the absolute and relative (vis-à-vis other regions and countries) levels of human development and the occurrence and relative importance of particular forms of (generally short-distance) internal and (generally long-distance) international immigration and emigration. *This is the quintessence of migration transition theory.* The following general hypotheses on timing and causality of migration transitions and how they are causally linked to broader development processes can be formulated:

(2)   In the most deprived and countries (societies) and regions, most but not all migration is short distance and circular.
(3)   Processes of modern human development associated to technical progress, industrialisation, infrastructure development, increasing education and urban-based economic growth, lead to migration transitions, characterised by initially rapidly increasing, then stagnating and finally decreasing out-migration.
(4)   These transitions occur first for internal migration, then for international skilled migration, and finally for international low skilled migration.
(5)   These transitions tend to concur with demographic transitions, but this is not necessarily the case as there is no *direct* link between demographic factors and migration.

The following more specific hypotheses on the evolution and reversibility of internal and international migration transitions can be specified:

(6) Constraints-loosening and aspirations-increasing human development in combination with migration-facilitating network effects and endogenous and contextual feedback effects (de Haas 2010b, Massey 1990) lead to rapidly accelerating emigration in early initial phases of human development after which they decrease due to diffusion and decreasing opportunity differentials with destination countries.

(7) The relation between human development and immigration levels is largely linear and positive.

(8) Combining (6) and (7): human development has an inverted J- or U-curve effect on net emigration levels.

(9) After international migration transitions have reached their peak and net emigration countries have transformed into net immigration countries, both emigration and immigration remain on a structurally higher level than in pre-modern, pre-transitions phase because of (1).

(10) After internal (rural-to-urban) migration transitions have reached their peak, rural-urban migration within (and sometimes across[14]) borders grows in structural complexity, with increasing urban-to-urban, suburbanisation, urban-to-rural and circular (residential) mobility (derived from Zelinsky's 1971).

(11) International migration transitions are not inevitable and may stagnate or reverse if *relative* levels (as compared to other place, regions or countries) of human development decrease.

(12) However, rural-urban (generally, but not exclusively, internal) migration transitions are largely irreversible as rural-urban migration within and across borders is inextricably linked to processes of capitalist economic development which is universally leading to a labour force shift from agriculture and fisheries to industry and services and an increasing concentration of economic activities in urban areas.

It is crucial to emphasise that these hypotheses pertain to *general* and *long-term*, aggregate levels and trends of migration. This is a fundamentally different theoretical exercise than hypothesising the determinants of inter-annual fluctuation in migration flows. Explaining such annual fluctuations has been the focus of the bulk of work on migration determinants. Several empirical studies have indicated that there is a correlation between annual and cyclical fluctuation in economic growth and net migration flows to destination countries (cf. Jennissen 2003, Ortega and Peri 2009). Also migration hump theory (Martin 1993, Martin and Taylor 1996) focuses on short- to medium-term responses of migration to events such as trade liberalisation.

However, transition theory does look at the relation between *long-term* trends of human development and *long-term* trends in migration. This has fundamental methodological implications. In order to capture such long-term relations, it seems preferable to use migrant stock rather than flow data. Stock data are more likely to reflect long-term trends, while flow data are likely to be much more volatile and can disguise underlying, long-term trends. During severe economic downturns, even wealthy countries may experience a few years of net emigration, despite their general position as immigration countries.

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[14] The distinction between internal and international border is sometimes blurred. For instance, rural-urban migration from Mali to Côte d'Ivoire is not essentially different from 'internal' migration.

States, politics and policies seem to be strikingly and disturbingly absent from this theoretical framework. This is not to suggest that states do not affect migration, quite on the contrary. However, the major role states play in shaping migration processes is primarily *indirect*, such as through states' influence on infrastructure, taxation, social services, labour markets, individual freedoms and rights and identity formation. In fact, the whole phenomenon of modernisation and the associated migration transitions is impossible to understand without taking into account concomitant processes of state formation (cf. Skeldon 1997).

So, the role of states in shaping migration is predominantly materialised through its impact on general development processes, which affect aggregate levels of immigration and emigration. Second, states profoundly affect initial location choice of migrants and, hence, the initial spatial structure of migration flows. For instance, this is evident in the influence of (past) colonial ties, military occupation and labour recruitment in creating new migration systems. These initial patterns tend to leave their lasting imprint in later stages of migration system formation, leading to spatially clustered migration flows between specific places and countries. Such patterns tend to become partly self-perpetuating through networks and other feedback mechanisms, explaining the limited capacity of policies to influence these flows.

In comparison to such general political-economic factors, specific *migration policies* are hypothesised to be of relatively limited influence. Although migration policies can affect the specific origins, destinations, itineraries and methods (e.g., through recruitment, work visas or smuggling) migrants use, and although changes in migration policies (e.g., introduction of visas) can partly explain inter-annual fluctuations in migration, they are hypothesised to have a rather limited influence on the aggregate levels and long-term trends of immigration and emigration. For instance, most highly developed countries are net immigration countries, irrespective of their specific migration policies, notwithstanding the relative levels of migration and migrants' origins and profiles vary hugely.

6. Empirical state-of-the-art and aims

To our best knowledge, only a few, adequate empirical tests have been put forward to test migration transition theory for current world migration. This is linked to theoretical limitation, the concomitant inadequate design of empirical tests and/or a lack of pertinent data. Although there is a substantial body of research on migration determinants (cf. Hilderink et al. 2001, Jennissen 2003, Zoubanov 2003, Zoubanov 2004), most of these studies aim at explaining inter-annual variability of migration flows between particular places, regions or countries over relatively limited time spans, rather than studying the general, long term relationship between human development and overall levels of immigration and emigration. In addition, the gravity models which are commonly employed to assess migration determinants tend to focus on a limited number of variables (particularly distance, population and income) and exclude other, theoretically relevant variables such as education and political freedoms.

A few studies have formally tested elements of transition theory for migration to and from European countries. Faini and Venturini (1994) found that between 1962 and 1988 migration from Greece, Portugal, Spain and Turkey showed a positive correlation with GDP per capita in origin countries at low income levels, but showed a negative correlation at higher income levels. Vogler and Rotte (2000) analysis of migration to Germany from 86 Asian and African countries from 1981 to 1995 also pointed at the relevance of development in loosening the financial restrictions on migration. Also the historical experiences of many countries seem to support the contention that beyond a certain level of economic development, countries tend to transform from net emigration into net immigration countries (Massey 2000b). The more recent experiences of southern European countries such as Spain and Italy and several southeast Asian countries such as Malaysia, Taiwan, and South Korea seem to illustrate this point.

Perhaps the most comprehensive quantitative, longitudinal analysis of migration transitions so far is the seminal work by Hatton and Williamson (1998) on European migration to North America between 1850 and 1913. Their analysis indicated that emigration usually *increased* as wage rates in source and destination countries *converged*., because declining wage differentials were outweighed by the mass arrival of cohorts of young workers on the labour market, increasing income and, to a lesser extent, a structural shift of the labour out of agriculture. Furthermore, expanding networks partially gave migration its own momentum by reducing risks and costs of migration (Hatton and Williamson 1998, see also Massey 2000a).

However, there is still a lack of empirical studies which test this theory with data for a wider range of countries. There seems general agreement on the right hand side of migration transitions – the hypothesis that beyond some level of development societies tend to transform from net emigration to immigration societies. However, there is still disagreement on the other hypothesised relationships, and in particular on the following two:

- development in the least developed countries leads to take-off emigration.
- at higher levels of development, beyond a certain turning point emigration start to drop but does not decrease to initial levels and remains at a structurally higher level because human development leads to an increase in *overall* mobility (immigration + emigration).

For instance, Lucas (2004) has recently contested the hypothesis that development in the least developed countries leads to take-off emigration. Analysing bivariate correlations between UN migration data and levels of economic development, Lucas found that net out migration declines significantly as levels of income per capita rise across countries. Lucas (2004: 32) argued that, "Although the notion of a migration hump[15] is now often depicted as conventional wisdom, empirical support for the existence of such a pattern may readily be questioned." He therefore concluded that

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[15] Lucas uses the term 'migration hump' where this paper uses the 'migration transition' terminology, because the 'migration hump' as originally proposed by Martin and Taylor (1996) refers to short to medium-term migration responses to 'external' shocks such as trade reforms rather than the long-term relationships between human development and migration patterns. As argued above, migration humps and transitions are commonly confused in the literature.

most evidence indicates that economic development in origin countries *diminishes* emigration and, that "if there is any indication of a lower arm to a migration hump, whereby development accelerates departures, it is apparently confined to very low-income countries" (Lucas 2005).

Taking into consideration the largely unresolved nature of this debate, there is a clear need for empirical tests to test the central hypotheses of migration transition theory in a multivariate rather than bivariate analytical setting. Fortunately, our ability to do so has increased through the recent release of improved data on global migrant stocks at the individual country level. The remainder of this paper aims to perform such a test based on a new global database of bilateral migrant stock data.

7. Data and research design

There are basically three empirical strategies for testing migration transition theory. The first option is the longitudinal approach elaborated by Hatton and Williamson (1998). This analyses the factors determining the evolution of migration flows over several decades between the relatively limited number of countries for which such data are available. Such an approach has the advantage of including both sending *and* receiving country data. A second option is to perform a cross-sectional analysis of the links between levels of human development and migration levels as performed by Lucas (2004), albeit on a bivariate level. The third option is a combination of both, but this would require global panel data on bilateral (country-to-country) flow data extending over several decades, which is currently not available.

Recent improvements in data availability have drastically increased the scope for the second type of cross-sectional analyses. This empirical test draws on the Global Migrant Origin Database released by the World Bank and the University of Sussex. This database is unique because it contains bilateral country-to-country estimates of migrant stocks for *all* countries and several overseas territories in the world (cf. Parsons et al. 2005, Ratha and Shaw 2007). These bilateral migration data are derived from an augmented and updated bilateral migration matrix originally created by the University of Sussex (see Parsons et al. 2005)). This database uses national censuses, population registers, national statistical bureaus and a number of secondary sources (OECD, ILO, MPI, DFID, United Nations Population Division) to compile bilateral migrant stocks for 162 countries. In an expanded version used for statistical modelling, this database also estimated bilateral information for 64 additional countries for which the censuses had no information, and was updated with information on bilateral migrant stocks for 56 countries using the most recent census data (Ratha and Shaw 2007).

The last (fourth) version of the database has been used for this analysis[16]. Although data is of varying quality and that some figures have been obtained through estimation, the database should provide a generally realistic approximation of the

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[16] The database was downloaded
from http://www.migrationdrc.org/research/typesofmigration/global_migrant_origin_database.html on 3 October 2008.

overall magnitude of migrant stocks and global migration patterns (Parsons et al. 2005). In addition, the fact that this database is compiled using migrant stock instead of flow data makes it particularly useful for a cross-sectional analysis of the relation between levels of human development and long term migration trends, since migrant stocks can be used as a proxy for migration levels over the past few decades.

For each country, the total emigrant and immigrant stock was calculated. Data on absolute population size in 2000 drawn from the World Development Indicators was used to calculate emigrant and immigrant stocks as a proportion of the total population, as well as net migrant stocks. A 'total mobility' variable was constructed by calculating the sum of the positive values of immigration and emigration stocks data as a percentage of the total population.

In order to test the hypothesised added value of using a broad, capabilities-based definition of development instead of one focused on income alone, two alternative empirical models have been tested. The first uses the natural logarithm of the 2005 value of *per capita Gross Domestic Product (GDP)* in United States Dollars in Purchasing Power Parity (PPP) as main predictor variable. Other theoretically relevant variables include *average GDP per capita growth* over the 1987-2006 period to proxy the extent to which countries are "growing fast and offering hope and opportunity", which was hypothesised by Martin and Taylor (1996: 58) as an important factor in decreasing emigration. *Literacy* is included as a proxy for overall educational levels, and was calculated as the average value over the 1987-2006 period for all the years for which data was available.

The second model replaced the GDP per capita and literacy variables with the Human Development Index (HDI) value for 2005 as calculated by the United Nations Development Programme (UNDP). Data was drawn from the World Development Indicators and United Nations Development Programme datasets, but supplemented with data from other sources (UNDP, UNESCO, CIA World Factbook) in cases of missing data.

To test the hypothesis that demographic factors have *no* direct effect on migration, *past fertility levels* (the average total fertility rate over the 1970-1990 period) have been included in the model. We took a lagged value, as the effect of fertility on new entries in the labour market of young adults is delayed, and the mass arrival of new cohorts on the labour market has often been mentioned in the literature as a factor spurring emigration. Variables measuring school enrolment and life expectancy were used in the initial descriptive analysis, but were excluded from the final regression models due to multicollinearity with literacy and fertility, respectively.

Both empirical models contain some additional variables, which are captured neither by GDP or HDI. First, we included a variable measuring a lack of political rights based on the ranking system developed by Freedom House. Most tests of migration determinants conventionally include the absolute population size and occasionally the surface area of countries as independent variables. Such tests invariably conclude that the absolute size of population does have a strong significant effect the size of migration population or migration flows. However, one may wonder whether this is not stating the obvious – after all, it can hardly be surprising that the *absolute* emigrant and immigrant populations of the United States are larger than of, say, the

United Kingdom. As we are interested in the *relative* magnitude of emigration and immigration, it seems more appropriate to use migrant stocks *as a percentage of the total population* as dependent variables.

However, also in this type of analysis, there is a theoretical argument to include absolute values of population and land surface as independent variables. For instance, immigration and, particularly, emigration often reaches exceptionally high values on small islands and in micro-states. Initially, we included an small island/micro state dummy with the cut-off point put at 1.5 million inhabitants, and earlier empirical tests showed the predicted, strong effect on migration stocks. However, we found that there are no solid theoretical grounds to create a rather essentializing "exceptionalism" for island states in addition to the ambiguity involved in determining a cut-off point. It was judged more appropriate to include the (natural logarithm of) population and land surface as variables to capture the hypothesized effects of population and land size on migration.

This builds into the empirical model some sort of control for the rather artificial distinction between internal and international migration. While this test specifically focuses on international migration, the distinction is somehow artificial. For instance, an international move from the Netherlands to Flanders (Belgium) involves crossing smaller distances, lower costs, and smaller cultural and economic differences than, say, internal migration from Xinjiang Uyghur Autonomous Region to Shanghai on the Chinese east coast. In addition, countries with small population sizes are less likely to have urban agglomerations where particularly skilled workers tend to find employment, increasing the likelihood that what is essentially rural-urban migration involves border crossing. The rationale for including land surface is different: controlling for all other factors, we can hypothesize that there are less costs involved in leaving a small, rather than large, country. Because the effects of population size and land surface on the percentage of *international* migrants are likely to be gradual, it seems preferable to use the actual values of the population (in 2000) and land variables rather than to construct a dummy variable.[17] Finally, a dummy variable indicating oil rich, labour importing states in Middle East (see below) was include to capture the effect of their particular, highly segmented and structurally immigration-dependent labour markets.

8. Results

8.1. Bivariate analysis

In order to perform a basic bivariate exploration of the association between levels of human and economic development, countries were classified in equally sized quintiles based on HDI and GDP values. Subsequently, for each quintile, average migration values were calculated (table 2). The results seem to confirm the hypothesized, curvilinear association between HDI and GDP levels and emigrant stocks. While underdeveloped countries have the lowest emigrant stocks as a percentage of their

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[17] Distance variables, not because we assume that distance is irrelevant, but because we test the relation between human development and overall levels of emigration and immigration (irrespective of destination or origin of migrants) rather than variations in bilateral migration flows.

total populations, countries with medium development levels have the highest levels. While highly developed countries have lower emigration stocks, they tend to be still larger than those of underdeveloped countries.

Figure 3. Association between GDP per capita and immigrant and emigrant stocks
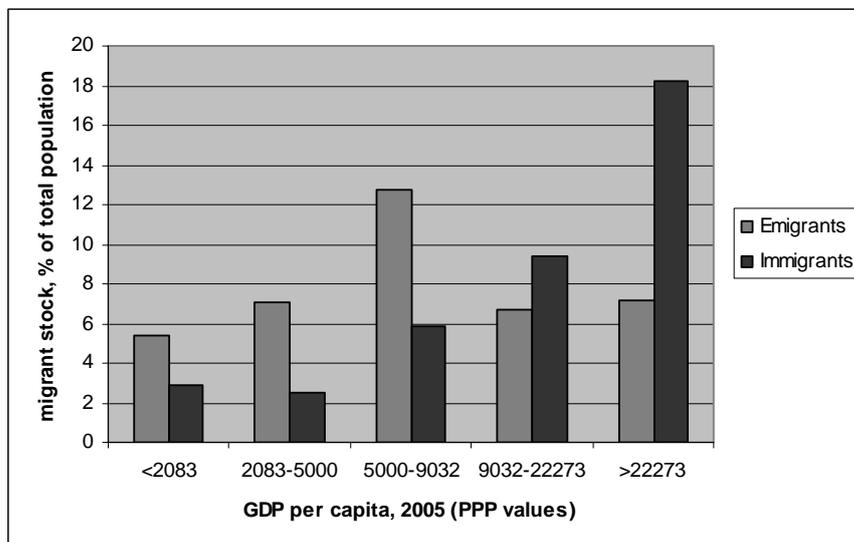
Source: analysis table 2 (appendix)

Figure 4. Association between HDI scores and immigrant/emigrant stocks
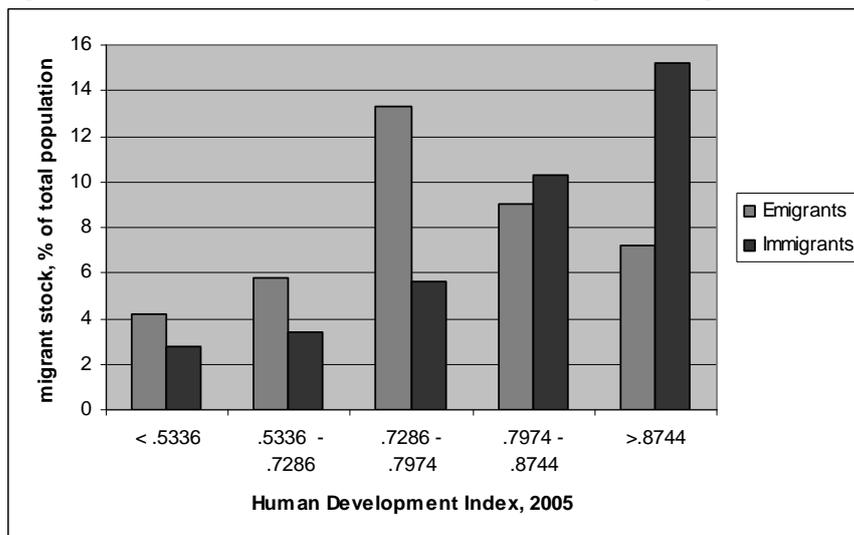
Source: analysis table 2 (appendix)

In line with theory, the association between HDI and GDP levels and relative immigrant stocks is positive and largely linear. However, an intriguing finding is that the second poorest group of countries has slightly lower emigrant stocks than the poorest group of countries, indicating that the relation might not be entirely linear. As predicted, the average net migration stock ((immigrant stock – emigrant stock) / total population) is lowest for the countries with middle level incomes and is positive only

in the one or two highest categories. These patterns are depicted in figures 3 and 4[18], which seem to replicate the overall patterns predicted by migration transition theory.

Average total mobility (immigrants + emigrant stock) increases particularly fast between the second and third categories, after which stagnation occurs. This seems to corroborate that countries with high levels of economic development are characterised by generally higher levels of mobility. Specific analyses including and excluding island and microstates and using GDP or the HDI index as independent variables yield the same overall results, although analysis of variance (ANOVA) indicate that measures of association are generally stronger and more significant when using HDI and for the analyses which exclude small island and microstates.

Table 3 shows bivariate (linear) correlations between all variables which will be included in the multivariate analysis. The most remarkable result is that there is no correlation between GDP per capita and emigrant stocks, while the association between GDP per capita and immigration is strongly positive. This result might conceal a curvilinear relationship because the correlation coefficients only measure linear relationship (as opposed to analysis of variance). In contrast, the correlation between GDP per capita and immigrant stocks is strong and significant. Interestingly the association between HDI and emigrant stocks is positive and statistically significant, albeit to a lesser extent than immigrant stocks. Neither GDP nor HDI are significantly correlated to net immigrant stock, while the relation between GDP and, particularly, HDI and total mobility is significant and positive. With regards to demographic factors, the correlation matrix also reveals a very strong negative correlation between fertility and GDP and, particularly, HDI. This corroborates that fertility is a somehow proxy of development levels, but may also question whether demographic factors can have a *direct* effect on migration.

Interestingly, (lagged) fertility has a significant *negative* effect on immigrant and emigrant stocks. This finding seems to go against the idea that (mass) emigration is a direct response to 'demographic pressure'. Reverse causality (migration affecting fertility) might partly explain the negative association with emigration but is less likely to explain the negative association with immigration. Increased political rights are *positively* correlated to emigrant stocks, vice versa. This might seem counterintuitive as one would expect more people to leave autocratically ruled countries, but it could be explained by the fact that such regimes tend to put higher constraints on people's mobility, for instance by high passport cost or exit visa requirements (cf. McKenzie 2005). However, these bivariate correlations do not say much about possible causal links, and we will have to turn toward multivariate analysis to disentangle the effects of the various variables.

To further explore the hypothesized, non-linear character of development-migration relations, tables 4 and 5 show correlations between key independent variables and migration variables specified for two countries with low and high levels development based on GDP and HDI scores, respectively. In line with expectations, this analysis reveals a positive and significant correlation between HDI and emigrant stocks for low developed countries, and a negative correlation for high developed countries.

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[18] Small island and micro-states (< 1.5 million inhabitants) were excluded from these figures because of their extremely high migration figures. However, this does not affect the overall patterns reflecting migration transition theory (see also table 2).

While similar correlations apply for GDP, they are weaker than for HDI variables and only significant in table 4. This might reflect the added value of including education variables in the HDI measure.

In contrast, correlations between GDP and immigrant stocks tend to be stronger than for HDI. The correlations are strongest and most significant for higher developed countries. Again, this suggests that the effect of GDP on immigration is zero or small at low levels of development while it is positive at higher GDP levels. Again, correlations between fertility and emigration stocks are the opposite from what conventional theories would predict, and increased political rights have a positive effect on emigration in less developed countries. Interestingly, in both analyses education has a significant positive effect on emigrant stocks in the lesser developed group of countries. This seems to corroborate the idea that education plays an emigration-accelerating role in early phases of development through its positive effect on capabilities and aspirations.

Nonparametric (Nadaraya-Watson) regression analyses[19] were performed to further explore non-linearities in the association between GDP, HDI and migration. The results of these analyses are depicted in figures 5, 6 and 7. These largely replicate the results of the other bivariate analyses highlighting the nonlinear nature of these associations. However, they also suggest that the non-linearities are much more prominent when using HDI values. The estimates show that the association between GDP and emigration better fits an inverted U-shape than the association between HDI and emigration, which is at first absent or even slightly negative after which it follows a much steeper inverted U-shaped pattern.

Interestingly, while no clear relation exists between emigration and HDI for low levels of HDI, the analysis reveals a marked 'hump-shaped' association above HDI values of 0.6. While the left-hand (low-income group) associations between GDP and emigrant stocks is more linear, it seems weaker at very low GDP values, it becomes stronger at slightly higher income levels. Emigrant stocks seem to reach a peak at GDP/capita levels of approximately 12,000 US$ and HDI levels of approximately 0.8, after which they start to decline. Associations between GDP and HDI and immigrant stocks do not show an inverted U-shape at any point, although they are not entirely linear either. Again, this is particularly the case for HDI values lower than 0.6, beyond which both emigrant *and* immigrant stocks increase rapidly, albeit the former much more rapidly than the latter.

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[19] These (kernel) regressions are non-parametric techniques to estimate the conditional expectation of a random variable in order to detect non-linear relations between a pair of variables. The lines represent the estimated mean over the grid points used for calculation. In order to enable direct comparison between HDI and GDP estimates, only observations were used for which GDP estimates were available.

Figure 5. Nonparametric estimates of the association between GDP and migration
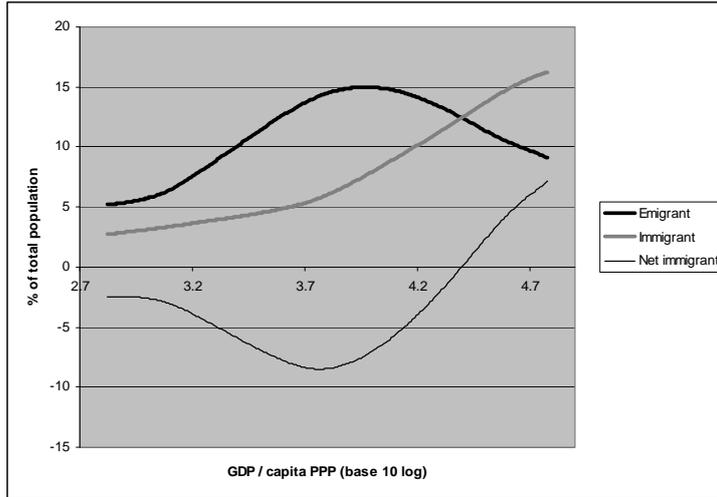
Figure 6. Nonparametric estimates of the association between HDI and migration
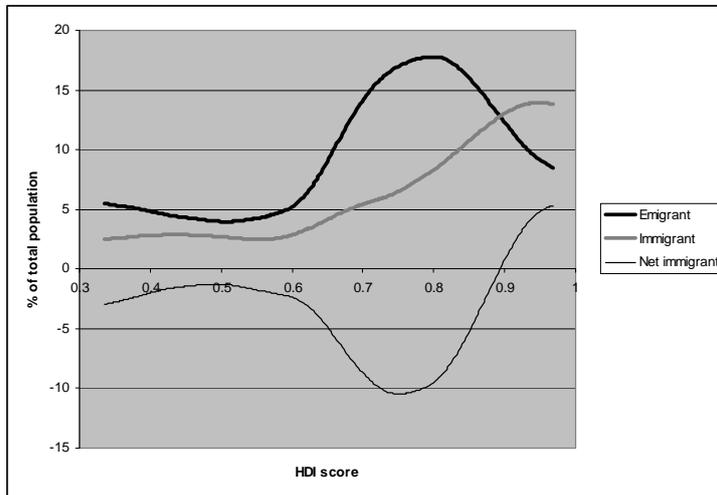
Figure 7. Nonparametric estimates of the association between HDI and GDP on 'total mobility'
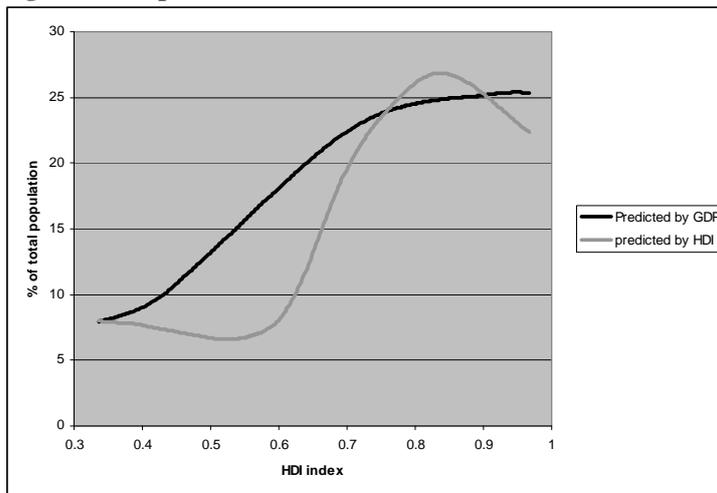
For GDP, the positive effect on emigrant stocks seems to increase beyond 5,000 US$. The analysis suggests that immigrant-emigrant stock break even points are located at HDI values of about 0.89 and at GDP levels of about 20,000 US$ (or 67 percent above average world GDP) per capita.[20] It is important to emphasise that migrant stock data reflect past rather than current migration, and that the actual tipping and break-even points for migration *rates* are likely to lie at significantly lower levels. The test for the association between HDI and GDP on 'total mobility' yield an S-curve shaped pattern for HDI and a much more linear pattern for GDP.

8.2. Multivariate analysis

Table 6 shows the results of the regression analyses with *emigrant stocks* as the dependent variable. The first model only contains GDP per capita and the main control variables of surface, population and political rights. In line with correlation analysis, it shows no significant relationship between GDP and capita. When the squared value of GDP is introduced in the second models, the regression coefficients become significant, corroborating the idea that the relation between income and emigration levels is inversed U shape rather than linear. Model 3 includes literacy and fertility. The significant negative effect of past fertility seems counterintuitive. This might be result of reverse causality, as most migrants are young and this is likely to adversely affect fertility. In any case, it challenges the idea that there is a direct link between demographic factors and migration.

Literacy has no significant effect. Additional regression analysis (not shown) suggested that the relation between literacy and emigration levels is non-linear. Model 4 therefore includes the squared value of literacy, which slightly improves significance. The initially negative effect of literacy is difficult to interpret, although it corroborates the potential value of disaggregating various development indicators. The effects of GDP and its quadratic term remain robust in all models. Model 5 replaces GDP and literacy by HDI, which yields highly significant coefficients for HDI and its quadratic values. This provides further evidence that the relation between 'development' and emigration is curvilinear.

As expected, population size has the predicted negative and highly significant effect in all models, corroborating the idea that in populous countries relatively more migration to population centres is 'absorbed' internally. Land surface, which can be taken as a rough, albeit highly imperfect, proxy of travel costs, also has the predicted negative effect, although it is smaller and less significant. Surprisingly, past GDP growth has no significant effect, suggesting that current GDP levels are more important than growth achieved in the past. A lack of political rights has a negative, though insignificant effect on emigration rates, which replicates the above results of the bivariate correlation analysis.

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[20] To makes this more concrete, it is useful to look at the actual GDP and HDI levels of some high-emigration countries. In 2005, GDP and HDI in Mexico were 10,751 and 0.829, in Morocco 4,555 US$ and 0.646 and in Turkey 8,407 US$ and 0.775, respectively. By comparison, for Nigeria these values were 1,128 US$ and 0.470 (HDI).

Table 6. Regression analysis: emigrant stocks

Independent variables	Dependent variable: Emigrant stock in % of origin country population				
	1	2	3	4	5
	Beta	Beta	Beta	Beta	Beta
(Constant)	62.41***	-85.02	-17.39	-20.05	53.75***
Ln GDP/cap(PPP)	0.61	35.20***	27.24**	30.15***	
Ln GDP/cap(PPP)SQ		-2.02***	-1.77***	-1.93***	
GDP growth (20 years)			0.48	0.49	0.34
HDI					115.50***
HDI Squared					-94.20***
Fertility			-2.15**	-1.40	-2.11**
Literacy			0.03	-0.52*	
Literacy SQ				0.00*	
Ln Population	-2.48***	-2.22***	-3.18***	-2.94***	-3.25***
Ln Land surface	-1.42**	-1.51**	-1.23*	-1.42**	-1.09*
Lack of political rights	-0.52	-0.78	-0.67	-0.70	-0.56
N	195	195	179	179	176
R^2 adjusted	0.375	0.407	0.433	0.441	0.417

*** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

The regression results for *immigrant stocks* shown in table 7 suggest that the relation between GDP and immigration is more linear than for emigrant stocks, as indicated by the significant positive value of GDP in model 1. However, the introduction of its quadratic value significantly improves model fit and suggests that the relationship is curvilinear, first decreasing and subsequently increasing. Interestingly, model 5 suggests an equally curvilinear relationship between HDI and immigration levels. The bivariate analysis suggested that this is a convex rather than linear association.

Models 3 and 4 include fertility and literacy. Unsurprisingly, literacy levels have little impact upon immigrant stocks[21]. The significant *positive* effect of fertility is more difficult to explain. Reverse causation might play a role if immigrants have a higher-than-average fertility. However, because we suspected that this might also reflect the particular situation of oil exporting states in the Middle East, which combine high fertility and high immigration (which are not causally related), we introduced a dummy for the member countries of the Gulf Cooperation Council as well as Libya. After introduction of that variable, the effect of fertility entirely disappears, further corroborating the hypothesis that there is no *direct* relation between demographic factors and migration. The positive and significant effect of a lack of political rights is more difficult to explain, particularly because it remains significant after introduction of the petrol state dummy, which also partly captures the authoritarian nature of these states.

Table 8 shows the regression results with net immigrant stocks as dependent variable, which confirms the above analyses. Higher GDP and HDI have an initially negative, subsequently positive effect on net migrant stocks. These results are robust across the various models. Arab oil countries have significantly higher net migrant stocks. The positive effect of a lack of political rights is in line with the analysis on emigrant

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[21] Additional bivariate and multivariate analyses confirmed that literacy has no significant effect on immigration in contrast with the positive and significant effect on emigration. This seems to corroborate the hypothesis that education increases emigration inclinations through its capabilities and aspirations-enhancing effect, while the attractiveness of countries for immigrants are *primarily* affected by (economic) opportunities.

stocks and would require further analysis to fully understand. In contrast to the analysis on emigrant stocks, fertility has a significantly positive effect on net immigration stocks even with the inclusion of the oil country dummy. This is difficult to explain theoretically and might be a spurious correlation through reverse causality and/or the effect of unmeasured variables.

Table 7. Regression analysis: immigrant stocks

Independent variables	Dependent variable: Immigrant stock in % of receiving country population				
	1	2	3	4	5
	Beta	Beta	Beta	Beta	Beta
(Constant)	-20.60**	173.11***	66.45*	76.82**	29.71**
Ln GDP/cap(PPP)	5.90***	-39.54***	-24.14***	-19.36**	
Ln GDP/cap(PPP)SQ		2.65***	1.89***	1.42***	
GDP growth (20 years)			-1.13***	-0.88***	-0.75**
HDI					-93.21***
HDI Squared					92.80***
Fertility			2.32***	1.20	0.71
Literacy			0.04	-0.38*	
Literacy SQ				0.00*	
Ln Population	-1.12	-1.45**	-0.17	0.12	-0.20
Ln Land surface	-1.03*	-0.91*	-0.91*	-1.06**	-0.87**
Lack of political rights	1.90***	2.25***	1.85***	1.20***	1.20***
Petrol state				22.50***	25.04***
N	195	195	179	179	176
Adjusted R^2	0.336	0.407	0.427	0.530	0.498

*** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

Table 8. Regression analysis: net immigrant stocks

Independent variables	Dependent variable: Net migrant stock in % of country population (emigrant-immigrant stock)				
	1	2	3	4	5
	Beta	Beta	Beta	Beta	Beta
(Constant)	-83.01***	258.13***	83.84	94.83	-23.41
Ln GDP/cap(PPP)	5.29***	-74.73***	-51.38***	-49.95***	
Ln GDP/cap(PPP)SQ		4.67***	3.66***	3.41***	
GDP growth (20 years)			-1.61***	-1.41***	-1.08**
HDI					-207.53***
HDI Squared					185.04***
Fertility			4.47***	2.87**	2.71**
Literacy			0.01	0.15	
Literacy SQ				0.00	
Ln Population	1.36	0.78	3.00***	3.04***	3.07***
Ln Land surface	0.39	0.60	0.32	0.36	0.21
Lack of political rights	2.42***	3.03***	2.51***	2.00***	1.73***
Petrol state				18.77***	26.32***
N	195	195	179	179	176
Adjusted R^2	0.138	0.258	0.450	0.473	0.421

*** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

Table 9 analyses 'total mobility', in which the sum of emigrant and immigrant stocks (analogous to how trade openness can be measured) is taken as a proxy for the general

level of people having crossed borders in either direction in the past few decades. This was the only regression for which the inclusion of the squared GDP and HDI values *decreases* (and actually removes) the significance of the central predictor variables, confirming the hypothesis that there is a positive relationship between development levels and overall levels of mobility. Reflecting the results for emigrant stocks, literacy has an initially decreasing, then increasing effect on the sum of immigrant and emigrant stocks. This U-shaped effect, which is opposite to the positive effect of HDI and GDP, is difficult to explain. Further analysis and theorisation is necessary to explore why increasing literacy is initially associated with a decrease in international out-migration. Population size and land surface have the hypothesized negative effect, which confirms that the inclusion of these variables in empirical models introduces some sort of control for the distinction between internal and international migration.

To assess the relative importance of the different explanatory variables, table 10 summarises the standard beta coefficients for models 4 and 5 for emigrant, immigrant and net immigrant stocks. They reveal the overwhelming importance of the development proxies HDI and GDP in explaining overall levels of migration. Literacy, which is a proxy for education levels, comes out as second most important, although the effects are only weak, difficult to explain and therefore warrant more detailed investigation. The results also suggest that political factors (rights, immigration policies) are important in explaining immigration, although these factors are largely outweighed by economic factors.

The regression analyses have consistently yielded a better fit for the empirical models using GDP instead of HDI. However, the preceding bivariate and nonparamatic tests strongly suggest that this is not so much because the associations between HDI and migration are weaker. In fact, ANOVA analysis suggested the contrary. It rather reflects that fact that the association between HDI and migration can be expressed less well as a linear or parabolic function than the GDP-migration association.

Table 9. Regression analysis: total mobility

Independent variables	Dependent variable: Total mobile population in % of country population (emigrant + immigrant stock)				
	1	2	3	4	5
	Beta	Beta	Beta	Beta	Beta
(Constant)	41.81***	88.09	40.19	56.22**	57.42***
Ln GDP/cap(PPP)	6.52***	-4.34	5.24***	5.26***	
Ln GDP/cap(PPP)SQ		0.63			
GDP growth (20 years)			-0.68	-0.61	-0.60
HDI					47.10***
Fertility			0.16	1.49	0.56
Literacy			0.07	-0.87**	
Literacy SQ				0.01**	
Ln Population	-3.59***	-3.67***	-3.34***	-2.97***	-3.68***
Ln Land surface	-2.45***	-2.42***	-2.14***	-2.45***	-1.85**
Lack of political rights	1.38**	1.46**	1.16*	1.14*	1.21*
N	195	195	179	179	176
Adjusted R^2	0.492	0.491	0.419	0.434	0.469

*** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

Table 10. Summary table standardized beta coefficients

Independent variables	Standardized Beta					
	Emigrant stock	Emigrant stock	Immigrant stock	Immigrant stock	Net im-migrant stock	Net im-migrant stock
Log GDP/cap(PPP)	2.42**		-2.02**		-3.36***	
Log GDP/cap(PPP)SQ	-2.68***		2.56***		3.96***	
GDP growth (20 years)	0.07	0.05	-0.17***	-0.15**	-0.18***	-0.14**
HDI		1.36***		-1.42***		-2.04***
HDI squared		-1.53***		1.93***		2.50***
Fertility	-0.19	-0.28**	0.21	0.12	0.32**	0.30**
Literacy	-0.73		-0.68*		0.17	
Literacy SQ	0.85*		0.80*		-0.19	
lnpop2000	-0.39***	-0.43***	0.02	-0.03	0.33***	0.34***
Inland	-0.23**	-0.18*	-0.22**	-0.18**	0.05	0.03**
Lack of political rights	-0.10	-0.08	0.23***	0.23***	0.25***	0.21***
Petrol state			0.39***	0.44***	0.21***	0.30***
Adjusted R^2	0.441	0.417	0.530	0.498	0.473	0.421

*** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

9. Conclusion

This paper has shown how the common assumption that development in origin countries will reduce international migration is based on conventional "push-pull", neo-classical and other functionalist equilibrium theories, which implicitly assume an inversely proportional, linear relationship between income differentials and migration. By contrast, another group of theories question the "no migration under equilibrium conditions" assumptions by conceptualising migration as an intrinsic part of broader development processes. They postulate that human development leads to generally *increased* levels of migration and that, as they develop, societies go through migration transitions characterised by an inverted U-shaped pattern of emigration. In particular Zelinsky (1971) and Skeldon (1997) explored the fundamentally non-linear associations between state formation, demographic transitions, economic growth and the occurrence of particular forms of internal and international migration.

The paper discussed striking but as yet unobserved conceptual parallels and differences between separately evolved 'transition' theories as well as their common intellectual roots in social theory and modernisation paradigms. However, prior theories can be criticized for their evolutionary character and sedentary bias, their inclination towards demographic determinism, their limited conceptualisation of structure and agency as well as the causal mechanisms underlying the correlations they describe. By synthesising and amending existing theories, this paper has advanced a conceptual framework on the developmental drivers of international migration processes.

First, transition theory is amended by introducing notions of stagnation and reversibility. Second, the paper argued that by applying Amartya Sen's capabilities approach to migration, we are able to broaden conventional, income-focused concepts of development in order to conceptualise migration as a response to generic *opportunity* rather than income differentials alone. Third, in an attempt to incorporate structure and agency into migration theory, the paper conceptualised migration as a function of people's capabilities and aspirations. This paper argued how this creates analytical room to analyse virtually all forms of migration within a single perspective and to move beyond artificial categorisations such as between 'voluntary' (economic) and 'forced' (political) migration, which have generally obstructed a more comprehensive theorisation of migration.

Sen's capabilities-based development concept is applied to migration to create analytical room to analyse most forms of migration within a single perspective. Structure and agency are incorporated by conceptualising migration as a function of capabilities, aspirations and, on a macro-level, opportunity rather than income differentials. Based on this analytical framework, we hypothesised that human development *generally* leads to higher levels of migration, mainly through (1) increasing capabilities by loosening constraints on movement, (2) increasing aspirations and (3) increasing occupational specialisation. This paper argued how such conceptualisation can help explain why the links between opportunity levels and differentials and migration are fundamentally non-linear, and why human development is typically associated to a sequence of internal and international migration transitions.

Because of the contested nature of migration transition theory, the second part of this paper provided an empirical test for its central hypotheses. Drawing on the World Bank / University of Sussex global migrant origin database, it estimated the effect of theoretically relevant development indicators on immigrant, emigrant, net immigrant and total migrant stocks. The results confirm the main hypotheses of transition theory. Higher levels of economic and human development as proxied by HDI and GDP indicators, respectively, are associated to higher overall levels of migration; have the predicted U-curve effect on emigration and net migration; and have an overall positive, although not entirely linear, effect on immigration. The results also suggest that past fertility does not have a direct effect on migration. Although future tests should control for reverse causality, this corroborates the hypothesis that demographic factors have no direct effect on migration.

While the analysis suggested that economic factors as proxied by GDP per capita have a higher explanatory power than other factors, the analysis also exemplified the value of disentangling different dimensions of development. This enabled us to deepen our insight into the complex, non-linear relationships between human development and migration. For instance, from current theory it is difficult to explain the initially absent or possibly even negative relation between HDI and emigrant stocks. It might be partly explained by the fact that HDI measures include education variables, which, as the analysis below suggest, seems to have an initially, slightly negative effect on emigration. However, the underlying causal mechanisms are as yet unclear and warrant more focused theorisation and empirical research. Also the non-linear effects of development indicators on immigrant stocks and the relatively weak, though unexpected U-shaped effects of literacy on emigrant stocks are difficult to explain and therefore also warrant more detailed investigation.

Last but not least, the surprising positive association between a low degree of political freedoms and immigrant stocks and the negative association with emigration stocks points to the importance of political factors but leaves us with intriguing empirical and theoretical puzzles to be explored. At first sight, the negative correlation between a lack of political rights and emigration seems surprising because more people (including refugees) might prefer to leave autocratic countries. However, this hypothetical positive effect might be counterbalanced by the fact that autocratic states often create administrative obstacles for emigration of their citizens such as exit controls or high passport costs (cf. McKenzie 2005).

While as counterintuitive as the negative correlation with emigration, the much stronger and robustly positive effect of a low level of political rights on *immigration* is even more intriguing. It is as yet unclear whether this provides evidence for any variant of "numbers vs. rights hypotheses"(Ruhs and Martin 2008), according to which there is a trade-off between the rights states attribute to migrants and the number of migrants that can be allowed in. It is possible that states which give fewer rights to their citizens and even less to migrants have a higher ability to impose segmented, inherently discriminatory labour markets, to organise and recruit labour and are less sensitive to domestic political pressure for immigration reduction. The stronger effect of a lack of political rights on immigration compared to emigration might also indicate that states find it generally easier to attract than to expel migrants. This shows the need to further analyse the largely unresolved role of migration policies and, more generally, political and state factors. Such sophisticated analysis

would require disaggregating the various dimensions of human rights, political freedoms, security and governance as their effects on (different forms of) migration is unlikely to be uniform.

While the use of migrant stock data enables us to assess general migration tends, this methodology also has fundamental limitations. As migrant stock data do primarily reflect migration in the recent pas, the actual development tipping and break-even points for migration *rates* are likely to lie at significantly lower levels than those estimated for migration stocks in this paper. Further research using panel (bilateral migration flow) data would be necessary to further explore and disentangle the effects of *absolute* and *relative* (compared to other countries) development levels on migration. Theoretically, the effects should be different, as the first factor is related to constraints and capabilities to migrate as well as life aspirations, whereas the second factor is likely to affect opportunity differentials and aspirations to migrate. Such detailed analysis of origin-destination (bilateral) panel data would also allow us to resolve some important empirical puzzles, in particular the unexpected U-shaped effects of education on emigration; the nonlinear effect of development proxy variables (GDP, HDI) on immigration and the important but complex and largely unresolved role of political factors and (migration) policies.

Although several theoretical and empirical puzzles remain, and although we should remain cautious in making claims of causality based on limited, cross-sectional data, the robust outcomes of the analyses strongly suggest that capability- and aspiration-increasing human development is initially associated with generally higher levels of emigration and immigration. There is obviously a range of other factors, particularly those rooted in the particular political economy of countries, their geographical location and historical contingencies, which explain why countries with roughly similar levels of development show highly divergent migration levels and patterns. However, this does not necessarily undermine the hypothesis that there is a *general* patterned relationship between human development and migration, and that development tends to coincide with a particular sequence of migration transitions. This also leads us to conclude that, contrary to common push-pull models, take-off development in the least developed countries is likely to lead to take-off emigration. More generally, this exemplifies the need to conceptualise migration as an integral part of broader processes of development and social and economic change rather than as problem to be "solved".

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Appendix

Table 2. Association between GDP and HDI levels and migration indicators

Key independent variables	Values	Migrant stock indicators (average, as percentage of total population)					
		Emigrant stock	Immigrant stock	Net migrant stock	Emigrants in OECD	Mobility index	N
GDP/capita PPP	<2083	8.2	3.0	-5.3	3.7	11.2	45
	2083-5000	20.1	5.1	-15.0	12.9	25.2	44
	5000-9032	27.3	6.7	-20.7	19.9	34.0	44
	9032-22273	21.7	14.1	-7.7	15.3	35.8	45
	>22273	14.4	23.4	9.0	11.1	36.1	44
	η (ANOVA)	0.17	0.50**	0.25**	0.16	0.22*	
GDP/capita PPP (without island/ micro states)	<2083	5.4	2.9	-2.6	1.0	8.3	40
	2083-5000	7.1	2.5	-4.6	3.1	9.7	31
	5000-9032	12.7	5.9	-6.8	7.3	18.7	31
	9032-22273	6.7	9.4	2.7	3.9	16.2	26
	>22273	7.2	18.2	11.0	5.2	25.5	29
	η (ANOVA)	0.30**	0.52**	0.47**	0.33**	0.43**	
Human Development Index	< .5336	4.2	2.7	-1.5	0.9	6.9	35
	.5336 - .7286	5.9	3.3	-2.6	1.8	9.2	36
	.7286 - .7974	19.7	6.6	-13.1	11.9	26.3	35
	.7974 - .8744	16.9	9.6	-7.3	10.3	26.5	36
	>.8744	9.5	14.8	5.4	7.3	24.3	35
	η (ANOVA)	0.40**	0.40**	0.35**	0.40**	0.44**	
Human Development Index (without island/ micro states)	< .5336	4.2	2.8	-1.4	0.8	7.0	32
	.5336 - .7286	5.8	3.4	-2.4	1.5	9.2	32
	.7286 - .7974	13.3	5.6	-7.7	7.4	18.9	26
	.7974 - .8744	9.0	10.3	1.3	4.9	19.3	28
	>.8744	7.2	15.2	8.0	5.1	22.4	30
	η (ANOVA)	0.35**	0.42**	0.37**	0.37**	0.42**	

Table 3 Bivariate correlations between key variables

	Log GDP/capita (PPP)	GDP growth (20 years)	Fertility	Life expectancy	Literacy	School enrolment	HDI index	Small/Island state	Lack of political rights	Emigrant stock	Immigrant stock	Net migrant stock	Mobility index
Log GDP/capita (PPP)	1	.373**	-.784**	.808**	.724**	.779**	.934**	.201**	-.485**	.051	.457**	.121	.190**
GDP growth (20 years)		1	-.297**	.306**	.224**	.240**	.287**	.132	-.082	.208**	.035	-.163*	.163*
Fertility			1	-.739**	-.752**	-.773**	-.832**	-.087	.527**	-.228**	-.167*	.093	-.240**
Life expectancy				1	.697**	.753**	.917**	.252**	-.446**	.176**	.377**	.002	.295**
Literacy					1	.802**	.858**	.130	-.324**	.242**	.258**	-.049	.321**
School enrolment						1	.891**	.018	-.481**	.168*	.226**	.019	.257**
HDI index							1	.077	-.473**	.205**	.354**	.049	.359**
Small/Island state								1	-.232**	.408**	.321**	-.272**	.464**
Lack of political rights									1	-.254**	-.053	.176*	-.207**
Emigrant stock										1	.119	-.924**	.936**
Immigrant stock											1	.269**	.461**
Net migrant stock												1	-.730**
Mobility index													1

Notes: ** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 4 Bivariate correlations between key variables for low and high GDP level

GDP/capita PPP	Key independent variables	Dependent variables				
		Emigrant stock	Immigrant stock	Net migrant stock	Emigrants in OECD	Mobility index
Low (below 6977 USD)	Log GDP/capita (PPP)	.183	.227*	-.143	.174	.216*
	GDP growth (20 years)	.090	-.207*	-.205*	.192	-.026
	Fertility	-.343**	-.034	.311**	-.333**	-.284**
	Literacy	.341**	.185	-.221*	.315**	.353**
	HDI index	.450**	.191	-.323**	.434**	.440**
	Lack of political rights	-.381**	-.004	.348**	-.423**	-.291**
High (above 6977 USD)	Log GDP/capita (PPP)	-.099	.376**	.347**	-.044	.100
	GDP growth (20 years)	.247*	-.010	-.219*	.156	.160
	Fertility	-.054	.181	.167	-.071	.080
	Literacy	.013	-.014	-.019	.044	-.007
	HDI index	-.173	.253*	.290**	-.090	.019
	Lack of political rights	-.090	.169	.195	-.196	.042

Table 5 Bivariate correlations between key variables for low and high HDI level

HDI Index	Key independent variables	Dependent variables				
		Emigrant stock	Immigrant stock	Net migrant stock	Emigrants in OECD	Mobility index
Low (below .7660)	Log GDP/capita (PPP)	.270*	.093	-.203	.326**	.248*
	GDP growth (20 years)	.097	-.230*	-.239*	.146	-.038
	Fertility	-.369**	-.016	.348**	-.343**	-.285**
	Literacy	.292**	.144	-.192	.245*	.289**
	HDI index	.384**	.126	-.293**	.383**	.349**
	Lack of political rights	-.229*	.101	.285**	-.309**	-.123
High (above .7660)	Log GDP/capita (PPP)	-.271**	.353**	.419**	-.204	-.009
	GDP growth (20 years)	.141	-.114	-.178	.128	.047
	Fertility	.074	.289**	.117	.057	.241*
	Literacy	-.060	-.191	-.064	-.027	-.165
	HDI index	-.307**	.198	.357**	-.222*	-.132
	Lack of political rights	-.095	.359**	.284**	-.208*	.140