# Chapter 13
# Migration Transition in Asia: Revisiting Theories in the Light of Recent Evidence

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It is now exactly 20 years since the Conference on "Turning Points in Labour Migration" was organized by the ILO in Seoul in cooperation with the Korea Labor Institute and the UN University. The conference aimed to contribute insights into the complex relationship between migration and development, and in particular how improvements in general standards of living in successfully industrializing economies in East Asia have led to a transition in migration. A year later the Asian and Pacific Migration Journal (APMJ) published the eight papers commissioned for the conference in a special issue. This paper revisits some of the ideas and conclusions that emerged out of that conference and offers some reflections in the light of what has actually taken place with migration in the region over the recent past. To confirm the general validity of some of our conclusions, we then look further afield at the experience of a larger number of countries. Fortunately, more studies and a larger data base on emigration and immigration have since emerged, thanks to the data collection activities of the Department of Economic and Social Affairs (DESA) of the United Nations, the United Nations Development Program (UNDP), and the World Bank.

We start with the general proposition that, everything remaining the same, most people would prefer to live and work in the countries where they were born and raised. Migration then occurs because those who move see better prospects for improving their material or spiritual conditions outside their own communities or countries, otherwise they would have stayed. Once similar conditions start to avail at home, the assumption is that the propensity of people to migrate declines until net emigration approaches zero. This by itself does not of course signal that a turning point in migration has been reached and that a transition is already about to take place. We interpret the turning point to be reached only when the improvements

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in material welfare and other conditions are sustainable, anchored on a shift to a higher level of productivity and accompanied by corresponding changes in political and social institutions which give people confidence and security. Thus, a few years of zero net emigration, or even a few years of net immigration, may not mean very much unless they signal the start of a more permanent condition. While there may be temporary setbacks such as, for example, an economic recession that forces young people to look for jobs outside the country (i.e., such as what is happening now in Greece or Spain) these do not constitute a reverse transition where the country still possesses the technological capacity and the economic, political, and social institutions necessary for delivering a high standard of living.

Of the various conditions that shape people's confidence and sense of security, the easiest to observe and measure are material ones such as employment and wages, or more generally incomes, although clearly not the only ones that count nor even always the most important. This practical limitation has constrained investigations into the determinants of transition. Unfortunately, the more holistic measures of development and human welfare, such as UNDP's Human Development Index, were not yet available at the time the studies for the Seoul conference were undertaken. Later in this paper we shall make use of these indices, which have since become available, to shed light on the issue of migration transition.

It is notable that none of the studies pursued the line now gaining some currency that there is some internal logic linking migration to development, particularly though remittances. In simplest terms, the argument is that with appropriate policies, countries of origin can accelerate economic development because migrants' remittances relax foreign exchange constraints and increase savings and investments, while the migrants themselves often bring back useful knowledge and know-how. If "migration-led" development can be sustained, it may therefore lead to its own demise in the form of a migration transition.

## 13.1 Early Views on Turning Points in Asian Migration

What was observed years ago was that in the successfully industrializing countries of East Asia the decline in the absolute as well as relative levels of net emigration was followed by positive net immigration. While migration transition has been widely observed in other parts of the world and is in principle predictable when the reasons for wishing to migrate diminish (i.e., as incomes converge) there seem to be wide differences among countries in when and how long a transition takes place. Such differences may be accounted for by a country's openness to trade, the path a country chooses to meet labor shortages, how quickly economic growth translates into higher wages, differences in geography, external factors such as shifts in immigration policies of destination countries, or even by differences in attitudes to ethnic heterogeneity. If the experience of these countries can shed light on how these factors have made a difference to the timing and speed of transition, then it may be possible to predict what is likely to happen to the other developing countries in the

region. Case studies on Japan, the Republic of Korea, Hong Kong and Thailand looked at the processes of change taking place before the countries reached their respective turning points. What explains the decline in emigration pressures and were these broadly similar among the countries? The experiences of these countries were juxtaposed against more theoretical models on how migration transition can best be explained, especially by economic theories on labor market adjustments in the course of structural change and rapid development.

We revisit these earlier views on migration transition starting with the theoretical explorations.

Pang (1994) distinguished three turning points in migration, each one determined not only by economic but also by institutional and political variables. At early stages of development, when labor is abundant but per capita income is low, net outflows of labor rise as a percentage of the labor force. As development proceeds, net outflows are likely to accelerate because families can mobilize more resources to send more members abroad while the cost of information and uncertainty declines due to social networks established by earlier migrants. As economic growth continues, the rate of increase in net outflows is likely to then decline as net attractions to stay at home increase until the first turning point in Pang's model is reached. He associates this with the early stages of industrialization, when more people, previously discouraged by poor job prospects, begin to enter the labor force. As industrialization gains further strength, more people find employment—especially women. The greater employment of women sets in train a decline in fertility rates. Depending on the size of the population, a surplus of labor may persist for some time but the net outflow of labor eventually starts to increase at a slower pace than the growth of the labor force. The second turning point is reached when a country succeeds in expanding trade and investments, motivating workers abroad to return. Skilled foreign workers may also be admitted. Pang notes that although full employment may not yet be reached at this stage, one will be likely to already see changes in "…people's values and attitudes towards work—changes that lead to sectoral labor shortages. There is greater reluctance among locals to take up dirty, dangerous and difficult or 3D jobs…" (Pang 1994, p 87). The third turning point is reached when the economy starts to become a net importer of foreign workers, particularly the unskilled. This transition happened very swiftly in the case of Malaysia, which shifted almost immediately from being a country of net emigration to a country of net immigration, but not in Japan or Korea which instead opted to send capital overseas and establish offshore labor-intensive production.

Another theoretical formulation of migration transition was offered by Nayyar (1994) who focused on how intensively labor is used as economies pass through different stages of the structural transformation. At the early stages of development, surplus labor from the rural sector is absorbed outside agriculture into manufacturing at existing levels of wages and productivity. Manufacturing may increase its share of output and employment but the changes are more significant in the composition of employment than of output. He described this stage as the "extensive margin" of labor absorption. Net outflows of labor, which may have started earlier, will tend to come to an end when this stage of structural transformation is completed.

The second stage is reached when labor is transferred from low to high productivity occupations and real wages rise in both sectors. Manufacturing becomes more capital-intensive and significantly expands its share in output, while the share of agriculture shrinks. He describes this process as the "intensive" margin of labor use. Not all economies, however, are able to make a transition from being labor exporters to becoming labor importers. In his paradigm, reaching the intensive margin of labor use or full employment is an essential condition for the country to become a net importer of labor.

In his analysis of the migration transition experienced by the so-called NIEs of East Asia (Hong Kong, Korea, Singapore and Taiwan), Fields (1994) attributed much of the credit to two factors: one is the labor-intensive character of their export-led growth, and second is the highly-integrated nature of their labor markets. Their development strategies paid off quickly as employment opportunities expanded and the improvements in the labor market were transmitted to all sectors. Rising employment and wages, in turn, slowed down emigration pressures while firms sought to mitigate wage increases by shifting to labor-saving and labor-augmenting technologies, and by importing labor to the extent that immigration policies allowed. The fact that these economies were characterized by absence of institutional restrictions in the labor market enabled very flexible responses to the growth in demand which eased wage pressures in the early stages of industrialization but which were felt economy-wide and later brought about a migration transition.

The classical argument that the movement of goods is a substitute for the movement of the factors of production was the starting point of Alburo's (1994) contribution. He sought to confirm this "trade-off" between trade and migration by looking at the actual experiences of eight Asian countries and found that they all had increasing emigration with increasing exports. Interestingly, the peaks of migration outflows seemed to have clustered around periods of stagnant levels of exports. The relationship did not hold consistently for all the years however, nor for every country; but where the net outflow of workers diminishes on a sustained basis, it is the speed of trade expansion that seems to determine the turning point. Positing this observation as a testable hypothesis, he proceeded with an econometric analysis and found strong evidence that increasing exports is indeed associated with increased worker outflows, but accelerated exports reduced emigration. An alternative way of interpreting these results, as Alburo suggests, is that there is a social opportunity cost to migration.

The case studies undertaken in four countries however provided more nuanced explanations for each of the cases of migration transition than just purely economic. According to Watanabe (1994), what actually transpired in Japan with worker outflows and inflows cannot be explained by economic theory. Much of what happened with Japanese migration was the consequence of politics (i.e., admissions and later restrictions on Asian migration to US and Canada) and of Japan's defeat in the Second World War. Strong emigration pressures already felt during the Great Depression persisted well into the 1960s but actual emigration fluctuated widely on account of policies of destination countries. What played a bigger role in Japan's reaching its Lewisian turning point (exhaustion of surplus labor and rising real wages) was the intensification of labor use in its industrialization, especially the absorption of labor in small cottage industries.

In his case study, Skeldon (1994) argues that Hong Kong's experience does not fit neatly into models of migration transition. Geopolitical factors have played a key role in patterns of migration which included multiple turning points. Starting with the flood of refugees from the mainland after the Second World War, Hong Kong had large labor surpluses throughout most of the 1950s when processes of industrialization began. However, there was little emigration of any significance not because of absence of emigration pressures but because there were few doors open to the entry of unskilled Chinese migrants. Industrial employment grew rapidly during the 1950s and Hong Kong entered a period of low unemployment by about the beginning of the 1960s. Unemployment did rise in the mid-1970s due to the global recession and again in the early 1980s, but these trends were brief. In the case of Hong Kong, Skeldon argues that the turning points were from immigration to emigration, but these were due not to economic changes or labor market conditions but to Hong Kong's specific geopolitical circumstances. The spurts of emigration, especially in the late 1980s to early 1990s, coincided with periods of record low unemployment and the opening of immigration doors to some countries. These included flows to Canada, Taiwan, Australia, and the US, comprised largely of professionals and highly qualified people as well as students.

In Korea's case an abundant supply of labor enabled the country to achieve very rapid economic growth in the initial stages of its industrialization (Park 1994). Trade played a large role as Korean exports of light industry manufactures grew rapidly throughout the 1970s. Manufacturing absorbed labor from the rural areas by the millions and the process was hastened by the removal of price supports for rice and other crops which shifted the terms of trade against agriculture. Park claims that by about the middle of the 1970s, the Lewisian turning point had already been reached in Korea. From then on, the manufacturing sector became increasingly dominated by heavy industries. In the early years, Korea's development strategy included an active programme to export labor but this soon faded into insignificance. By the early 1990s, Korean small industries were already facing severe labor shortages, forcing the government to relax existing immigration restrictions to low-skill labor, and eventually to adopt a formal temporary guest worker scheme. This was the second turning point when Korea became a net importer of labor.

Thailand also went through similar phases of structural change as Korea, according to Pracha Vasuprasat (1994), although these started a decade or so later. A labor export program was in place by the mid-1970s, which continues to this day. Given its abundant supply of labor, a strong agricultural economy and stable economic policies, Thailand easily attracted large inflows of foreign direct investments which fueled its export-led industrialization. Initially exporting mainly processed agricultural products and raw materials, Thailand's exports eventually became dominated by light manufactures. The manufacturing and services sectors easily absorbed the millions of Thai workers leaving agriculture. The difference with Korea lies in its having porous land borders with much poorer neighbouring countries, insuring continued supplies of foreign workers willing to take the place of Thais in so-called 3-D jobs in agriculture, construction, and low skill services. Real wages remained fairly stable until well into the beginning of the 1990s, when unemployment reached record lows. This explains why significant numbers of Thai workers continued to seek

employment in Singapore, Taiwan, Korea and the Middle East despite full employment conditions at home. However the numbers of Thais leaving for work abroad have gone down and for many years have been much smaller than the numbers of foreign workers coming to Thailand from across the border; hence the country must have transitioned very early from being a net exporter to a net recipient of labor.

From these case studies of Asian countries, we may draw a few general conclusions:

- Rising employment and per capita incomes clearly impact on propensities to emigrate but since actual levels of emigration also depend on exogenous factors (i.e., policies of destination states) the former constitute at best necessary but not sufficient conditions for migration transition to take place.
- For the same reasons as above, the turning point need not be a unique event; even countries which have attained full employment may still experience net outflows of labor.
- Exporting goods and exporting labor may be complements at early stages of industrialization, both contributing to accelerating a country's economic development. However, with faster exports growth (thus accelerating income growth) they tend to become substitutes—meaning that accelerating exports can lead to return migration.

## 13.2 Searching for Global Evidence of Migration Transition

Data on migration flows (number of immigrants arriving and number of emigrants departing) are hard to come by but the United Nations Population Division has managed to make estimates of net migration (difference between number of immigrants and number of emigrants) for all countries with at least 150,000 inhabitants in 2000 for each 5-year period between 1950 and 2000. The data cover long enough intervals to even out temporary fluctuations and can serve as a good basis for determining if net migration has changed, from positive to negative or vice versa, during the 50-year period (United Nations Department of Economics and Social Affairs 2004).

Since very small countries are highly susceptible to experiencing net outflows for a variety of reasons, we look at the 109 countries with five million or more inhabitants in 2000. We reproduce in Annex A Table II.5 of the UN's World Economic and Social Survey of 2004 which shows which countries had positive, zero, or negative net migration in each of the 5-year periods between 1950 and 2000. Comparison of their data shows that most countries have experienced a shift in net migration over the 50-year period. Only 16 countries had experienced consistently negative net migration (more emigrants than immigrants) during each 5-year period between 1950 and 2000, and only seven had consistently positive net migration (more immigrants than emigrants). Among the other 86 countries, according to the UN report, net migration had changed sign or been zero at least once since 1950. The report reached the conclusion that "…international migration is a volatile phenomenon

whose direction can and often does change, implying that, for most countries, it is not possible to postulate that a lengthy period of sustained negative net migration will necessarily be followed by a period of sustained positive net migration" (United Nations Department of Economics and Social Affairs 2004, p 33).

In Europe, the countries that used to be countries of emigration but have experienced a transition and have become receiving countries in recent years were Greece, Italy, Portugal, Slovakia, and Spain, which used to be the main sources of migrant workers for the rest of Europe in the 1950s and 1960s but have become destination countries in the 1980s; Finland, which used to supply labor to Sweden, has since been a net receiver of workers from the former USSR; the United Kingdom, where immigration of workers from the rest of EU, especially from the new member states, has overtaken the numbers of UK nationals emigrating to other parts of the world; the Russian Federation, which has emerged as the destination country for many of the former Soviet republics; the Czech Republic and Hungary.

In Asia, Japan has become a destination country especially for descendants of Japanese immigrants in Latin America, as well as from China, Korea, and other parts of Asia; Malaysia, which supplied Singapore with many workers, has herself become a receiving country of workers, many from East and South Asia.

On the other hand, there were also countries which transitioned from being net receivers to being net senders of migrants. They include Georgia, Nigeria, Kazakhstan, and Uzbekistan.

Some countries passed through migration turning points more than once, notably Belgium, Switzerland, Jordan, Libya and Venezuela, which all experienced shifts from being net receivers to net senders and then back again to being net receivers.

Table 13.1 below provides a summary of the data shown in Annex A and highlights the trends observed for many Asia/Pacific countries. Of the 16 countries found to have remained net senders of migrants throughout the 50-year period, four were Asian countries (Nepal, Bangladesh, Indonesia, and India). Only Australia remained a net receiving country throughout the period. The Republic of Korea was a receiving country from 1950 to 1955, but became a net sender ever since despite the spectacular growth of her economy and rise in living standards over the past 2 decades. Equally surprising is the case of Thailand, which the UN data show as a net sender from 1980 to 2000, a period during which she was known to employ large numbers of Burmese, Cambodian, and Laotian workers. Both Sri Lanka and the Philippines had zero net migration in the early years, but have become net senders since the 1960s (consistent with outflow trends for the two countries coming from other sources).

## 13.3 Economic Downturns and Migration Flows

How have net migration flows been affected by changes in economic conditions in the Asia/Pacific region? The growth of the region's economies were set back by two significant disturbances in the recent past, the first on account of the Asian financial crisis of 1998 which started in Thailand but subsequently had severe contagion effects on the rest of the region in particular Malaysia, the Republic of Korea, Hong

**Table 13.1** Countries or areas with five million inhabitants or more in 2000 distributed according to number of 5-year periods of positive or negative net migration, 1950–2000. (Source: Table II.5 of UN World Economic and Social Survey 2004)

| Number of 5-year periods with negative (−) net migration | Number of 5-year periods with positive (+) net migration | Total number of countries | Of which Asia/Pacific countries are (+) years of net immigration (0) means inflows = outflows |
|---|---|---|---|
| 10 | 0 | 16 | Nepal, Bangladesh, Indonesia, India (+) none |
| 9 | 0 | 1 | |
| | 1 | 12 | Rep of Korea (+)1950–1955, China (+)1965–1970 |
| 8 | 0 | 3 | Sri Lanka (0) 1950–1960 |
| | 2 | 4 | |
| 7 | 0 | 2 | Philippines (0) 1950–1965 |
| | 1 | 1 | Papua New Guinea (+) 1965–1970, (0) 1990–2000 |
| | 3 | 11 | Cambodia (+) 1985–2000, Pakistan (+) 1975–1990 |
| 6 | 3 | 1 | |
| | 4 | 10 | Japan (+) 1980–2000 |
| 5 | 0 | 2 | Vietnam (0) 1950–1975 |
| | 3 | 3 | |
| | 4 | 1 | |
| | 5 | 5 | Lao PDR (+) 1955–1975, 1985–1990 |
| 4 | 1 | 2 | Afghanistan (0) 1950–1975, (+)1990–1995 |
| | 2 | 1 | Thailand (0) 1950–1970, (+)1970–1980 |
| | 3 | 1 | |
| | 4 | 1 | |
| | 6 | 3 | Malaysia (+) 1950–1965,1975–1980, 1990–2000 |
| 3 | 1 | 1 | Myanmar (0) 1950–1980, (+)1995–2000 |
| | 2 | 1 | |
| | 4 | 1 | |
| | 7 | 1 | |
| 2 | 0 | 1 | |
| | 5 | 1 | |
| | 6 | 1 | |
| | 7 | 1 | |
| | 8 | 7 | |
| 1 | 0 | 1 | DP Korea (0) 1955–2000 |
| | 9 | 6 | Hong Kong (+) for all periods except 1965–1970) |
| 0 | 10 | 7 | Australia (+) all periods |

**Table 13.2** Selected indicators of net migration 2000–2010. (Source: UNDP Human Development Report 2009)

| | Emigration rate[a] | Stock of immigrants[b] in 000s | | Net international migration rate[c] |
|---|---|---|---|---|
| | 2000–2002 | 2005 | 2010 | 2005–2010 |
| Japan | 0.7 | 1999 | 2176 | 0.0 |
| R. of Korea | 3.1 | 551 | 535 | 0.4 |
| Singapore | 6.3 | 1949 | 1967 | 0.3 |
| Malaysia | 3.1 | 2029 | 2358 | 0.1 |
| Hong Kong | 9.5 | 2721 | 2742 | 0.2 |
| Thailand | 1.3 | 982 | 1157 | 0.0 |

[a] Emigration rate is the stock of emigrants from a country at a particular point in time expressed as a percentage of the sum of the resident population in the country of origin and the emigrant population

[b] Immigrants are individuals residing in a given host country (country of destination) that is not their country of origin (or birth)

[c] Net international migration rate is the total number of immigrants to a country minus the number of emigrants over a period, divided by the person-years lived by the population of the receiving country over that period. It is expressed as net number of migrants per 1000 population, or as a percentage

Kong (China), and Japan; and the second, the 2009 banking crisis in the US which also caused a recession in the East Asian region, affecting particularly hard Japan, Taiwan, and Singapore.

The net migration data, on which Table 13.1 above is based, only cover the period from 1950 to 2000 and thus can only reflect what happened after the Asian financial crisis. The net flows did not appear to change for most countries until 2000. Australia, Japan, Malaysia and Hong Kong remained net receivers of migrants, while the Republic of Korea and Thailand, along with other developing countries of the region, remained as net senders of migrants. More recent data made available from other sources indicate that the Republic of Korea may have reached a turning point during the middle of that decade. The decline in fertility rate has already made an impact on the labor force which grew anemically at only around 1% for most years. Unemployment rate did not go beyond 3.7%. A net sender of migrants over the previous decades, Korea had 7.3 million Koreans estimated to be overseas as of 2011, of whom about 40% maintain Korean nationality, according to the Ministry of Foreign Affairs and Trade (Oh et al. 2012). Korea registered for the first time in 2006 a net immigration of 47,600. From then on net inflows were registered rising to 82,000 in 2011 (Table 13.2).

Singapore experienced an increase in emigration rate early in the decade but remained a net recipient of migrants throughout the last decade. Other sources suggest a rise in emigration throughout the decade since net inflows declined from 2004 to 2011 even if immigration rose. Malaysia also remained a net recipient of migrants over the last half of the previous decade but only marginally so. Hong Kong experienced a very high rate of emigration early in the decade which may not have been sustained since the net international migration rate remained low over the last half of the decade. The UN data base did not include Taiwan, but other sources suggest

that net migration flows were slightly negative throughout the decade, except for 2007 when a positive inflow was registered. In the case of Thailand, the net flows are almost impossible to determine since they are dominated by clandestine movements.

## 13.4 Shifting to More Holistic Measures of Welfare

At the beginning of this paper, we laid down our basic assumption that given a choice, most people would prefer to live and work in the country they were born and raised. The phenomenon of migration is therefore taken as an indication that those who move see better prospects elsewhere for improving their material or spiritual welfare, otherwise they would stay. We also recognized that using simple indicators like income as a proxy for well-being is unsatisfactory. People after all are motivated to move by many other dimensions of welfare. Countries that attract immigrants are typically those that offer a safe and healthy environment, where standards of education are high (which is often also an indicator of developed democratic institutions and a rich cultural life), and where human beings can achieve higher levels of productivity through the application of their labor.

Since 1990, the UNDP has been developing its Human Development Index (HDI), a composite index measuring average achievement in three basic dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living. Because of this index, it is now possible to compare countries and the advances they have made over time based on a more comprehensive measure of welfare than simple indicators like GNP per capita. The specific components of HDI for the 2007 estimates were:

- Life expectancy at birth
- Adult literacy rate
- Combined gross enrollment ratio
- GDP per capita
- Life expectancy index
- Education index

The UNDP calls countries that have achieved an HDI of 0.9 or higher, developed, and those that have not, as developing. UNDP then grouped countries based on HDI values: 0–0.499 for low HDI; 0.500–0.799 for medium HDI; 0.800–0.899 for high HDI; and greater than 0.900 for very high HDI.

Annex Table B shows the countries that have made the most gains in terms of their HDI ranking. We use their HDI values, and changes therein, for testing a few hypotheses that may shed some light on how they influence migration.

## 13.5 Testing Some Hypotheses

### *13.5.1 Do Countries Which Achieve Significant Gains in Human Development, As Indicated by the HDI, Attract More Immigrants?*

We postulate the following relationship: the change in the stock of immigrants from 1990 to 2005 is some function of the change in HDI from 1990 to 2005, the initial population in 1990, and the initial HDI level in 1990.

$\Delta M_{90-05} = f(\Delta HDI_{90-05}, P_{90}, HDI_{90})$ where M is the stock of immigrants, $\Delta HDI_{90-05}$ is the change in HDI from 1990 to 2005, and P is the population in 1990.

We postulate this relationship on the grounds that countries which make significant gains in welfare, as indicated by HDI, will attract more immigrants. The 1990 population is included as a variable since the data on stock of immigrants are expressed in absolute terms, not as a percentage of the population. Assuming that a bigger country has a bigger capacity to absorb more immigrants than a small one, we needed a way of isolating this effect on immigration from that of HDI values.

The results of the statistical regression are shown below:

Number of obs. = 112
F (3, 108) = 2.84
Prob > F = 0.0412
R-squared = 0.0764

| ch_stk_≈9005 | Coef | Robust std. err | t | P > [t] | 95 % Conf. interval | |
|---|---|---|---|---|---|---|
| ch_hdi_9005 | −2520.212 | 3392.725 | −0.74 | 0.459 | −9245.181 | 4204.757 |
| pop_1990 | 1.32866 | 2.156487 | 0.62 | 0.539 | −2.945871 | 5.603191 |
| hdi_1990 | 2187.528 | 900.0551 | 2.43 | 0.017 | 403.4626 | 3971.594 |
| _cons | −1060.483 | 427.3559 | −2.48 | 0.015 | −1907.676 | −213.3893 |

The results of the regressions based on values for 112 countries show no significant relationship between the change in HDI over the 15-year period and the change in the stock of immigrants. This becomes understandable when one notes that many of the countries that registered large gains in HDI are developing countries which did not have policies for admitting immigrants.

However, the countries that in 1990 (initial year) had a high level of HDI tended to have a large increase in the stock of immigrants from 1990 to 2005. These countries were already developed ones in 1990. The results are consistent with the fact that in recent decades the growth in migration was higher in the South–North, than the South–South direction.

### 13.5.2 Are the Effects of Gains in Human Development Better Reflected in "Net International Migration" Than in Changes in Stock of Immigrants?

In the above regression, we sought to find a correlation between changes in stock of immigrants with changes in HDI. In the following, we replace the changes in stock with the data on "net international migration rate," which the UNDP defined as the "total number of immigrants to a country minus the number of emigrants over a period, divided by the person-years lived by the population of the receiving country over that period. It is expressed as net number of migrants per 1000 population or as a percentage." We postulate the following relationship:

$NM^i_t = f(\Delta HDI^i_t, HDI^i_t)$ where NM is net migration rate for country *i*. We look first at the net migration rate for 1990–1995 and relate it to HDI gains for the immediately preceding period, 1980–1990.

Number of obs. = 81
F (2, 78) = 5.91
Prob > F = 0.0041
R-squared = 0.3332
Root MSE = 0.87701

| n_mig_r-9095 | Coef. | Robust, Std. Err. | t | P>[t] | 95% Conf. interval | |
|---|---|---|---|---|---|---|
| Hdi_gr_8090b | 0.7716273 | 0.3599032 | 2.14 | 0.035 | 0.0551151 | 1.48814 |
| hdi_1980 | 2.966112 | 0.9868895 | 3.01 | 0.004 | 1.001366 | 4.930858 |
| _cons | −2.43363 | 0.9255655 | −2.63 | 0.010 | −4.276289 | −0.5909707 |

For the second period, we use the net migration rate for the period 2005–2010 and relate it to HDI gains for the preceding period, 1990–2007.

Number of obs = 115
F (2, 112) = 6.21
Prob > F = 0.0028
R-squared = 0.0989
Root MSE = 0.45831

| n_mig_r-0510 | Coef. | Robust Std. Err. | t | P > [t] | 95% Conf. interval | |
|---|---|---|---|---|---|---|
| Hdi_gr_9007b | 0.2264966 | 0.101186 | 2.24 | 0.027 | 0.0260096 | 0.4269836 |
| hdi_1990 | 1.1496 | 0.3287123 | 3.50 | 0.001 | 0.4982889 | 1.800902 |
| _cons | −0.897534 | 0.2778862 | −3.23 | 0.002 | −1.44813 | −0.3469381 |

The above regressions show a highly significant relationship between net international migration rate and the HDI growth in the immediately preceding period, as well as with the initial period. Countries that initially scored high HDI values also have higher net international migration rates, on average. More significantly, countries

which made rapid gains in HDI also registered high net migration rates. The relationship to estimation periods was robust, meaning that it was found for data pertaining to net migration rate from the first half of the 1990s, as well as data for the first half of 2000s.

### *13.5.3 At What Level of Income do Propensities to Emigrate Weaken?*

The UNDP statistics on migration include estimates of emigration rates for each country for 2000–2002 and thus allow us to relate emigration propensities to income in the origin countries. Unfortunately, it is only possible to do a cross-section analysis of the question when it would have been more instructive to have a time series showing how the propensity changes for the same country as it undergoes development changes. Nevertheless, the cross-section comparison is interesting and yields a few interesting insights.

We postulate the following simple relationship:

Ei = f ($Y^{i}_{00}$, $Y^{i2}_{00}$) where Ei is the emigration rate for country *i* for the period 2000–2002, $Y^{i}_{00}$ is GDP per capita for the year 2000 in purchasing power parity dollar (base 2005), and $Y^{i2}_{00}$ is its square (in natural logarithm).

Number of obs = 181
F (2, 178) = 10.94
Prob > F = 0.0000
R-squared = 0.0807
Root MSE = 9.1536

| Em_rate_20-2 | Coef. | Robust, Std. Err. | t | P > [t] | 95% Conf. interval | |
|---|---|---|---|---|---|---|
| lrgdpch | 18.63681 | 4.996586 | 3.73 | 0.000 | 8.776638 | 28.49697 |
| lrgdpch2 | −1.034394 | 0.2943477 | −3.51 | 0.001 | −1.615254 | −0.453534 |
| _cons | −72.9012 | 20.45579 | −3.56 | 0.000 | −113.2683 | −32.53413 |

The results show that emigration rates are on average higher for countries with higher incomes. However, at very high levels of per capita income they begin to decline and at some stage, a turning point is reached. From the results, one can also estimate that the turning point occurs at per capita GDP around $ 8172 in PPP (base 2005). Note that this jibes with Olesen (2002), which posited that migration occurs from countries with income between $ 1500 and $ 8000 in PPP terms (base 1985).

These findings are consistent with the common observation that, since emigrating is costly, emigration will be low at low levels of income, but rises as incomes rise. Emigration rises at a decreasing rate with respect to income, however, and eventually falls.

### 13.5.4 Are Those with College Education more Likely to Emigrate? Is this Observable at All Levels of Income?

$ET^{i}_{00} = f(Y^{i}_{00})$ in natural logarithm. where $ET^{i}_{00}$ is the emigration rate of the tertiary educated for country i for the period 2000-2002 and Yi is GDP per capita for the year 2000 in purchasing power parity dollar (base 2005) in natural logarithm.

We hypothesize a similar relationship between emigration rates and per capita incomes, but this time relate to incomes the data on emigration rates of the tertiary educated which are also available from the UNDP statistics.

Number of obs = 101
F (1, 99) = 6.44
Prob > F = 0.0127
R-squared = 0.0557
Root MSE = 16.46

| t_em_ra-2000 | Coef. | Robust ,Std. Err. | t | P > [t] | 95 % Conf. interval | |
|---|---|---|---|---|---|---|
| lrgdpch | −2.73237 | 1.076961 | −2.54 | 0.013 | −4.869295 | −0.595446 |
| _cons | 37.60904 | 9.735164 | 3.86 | 0.000 | 18.29237 | 56.92572 |

The above results show that the higher the incomes per capita of the origin countries the lower on average the emigration rates among those with tertiary education. A virtuous cycle is discernible, with the emigration of the better educated declining as incomes rise.

### 13.5.5 Do Emigration Rates Rise With the Level of Urbanization of Origin Countries? To What Extent is the Relationship Affected by the Country's Level of Human Development?

Cities serve as hubs of communications and transport linking countries to the outside world; thus it is taken for granted that higher emigration rates will be positively associated with levels of urbanization. Is this supported by the statistics now available from UNDP on emigration rates? To find out, we relate emigration rates with urbanization rates. Furthermore, we test if the relationship depends on level of development by breaking up the countries according to their classification by the UNDP into those at high, medium and low levels of human development.

The following relationship is then postulated:

Ei00-02 = f (U90, HDI) where *E* is the emigration rate for country i estimated by UNDP for 2000–2002; U90 is the level of urbanization in 1990. HDI serves as the dummy variable for level of development.

a. *Very High Human Development*

Number of obs = 38
F (1, 36) = 1.55
Prob > F = 0.2216
R-squared = 0.0702
Root MSE = 6.3885

| em_rate-20-2 | Coef. | Robust, Std. Err. | t | P > [t] | 95% Conf. | interval |
|---|---|---|---|---|---|---|
| Urb_pop_1990 | −0.0961647 | 0.0773071 | −1.24 | 0.222 | −0.2529507 | −0.0606212 |
| _cons | 15.19256 | 6.110617 | 2.49 | 0.018 | 2.799656 | 27.58547 |

The regressions for countries at high level of development do not show statistically significant relationship between emigration rates and urbanization (note that the R-squared is very low and the probability value, *p*, is high).

b. *High Human Development*

Number of obs = 44
F (1, 42) = 14.33
Prob > F = 0.0005
R-squared = 0.3232
Root MSE = 9.6181

| em_rate-20-2 | Coef. | Robust, Std. Err. | t | P > [t] | 95% Conf. | interval |
|---|---|---|---|---|---|---|
| Urb_pop_1990 | −0.3684356 | 0.0973243 | −3.79 | 0.000 | −0.5648439 | −0.1720273 |
| _cons | 34.55495 | 6.673341 | 5.18 | 0.000 | 21.08761 | 48.0223 |

The results show that for countries classified at high level of human development, a higher level of urbanization is associated with lower emigration rates. The correlation is strong as indicated by the very low "*p*" values and the relatively high *R* squared.

c. *Medium Human Development*

Number of obs = 75
F (1, 73) = 6.69
Prob > F = 0.0117
R-squared = 0.0839
Root MSE = 9.3086

| em_rate-20-2 | Coef. | Robust, Std. Err. | t | P > [t] | 95% Conf. interval | |
|---|---|---|---|---|---|---|
| Urb_pop_1990 | 0.1662984 | 0.0643163 | 2.59 | 0.012 | 0.0381161 | 0.2944806 |
| _cons | 2.076478 | 2.61407 | 0.79 | 0.430 | −3.133355 | 7.286312 |

The results show that for countries at medium level of human development, a higher level of urbanization is associated with higher emigration rate.

d. *Low Human Development*

Number of obs = 24
F (1, 22) = 1.38
Prob > F = 0.2526
R-squared = 0.0433
Root MSE = 3.6014

| em_rate-20-2 | Coef. | Robust, Std. Err. | t | P > [t] | 95% Conf. interval | |
|---|---|---|---|---|---|---|
| Urb_ pop_1990 | −0.0653779 | 0.0556481 | −1.17 | 0.253 | −0.180785 | 0.0500291 |
| _cons | 6.452508 | 1.907368 | 03.38 | 0.003 | 2.496869 | 10.40815 |

Note that for countries at both extremes—at very high level and at low level of human development—there is no statistically significant relationship between urbanization and emigration rate.

### *13.5.6 Are Propensities to Emigrate Higher in Societies that have Greater Inequality than in Those that are More Equal?*

Among the "push factors" driving emigration is often people's dissatisfaction with inequalities they see in their society. These inequalities are often due to maldistribution of productive assets (a few owning huge tracks of the most fertile lands) or lack of opportunities to earn a decent income despite hard work. It is therefore legitimate to ask if reducing social inequality through appropriate policies help bring about a turning point in migration. We are able to investigate this issue with the same statistics available from the UNDP. For countries at the same level of human development, is lower inequality associated with lower emigration rates?

We postulate the following relationship:

$E^i_{00} = f(Rto^i_{10}, HDI^i)$ where $Rto^i$ is the ratio of the income of the top 10% to the income of the bottom 10% in country i.

Number of obs = 117
F (2, 114) = 4.88
Prob > F = 0.0092
R-squared = 0.0440
Root MSE = 5.7171

| em_rate_20-2 | Coef. | Robust, Std. Err. | t | P>[t] | 95% Conf. interval | |
|---|---|---|---|---|---|---|
| Rto_t10tob-c | −0.0363306 | 0.0177785 | −2.04 | 0.043 | −0.0715497 | −0.0011114 |
| hdi_2000 | 5.480209 | 2.166037 | 2.53 | 0.013 | 1.189307 | 9.771111 |
| _cons | 3.200981 | 1.49716 | 2.14 | 0.035 | 0.2351183 | 6.166843 |

Contrary to our expectation, the regression results show that, controlling for HDI level, countries with higher inequality as measured by the ratio of the top 10% to the bottom 10% tended to have lower emigration rates. For countries with the same inequality, those at higher HDI levels tended to have higher emigration rates.

Using Gini coefficient as the measure of inequality yields no significant relationship between inequality and emigration rate.

## 13.6 Fitting Theory to Reality

We tried to see how our notions of migration determinants and transition fitted the experience of countries using the most comprehensive data base available from the United Nations on immigration and emigration, urbanization, and its indices of human development (HDI) for large number of countries. The availability of the HDI indices has, in particular, enabled us to take into account more factors than just income changes in measuring improvements attained by countries in improving the human condition, presumably a key consideration for people's decision to leave or stay in their countries of birth. Moreover, the data sets cover a long period of time, offering us a more reliable indicator of sustainable changes than data for just a few years which would have been subject to temporary fluctuations. There are of course limitations since migration movements are inherently difficult to track using periodic surveys. Censuses only catch the situation at discrete points in time. Another caveat is that many of our hypotheses focus on economically-motivated movements while the data available of migrant stocks do not differentiate one form of movement from another.

Our statistical analysis of the link between migration and HDI suggests that our theorizing is still far from satisfactory since HDI only explains a part, albeit a small part, of the whole story. The following general conclusions, however, seem warranted even at this stage of our exploration:

1. Countries which show improving human development are likely to experience more emigration than before. This probably reflects the fact that rising incomes enable more people to become mobile not only within their own countries but also outside, and because people with better education and health can venture out and seek to have more satisfying lives within or outside their own countries. However, those in countries at the highest levels of development are likely to be more content to stay at home.
2. For countries already at high levels of human development, it does not seem to matter how much of the population is urbanized. Urbanization seems to be related to greater tendencies to migrate when countries are still at medium level of development.

**Table 13.3** Countries that have developed most rapidly in terms of increase of HDI (Top 20)

| | Country | HDI growth from 1980 to 2007 | Country | HDI growth from 1990 to 2007 | Country | HDI growth from 2000 to 2007 |
|---|---|---|---|---|---|---|
| 1 | Nepal | 2.16 | Mozambique | 2.28 | Niger | 3.92 |
| 2 | Bangladesh | 1.86 | Mali | 2.23 | Ethiopia | 3.13 |
| 3 | Burkina Faso | 1.67 | Rwanda | 2.04 | Burkina Faso | 2.85 |
| 4 | Guinea-Bissau | 1.62 | Bangladesh | 1.96 | Mali | 2.30 |
| 5 | Mali | 1.53 | Burkina Faso | 1.82 | Tanzania (United Republic of) | 2.09 |
| 6 | Burundi | 1.43 | Liberia | 1.81 | Cambodia | 2.01 |
| 7 | China | 1.37 | Nepal | 1.81 | Mozambique | 1.97 |
| 8 | Mozambique | 1.34 | Uganda | 1.59 | Rwanda | 1.90 |
| 9 | India | 1.33 | Benin | 1.46 | Tunisia | 1.79 |
| 10 | Egypt | 1.30 | Togo | 1.44 | Congo | 1.65 |
| 11 | Pakistan | 1.30 | Pakistan | 1.42 | Morocco | 1.63 |
| 12 | Indonesia | 1.26 | China | 1.40 | Chad | 1.61 |
| 13 | Benin | 1.25 | Guatemala | 1.40 | Uganda | 1.57 |
| 14 | Iran (Islamic Republic of) | 1.23 | Malawi | 1.38 | Zambia | 1.57 |
| 15 | Morocco | 1.20 | Morocco | 1.37 | Jordan | 1.55 |
| 16 | Malawi | 1.20 | India | 1.32 | Nepal | 1.46 |
| 17 | Viet Nam | 1.16 | Papua New Guinea | 1.32 | Congo (Democratic Republic of the) | 1.41 |
| 18 | Tunisia | 1.09 | Guinea-Bissau | 1.25 | Bangladesh | 1.39 |
| 19 | Guatemala | 1.05 | Tunisia | 1.20 | Burundi | 1.38 |
| 20 | El Salvador | 0.99 | Nicaragua | 1.17 | Benin | 1.37 |

3. Education seems to matter but not in the way usually assumed, namely that the more educated tend to leave. This seems to depend on whether countries are experiencing improvements in human conditions. Our study suggests that the tendency for those with college education to emigrate declines with increasing HDI levels of their countries, hence we said it may be a sign of a virtuous cycle taking hold.
4. Our data suggest that the turning point when countries stopped being net senders to being net receivers has tended to occur when per capita incomes (at purchasing parity terms) reached about US$ 8100. The estimate is significant, not because it is likely to be generally valid, but only because it suggests that many developing countries are still quite far from reaching such threshold.
5. The effect of social inequality on people's motivation to emigrate is one of the issues explored by the study. Contrary to our expectations, the data show that the tendency to emigrate does not rise with higher inequality, but in fact it declines with higher inequality (Table 13.3 and 13.4).

**Table 13.4** Countries that have developed most rapidly in terms of HDI ranking (top 20)

| | Country | Change in HDI Rank from 1980 to 2007 | Country | Change in HDI Rank from 1990 to 2007 | Country | Change in HDI Rank from 2000 to 2007 |
|---|---|---|---|---|---|---|
| 1 | Ireland | 16.0 | China | 18.0 | Tunisia | 16.0 |
| 2 | Korea (Rep. of) | 15.0 | Korea (Rep. of) | 17.5 | Jordan | 10.0 |
| 3 | China | 12.0 | Ireland | 15.0 | Ireland | 9.5 |
| 4 | Iran (Islamic Republic of) | 10.0 | Bangladesh | 11.0 | Indonesia | 9.0 |
| 5 | Australia | 9.5 | Australia | 10.0 | Equatorial Guinea | 9.0 |
| 6 | United Arab Emirates | 9.0 | Tunisia | 10.0 | China | 8.5 |
| 7 | Nepal | 9.0 | Iran (Islamic Republic of) | 9.0 | Tanzania (United Republic of) | 8.0 |
| 8 | Turkey | 8.0 | Dominican Republic | 9.0 | Korea (Republic of) | 8.0 |
| 9 | Singapore | 7.0 | Turkey | 8.5 | Armenia | 7.5 |
| 10 | Indonesia | 7.0 | Guatemala | 8.0 | Estonia | 7.0 |
| 11 | Bangladesh | 7.0 | Chile | 7.5 | Latvia | 7.0 |
| 12 | Chile | 5.0 | Brazil | 7.0 | Iceland | 6.5 |
| 13 | Malaysia | 5.0 | Nepal | 7.0 | Ethiopia | 6.0 |
| 14 | Spain | 5.0 | Honduras | 6.5 | Kazakhstan | 5.5 |
| 15 | Pakistan | 4.5 | Saudi Arabia | 6.5 | Bangladesh | 5.5 |
| 16 | Bahrain | 4.0 | Cape Verde | 6.0 | Romania | 5.5 |
| 17 | India | 4.0 | Jordan | 6.0 | Cambodia | 5.0 |
| 18 | Egypt | 4.0 | Viet Nam | 6.0 | United Arab Emirates | 4.5 |
| 19 | Iceland | 4.0 | Mexico | 5.5 | Iran (Islamic Republic of) | 4.5 |
| 20 | Finland | 3.5 | Indonesia | 5.0 | Venezuela (Bolivarian Republic of) | 4.0 |

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