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Cover photo: Exit from Metro Station, Moscow. More than 90 per cent of all the streets of this city are cleaned by labour migrant who live in basements. Most of them receive only one third of the salary wages for which they are promised in related documents. Street cleaners are the subjects of frequent attacks by nationalists. © IOM 2018/Elyor Nematov

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7 INTERNATIONAL MIGRATION AS A STEPLADDER OF OPPORTUNITY: WHAT DO THE GLOBAL DATA *ACTUALLY* SHOW?[1]

Introduction

International migration is strongly associated with opportunity for positive advancement, most typically in economic terms. A long-standing, influential international migration narrative is deeply intertwined with the notion of betterment, whether this relates to individual attainment, household income or community resilience and coping strategies.[2] People migrate for better lives. This has long been a cornerstone of international migration research, analysis and policy:

> Like many birds, but unlike most other animals, humans are a migratory species. Indeed, migration is as old as humanity itself. … A careful examination of virtually any historical era reveals a consistent propensity towards geographic mobility among men and women, who are driven to wander by diverse motives, but nearly always with some idea of material improvement.[3]

There are many stories of the migrant who arrived in a new country with little and managed to build a successful business, become a respected civic leader, fund the education of an entire generation of extended family members back home or personally achieve the highest levels of academic attainment through sustained hard work. Likewise, we have also read complaints from some critics about people moving to access welfare regimes or certain jobs, mostly in negative and sometimes politicized terms. While these somewhat superficial narrative examples might be quite different in framing and perspective, they are both strongly associated with attainment and the fact that migration offers the person(s) migrating some positive and tangible benefit. In other words, it is difficult to contemplate someone actively migrating into a worse situation. To have moved internationally and to be worse off is more likely to be associated with "forced migration" (otherwise referred to as displacement) and can be due to war, persecution, disaster or other reasons. Unsurprisingly, displacement is strongly related to unanticipated and profound loss.[4]

Beyond narratives of migration, international *emigration* has been a policy pursued by some national governments over many decades as part of broader economic agendas.[5] Emigration has supported the development of international trade, diplomacy and peace, and helped to forge cultural ties as well as provide a source of foreign income. In other countries, *international* immigration has been a significant policy lever in the journey of "nation building"

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2 Castles et al., 2014; Massey et al., 2005.

3 Massey et al., 2005:2.

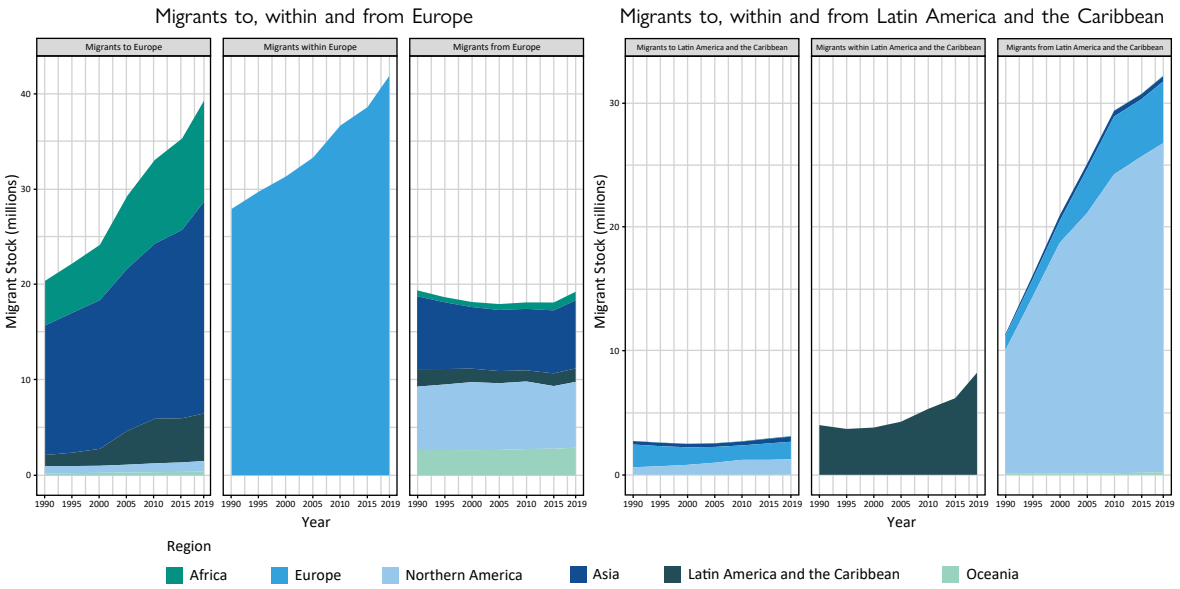
4 Ayeb-Karlsson, 2020; Ibáñez and Vélez, 2008; Turton, 2003.

5 Lee, 2016; Premi and Mathur, 1995; Xiang, 2016.

during a period in which international competition between States has intensified and the search for "global talent" amplified.[6]

In numerical terms, the number of international migrants has grown from around 84 million globally in 1970 to 281 million in 2020, although when global population growth is factored in, the proportion of international migrants has only inched up from 2.3 to 3.6 per cent of the world's population.[7] However, the change in the number and proportion of international migrants has not been uniform, with significant variation in migration rates around the world. Distinct regional patterns have emerged over time (see Figure 1), often underpinned by large, historical migration corridors linked to geographic proximity as much as geoeconomic disparity.

Figure 1. International migrants by region 1990 to 2019: Migrants to, migrants within and migrants from Europe, and Latin America and the Caribbean (LAC)



Source: UN DESA, 2019.

Note: "Migrants to Europe" refers to migrants residing in the region (i.e. Europe) who were born in one of the other regions (e.g. Africa or Asia). "Migrants within Europe" refers to migrants born in the region (i.e. Europe) and residing outside their country of birth, but still within the European region. "Migrants from Europe" refers to people born in Europe who were residing outside the region (e.g. in Latin America and the Caribbean or Northern America).

Note: "Migrants to Latin America and the Caribbean" refers to migrants residing in the region (i.e. Latin America and the Caribbean) who were born in one of the other regions (e.g. in Europe or Asia). "Migrants within Latin America and the Caribbean" refers to migrants born in the region (i.e. Latin America and the Caribbean) and residing outside their country of birth, but still within the Latin America and the Caribbean region. "Migrants from Latin America and the Caribbean" refers to people born in Latin America and the Caribbean who were residing outside the region (e.g. in Europe or Northern America).

6 Alarcón, 2011; Bhuyan et al., 2015; Fargues, 2011; Moran, 2011.

7 UN DESA, 2021. See Chapter 2 for a discussion of definitions. While internal migration (especially urbanization) has also played a significant role in the provision of opportunities via mobility, this chapter focuses on international migration.

We can see from Figure 1 that very distinct trends have emerged at the regional level over the last 30 years, such as the strong preference of people from Latin America and the Caribbean to migrate to Northern America, and the almost doubling of migration to Europe from other regions. Within these regional pictures, additional variability is apparent at the country level, with some countries accounting for a greater share of international migrants over time (e.g. the proportion of migrants in the United Arab Emirates has risen from 71% in 1990 to 88% in 2019), while other countries face increasing emigration and declining fertility such that "depopulation" challenges are looming (Latvia, Lithuania and Bosnia and Herzegovina all experienced more than 10% declines in population since 2009).[8]

In this chapter, we examine the key questions of "who migrates internationally and where do they go?" We analyse a range of statistical data at the country and regional levels and draw upon some of the existing body of research on migration determinants and decision-making. The next section summarizes some of the key debates in international migration, including those in the development context. The following section presents an analysis of migration between 1995 and 2020,[9] with reference to human development, before discussion in the third section on policy levers. The chapter then concludes by outlining some of the key policy and programmatic implications and challenges ahead.

Concepts and context

There has been considerable research and enquiry over many decades into the reasons underpinning migration, both internal and international, stretching back in the modern era as far as the 1880s.[10] Ongoing examination of migration drivers and factors principally involves attempts to explain migration patterns as well as the structures and processes that influence and shape the movement of people from one country to another. As a result, there is a substantial body of research and analysis on the determinants of international migration that has identified multiple factors underpinning migration patterns and processes, including those related to economics and trade, social and cultural links, demography and demographic change, and safety and protection, as well as geography and proximity.[11]

There has been a considerable focus on agency and structure, and how people contemplating migration navigate through a range of "intervening obstacles", with the number and nature of those obstacles being related to human capability in the context of development.[12] While the populist view remains that so-called "economic migrants" are active in their pursuit of migration and exercise a considerable degree of agency, this is too simplistic. While acknowledging long-term evidence reflected in academic outputs on the political economy of migration, research and analysis in more recent decades has, for example, found wide variation in the ability of labour migrants to make choices, depending on the policy constraints and options they face; these constraints include conditions of bonded labour, as well as labour migration that involves people trading off their rights in pressurized environments.[13] For example, the extent to which labour migrants are able to exercise self-agency and choose aspects of their migration

8 See the *World Migration Report 2020*, Chapter 3, for discussion.

9 The chapter draws upon international migrant stock data for 2020 (UN DESA, 2021) and human development index data for 2019 (UNDP, 2020), these being the latest data available at the time of drafting.

10 Ravenstein, 1885; Ravenstein, 1889.

11 See for example writings on cumulative causation (Massey, 1990), neoclassical economics (Todaro, 1989), world system theory (Portes and Walton, 1981), social capital theory (Massey et al., 1987), new economics of labour migration (Stark and Bloom, 1985) and social network theory (Boyd, 1989).

12 Lee, 1966; Sen, 1999.

13 Ruhs, 2013.

can be heavily circumscribed, although in most circumstances some choice remains, including as to whether to migrate, where to migrate, how to migrate, and whether or when to return home.[14] Nevertheless, the ability of (potential) migrants to exercise choice in international migration can be extremely limited, depending on where they were born and the circumstances in which they live.

Migration and the lottery of birth

Examining the overall quality of life by country, and the ability to migrate in terms of visa access, reveals that availability of migration options is partly related to the lottery of birth and in particular the national passport of the potential migrant. For instance, some nationality groups appear to be much less likely to have access to visas and visa-free arrangements.[15] Table 1 below summarizes global indices of human development (see Appendix A for a discussion of the Human Development Index), fragility and visa access for selected countries.[16] The Passport Index, a global ranking of countries according to the entry freedom of their citizens,[17] reveals for example that an individual's ability to enter a country with relative ease is in many respects determined by nationality. Entry access also broadly reflects a country's status and relations within the international community and indicates how stable, safe and prosperous it is in relation to other countries. The data also show two other aspects: that there are some significant differences between highly ranked human development countries and others; and that mid-ranked development countries can be significant source, transit and destination countries simultaneously. Nationals from countries with very high levels of human development can travel visa free to most other countries worldwide.[18] These countries are also significant and preferred destination countries.[19] Toward the bottom of the table, however, the entry restrictions in place for these countries indicate that regular migration pathways are problematic for citizens. Irregular pathways are likely to be the most realistic (if not the only) option open to potential migrants from these countries. It is also important to note that low HDI countries are also much more likely to have large populations of internally displaced persons and/or to be origin countries of large numbers of refugees.[20]

14 Khalaf and Alkobaisi, 1999; Ullah, 2011.

15 We note here that different types of visas involve different levels of processing and scrutiny; however, the Henley index provides a useful synthesis of access to regular migration at the global level by country.

16 The Human Development Index is a composite index measuring average achievement in three basic dimensions of human development: life expectancy, education and a decent standard of living. The Passport Index measures visa restrictions in place in 227 countries, territories and areas and indicates the capacity of individuals to travel to other international destinations with relative ease. The higher the rank, the more countries an individual with that passport can enter visa free. The Fragile States Index, produced by the Fund for Peace, is an annual ranking of 178 nations based on their levels of stability and the pressures they face. The index includes social, economic, political and military indicators.

17 Henley & Partners, 2021.

18 Ibid.

19 Esipova et al., 2018; Keogh, 2013; McAuliffe and Jayasuriya, 2016; UN DESA, 2021.

20 IDMC, 2020; UNHCR, 2020.

Table 1. Human development, fragility and passport rankings for selected countries

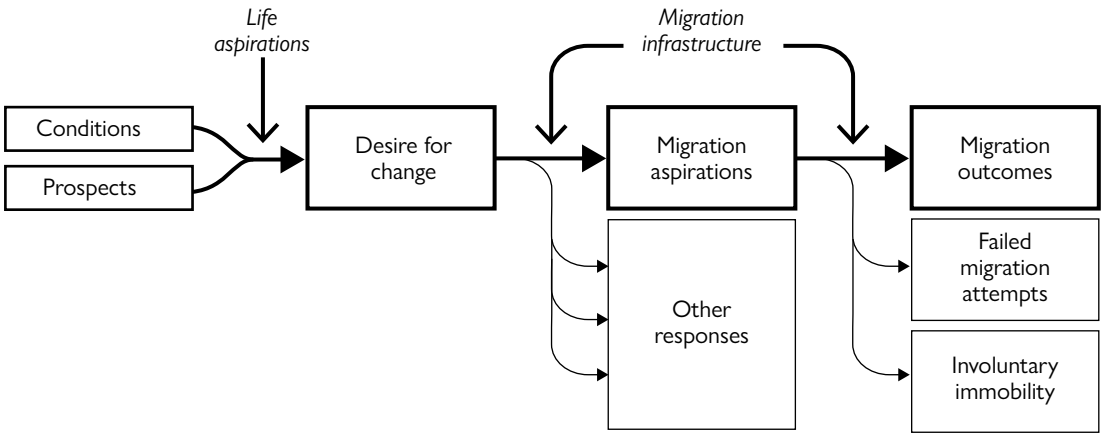
	Country (in HDI rank order)	Human Development Index 2019	Passport Index 2021	Fragile States Index 2020
		Rank	Rank	Rank
Very High Human Development	Norway	1	8	177
	Germany	6	3	166
	Australia	8	9	169
	Singapore	11	2	162
	Canada	16	9	171
	United States	17	7	149
	France	26	6	160
	Italy	29	4	143
	Malaysia	62	12	120
High Human Development	Sri Lanka	72	99	52
	Mexico	74	23	98
	Thailand	79	65	82
	Tunisia	95	72	95
	Lebanon	92	100	40
	Libya	105	101	20
	Indonesia	107	72	96
	Egypt	116	90	35
Medium Human Development	Kyrgyzstan	120	79	73
	Iraq	123	109	17
	Morocco	121	78	80
	India	131	84	68
	Bangladesh	133	100	39
	Cambodia	144	88	55
	Kenya	143	72	29
	Pakistan	154	107	25
Low Human Development	Uganda	159	75	24
	Sudan	170	100	8
	Haiti	170	92	13
	Afghanistan	169	110	9
	Ethiopia	173	96	21
	Yemen	179	106	1
	Eritrea	180	98	18
A number 1 ranking means:		Very high human development	Most mobile passport citizenship	Most fragile country
The lowest ranking means:		Low human development	Least mobile passport citizenship	Least fragile country

Sources: UNDP, Human Development Index 2019 (Human Development Report 2020); Henley & Partners, Passport Index 2021 (The Henley Passport Index 2021, Q2); The Fund for Peace Fragile States Index 2020.

Note: Data were the latest available at the time of writing.

We also know, however, that nationality alone does not account for evolving migration patterns, as visa and mobility policy settings are one (albeit important) factor in explaining who migrates and where people migrate over time. Within the context of the broader discussions on migration drivers and the development of discernible migration patterns over recent years and decades, models to explain migration, as shown in Figure 2, seek to account for both structural aspects and migrants' agency.

Figure 2. A model of the mechanisms that produce migration



Source: Carling, 2017.

Importantly, this model recognizes that a desire for change does not necessarily result in a desire to migrate, and that where it does exist, a desire to migrate does not necessarily result in migration – the existence of migration infrastructure[21] (or lack thereof) is an important factor in migration outcomes, with migration infrastructure defined as diverse human and non-human elements that enable and shape migration (e.g. migration "agents" operating commercially, including smugglers; regulatory regimes and policy frameworks; technological aspects such as ICT and transport; and transnational social networks).[22]

As part of this migration infrastructure, the (in)ability to access a visa can be profoundly important, not least because it is the one element that has not radically expanded over time, unlike the marked growth in "agents", ICT, transport and connected networks.[23] On the contrary, recent analysis shows that visa access has resulted in a bifurcation of mobility, with citizens of wealthy countries much more able to access regulated mobility regimes than those from poor countries.[24] This is important because, wherever possible, migrants will opt to migrate through regular pathways on visas.[25] There are stark differences between travelling on a visa and travelling unauthorized without a visa. From a migrant's perspective, the experience can be profoundly different in a number of important ways that can impact on the migrant as well as his/her family, including those who may remain in the origin country. First, visas denote authority to enter a country and so offer a form of legitimacy when arriving in and travelling

21 Xiang and Lindquist, 2014.

22 Carling, 2017.

23 Lahav, 1999; McAuliffe., 2017a; Triandafyllidou and McAuliffe, 2018.

24 Mau et al., 2015.

25 Jayasuriya et al., 2016; Koser and Kuschminder, 2015; Maroufof, 2017; McAuliffe et al., 2017. Please note that while "regular" migration does not necessarily require visas, the discussion refers to visas because these are often a requirement, most especially for migrants from developing countries. In addition, the term "visa" is much more widely understood than "regular" by migrants and the general public.

through a country. A valid visa provides a greater chance of being safeguarded against exploitation. Conversely, travelling without a visa puts people at much greater risk of being detained and deported by authorities, or exploited and abused by those offering illicit migration services, such as smugglers or traffickers, and having to operate largely outside of regulated systems.[26] Second, travelling on visas is undoubtedly much easier logistically, as the availability of travel options is far greater. In some cases, it can mean the difference between a journey being feasible or not. Third, visas provide a greater level of certainty and confidence in the journey, which is much more likely to take place as planned, including in relation to costs.[27]

Unsurprisingly, there is thus often a strong preference for travelling on a visa. Access to visas within decision-making contexts, therefore, features heavily in the minds of potential migrants and has been shown to be a key factor when the possibilities of migrating are explored while in the country of origin.[28] In recent research on online job search and migration intentions, for example, the availability of visas was found to be a determining factor in how people conducted online job searches.[29] Similarly, changes in visa settings have been found to have an impact on potential migrants' perceptions of opportunities afforded by migration, as well as their eventual migration.[30]

The intentions of (potential) migrants as part of individual and collective migrant decision-making processes has been a significant focus of migration research and analysis for many years, and remains of particular interest to scholars and policymakers alike.[31] As highlighted in Figure 2 above, intentions do not always result in migration outcomes, and much of the research has adopted a tiered approach to contemplations of migration that involve different stages (such as "desire", "exploration/planning", "preparation" and "down/actual payment"), finding overall that as the process progresses over time, fewer and fewer people are able to maintain their desire and realize their migration intention, and those in the final "payment" category are typically very small in number and proportion.[32] Intentions to migrate – even if carefully refined and nuanced – can only take us so far in understanding migration.[33]

Migration and development: mobility transitions and "hump migration"

The significant limitations or obstacles facing people (especially in countries with low levels of human development) in accessing visa regimes to pursue international migration is also reflected in macroeconomic analysis of migration. One line of research on the links between "maturity" of migration and human development, for example, shows that low-income countries have low emigration rates, an explanation being that low income levels are an obstacle in accumulating the funds needed to undertake migration, acknowledging that other factors (e.g. demography) also play a role.[34] Resource consideration is related to the concept of "involuntary immobility", in which people who would like to migrate internationally are unable to do so for a number of reasons, including costs.[35]

Further, analysis of the relationship between country income and international migration shows that emigration increases with higher income levels, and that at a certain point, higher incomes enabling increased emigration can then become a stabilizing influence and reduce outward migration. In other words, as GDP per capita increases,

26 McAuliffe, 2017a.

27 McAuliffe et al., 2017.

28 Jayasuriya, 2014; Manik, 2014.

29 Sinclair and Mamertino, 2016.

30 Czaika and de Haas, 2016; Gaibazzi, 2014; Jayasuriya et al., 2016; Manik, 2014; McAuliffe and Jayasuriya, 2016.

31 Clemens and Mendola, 2020; Lee, 1966; McAuliffe, 2017b; Neumayer, 2010; Van Hear et al., 2012.

32 McAuliffe and Jayasuriya, 2016.

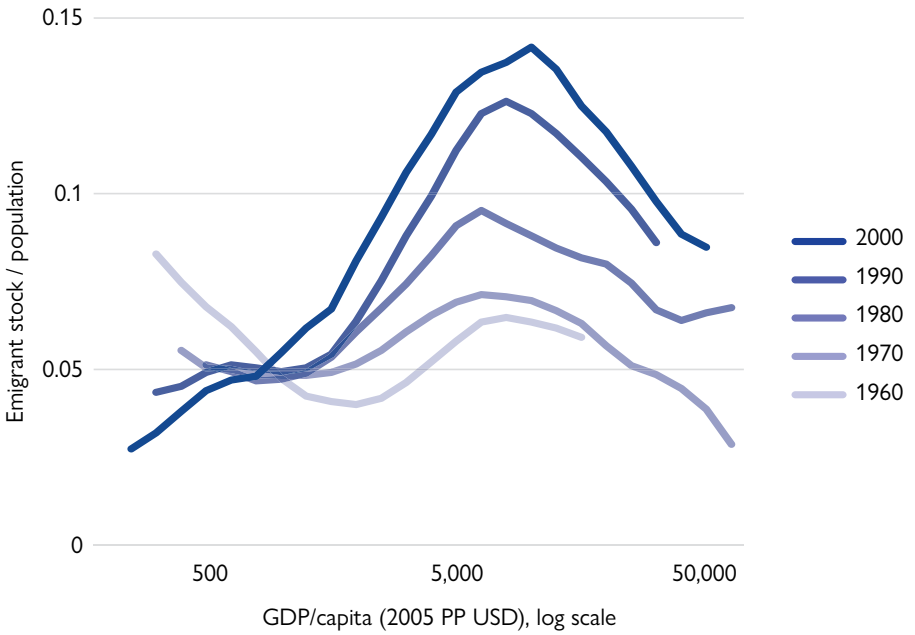
33 Tjaden et al. (2018) examined the links between intentions and migration flows, however, this is limited to a narrow and specific geography.

34 Clemens, 2014; Dao et al., 2018; Zelinsky, 1971.

35 Carling, 2002.

emigration initially increases and then decreases. This phenomenon, depicted in Figure 3,[36] has been referred to by some analysts as the "mobility transition".[37]

Figure 3: Mobility transition



Source: Adapted from Clemens, 2014:7–8.
Notes: Clemens found that overall higher economic development (higher income) is associated with reduced emigration. Refer to Clemens (2014) for further discussion of data analysis.

As shown in Figure 3, Clemens's analysis estimates that emigration rates start to decrease if countries rise above GDP per capita income levels of USD 7,000–8,000, which at the time of the analysis (using 2005 GDP data) included countries such as Ecuador, Egypt, Fiji and North Macedonia.[38] Further, as income levels rise, emigration rates decline, as illustrated by the so-called "migration hump".[39]

The interaction of economic development and international migration – or "mobility transitions" – has been of intense interest to researchers and policymakers globally, as it calls into question the commonly held notion that overseas development assistance will act to "stabilize" populations and dampen emigration rates from low-income countries by providing greater opportunities at home.[40] Analysts have found that economic development of low-income countries is positively correlated with emigration: "economic growth has historically raised emigration in almost all developing countries".[41] However, more recent analysis has found that when shorter time periods

36 Clemens, 2014.

37 Akerman, 1976; Clemens, 2014; Dao et al., 2018; de Haas, 2010; Gould, 1979.

38 See, for example, the interactive World Bank dashboard on GDP per capita (PPP) at: https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD.

39 Zelinsky, 1971. See discussion in de Haas (2010) of the difference between "mobility transition" and "migration hump", which has become confused/conflated over time.

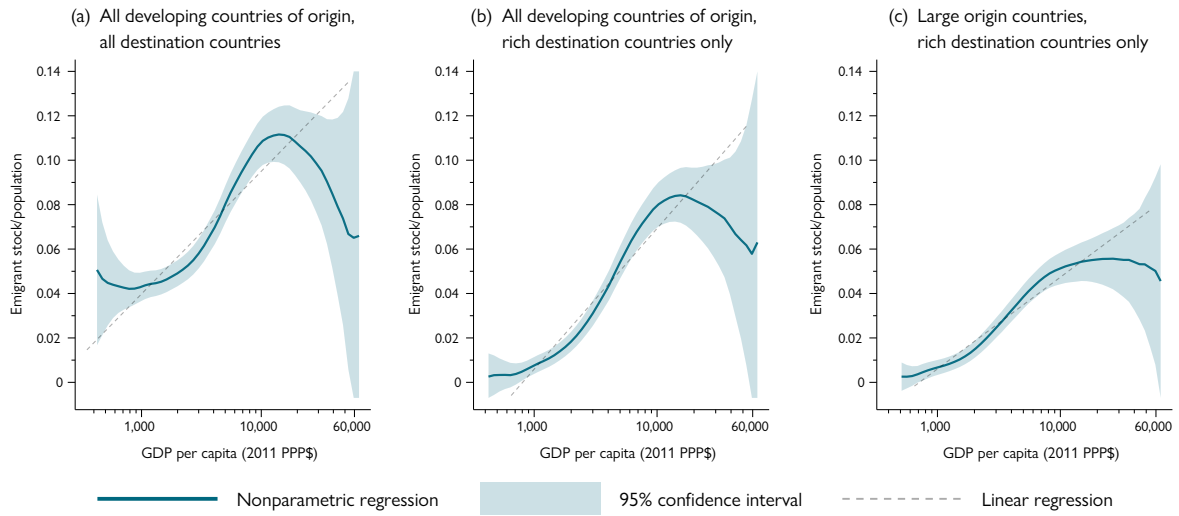
40 Clemens, 2020; de Haas, 2010, 2020.

41 Clemens and Postel, 2018.

are examined, the relationship between country income levels and emigration is less clear, with the finding that economic growth in poor countries coincides with less emigration.[42] This finding, however, has been hotly contested with the discussion focusing on technical errors in modelling (please see Appendix B for further background).[43] Importantly, much of the research and analysis on mobility transitions focuses on emigration from low-income countries, almost certainly due to the preoccupation in policy and academic spheres with (irregular) migration to very high HDI countries.[44]

As can be seen from Figure 3, as country income levels rise, emigration decreases, forming a so-called "hump" pattern. However, rather than a migrant "hump" involving a trailing off of emigration rates as incomes rise, a so-called "plateau" has previously been identified by scholars who call into question the notion that emigration rates decline as countries develop over time.[45] Others have questioned the time periods applied to theorizing underlying migration dynamics related to "humps" or "mobility transitions".[46] However, as the overall quantity and quality of data related to migrants, human development (including economic indicators), mobility and migration policy improves over time, it is possible that a divergent picture is emerging. One perspective shows that emigration to and from wealthy countries is a key feature of recent migration patterns, while migration from developing countries remains much more limited. This is highlighted in recent analyses, with particular reference to the very wide confidence bands evident in Figure 4, meaning that we cannot be certain that emigration declines with higher incomes; however, emigration prevalence is non-linear (meaning that there is not a straightforward positive relationship between emigration rates and country income levels).

Figure 4. Emigration prevalence, 1960 to 2019



Source: Clemens, 2020.

42 Benček and Schneiderheinze, 2020.

43 Vermeulen, 2020.

44 See, for example, Carling et al., 2020; Czaika and Hobolth, 2016; de Haas, 2020; and Tjaden et al., 2018, which do not address emigration from highly developed countries.

45 Martin and Taylor, 1996.

46 See, for example, discussion in de Haas, 2010; and Clemens, 2020.

Who migrates internationally and where do they go? International migration globally between 1995 to 2020

In seeking to answer this question, it is important to acknowledge that the ability to offer a perspective at the global level – as part of this World Migration Report – is challenging. As widely acknowledged over many years, statistics to support our collective understanding of international migration patterns and trends are not as well developed as those available in other domains. However, there has been renewed interest in and action on migration statistics, with several major initiatives launched or under way in recent years.[47]

While migration flow statistics are limited to specific, narrow geographies (see Chapter 2 for discussion),[48] a global picture on international migration patterns and trends can be drawn from international "foreign-born" migrant population data.[49] Analysis of long-term migrant stock trends allows for insights into where people migrate to, and which countries they emigrate from.[50] The UN DESA statistical estimates are widely acknowledged as the main data source on international migrants globally, with separate databases compiled on various categories of migrants (such as migrant workers, missing migrants, internally displaced persons, refugees and asylum seekers).[51]

Since this chapter re-examines international migration from the perspective of opportunity (or lack thereof), the circumstances of forced displacement are set to one side, in recognition of the lack of choice and the related losses associated with being forcibly displaced. Data on international displacement (refugees and asylum seekers) have, therefore, been subtracted from the international migrant statistics collected by UN DESA in order to produce an estimated total of international migrant stock minus forcibly displaced.[52] For a full description of the methods, see Appendix C.

For this analysis, we have also used HDI, which allows for a complementary perspective to that provided by macroeconomic analysis based on country income data. Such macroeconomic contributions to our understanding of global migration have analysed migration-related data against economic indicators, such as gross domestic product or the average income of a household. The outcome of this research has been fruitful, but there is a substantial body of literature suggesting that migration is motivated by income considerations as well as a range of other factors.[53] Just as development is more than economic, opportunity to improve well-being beyond economic aspects affects migration trends worldwide. Our analysis, therefore, draws upon the broad set of indicators represented in the HDI (see discussion of the HDI in Appendix A). More specifically, our analysis utilizes HDI and migrant stock data from 1995 to 2020. Beginning the analysis in 1995 allows for the inclusion of more countries that did not have reportable data when the HDI was first published; it also allows for geopolitical changes in Eastern Europe following the dissolution of the former Soviet Union. At the time of writing, the most current migrant stock data available are from 2020. However, the effects of COVID-19 on migrants and migration are likely to be significant and may have important impacts on migration patterns well into the future (see Chapter 5 for further discussion).

47 See, for example, the International Forum on Migration Statistics (co-led by IOM, the Organisation for Economic Co-operation and Development OECD, and UN DESA), the Global Migration Data Analysis Centre and the UN Expert Group on Migration Statistics.

48 Migration flow estimates are published by UN DESA for 47 countries (see UN DESA, 2021) and annually by the OECD for its 30+ member States.

49 See UN DESA, 2021.

50 Abel and Sander, 2014; IOM, 2017; IOM, 2019.

51 See Chapter 2 of this report for analysis and data sources.

52 We note that this may not include disaster and other displacement outside of the categories of refugees and asylum seekers; however, this type of displacement is not consolidated in any existing data set.

53 See discussion earlier in this chapter.

Who has migrated?

As noted above, while the global number of international migrants has increased substantially over the past 25 years, rising from approximately 161 million migrants in 1995 to 281 migrants in 2020, the proportion of international migrants has only slightly increased, rising from 2.8 to 3.6 per cent of the global population over the intervening years. Table 2 shows the difference between 1995 and 2020, disaggregated by United Nations region.[54] While absolute numbers of immigrants have increased by tens of millions across all regions, the share of international migrants as a proportion of each region's population has only marginally increased in Africa, Asia, and Latin America and the Caribbean, while Europe, Northern America and Oceania have seen the proportion of international migrants rise by around 4 percentage points or more in each.

Table 2 . Immigrants by United Nations region, 1995 and 2020

Region	Year	Immigrant stock (millions)	Immigrant share of population (%)
Africa	1995	10.1	1.4
	2020	15.8	1.2
Asia	1995	39.2	1.1
	2020	71.1	1.5
Europe	1995	50.8	7.0
	2020	81.7	10.9
Latin America and the Caribbean	1995	6.2	1.3
	2020	13.3	2.0
Northern America	1995	30.7	10.4
	2020	53.3	14.5
Oceania	1995	4.9	16.8
	2020	9.0	21.2

Source: UN DESA, 2021.

Table 3 shows both emigrants (origin) and immigrants (destination) further disaggregated at the country level, with the top 20 countries for each category listed in descending order. Countries in Europe and Asia feature as both origin and destination countries for tens of millions of migrants.

54 A breakdown of UN regions can be found in Appendix A of Chapter 3 of this report.

Table 3. Top 20 countries of origin and destination, by number (millions) and proportion of total population

Origin						Destination					
1995			2020			1995			2020		
Country	Emigrants	(%)	Country	Emigrants	(%)	Country	Immigrants	(%)	Country	Immigrants	(%)
Russian Federation	11.38	7.1	India	17.79	1.3	United States of America	24.60	9.3	United States of America	43.43	13.1
India	7.15	0.7	Mexico	11.07	7.9	Russian Federation	11.91	8.0	Germany	14.22	17.0
Mexico	6.95	7.0	Russian Federation	10.65	6.8	Germany	7.28	9.0	Saudi Arabia	13.00	37.3
Ukraine	5.60	9.9	China	9.80	0.7	India	6.69	0.7	Russian Federation	11.58	7.9
Bangladesh	5.37	4.5	Bangladesh	7.34	4.3	France	5.96	10.3	United Kingdom	8.92	13.1
China	4.70	0.4	Pakistan	6.14	2.7	Ukraine	5.77	11.3	United Arab Emirates	8.43	85.3
United Kingdom	3.61	5.9	Ukraine	6.05	12.2	Saudi Arabia	4.94	26.5	France	8.09	12.4
Pakistan	3.33	2.6	Philippines	6.01	5.2	Canada	4.69	16.1	Canada	7.81	20.7
Kazakhstan	3.30	17.2	Poland	4.82	11.3	Australia	4.11	22.9	Australia	7.41	29.1
Italy	3.20	5.3	United Kingdom	4.62	6.4	United Kingdom	3.99	6.9	Spain	6.63	14.2
Germany	3.04	3.6	Indonesia	4.58	1.6	Kazakhstan	2.89	18.3	Italy	6.13	10.1
Turkey	2.73	4.5	Venezuela, Bolivarian Republic of	4.49	13.6	Pakistan	2.46	2.0	Ukraine	4.57	10.4
Philippines	2.43	3.4	Kazakhstan	4.20	18.3	China, Hong Kong SAR	2.09	34.4	India	4.48	0.3
Indonesia	1.93	1.0	Romania	3.98	17.1	Côte d'Ivoire	2.02	14.2	Thailand	3.53	5.1
Portugal	1.91	15.9	Germany	3.85	4.4	United Arab Emirates	1.78	73.6	Kazakhstan	3.39	18.1
Morocco	1.88	6.5	Egypt	3.57	3.4	Italy	1.70	3.0	Malaysia	3.08	9.5
Poland	1.76	4.4	Turkey	3.28	3.7	Israel	1.55	29.5	Kuwait	2.98	69.8
Belarus	1.74	14.7	Morocco	3.25	8.1	Jordan	1.53	33.4	China, Hong Kong SAR	2.85	38.1
Republic of Korea	1.68	3.6	Italy	3.25	5.1	Argentina	1.51	4.3	Jordan	2.69	26.4
Afghanistan	1.67	8.5	Viet Nam	3.07	3.1	Uzbekistan	1.43	6.3	Japan	2.49	2.0

HDI:

Low Medium High Very High

Sources: UNDP, 2020; UN DESA, 2021.

Note: Uzbekistan did not receive an HDI score until 2000. At that time, the HDI classified Uzbekistan as a medium HDI country. As per UN DESA definitions, emigrants are "foreign born" such that major political changes (e.g. 1947 Partition, dissolution of the Soviet Union) can be reflected in data (further discussion of definitions can be found in Chapter 2). Some categories of international migrant are not included (see methods in Appendix C).

Between 1995 and 2020, only a few countries changed from being among the top 20 migrant origin countries (with Portugal, Belarus, the Republic of Korea and Afghanistan included among the top 20 in 1995, but replaced by 2020 by the Bolivarian Republic of Venezuela, Romania, Egypt and Viet Nam). We can see, however, that there are far fewer medium HDI countries of origin by 2020 and no low HDI countries; however, this relates in part to the development progress by countries and their recategorization (discussed further below). The prevalence of high and very high HDI countries as origin countries is quite stark by 2020, accounting for 16 of the 20 top origin countries.

In terms of destination countries as at 1995 and 2020, compared with the top 20 origin countries, there was greater change evident, with five countries dropping out of the list (Pakistan, Côte d'Ivoire, Argentina, Israel and Uzbekistan), being replaced by Spain, Thailand, Malaysia, Kuwait and Japan. With the exception of the Russian Federation, Kazakhstan, India, Jordan and Ukraine, all of the destination countries in both the 1995 and 2020 top 20 lists experienced increases in numbers and proportions of immigrants over this period. Further, Table 3 shows the substantial increase in numbers of immigrants experienced in many destination countries, most notably in the United States of America, Saudi Arabia, Germany, the United Kingdom and the United Arab Emirates. This highlights that while it may be useful to discuss international migrants at the global and regional levels, there are distinct long-term country-to-country corridors that account for large proportions of international migration, potentially masking the extent to which migration remains highly uneven globally.[55]

Migration trends through the prism of human development

Current data indicate that most international migrants (79.6% or 190 million) reside in very high HDI countries. We can see, for example, that all of the top 10 countries of destination in Table 3 are very high HDI countries, and the majority of the remaining top destination countries in Table 3 are also very high HDI (with the rest being high HDI countries). This is consistent with long-term trends and existing knowledge that shows that international migration has developed over time as a means for households, families and communities to realize opportunities, including substantial increases in household income via international remittances.[56]

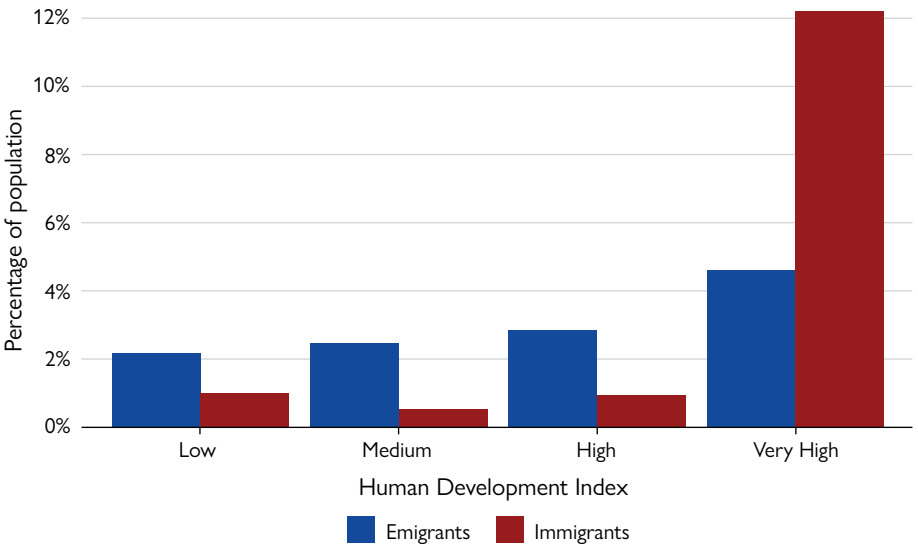
The current data also highlight that most of the top 20 origin countries are very high (8) or high (8) HDI countries. By 2020, the remaining four origin countries were medium HDI countries.

This is also shown in Figure 5 below, which clearly highlights that international migrants are concentrated in very high and high HDI countries, being most pronounced for immigrants, but also showing significant prevalence among emigrants. In other words, there is a lot more migration occurring in the more developed countries in the world, with lower numbers and proportions in medium and low HDI categories. Interestingly, and contrary to the mobility transitions analysis discussed above (see Figure 3), the very high HDI countries combined have produced a high proportion of emigrants relative to the aggregate population (4.6%), which is higher than high, medium and low HDI categories. Further, in numerical terms, very high HDI countries produced 76 million migrants, second only to high HDI countries (86 million).

55 Migration corridors are discussed in detail and graphically present in the *World Migration Report 2020*, Chapter 3 (IOM, 2019).

56 Clemens and Pritchett, 2008; de Haas, 2005; Ratha, 2013.

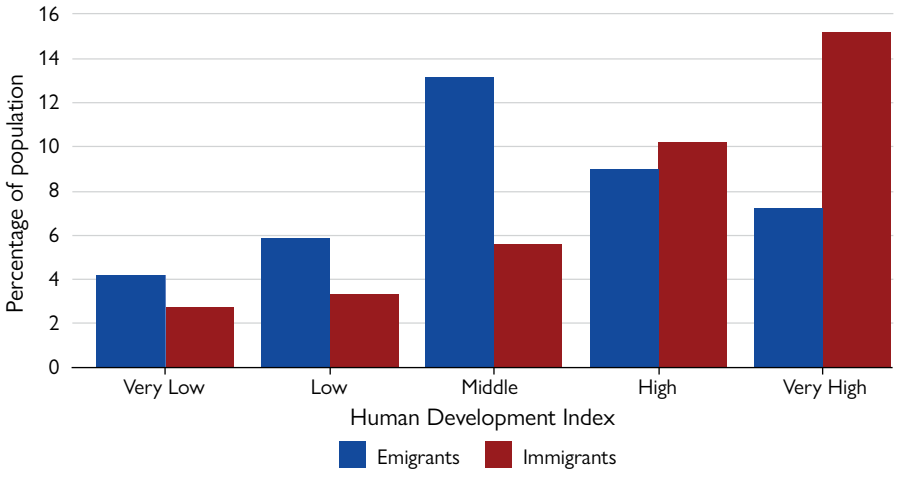
Figure 5. Immigrants and emigrants by Human Development Index country category, 2020



Sources: UN DESA, 2021; UNDP, 2020.
Note: Some categories of international migrant are not included (see methods in Appendix C).

This snapshot in Figure 5 shows that many more emigrants were born in wealthier countries and seem to have moved to other wealthier countries. Other earlier analysis, however, seems to show very different patterns to Figure 6 below, in which 2005 HDI data are used.[57]

Figure 6. Association between Human Development Index scores and immigrant/emigrant stocks, 2005



Source: de Haas, 2010:4, reproduced in de Haas, 2020.
Note: Categorization by author (not UNDP's HDI 4 categories).

57 de Haas, 2010; de Haas, 2020.

In Figure 6, the association between HDI and international migrants is represented, although an author-created fifth category of "very low HDI" based on HDI scores is used (not among UNDP's four categories), and "average migration values" are applied rather than aggregated migrant stock and population data by category.[58] Figure 5 shows that emigrants as a percentage of population are lower from high and very high HDI categories compared with medium HDI, which appears consistent with the "mobility transitions" analysis (Figure 3), but different to the current empirical evidence in Figure 6 above.

Lower levels of emigration from low HDI countries is apparent in both figures; however, the two sets of bivariate analyses highlight different rates of emigration from wealthier countries. To explore the difference between the emigration data for high HDI categories represented in Figures 5 and 6, we first looked at changes since 1995. Overall, there appear to be two important but distinct change processes occurring:

- Significant changes in HDI classification; and
- Intensifying migration to, as well as from, highly developed countries.

These are now discussed in turn.

Human development index changes since 1995: the up and up

The HDI was developed by economist Mahbub ul Haq and first used by UNDP in 1990 as the centrepiece of its 1990 Human Development Report in an effort to better encompass human aspects in the analysis of development, previously dominated by economic indicators.[59] Initially, the HDI covered 130 countries, increasing to 163 in 1995 and progressively reaching a total of 189 countries (see Table 4). All countries that have been reclassified over time have moved into a higher classification in accordance with HDI methods, with the exception of the Syrian Arab Republic (dropping from medium to low in 2015).[60] By 2019, 66 countries (or 34%) were classified as very high HDI, and a further 53 (or 27%) were high HDI.[61]

Table 4. Number of countries in HDI classifications, 1995 to 2019

Classification	1995	2000	2005	2010	2015	2019
Very High	23	31	43	48	62	66
High	27	36	45	57	54	53
Medium	59	62	54	46	46	37
Low	54	60	59	52	41	33
No data	49	23	11	9	9	6

Source: UNDP, 2020.

58 de Haas, 2010.

59 Stanton, 2007.

60 See discussion on methods in Stanton, 2007 and UNDP, 2020.

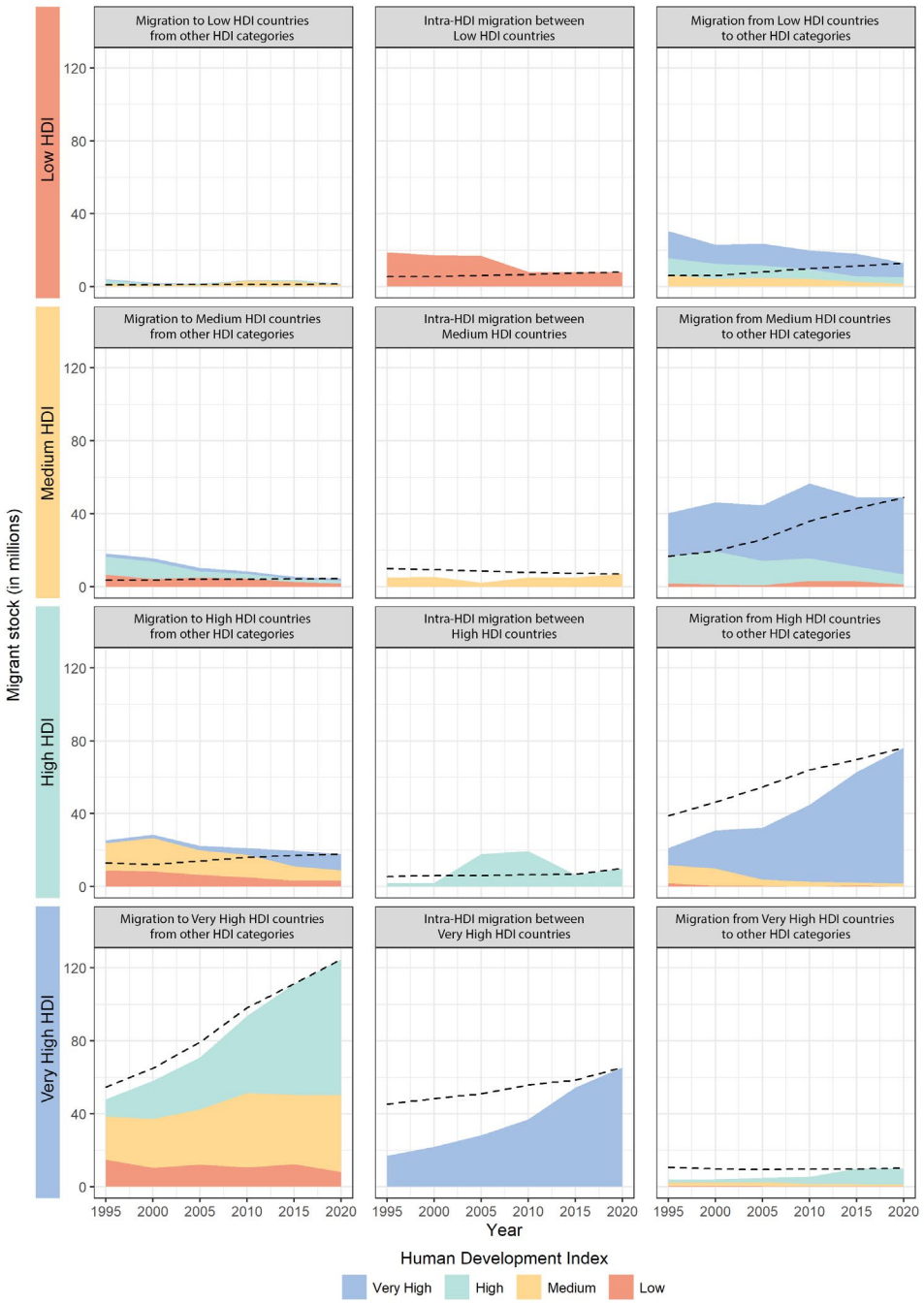
61 Refer to Wolff et al., 2011, for criticism of HDI methods and UNDP, 2011, for the UNDP's response.

So, in part, we can see that reclassification of countries helps explain different migration patterns at different points in time. However, when keeping the 1995 HDI classifications constant (i.e. not adjusting outputs for reclassifications over time), we can also see that there are specific underlying migration dynamics occurring beyond reclassification issues.

Figure 7 below shows the "stepladder" phenomenon over time, even when 2019 classifications are applied across all years (represented by the black dotted lines), so that:

- There is a marked increase in "migration to" by HDI category (graphs on the left of the series), so that very few people migrate to a low HDI country, more migrate to a medium HDI country, more again to a high HDI and the largest number to a very high HDI country (even when applying 2019 categories).
- There is a distinct pattern across Figure 7, which shows that "migration from" one HDI classified country to another category (graphs on the right) also follows the "stepladder" principle of moving up. However, reclassifications have clearly impacted on this pattern over time, resulting in a more pronounced emphasis on the very high HDI category.
- Of particular interest is the "migration within" data (middle graphs), which show significant differences by HDI classification: higher levels of migration to a country with the same HDI classification occur for low to low HDI countries and very high to very high HD countries. We can also see the impact of reclassification, most pointedly for very high HDI countries. Nevertheless, emigration both to and from very high HDI countries is a distinct and clear feature in current migration trends.

Figure 7. Migrants to, between and from each of the four HDI categories (low, medium, high and very high), 1995–2020



– Overall total based on 2020 HDI classifications

Sources: UNDP, 2020; UN DESA, 2021.

Notes: "Migration to" plots refer to migration *to* that HDI category from the other HDI category countries; "Migration from" plots refer to migration *from* that HDI category to the other HDI categories. The data points at the five-year intervals in the colour bands reflect the HDI categorization at that time; the black dotted lines use 2020 HDI classifications across all data points (i.e. 1995 through to 2020). Some categories of international migrant are not included (see methods in Appendix C).

Two important conclusions can be drawn from these data:

1. It is clear that migration from high and very high human development countries to other high and very high countries is pronounced and has increased significantly since 1995 (even accounting for recategorization of countries).
2. A question arises as to whether the degree of shift relevant to the migration "hump" model is as relevant today as it previously has been – the bivariate data analysis shows correlations that would benefit from deeper examination.

Of particular relevance is the important factor of policy, and how countries' visa and mobility policies have evolved over time. As highlighted in the discussion above (and modelled in Figure 2), such policies can enable migration options to be transformed from "impossible dreams" into concrete options, and recent research has pointed to growing mobility inequality.[62] To explore this further we examine mobility agreements at the regional level (e.g. the Schengen agreement and the ECOWAS free movement protocol).

Why is understanding migration patterns important for policy development processes?

Migration policies are developed and administered predominantly at national level and are often influenced by the geopolitical relations between countries at the bilateral level (i.e. between two entities) and can result in visa-free arrangements agreed between two (or more) countries. Examples of bilateral agreements include the Trans-Tasman Travel Arrangement between Australia and New Zealand,[63] the Agreement on Mutual Abolition of Visa Requirements between the Russian Federation and the Republic of Korea,[64] and the Agreement between the European Community and Barbados on the short-stay visa waiver,[65] although many hundreds of similar bilateral arrangements currently exist.[66]

Policies help countries to create systems that respond to changes within a country (e.g. skills shortages), as well as outside a country (e.g bilateral relationships), and determine who can access a country. Data are therefore important to determine trends and flows from, to and within a region in order to inform policy processes. Countries with the available resources, knowledge and expertise are able to capture, analyse and present data for policy responses, especially with regard to regular migration. On the other hand, data on irregular migration occurring outside of, or in contravention of, regulated systems are based on estimations and predictions of available small-scale data sets that can be used to inform the policy development process. However, for States to develop migration policy processes, such as bilateral visa agreements or bilateral labour migration agreements, they require systematic procedures to consider relevant data and trends in origin and destination countries guided by a comprehensive analytical framework.[67] To a large extent, the focus is necessarily on migration dynamics, trends and data at the country level, as the main focus is on bilateral negotiations and agreement-making.

62 Mau et al., 2015; Triandafyllidou et al., 2019.

63 Australian Productivity Commission and New Zealand Productivity Commission, 2012.

64 Government of the Russian Federation and Government of the Republic of Korea, 2020.

65 European Community and Barbados, 2009.

66 European Union, 2021.

67 de Haas, 2011.

Importantly, visa policies are designed as control measures for mobility, allowing each individual country to exercise its exterritorial control over potential entrants (e.g. business travellers, tourists, students and migrant workers).[68] Given the volume and complexity of country-specific policies on the entry and stay of non-nationals, most analysis undertaken around the world is conducted at the country level (i.e focusing on a single country). The DEMIG project,[69] however, analysed the evolution of migration policies since the 1850s with the aim of evaluating their impact on international migration patterns and trends. Researchers found that visa policies had evolved between 1995 and 2019, resulting in border control, entry and exit policies that were more restrictive over time.[70] Other analysis points to destination countries formulating agreements that grant free visa access to their allies, while imposing restrictions on poorer countries or those they deem unfriendly.[71] This may create more opportunities for citizens in high HDI countries to migrate, in comparison with those in developing countries, who face more restrictions. On a long-term basis, this could lead to systemic inequality between countries and further deepen mobility inequality between countries and regions, while placing greater migration "pressures" that could significantly increase human trafficking and migrant smuggling.

Strictly enforced laws and requirements may dissuade some migrants from selecting one destination over another,[72] while countries with weaker regulatory regimes may unwittingly create an environment in which irregular migration thrives due to a lack of effective regulation and adequate resources. Ensuring a safe environment for regular migration to take place is important to reduce the risks faced by migrants who would otherwise have little choice but to move irregularly. Free movement of persons, goods and services and a labour environment based on a mutual understanding between member States can reduce some migration-related risks within regional blocs.

Regional agreements facilitating mobility

The Economic Community of West African States (ECOWAS) and the Schengen area have illustrated how mobility agreements achieved through multilateral approaches, which build upon bilateral arrangements, can open up further mobility opportunities and support development and greater equality, while reducing pressures (including those related to trafficking and smuggling). They have, however, evolved differently through time, with clear contrasts in the way free movement is implemented.

The European Union Schengen agreement has seen gradual progress since 1985, with the process of removing internal border checks between member States taking place at the same time that the external border has been strengthened around the Schengen area. Notwithstanding events (such as the large-scale movement of people into and through the Schengen area in 2015–16 and the COVID-19 pandemic) that exerted considerable pressure on aspects of European Union border, entry and asylum/refugee policies, the Schengen agreement has remained intact, providing mobility opportunities for 400 million European citizens.[73]

68 Mau et al., 2015.

69 Determinants of International Migration: A Theoretical and Empirical Assessment of Policy, Origin and Destination Effects (DEMIG) was conducted in 45 countries in Western Europe, North America, Latin America, Asia, Central and Eastern Europe, Africa and the Middle East, Australia and New Zealand. See EC, 2016 and de Haas et al., 2016.

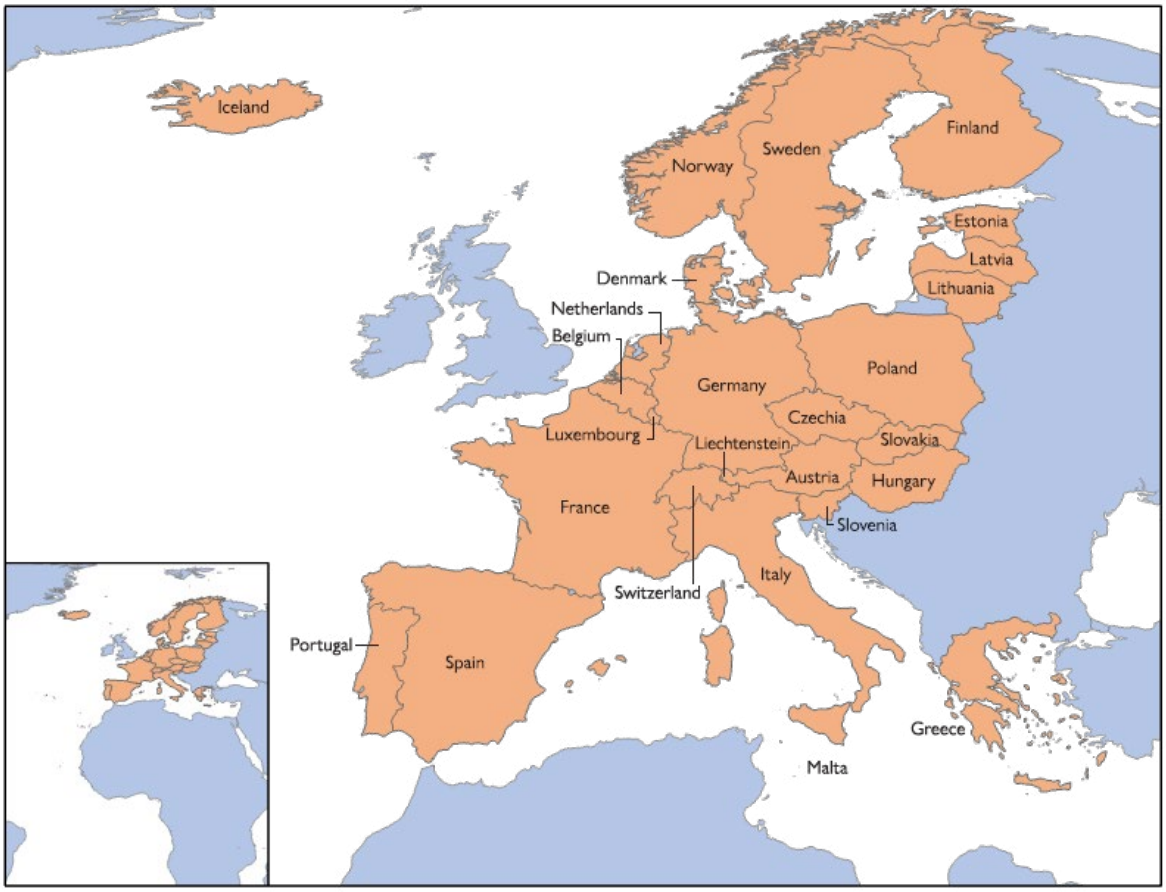
70 de Haas et al., 2019.

71 Czaika and Neumayer, 2017.

72 Helbling and Leblang, 2018.

73 European Commission, 2020.

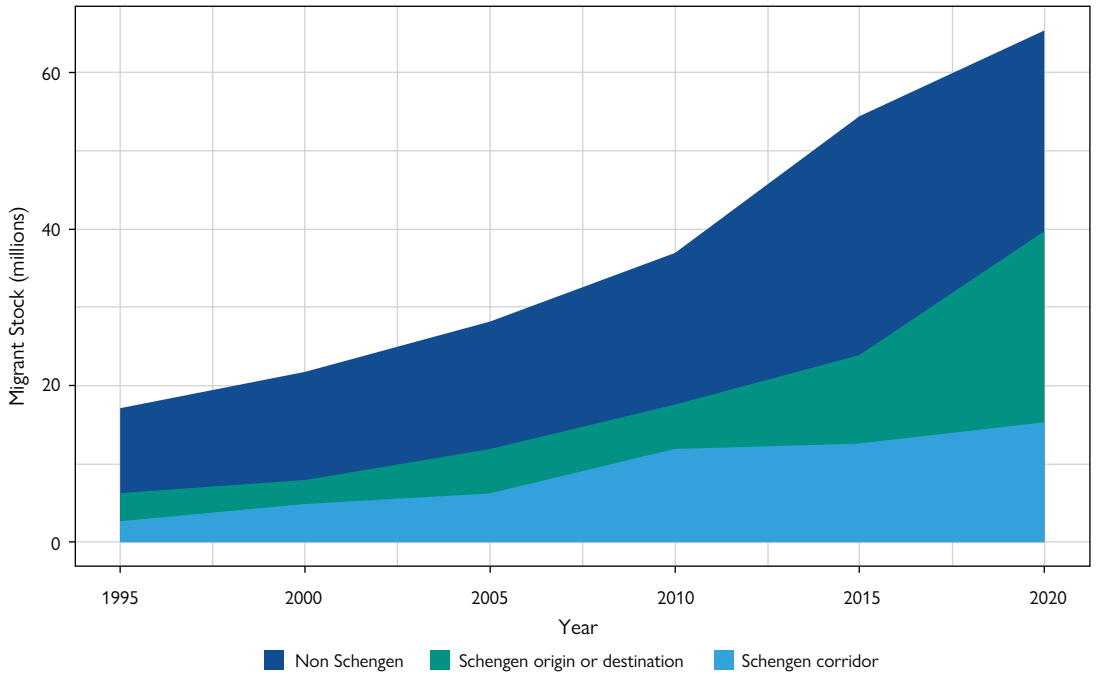
Figure 8. Schengen area member States



Source: ArchaeoGLOBE Project, 2018.
Note: This map is for illustration purposes only. The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the International Organization for Migration.

The significance of the Schengen mobility agreement can be seen in Figure 9. Though Schengen countries made up only 39 per cent of countries classified as very high HDI in 2020 globally (26 out of 66), and a fraction of the total population of the aggregated total populations in very high HDI countries, the proportional growth in very high HDI country migration was much higher for Schengen countries than non-Schengen countries between 1995 and 2020.

Figure 9. Migration between very high HDI countries



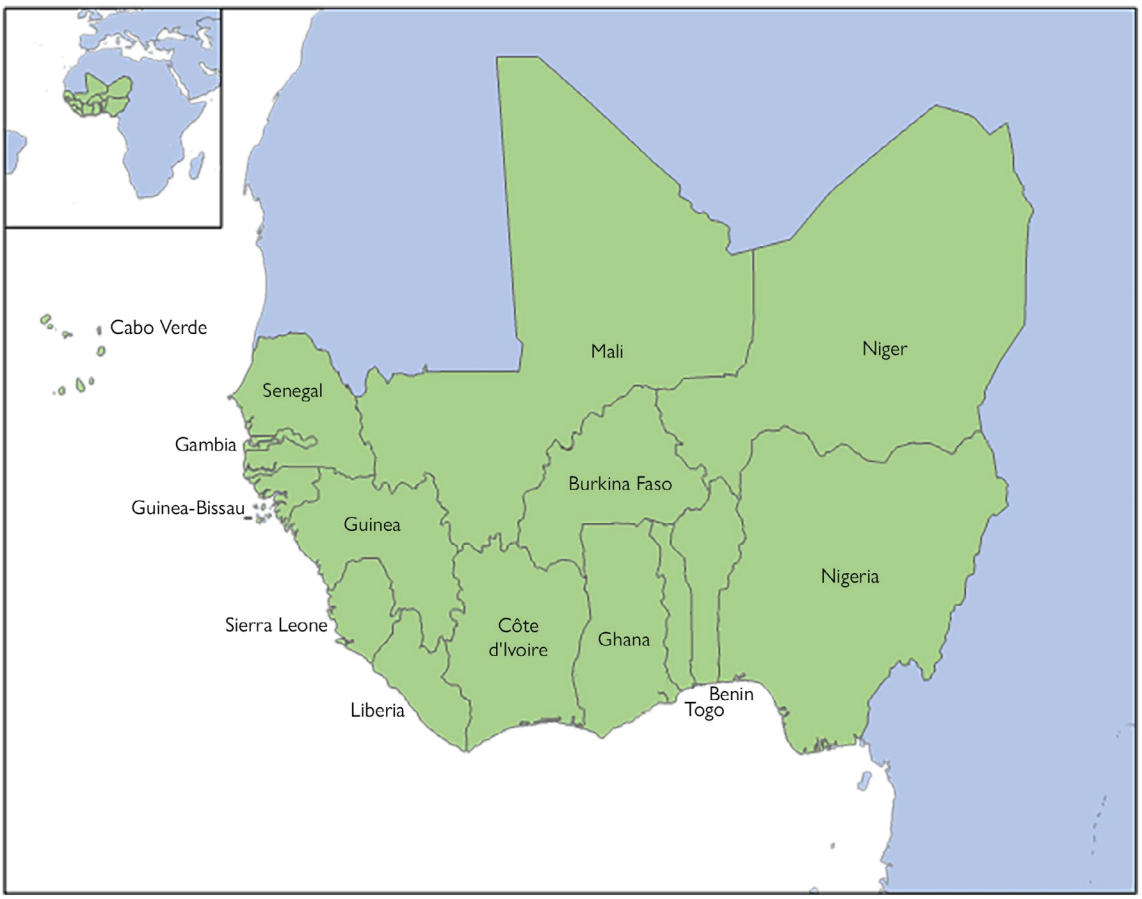
Sources: UNDP, 2020; UN DESA, 2021.

Notes: The data points at the five-year intervals in the colour bands reflect whether the migration corridor (i) did not feature Schengen countries; (ii) featured a Schengen country either at origin or destination; or (iii) featured Schengen countries at both origin and destination. Designation as a Schengen country coincides with implementation of Schengen area policies (see Schengen Visa Info, 2020). All Schengen countries are very high HDI countries.

In ECOWAS, the process of achieving free movement in the region has been an ongoing process since 1979. In the initial years, free movement of goods, services, people and labour occurred with limited restrictions. However, as countries in the region began to develop and as conflict arose in some member States, cross-border movements became more restrictive as countries responded with national laws that undermined the notion of free movement. The conflict in Liberia over competition for resources and the rise of irregular migration between member States has weakened some of the implementation strategies adopted, as security was prioritized over the benefits of trade.[74] ECOWAS also lacked an established and efficient mechanism that could monitor trafficking of persons, weapons and drugs, among other issues. The approach to reduce irregular migration from West African States, however, has not been to restrict mobility, but to generate greater awareness of the risks of irregular migration, as well as to enhance the opportunities available within the region and facilitated by mobility, especially for the youth.

74 Opanike and Aduloju, 2015.

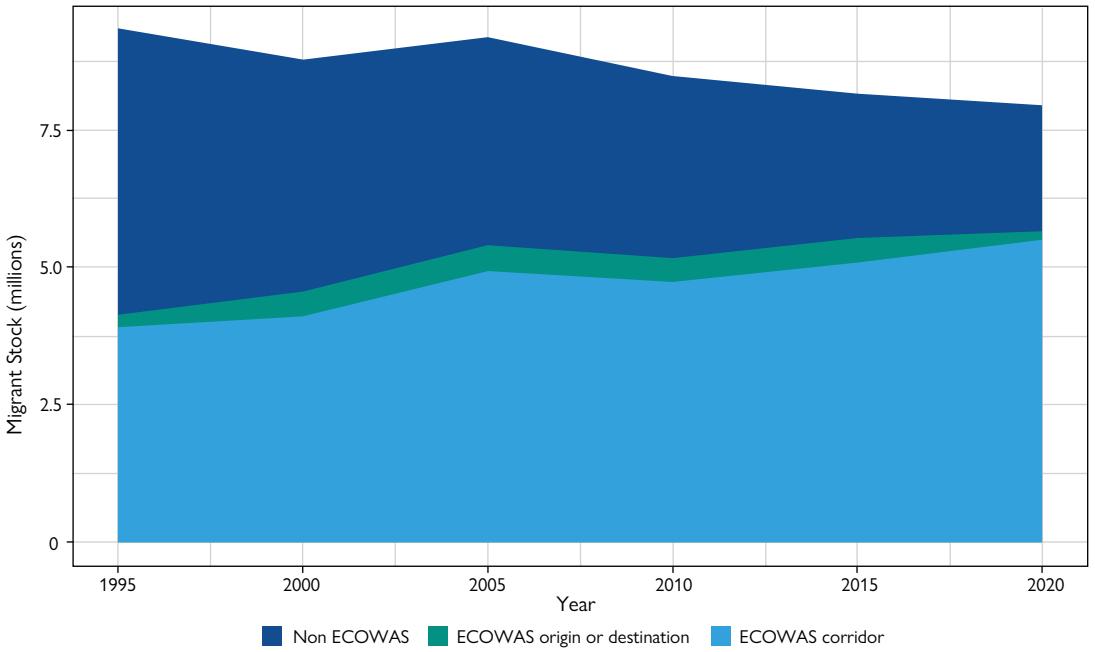
Figure 10. ECOWAS member States



Sources: ArchaeoGLOBE Project, 2018.
Notes: This map is for illustration purposes only. The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by IOM.

Figure 11 illustrates how migration involving ECOWAS countries is almost completely made up of migration between regional member States of the economic organization. The scale of migration is smaller compared with the Schengen zone, and the majority of countries in ECOWAS are classified as low HDI, but despite these differences, the same dynamics manifest in similar proportions. Out of the 10 million international migrants moving to or from ECOWAS countries in 2020, more than 6 million moved within ECOWAS. When people have the ability to move in order to obtain access to a greater range of opportunities, many will do so.

Figure 11. Migration between low HDI countries



Sources: UNDP, 2020; UN DESA, 2021.

Notes: The data points at the five-year intervals in the colour bands reflect instances in which the migration corridor (i) did not feature an ECOWAS country; (ii) featured an ECOWAS country at either origin or destination; or (iii) featured an ECOWAS country at both origin and destination. With one exception, membership in ECOWAS has been consistent throughout the timeframe examined here (ECOWAS, 2021). ECOWAS includes Ghana (medium HDI); non-ECOWAS does not include India and Pakistan.

Conclusions

The long-term narrative of migration has been based on the notion of opportunity, that people who migrate internationally do so in order to forge better lives. Migration has become strongly associated with attainment, with social and economic progress of individuals, of families, of communities and of nations. While this may have reflected a long-term reality stretching back well before the modern era, there may be reason to conclude that international migration no longer affords opportunity to the degree it has historically. Current data suggest that instead of serving as a stepladder of opportunity, international migration pathways for millions of people in developing countries have further narrowed.

Our analysis of global international migrant stock and HDI data show that between 1995 and 2020, migration from low and medium HDI countries increased, but only slightly. The combination of migration aspirations and migration infrastructure (or lack thereof) did not result in high growth rates of international migration from low and medium HDI countries, even when accounting for recategorization of HDI ratings over time. This is consistent with existing macroeconomic analyses, which show that international migration from low-income countries has historically been very limited.

On the other hand, the analysis in this chapter shows that contrary to previous understandings on the migration of people from high income countries – namely, that as country income levels increase above a threshold, international migration rates decline – the scale and proportion of outward migration from high and very high HDI countries has increased significantly. In fact, this bivariate analysis of migration stock across the last quarter century indicates that there has been a "polarizing" effect, with migration activity increasingly being associated with highly developed countries. This correlation raises the key issue of visa access and related migration policies, especially in the context of migration aspirations (Figure 2) held by potential migrants around the world who may wish to realize opportunities through international migration, but are unable to do so. New research shows that citizens of wealthy countries are much more able to access regulated mobility regimes than those from poor countries.[75]

The need to reassess migration as a stepladder of opportunity has implications for the 2030 Agenda for Sustainable Development Goals (SDGs) and the Global Compact for Safe, Orderly and Regular Migration.[76] In an environment in which restrictive migration-related policies, such as border management, entry requirements and stay limitations, have become more prominent across the globe, it appears that there are systemic risks to the full realization of the SDGs and gains in human development (as flagged in the Human Development Report 2019). The situation has been further complicated by the COVID-19 pandemic, which is temporarily stalling migration and mobility across the globe and forcing all countries to re-evaluate their migration and border policies for the new post-pandemic world.

75 Mau et al., 2015.

76 The Global Compact for Migration guides source, transit and destination countries by providing strategies that will create an enabling environment in which safe and orderly migration can take place in a more regular manner.

Appendix A. Opportunity, migration and the Human Development Index

The Human Development Index (HDI), as published annually in the UNDP's Human Development Report, is premised on the view that people are not generally driven by a singular desire to gain increased income, but instead puts forward the idea that people seek the "capabilities to exercise their freedoms to be and do what they aspire to in life".[77] Grounded in the work of Amartya Sen and developed by Mahbub ul Haq, the HDI takes a "a people-centred view" by incorporating three streams of data, each representing some of the basic opportunities conducive to expanding human capabilities.[78] First, the education of a country or a subnational jurisdiction is measured, mostly in terms of years of schooling for children. Second, health is measured by the life expectancy of a child at birth. Third, the HDI utilizes an economic indicator, represented by the average income measured in the context of the local currency (purchasing power parity or PPP). By integrating these three categories into a single index, the HDI seeks to obtain a more nuanced perspective of the qualities that contribute to individual and collective well-being in a society.

The HDI's limitations are well known. Reducing the index to health and education, and then quantifying these categories based on a limited series of variables, can risk oversimplification. The classification system – the numerical cut-offs for determining country's level of development – can be perceived as arbitrary. Most pointedly, the HDI can be politicized, as some countries make concerted pushes to receive superior scores on one or more of the indicators.[79] However, economic indices are prone to worse sorts of manipulation, as most recently evidenced by the suspension and review of the World Bank's Doing Business Report, an annual overview that features an index of business regulations and economic factors, but which has been criticized for methodological irregularities and for neglecting the role of social protection systems in human development.[80]

The use of the HDI in this chapter recognizes, first, that the introduction of numerous variables does not inevitably lead to a more accurate representation of development. The simplicity of the HDI is one of its virtues. Second, regarding the classification systems, while these can sometimes be found to be arbitrary, they do help the human mind to conceptualize patterns in development.[81] Finally, while the politicization of the HDI is inevitable, it remains an index of record for journalists, scholars and policymakers alike to provide an accurate measure for understanding the opportunities available to people around the world.[82]

The 2009 edition of the Human Development Report featured a thematic focus on migration, remarking, "better policies towards human mobility can enhance human development".[83] From an HDI perspective, the decision to migrate does not rest solely on the realization of greater incomes, or as an investment for future potential earnings. Migration, instead, is a strategy engaged to secure access to some of the basic goods – health and education – that lead to increased opportunities for oneself and one's children. Notwithstanding the attempt at quantifying global internal migration, a fraught exercise given the definitional vagaries and the paucity of reliable migration event data, the Human Development Report 2009 demonstrated that migration can be analysed in the context of a wider set of variables and that doing so can result in robust evidence for migration with policy implications.

77 UNDP, 2019.
78 Ibid.; Sen, 1985; Stanton, 2007.
79 Wolff et al., 2011.
80 Davis and Kruse, 2007; World Bank, 2020.
81 Davis et al., 2012.
82 Stanton, 2007.
83 UNDP, 2009.

Appendix B. How I ended up in a scientific spat about migration figures and what I learned from it

By Maite Vermeulen

Note: This is an abridged extract of the original article published in the now defunct publication *The Correspondent*. The full text can still be accessed here: https://thecorrespondent.com/747/how-i-ended-up-in-a-scientific-spat-about-migration-figures-and-what-i-learned-from-it/98789433039-1dadd2ed.

I have to tell you how the debunking of an important theory about migration was itself debunked. You probably had to read that sentence twice, and I get that…I learned a lot from this experience. About how science works, and how we as journalists contend with that. About what expertise actually is, and why it is so limited. And about certainty, doubt and being right. So buckle in and brace yourself for a story about that time I said I was wrong – and turned out to be mistaken.

How it all started: the migration hump

It all started a few months ago when I read a new study about the migration hump. I was immediately interested, since "the hump" is a well-known, very influential theory about the relationship between migration and development. Basically, the theory states that as poor countries become richer, outward migration increases rather than decreases. This may seem counter-intuitive: we might expect that when countries get richer, reasons to leave will diminish because life there is better now, right? But the migration hump shows that this is only the case above a certain income level, starting from about USD 7,000 to USD 10,000 per person per year.

Many poor countries are a long way away from that, which means that economic development in those countries will lead to more migration, not less. That's because migration costs money, and when people who were previously very poor have some, they are more likely to leave. Come up with a graph comparing income and emigration, and you'll see a more or less hill-shaped curve showing the lowest rate of emigration in poor countries, the highest rates in middle-income countries, and falling rates for rich countries: the migration hump.

I frequently reference the migration hump in my articles, especially to criticize European migration policy. And there's a reason for that: the European Union is spending more and more money on development aid to reduce migration. But the migration hump shows that this policy is based on a misconception: if more aid leads to more development in poor countries, that funding will cause net migration to increase, not decrease. And then that new study came across my desk, released under the MEDAM research project. The researchers were quite blunt: their analysis of migration data showed that the migration hump was an oversimplification. In actual fact, their models produced opposite results. They calculated that when a poor country becomes richer, emigration to rich countries goes down. Their explanation was that their method was different: instead of comparing emigration in poor and rich countries, they compared countries with themselves, over time. Why? Because a comparison between poor and rich countries overlooks the differences between those countries: differences that can affect income as well as migration.

I had colleagues and migration experts with more knowledge of econometrics take a look at the new paper; I spoke to the researchers, and then decided to write an update. The research looked convincing, and I wanted to hold myself accountable, because a theory I had often cited in my pieces did not seem to hold up. I thought that was the end of my hump saga. But then I was tagged in a Twitter thread by Michael Clemens, a leading development economist at the Center for Global Development. The new research, he tweeted, was based on a statistical error.

Clemens and his calculations

There was nothing wrong with my article as such, Clemens told me in a private message. "The problem is with the research itself." All very friendly, of course. But I wasn't so sure. Could I have seen this coming? Should I have done something differently? What could I learn from this?

I took another in-depth look at the paper, and delved into Clemens's criticism. I looked at his charts, tables, formulas. The only slight problem was I didn't understand any of it. This wasn't really all that strange, because Clemens's criticism targets researchers' statistical methods. If you don't have a degree in econometrics, the analysis is almost impossible to follow. In fact, it's almost impossible for people who have studied advanced statistics. My colleague Sanne Blauw – with a PhD in econometrics – called me after spending three hours analysing both papers: "I think I more or less understand Clemens's criticism."

I asked more experts for assistance: professors and PhD students who could explain the statistics to me, who had experience with time series and cross-sectional panel data, who knew more about spurious regressions and non-stationary variables. I had long phone calls with Michael Clemens and Claas Schneiderheinze, one of the researchers who authored the original MEDAM paper. I can't say I've completely mastered the maths. But here's what I now understand of the discussion.

What I learned from this

Whether or not this paper is based on a statistical error (this discussion will probably be settled in academic journals in the next few months), all this commotion makes me wonder about my relationship with science as a journalist: what it is – or what it should be. Every single person – including a journalist – has a limited framework that shapes their ability to understand something. I went to university, but I never took advanced statistics. Nor do I understand topics like the nitrogen cycle, Japanese grammar or the mathematics behind climate models. There is simply so much more that we don't know than what we do.

Sometimes that doesn't matter. I don't have to understand Newton to say something meaningful about poverty alleviation. But often it does matter, even if we don't realize it. As journalists, when our own knowledge and skills fall short, we rely on experts to fill in the gaps. But even for those experts, what they don't know extends far beyond what they do know. Especially when it comes to statistics. Many biologists, medical professionals, psychologists, economists or social scientists hire specialized colleagues to run their statistical analyses. And those specialists design models that are so complicated that only a handful of people can really understand them, or provide critical commentary. The mathematical calculations behind the models are so far removed from reality that results pop out like a rabbit out of a top hat: we have no idea how it works, but the outcome is self-evident.

Who knows how the statistical stage magic actually works? We can draw an obvious parallel with the epidemiological models being used to predict the course of the coronavirus pandemic: who has any idea exactly how those models work?

And that's how a journalist – or policymaker – can end up in a tricky situation when two experts are making contradictory claims. Can you place two non-stationary variables on one side of a panel data regression without losing the long-term trend? Yes you can; no you can't! How on earth can a journalist possibly figure out who is right? The only solution seems to be cumulative knowledge: asking all the smart people you can find to give it their best shot too. At its very best, that's how science should work.

And when that happens, it often turns out not to be about what's true or false. Instead, it's about which question we want to answer. The MEDAM paper answers an interesting question – just not the question of whether or not the migration hump holds true. And maybe the researchers subconsciously fell into a pitfall that science has created for itself: contentious studies that debunk something major are considered more prestigious than studies that confirm the prevailing assumptions. Just think about it: this was a study that I (a journalist) decided to focus attention on. I probably wouldn't have taken such a close look if their model had once again supported the famous migration hump.

This discussion shows that the best thing we can do is to keep being critical: constantly doubting, questioning and admitting that what we know – and what experts know – is limited. Had I dug deeper I might have been able to raise some questions about the data set used in the MEDAM paper. But then again: there is no such thing as an unproblematic data set when it involves something as complicated as migration figures. And the concept that two non-stationary variables cannot be regressed if you are controlling for a cointegrated third variable – that's not a question I could even have imagined asking in the context of this paper. And neither have many, many scientists, because the MEDAM paper has been read and widely acclaimed by lots of other smart people.

Actually, I've started thinking that journalists, scientists and policymakers are all in the same boat here: we would love for the world to be simpler than it can be. We want to be able to capture it in a nice, neat model, and then wrap it all up in a nice, neat article. But reality is so much more capricious and complex than any model can capture.

Seeing more shades of grey is also a way to understand the world better – but it's not quite as simple to put into a pithy headline. It's easier to just say: I was right after all.

Appendix C

For the purposes of this chapter, in order to determine an estimated number of migrants who inhabit a jurisdiction due to factors not related to forced migration, we utilized the forced migration data base produced by UNHCR along with international migrant stock numbers produced by UN DESA.[84] Since these United Nations agencies collect data and make estimations based on disparate methods, sources and time frames, it is worth mentioning a few details about the computations featured in this chapter.

For each country in each year, the stock of forced migrants – made up of those legally designated as refugees by UNHCR plus UNHCR's estimate of asylum seekers – is subtracted from the overall migrant stock. In cases where a country's number of forced migrants (from UNHCR) exceeds the total migrant stock of an origin or destination country, the number of "non-forced-migrants" is reduced to zero to avoid a nonsensical "negative" stock.

To calculate migrant stock as a proportion of population, different computations are required in the case of emigration (the movement of people away from an origin country) than in situations of immigration – the movement of people to a destination country. In both cases, we used migrant stock data and population data, published most recently by UN DESA in 2020.

In cases of immigration, calculating the migrant stock for an HDI classification follows the equation:

$$Proportion_{immigrant} = \frac{sum\ of\ migrant\ stocks\ living\ in\ destination\ countries}{sum\ of\ total\ populations}$$

For cases of emigration, diaspora populations have to be included in the denominator of the formula to ensure correct proportionality. Thus, the equation for each HDI classification is:

$$Proportion_{emigrant} = \frac{sum\ of\ migrant\ stocks\ from\ origin\ countries}{sum\ of\ migrant\ stocks\ from\ origin\ countries + sum\ of\ total\ populations}$$

Since the accurate, anonymous and consistent collection of migration flow data remains difficult, the use of migrant stock has become a standard, if indirect way to assess migration flows.[85] As with previous studies using bilateral migrant stock data, we are bound by the same limitations, most prominent of which is an assumption that migrants are leaving their country of birth or citizenship, which might not always be the case.[86] By measuring migrant stocks in discrete intervals over time, one has a broad sense of movements of people between places, at least in the form of snapshots over time. As noted by Clemens, measuring migrant stock in this way does not account for migrant deaths, one of the other pillars of demographic change. A more precise term for the calculations completed in this chapter would be to call this the "incidence" of migration. To avoid technical jargon for a broader readership, we have chosen to avoid this discussion in the main text, while recognizing the conceptual distinctions here.

84 UNDP, 2019; UN DESA, 2021; UNHCR, 2020.

85 Clemens, 2020.

86 Abel, 2016.

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