Chapter 4
Challenges for Human Capital Migration in Developing Countries

4.1 Introduction

In theory, Newly Developing World (for example, China, Central and South-America and so on) should constitute a powerful magnet for immigration from the labor abundant regions as their rapid growth had created more dynamics in economic development, employment and migration. In fact, their development is accompanied by the marked element of development imbalance, economic inequality, financial risk and political weakness. Therefore economic development in poorer countries may eventually blunt the incentive to emigrate, because development takes time. When migration occurs between developing countries, we expect the flow of migrants to advanced economies is likely to provide a means through which global wages converge. There is also the potential for skills to be transferred back to the developing countries and for wages in those countries to rise. However, convergence is ineffective in most development regions because the region faces very severe difficulties in reconciling the forces of economic interdependence and globalization with still highly competitive and conflictive inter- (and intra-) state relations (Buzan, 1994).
Another impact of migration in developing countries is the issue of brain
drain. Skilled workers move from one country to another partly to find
better employment opportunities. However, this kind of emigration
generates a considerable long-term loss to countries, because brain drain
also involves the loss of money invested in the education, training and
skill formation of the emigrants. To developing countries, they are
motivated by a desire to enhance their workers’ opportunities for
education in order to reduce migratory pressure and further to achieve
“brain gain” in a context of returning migrants and collection remittances.
Moreover, state intervention, policy measures and international
cooperation are needed to ensure an appropriate balance in the various
relationships.

4.2 The Impact of Migration in Developing Countries

To developing countries, the dynamic character of globalization creates a
qualitatively new international environment for migration that the article
has mentioned previously. At the same time, a complex and troubled
relationship between migration and development can result in a number of
imbalances, inequality and risks. The first category of imbalance is related
to the structure of international systems governing development, trade and
finance. It is becoming increasingly evident in some ways these structures
place unnecessary obstacles in the path of efforts of developing countries
to benefit from the forces of globalization. In addition, the return of mobile factors of production, capital and labor, are lower in the developing countries, particularly in the poorest, most stagnant and economically backward countries, than in the technologically progressive and rapidly expanding countries. The second category of imbalance stems from a condition of severe poverty and underdevelopment that continues to characterize most developing countries, as well as the structure of production and comparative advantage that typically accompany underdevelopment. One aspect of severe poverty is an acute shortage of skills, in particular those necessary to cope with rapid changes in knowledge, technology, patterns of information flow, and the emergence of new financial instruments and practices. The difficulties of the least developed countries are particularly severe, since these countries have less flexibility in responding to change and are more vulnerable to shifts in demand, prices and other competitive conditions.

4.2.1 Migration, Growth, Convergence and Inequality

The interaction between long-run growth and migration is an equally important issue. A first question is regarding causality. There is the question of whether the rapid growth invites more migration. Conversely, there is the question of the effect migration has on the rate of economic growth of receiving and sending countries. Developing countries encompass the ‘middle-income’ and ‘newly-industrialized’ countries of
Central and South America, Africa and Asia and highly diversified economies, such as Brazil, Mexico and China and so on. In theory, the Newly Developing World constituted a powerful magnet for immigration from the labor abundant regions, as more rapid growth and expanding opportunities in the host country often precedes immigration. In turn, immigration can be also a positive factor in boosting growth in receiving countries. Another channel through which migration can increase growth in the host country is that by moderating the growth of wages, therefore contributing to rising profits from investment and thus accelerating growth. This is an investment-led growth mechanism. Another mechanism of migration to growth operates through savings, as profit-earners tend to have a larger propensity to save than wage earners. The result is an increase in overall national savings and an increase in growth (Solimano, 1996). By a symmetric logic these mechanisms can account for a growth-depressing effects of emigration in sending countries. The transfer of human capital and entrepreneurs from one country to the other can be predicted to have a positive growth effect in the recipient country and a negative growth effect in the sending country.

In assessing the impact of migration on inequality, an important distinction is made between global inequality (Lindert and Williamson, 2000) and national (within country) inequality (Solimano, A. 1998). If international migration represents a movement of people from relatively low wage
countries to nations with higher wages, international migration will contribute to reducing global inequality (at least of labor incomes) by reducing the real wage gaps between sending and receiving countries. This is in turn, a key element in the whole discussion about convergence. O'Rourke and Williamson (2000) report that around 60 percent of the wage convergence in the "Atlantic Economy" (Europe, U.S., Canada) between 1870 and 1900 is explained by the collapse of the wage gap between Europe and the New World following massive international migration from the former to the latter. The authors mention that the story of convergence is one of lower real wages in labor abundant regions catching up with the higher wages of workers in the labor scarce Newly Developing World. In addition, only convergence was interrupted in the de-globalization of the inter-war period and by national inequality.

International migration will contribute to wage convergence in certain regions (for example, EU) through contracts or agreements to reduce national inequality. However, convergence is difficult when it is carried out in the developing countries. In both developed and developing countries, the dynamic character of globalization creates a qualitatively new international environment for migration as we have mentioned before. However, all developing countries combine elements of significant social, political and/or economic development with marked elements of inequality, instability and/or financial risk. They present a mixed picture of
economic liberalization, growth and reform (allowing the penetration of global capital) and in some extreme cases, political and economic instability. Although there are states which are still, relatively ‘strong’, at least in a military sense, they face a significant and progressive erosion of authority as control over the key macroeconomic and other processes affecting their economies and societies shifts increasingly out of their hands. The juxtaposition of ‘strong’ statehood and weakening state authority can also be seen among the welfare democracies of the North. However, in many ‘transition’, ‘middle-income’ and newly industrialized countries, far more fragile or explosive political relations within and between countries exist. Economic conditions are also unstable and unpredictable with huge differentials of wealth, rapid rates of resource depletion and environmental stress, very poor protection of human rights and whole sections of the population whose basic needs are not met. All of these factors cannot lead to convergence. Therefore migration and trade were critical factors contributing to convergence.

Another important issue is the effect of migration and, more generally of globalization on national income distribution (particularly of labor incomes). In the 1980s and 1990s, it was observed in countries an increase in wage inequality coinciding with greater external integration (globalization) of economy. In turn, mass immigration is attributed to have played an important role in keeping domestic real wages of unskilled labor
from rising in spite of a booming economy. The explanations for the rising wage inequality in the 1980s and 1990s and its possible links with globalization have been explored under different analytical frameworks with relatively inconclusive results. Borjas (1994) points out that globalization is associated with a worsening of wage differentials for unskilled labor in developing countries. In the last two decades, part of this trend is due to related forces of globalization, with migration accounting for about two-thirds of that increase in wage inequality and trade the other third. It is important to observe, though, that other factors such as technological change, for example, the information revolution, has probably contributed to wage inequality. In fact, it seems that the studies give more importance in explaining the increase in wage inequality in developing countries brought about technical change than by trade integration. They have disregarded the effect of migration as an important globalization factor.

The theory suggests that migration of predominantly unskilled labor, reduces the supply of this class of labor in the sending country, therefore raising the salaries of unskilled workers and narrowing wage income distribution, therefore generating an egalitarian trend in the sending countries (though at lower per-capita income levels if emigration reduces growth at home). However, these trends need to be confirmed empirically for developing countries and the empirical evidence seems to be scarce in
this area.

4.2.2 Impact on Economic Growth and Employment

As suggested earlier, migration is meeting acute labor shortages. It will affect long-term growth of income of receiving countries. Although they fill gaps at the top or bottom of the labor market, they enable local people to make the best use of their own skills. However, an alternative to immigration, particularly of low skilled labor, is to increase levels of technology and make production more capital-intensive. Immigration could inhibit this process, effectively “diluting” the capital-to-labor ratio, leading to a drop in productivity.

Another impact of migration was discussed about public finances, in particular, taxation revenues and burdens. Early studies in the UK suggested that the effects were positive, largely because of the skewed age structure and high levels of employment found within migrant communities. Contrary to the public’s perception, when all levels of government are considered together, immigrants generate significantly more in taxes paid than they cost in services received (Fix and Passel 1994: 57). Later studies in Germany show that although foreign workers have the same rights as native workers to AFG benefits (unemployment payments), they are less likely to receive them. Only 29.6 per cent of foreign unemployed in 1988 received these payments, compared with 40.4
per cent of Germans (Frey and Mammey 1996: 88). The existence of public sector budgets deficit, renders employment prospects bleak for the native-born. Additionally, pressures on public sector revenues may have a marked negative effect on the issue of immigration, which drains social services while being especially vulnerable to current attempts by governments to reduce welfare expenditure.

International production is increasingly less reliant on cheap unskilled labor, as many commodity prices decline. As a consequence, a large number of poor countries, particularly in Africa, are increasingly marginalized from the global economy and the benefits that they might be able to extract from it. The result, for many, is an imposed self-reliance in a context of severe domestic economic decline or collapse and of increasing competition in the world economy. Shaw and Inegbedion (1994) suggest that the state that is emerging from this process is no longer neo-colonial or patrimonial because it lacks the resources to be either exploited or manipulated (Shaw and Inegbedion, 1994). Therefore economic development in poorer countries may eventually blunt the incentive to emigrate because development take times.

The article has described unemployment and the loss of jobs in countries as commonly associated with globalization. In the short term, global trade may stimulate further emigration as increasing exports from industrial
countries will cause unemployment in some sectors in sending countries, particularly in agriculture. In addition, global market depends on global capital and commodity flows instead of the flows of labor capital. Global economic restructuring has also been a factor in unemployment wages decline or job insecurity in dominant market economies. Unemployment, on the other hand, is mainly due to governments' failure to adopt sound macroeconomic and labor market policies. In order to combat unemployment and speedup development, priorities should be giving to the training and mobility of labor to create more jobs within a global economy. Some measures were mentioned in Multinational Enterprises (MNEs), for example:

➢ In order to keep their manpower plans in harmony with national social development policies, MNEs undertake appropriate consultations before starting operations;

➢ Carry out measures to increase employment opportunities and standards and to cooperate with government and workers' organizations in combating unemployment;

➢ In order to contribute to the local development, multinational enterprises use appropriate technology capable of generating both direct and indirect employment;

➢ MNEs try to implement policies with regards to using local raw material and local manufacture of parts and processing of raw materials.
On the other hand, unemployment poses a major challenge to social security. Some international social security instruments exist (ILL, ILO, ILOB, 1998) for workers' right. In general, however, the international labor instruments focus on the "right to work" and the rights of employed people. In theory, the organization and financing of unemployment benefit schemes are of national concern. At the same time, the international dimension is restricted to an integrated regional responsibility for the coordination of national social security schemes in cases where citizens exercise their rights of free movement within the region. Henceforth, some reform measures are undertaken to reduce the rate of unemployment and stabilize society.

There is a need to reform the coordination of national social security schemes for people such as follows:

➢ Integrating and updating tax and benefit systems with a view to increasing employment incentives;

➢ Developing unemployment compensation schemes into employability insurance; narrowing the gap between total salary costs and net take-home pay for low-skill workers;

➢ Increasing employment incentives and opportunities for older workers;

➢ Activating integration policies associated with minimum social benefits (EU report, 1998).
4.2.3 Knowledge, Skills and Education Issues

4.2.3.1 Global Education Issues

As we know, education as an investment good directly or indirectly improves output in the economy. Endogenous growth theory predicts that a large stock of human capital facilitates technological progress or, for a country not on the technological frontiers, acquiring technological capability. Empirical microeconomic studies verify the theory that in both agriculture & non-agriculture sectors (Johnson, H. 1997), numerous studies show that increases in human capital have a substantial direct impact on returns to labor. For example, Maluccio's study of a poor area in rural Philippines finds that each year education raises wages approximately by 10 percent. For the urban labor market in East Africa, Knight & Sabot find that the human capital accumulation that takes place during secondary school increases wages by approximately 25 percent even after taking account the credential effect of schooling as well as the impact of innate ability. Thus, strong evidence supports the view that education improves productivity, both in agriculture & non-agriculture sectors. In addition to improving productivity directly, human capital investment also has an indirect impact on national per capita income:

- Educational expansion can reduce inequality, which then improves growth (Birdsall, Ross, & Sabot 1995). Education for the poor can reduce inequality most obviously by raising the productivity of the
substantial number of poor who manage their own farms or informal sector firms;

Education of women has a negative impact on fertility & a positive impact on child health (Summers 1992), providing an important catalyst for demographic changes associated with increased saving and investment as well as more rapid economic growth.

Education causes productivity to rise, nutrition to improve, fertility to decline, and migration pressures to drop. Education is therefore key to development as well as migration. Widespread immigration to developed countries depends increasingly on education. Thus the possession of a good education is more important now than ever before. All migrants are motivated by a desire to increase their security or to enhance their opportunities for education or prosperity.

The movement of professionals around the world has also been intensified by the globalization of higher education. In 1993 an estimated 1.5 million students studied overseas (Salt, 1997). The highest numbers are from Asia, and most head for the United States. In 1992, 62% of engineering doctorates in the United State were given to foreign students, mainly Asians. Many of these professionals head for richer countries after completing training at home, but others are lost when they fail to return after completing their studies overseas. Developing economics are unable
to absorb this highly trained manpower. As far as students studying abroad are concerned, the likelihood of their returning to the country of origin diminishes the longer they stay abroad, especially those on private, non-government scholarships. The chances of not returning are even greater if the student receives no communication from his country of origin. Students can be discouraged by news that there is no job opening or adverse information from home may decide for the student to permanently stay abroad.

4.2.3.2 The Brain Drain Issue

Since education has been pointed out as one of the major determinants of long term growth (Lucas, 1988), common wisdom suggests that the migration of people endowed with a high level of human capital or so-called ‘brain drain’, is detrimental for the country of emigration. From that point of view, the current traditional position treats brain drain as a negative externality imposed to the remaining population (Bhagwati and Hamada, 1976). This study also explains the effect of "brain drain," and the countries and regions most strongly affected by it. One study on which this article is based, (Carrington and Detragiache, 1998) covers migration from 61 developing countries accounting for about 70 percent of the total population of developing countries, and the database recently assembled by Robert Barro and Jong-Wha Lee (1993), which provides the best estimates available to date of educational attainment for individuals more
than 25 years of age in a large sample of countries. This study tries to explain the complex relationship between brain drain and educational attainment (Figure 4.1). Here there is an overall tendency for migration rates to be higher for higher skill levels, suggesting that migrants are generally better educated than the average population. The brain drain to the United States from many Central American and Caribbean countries is substantial. For persons with a tertiary education, immigration rates for virtually all these countries are above 10 percent, and some appear to be 50 percent or even higher. Therefore there is little doubt that highly skilled workers in many developing countries are scarce on many scientists, engineers, physicians, and other highly trained professionals from LDCs work in developed countries. Today, there are about one and a half million skilled expatriates from developing countries in Western Europe, the United States, Japan, and Australia. Between 1985 and 1990, developing countries are said to have lost 60,000 professionals and still losing 20,000 per year ever since.

Although most migrants reach their decisions on the basis of economic, social, and political considerations, several additional reasons have been ascribed to the movement of the highly trained and skilled persons:

- They want to live and work in an environment where they are stimulated to apply their best efforts and where they are rewarded according to their expertise;
Figure 4.1 Migration Rates to the United States in 1990, by Educational Category

We followed a two-step procedure: first, estimates of the brain drain to the United States were constructed using 1990 U.S. census data and other sources of information. Then, these estimates were used—together with data on migrants to OECD countries other than the United States drawn from the OECD's Continuous Reporting System on Migration—to estimate the extent of the brain drain to all OECD countries.

The largest group of immigrants into the United States (about 3.7 million) consists of individuals with secondary education from other North American countries (understood here to include Central American and Caribbean countries), primarily Mexico. Perhaps surprisingly, the second largest group (almost 1.5 million individuals) consists of highly educated migrants from Asia and the Pacific. Total immigration from South America and, especially, Africa is quite small. It is noteworthy, however, that immigrants from Africa consist primarily of highly educated individuals (about 95,000 of the 128,000 African migrants).

Among the countries in Asia and the Pacific, the biggest source is the Philippines, with 730,000 migrants. Of these, the great majority have a tertiary education. The second largest stock of migrants is from China (400,000), which is split almost equally between the secondary and tertiary educational groups. Both India and Korea have seen more than 300,000 people migrate to the United States. It is striking that more than 75 percent of Indian immigrants have a tertiary education, compared with only 53 percent of Korean immigrants. The biggest migratory flows from Africa to the United States are from Egypt, Ghana, and South Africa, with more than 60 percent of immigrants from those three countries having a tertiary education. Migration of Africans with only a primary education is almost nil. The picture is quite different for the migratory flows from the Western Hemisphere: Mexico is by far the largest sending country (2.7 million), with the large majority of its migrants (2.0 million) having a secondary education and fewer than 13 percent having a tertiary education.

Source: OECD, 1994
➢ Income differentials are the major determinant of brain drain migration whereby the potential migrant weighs the costs and benefits of moving;

➢ Political instability of country of origin has also encouraged many citizens to emigrate.

Very often, developing countries are unable to provide the leadership, equipment, and research facilities required by professionals. On the other hand, many developed countries have resorted to relaxing or waiving certain immigration rules and regulations. Developing countries simply cannot compete with developed countries in terms of the economic returns and other benefits that are offered to professionally trained workers. The long-term losses generated by their emigration would be even more pronounced:

➢ They serve as vehicles for the dissemination of skills and technical knowledge. Their emigration would reduce the rate of human capital. Thus, not only are the skills lost in the short run, but long-term skill formation may also be stifled;

➢ Their savings are higher than the per capita average; investment per capita will decline with detrimental consequences for income growth;

➢ Although their departure initially reduces the size of the population,
if their rate of family formation was less than average, the rate of population growth will rise. In the longer term, this implies that for a given rate of investment, a decline in capital per worker and hence productivity and income per capita;

➢ As they are above average income earners, the permanent emigrants may have paid a level of taxes higher than their consumption of public goods;

➢ As permanent emigration causes skill bottlenecks, the economy’s capacity to respond to growth-promoting stimuli is reduced while the risk of inflation and balance of payments problems associated with any stimulus are enlarged concomitantly (Stahl, 1982).

Emigration cannot only siphon off excess workers, but it can also deprive sending countries of people they actually need. This would be detrimental to economic growth and could also increase unemployment among unskilled workers. This “brain drain” represents a considerable loss to countries that have invested in workers’ training and skill and was later used to describe the migration of trained manpower in general (Watanabe, 1969: 40) or “transfer of talent” (POPCON, 1984) in particular from developing to developed countries. It also causes loss of present and future production, present and future savings, taxes and potential innovations. Brain drain also involves the loss of money invested in the education, training and skill formation of the emigrants. For example,
Ghosh (1985) estimates that for India the collective losses may have been as high as $5 billion. In addition this can be measured as the loss in investment in education, for example almost 90,000 highly skilled migrants have left developing countries for the U.S.A. In 1990, it has been calculated that this represents a net loss in tertiary education of nearly $7,400 each, or $642 million in total (Griffin, K., and T. McKinley. 1994, p.50). In 1990, out of India’s 3.8 million pool of scientific-technical talent, 1.2 million was registered as unemployment (McDonald, H. 1992, p.46), between 1960 and 1987. Africa lost 70,000 of its highly skilled people (30% of stock), mostly to the European Union (Adepojou, A. 1995,p.99). This produced a serious skill shortage and a steep rise in wages in the developing industry, and along with it a decline in productivity. Therefore, in some countries emigration has an effect on unemployment and wages, but given the size of the markets this may not be noticeable. Thus, brain drain is variously described as a serious drag on development, or as the outflow of human resources that would be underutilized in the country of origin.

4.2.3.3 Impact and Argument

This issue of “human capital transfer” and “brain drain”, was observed as early as the 1960s, and has been a contentious issue in the North-South debate ever since. Many scholars argue that human capital in international migration is “an act of treason and theft” (Zahlan, 1977:320). The
movement is detrimental to the development process especially when the brain drain movement is unidirectional. It leads to shortage in a certain field in developing countries. During 1987-89, Hong Kong lost one-third of its computer analysts, one-eighth of engineers and seven-tenth per cent of doctors, nurses and lawyers (OECD, 1993, op. cit.). Furthermore, brain drain leads to an increase in inequality where rich countries continue to become richer while the poor countries become poorer. Therefore brain drain in developing countries has always been seen as a loss, a waste of resources, and a skills bottleneck that lead to a lesser rate of growth. As Haque and Kim (1995) point out, “brain drain reduces the growth rate of effective human capital that remains in the economy and hence generates a permanent reduction of per capita growth in the home country”.

Another opposite view has challenged the traditional view about brain drain according to the article “Brain drain and economic growth: theory and evidence” (Mountford, 1997) which was presented by Professor Michel Beine, Frederic Docquier (both are from CADRE, University of Lille 2, France, and SES, Ministère de la Région Wallonne, Belgium) and Hillel Rapoport (Department of Economics, Bar-Ilan University, Israel, and CADRE, University of Lille 2). They argue that from a theoretical perspective, an economy open to migration could end up with a higher average level of human capital even when its most skilled individuals migrate. This has been achieved independently through different models
studying the effects of potential migration on education decisions and, as a consequence, on human capital accumulation and growth. The empirical relevancy of this position is not obvious. Indeed, data on the skill composition of migrant populations are quite difficult to collect for a large number of countries and time periods; However, using migration rates as a proxy variable, Figure 4.2 shows that there is no evidence at all suggesting a decreasing relation between growth in income per capita and migration in developing countries. They consider the growth of income per capita and do not consider effects due to demographic changes. The

**Figure 4.2 Economic Growth and Migration Rate**

Source: OECD 1995
source of long-run growth here is the intergenerational externality linked to the transmission of human capital. It is assumed that the average level of human capital of those adults who remain home is integrally transmitted to each of the next generation.

They use three charts: **Figure 4.3, Figure 4.4, Figure 4.5** to test the direct effect of migration on education and its indirect effect on growth. Using cross-section data on growth, education and migration in developing countries, and controlling in particular workers' remittances, brain drain can be a win-win game. Firstly, the "gain effect" shows that migration opportunities foster investment in education since it is awarded a higher expected return when the economy is open to migration. Secondly, "drain effect" shows that brain drain is undoubtedly detrimental.

The conditions for a beneficial brain drain to be observed are when the economy is originally closed to an underdevelopment trap rendering migration probabilities are not too high, and when the economy already experiences a reasonable growth level and that migration probability take intermediate values. Thus, "brain drain' is a trade-off or exchange. It is linked to remittances, the migration of other brains from other countries, and the return of the same brains with more training and experience. An economy open to migration can benefit from the education decisions of migrants, which can bring about human capital accumulation and growth.
Figure 4.3  Brain Drain is Detrimental
Figure 4.4  Beneficial Brain Drain for Intermediate Values of the Migration Probability
Figure 4.5  Beneficial Brain Drain for Low Values of the Migration Probability

Explanation:

1 Brain drain and underdevelopment traps

The above two effects described that brain drain can push a developing country out of an underdevelopment trap. We depart from the classical definition of underdevelopment traps by using the following definition:

**Definition 1:** An underdevelopment trap is an equilibrium in which no agent decides to invest in education. The growth rate of income per capita is therefore zero.

Clearly, in the absence of migration possibilities, an underdevelopment trap is observed when the ability of the critical agent is higher than the ability of the most talented agent, i.e. when $\alpha_T > \bar{\alpha}$. In that case, there is no growth at all. But since migration prospects decrease the ability of the critical agent, we have the following result:

**Proposition 1:** Brain drain allows a country to exit out of an underdevelopment trap if and only if

$$a_T = \frac{\theta^{-\theta} (1 + r)}{1 + \rho (\omega - 1)} < \bar{\alpha} \leq \frac{\theta^{-\theta} (1 + r)}{1 + \rho} = a_T$$

Indeed, in an economy where $a_E < \bar{\alpha} < a_F$, the domestic return to education is too small to induce any investment in human capital, even for individuals with a high ability to learn; nevertheless, the most talented agents might be led to invest in education when facing a possibility to receive a higher return to their investment abroad. Indeed, without convergence in incomes, the relative return $w$ increases and this in turn decreases the threshold $a_E$.

2 The (general) case for a beneficial brain drain

Focusing on interior solutions when comparing an economy opened to (uncertain) migrations with an economy without migration possibilities.

**Definition 2:** An interior solution is equilibrium with a strictly positive human capital growth rate.

Beneficial brain drain observed the general condition as below:
\[
\frac{(1-p)e^{\beta (a^2 - a_F^2)}}{2a_F + 2(1-p)(a-a_F)} \cdot \frac{e^{\beta (a^2 - a_F^2)}}{2a} > 0
\]

Where \( a_F = \frac{a}{\phi(p, w)} \). This condition gives the following result:

**Proposition 2:** A brain drain is beneficial for the source country if and only if the probability of migration verifies the following condition:

\[
p \times Z(p) = p \left( A p^2 + B p + C \right) < 0,
\]

with \( A = (w-1)^2 \),

\[
B = (w-1) \left( \frac{a^2 - a_F^2}{a a_F} + 3 - w \right)
\]

and

\[
C = \frac{a^2 - a_F^2}{a a_F} - 2(w-1)
\]

For each \( p > 0 \),

It comes out that \( Z(0) = C \) might be either positive or negative, that means a developing country may or may not benefit from a small opening of its frontiers to the migration of educated people.

On the opposite, \( Z(1) = w(a^2 - a_F^2) / (a a_F) \) is always non-negative, that means a unitary probability to migrate is obviously detrimental for the country.

Between these two extreme cases, the total effect depends on the signs and values of \( B \) and \( C \).

Figure 4.3, 4.4, and 4.5: General conditions for a beneficial brain drain

**Fig. 4.3:** Brain drain is detrimental \((C > 0 \text{ and } B > 0): \text{two negative roots}\)

\[
Z(p)
\]

\[
0 \quad 1
\]

\[
p
\]

C is positive if investment in human capital is relatively high in the economy closed to migrations (i.e., if \( a_F \) is small enough). In this case, a brain drain is expected to be either
always detrimental for the home country if \( B > 0 \) or beneficial on a reduced migration probability space (if \( B < 0 \)). The intuition for the first case is that migrants are mostly picked up among educated people that would have engaged in human capital formation even in the absence of migration opportunities.

**Fig. 4.4: Beneficial brain drain for intermediate values of probability \( (p) \)**

\( C > 0 \) and \( B < 0 \): two positive roots

In the second case, the probability of migration must be high enough (since \( Bp < 0 \)) to induce a significant brain effect but low enough (since \( Ap^2 > 0 \)) to avoid a strong drain effect. As a result, a small opening to migration may then be insufficient to induce a higher growth rate since the brain effect dominates only for intermediate values of the migration probability.

**Fig. 4.5: Beneficial brain drain for low values of probability**

\( C < 0 \): one positive and one negative root

C is negative. This corresponds to an economy with a low growth rate in the absence of migration. A brain drain is expected to be beneficial as long as the migration probability is not too high.

Source: Mountford, 1997

www.cybercable.tm.fr/~jarmah/public_html/Hrapoport11.htm
The first paper to my knowledge explicitly explored the possibility that brain drain can be "good" for the country of migrants was Andrew Mountford's 1995 working paper, published as a journal article (Mountford, A. 1997). One must also add, in a very different framework, the contribution by Stark et al. (1997) which has shown that a 'brain gain' can be achieved in the course of a brain drain in the context of imperfect information, employment by transnational corporations and return migration. For example, a study from China reported that the proportion of expatriates to be very high when affiliates are being established. In 1995, there were about 450,000 expatriate managers employed in China (Kunin, 1991). This high proportion for government and companies may be due to issue of communication (English, German, France or Spanish etc) as the top management need to be in touch with the foreign countries or because the management style is based on informal network. Originally, expatriate staff were needed to exert control over affiliates and also to meet gaps in skills that were not available locally. Later these objectives seem to have widened, in attempts to build a more "internationalized" cadre of management capable of operating in many different countries.

Expatriate employment is unlikely to rise greatly in the years ahead, the main reason being the high cost has made transnational companies resort to employing host-country nationals who offer considerable advantages because they are more likely to be familiar with the language and customs,
and can deal better with local officials and exploit existing market opportunities. On the other hand, as educational standards rise around the world, employing local people also permits companies to make better use of local talent. By employing people with local language skills or knowledge these transnational corporations are stimulating a reverse brain drain, tempting people who have migrated to industrial countries to move back to developing countries.

Returning migration is taking place on quite a significant scale. For example, the Republic of Korea, a long emigration country had between 1970 and 1990 seen some 750,000 people leave the country. The annual figure peaked in 1976 at 46,533, and by 1994 had tailed off to 14,604. Some people are still emigrating, but the balance has shifted dramatically. During the peak years, Korean emigrants outnumbered returnees by 19 to 1. In 1994, it was only about 2 to 1 (SOPEMI/OECD, 1997). In some cases, this reverse flow is called “rencai huiliu” or “return of human talent”. Many of these migrants leave the host countries during periods of economic downturn because they found they have downgraded their professional skills to become shopkeepers thus finding returning to their home countries particularly attractive, especially those with English language skills. Those professionals are being attracted back to aerospace and other industries in high-technology cities. Even if this means taking a
pay cut of 30 to 40 percent, they seem happy to move, seeing the prospect of a better future in their native countries.

A win-win situation can be expressed as follows:

➢ Brain drain movement helps receiving countries ease shortage of necessary skills and overcome bottlenecks;

➢ The outflow of educated personnel reduces unemployment at the origin, raises domestic capital-labor ratios, maximizes the welfare of non-emigrants and increases productivity, income, and output. In addition, emigrants who go abroad return with better qualifications, training and experience;

➢ Some countries benefit from the remittances received from their nationals abroad. Remittances provide hard-currency foreign exchange that, properly used, can mean access to machinery and technology needed for economic development.

In recent years, remittances have contributed substantially to the dramatic rise in private capital flows, which were only US$5.6 billion globally in 1970, nearly the same as official development assistance (ODA), but reached $243.8 billion in 1996, when ODA was $40.8 billion (Nihal Kappagoda, 1998). Developing countries received 40 per cent of foreign direct investment flows in 1996 (compared to 15 per cent in 1990), with $61.1 billion going to East Asia/Pacific, mainly to China. The Chinese
Diaspora in developed countries is presumed to generate much of this flow of investment. Remittances boost not only a country's balance of payments, but also the living standards of the emigrants' families. Even if remittance is not invested, consumption increases demand, creating employment with a multiplier effect. Another study confirms that Mexico-U.S. migration stimulates employment, investment and income, locally and nationally: "The annual arrival of around $2 billion migradollars generates economic activity and accounts for 10% of Mexico's output and 3% of its Gross Domestic Product" (Jorge Durand et al., 1996). The oft-ignored multiplier effect of remittances spent on consumption brings benefits to agriculture, capital formation, manufacturing and service output, transport, commerce and education. Two billion migradollars ultimately boost Mexico's annual output by an estimated $6.5 billion, while more than 2 million workers in China are employed by companies in which emigrants from Hong Kong have made substantial investments. At the micro level, remittances can augment household income and savings, facilitate purchases of consumer durables and investment in productive assets, and alter the local income distribution. Ultimately, remittances are more likely to promote development in countries that have sufficient productive flexibility to respond positively to these stimuli. Indeed, some developing countries such as Algeria, Morocco, Tunisia encourages their nationals to stay abroad as part of their solution to "population pressures" and to high rates of unemployment and underemployment.
In addition, a recent study prepared by the secretary-general of the United Nations reviewed the "large benefits from the immigration of trained personnel from the developing countries. These gains consist of:

- The amount the receiving countries would have to spend to train people if the immigrants were not available;
- The goods produced or services rendered by them minus goods and services consumed by them;
- The vitality and breadth of the research contribution made by them”.

The gains accruing to sending countries were of 3 types:

- "Opportunity costs" or saving in investment for training domestic skills required in the absence of migration;
- Net increase in national output;
- The effect of "reverse transfer of technology”.

International scholars were of the viewpoint that the world has become one market for highly qualified manpower and that there is no such thing as a brain drain, only free movement of one factor of production. Labor simply locates in a country where it is most wanted and where it will give greater marginal productivity. Thus, the redistribution of highly skilled
workers leads to maximization of world production on the basis of optimum productivity. Emigration is the most important means of transmitting information and technology (Gubel and Scott, 1977). Furthermore, the focus on "drains" shifts emphasis away from the more fundamental question of the utilization of talent, regardless of location, and discounts potential gains (Myers, 1967). In fact, developing countries are not stripped of badly needed manpower, but are relieved of the surplus manpower they cannot use (Baldwin, 1970). Emigration ensures the optimum allocation of the world human resources.

4.3 The Immigration Policies and State Intervention

In the 1970s, international migration was still a topic of secondary concern for many governments. Only a minority of governments had explicit policies with respect to intervening in migration levels. 13 per cent of countries had policies to raise or lower immigration, and 17 per cent to raise or lower emigration. Today, the situation has changed significantly. Many more governments now consider migration and its consequences to be significant for their countries. By 1995, 40 per cent of countries had developed policies to raise or lower immigration and 24 per cent to raise or lower emigration.

The emigration policy has been seriously neglected despite a worldwide increase in international migration since labor-receiving countries
effectively control the international labor market. With the level of labor
emigration being primarily demand-determined (Bohning, 1978), both
developed and developing countries show an increased propensity to
intervene. The percentage of governments with a policy of non-
intervention decreased from 79 per cent in 1976 to 48 percent in 1995 for
developed countries and from 61 to 55 percent among developing
countries.

Many factors can explain the increased adoption of immigration and
emigration policies. From the development standpoint, emigration policies
have two primary functions:

➢ To safeguard national development interests;
➢ To maximize returns from migration to the benefit of development.

Both areas of concern are represented in the two sub-divisions of
emigration policy, which can be defined as management and structural.
Management policies are concerned with the short-term organization and
function of the migration process. These include the classic concerns of
emigration policy, namely protecting the legal status, rights and conditions
of nationals working and living abroad, together with the intervention in
the recruitment and selection process to prevent the abuse of individuals
by recruiting agents or to control the withdrawal of specific skills. A
related set of management issues include policies to influence the level,
use and distribution of emigrant workers' remittance earnings through, for
example, multiple exchange rates, foreign currency account provisions, tax advantages and investment opportunities.

In contrast, structural policies are concerned with a range of medium- and long-term measures that can be adopted by labor-supplying country to regulate external migration in a manner consistent with national development goals. Structural policies therefore impinge rather more closely on the government's wider development strategy. In the long term, such policies may aim to stabilize the flow of labor and remittances to enable the formulation of long-term resource policies. The attainment of these objectives may involve the negotiation of bilateral or multilateral manpower agreements. Most frequently structural emigration policies have relief functions to reduce the pressures imposed by the international labor market. They may involve measures designed to encourage or discourage the emigration of specific groups, or emigration from particular areas. The differences between management and structural emigration policies are illustrated in Figure 4.6.

Migration policies are major determinants of migration trends, but changes in the latter can also lead to changes in migration policies. All States address two principal policy issues concerning migration: regulating the number and type of migrants; and formulating policies to influence the conditions of migrants within the country.
### Figure 4.6 Influence on, and Aspects of Labor Emigration Policy

<table>
<thead>
<tr>
<th>Management Policies</th>
<th>Structural Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Remittances</strong></td>
<td><strong>Organization of Emigration</strong></td>
</tr>
<tr>
<td></td>
<td>5. Training Contrasts</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Development Strategy</th>
<th>Eco &amp; Social Determinants of Labor Emigration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Foreign Trade &amp; Balance-of-Payments Regime</td>
<td>1. Foreign Trade &amp; Balance-of-Payments Regime</td>
</tr>
<tr>
<td>2. Natural Resource Endowment</td>
<td>2. Natural Resource Endowment</td>
</tr>
<tr>
<td>4. Regional Policies</td>
<td>4. Regional Policies</td>
</tr>
</tbody>
</table>

Source: I.J. Secombe and R.I. Lawless, 1988
1. Permanent or long-term migrants. In the current international context, permanent migration is very different from the earlier patterns that characterized the redistribution of human populations. No longer are nations seeking to populate vast unsettled regions and develop land and natural resources by recruiting permanent migrants. Only a small number of countries admit a significant number of immigrants for permanent settlement, chiefly Australia, Canada, New Zealand and the United States. Policies for permanent settlement in these countries increasingly put a greater emphasis on migrant skills.

2. Labor migration. In the 1990s, policies and programmes addressing labor migration stem from issues concerned with worldwide economic stagnation and its effect on migration; temporary versus permanent labor migration; utilization of remittances; and brain drain. Also of concern are such issues as the exploitation of migrant workers; the rights of migrant workers; the needs of female migrant workers; and the return of migrant workers to their countries of origin at the end of their contracts. One area of labor migration that continues to be promoted is that of temporary foreign labor and high skill-type jobs. The rationale behind most temporary migration policies is not only to meet immediate labor shortages, but also to counteract undocumented immigration while avoiding long-term or permanent immigration and its accompanying social costs.
3. **Refugees and asylum seekers.** The 1951 United Nations Convention relating to the Status of Refugees and its 1967 Protocol address national policies towards refugees, but new developments and current conditions have led many countries to redefine and formulate their asylum policies. For example, the Dublin Convention Determining the State Responsible for Examining Applications for Asylum Lodged in One of the Member States of the European Community, adopted by countries of the European Community in 1990, coordinates asylum processing among countries to prevent asylum seekers from filing applications in more than one country simultaneously.

4. **Undocumented migration.** Measures concerning undocumented migrants are aimed at stemming one of the fastest growing forms of migration in the world today. Trafficking in immigrants is a growing and profitable industry and one partly controlled by international crime syndicates. Increasing numbers of undocumented migrants from different countries are smuggled into the West via routes in Eastern Europe that developed after the disappearance of the rigid border controls of the Soviet era. Lenient visa requirements and limited law enforcement have made some countries common entry points for undocumented migrants.

The emigration policy is propounded in a political and historical vacuum. The development of policies in developing countries historically
underwent a complicated process from prohibition to encouragement, and then to bilateral and multilateral agreements. Prohibitive emigration policies were adopted in the 1950s where the departure of professional, skilled and technical manpower was given further impetus by repeated reductions in public sector salaries following the accession. Restrictions on foreign travel by technical and university-educated cadres were introduced following further salary cuts.

In the mid-1960s, some governments of developing countries promoted emigration as a solution to the growing population problem although others feared that unless restrictions were retained, a growing "brain drain" would undermine the principles of socialist development and self-reliance. In addition, administrative constraints (such as the mandatory work assignment of university graduates) prevented the departure of those most acceptable to immigration countries. A new policy introduced in 1970s encouraged labor emigration but imposed quota restrictions on persons with skills required for national development. However, remaining restrictions do not address a country's real needs, while the procedures and documents required from potential emigrants are excessive. Laissez-faire policies, in which the barriers to labor emigration are minimal or non-existent, have been pursued by a number of labor-sending countries in the region in the 1980s. At this time, the government's involvement in emigration has been minimal. As a result, labor and skill
shortages are pervasive while remittance earnings have dominated the balance of payments.

In the North, it is increasingly left to the judiciary, non-governmental organizations (NGOs) and inter-governmental organizations (IGOs) to do what they can to invoke international human rights instruments to protect migrants and refugees, usually in opposition to the governments concerned. Peoples’ social and economic rights worldwide are increasingly promoted by international non-governmental organizations (INGOs) and country-based organizations, but there is nothing in the way of any formal global mechanism. There is certainly no powerful global lobby for the rights and well being of migrants, which can match the global lobby promoting the rights of capital.

4.3.1 International Cooperation

Today, policy makers in countries of origin and destination face various approaches to migration and policies issues. The major challenges posed by international migration to the international community, are compounded by negative public perceptions about international migration and the often limited recognition of the important contributions that migrants make to development and the quality of life in both their host societies and their countries of origin. Varying definitions and the scarcity of reliable data further contributed to the common misconceptions about
international migration. In order to correct this misunderstanding, the Technical Symposium on International Migration and Development was held in The Hague, the Netherlands, from 29 June to 3 July 1998. The Symposium sought to advance the knowledge required for the better management of orderly migration, in ways beneficial to both sending and receiving countries, through international cooperation. The cooperation focuses on the following points:

➢ **The migration of skilled personnel.** This issue was increasing in importance because both developed countries and the newly industrializing economies (NIEs) of the developing world had been making special efforts to attract workers with needed skills. Policy measures were needed to ensure that sending countries were not harmed by the loss of skilled personnel and that the benefits to receiving countries and skilled migrants themselves were maximized through recognition of qualifications and employment in appropriate positions. In addition, developing countries might consider cooperative arrangements on free temporary movement of persons among themselves to develop service packages that could strengthen their position in bidding for international contracts.

➢ **The interrelationship between irregular employment and international migration.** In all countries examined, both irregular
migration and the irregular employment of migrants have resulted from the conflict between real demand for unskilled workers and the restrictive or ineffective migration policies that hindered or prohibited their admission. Some irregular propensity is from migrants’ weak legal position and social vulnerability. To reduce irregular employment, some cooperation of regulations and policies are needed to address these issues. In addition, public perceptions about irregular migration were often extremely negative and were fuelling xenophobic or racist reactions. To be effective, policies to combat irregular migration should take a holistic approach and set up a monitoring agent based on a better understanding of the economic role of the informal sector and the need for unskilled labor.

> **Bilateral and multilateral agreements.** Countries of origin, especially those that considered the export of labor as a vital part of their economic strategies, were often in a weak position to protect their migrants abroad or to demand effective protection of their citizens as a condition for employment. Thus, the best framework to ensure the effective protection of migrant workers was a partnership between sending country and receiving country, since the equitable treatment of migrant workers was in their common interest and a key precondition for achieving orderly and mutually beneficial migration flows.
> Existence of standards in international human rights instruments, non-governmental organizations (NGOs), inter-governmental organizations (IGOs) and Conventions of the International Labor Organization (ILO) on the rights and treatment of migrant workers and refugees. It stressed that where actively pursued, the policies of countries of origin did have a positive effect on the protection of migrants abroad and contributed to making migration more orderly.

> Socio-economic integration. As the lack of appropriate social and cultural policies enjoying broad-based public support could lead to social tensions, the local population can be made to feel threatened and foreigners insecure and excluded. Therefore, a comprehensive long-term strategy was needed to ensure the socio-economic integration of foreign residents. Such a strategy should recognize and respect the desire of foreigners to maintain their linguistic, cultural and religious practices. Public information and education of whole world were considered crucial in this respect.

> Return migrations. Whether the return was purely voluntary or the result of changed conditions in the country of employment (recession, political instability or war), the effect of return was largely positive. As few countries had taken explicit measures to facilitate the
reintegration of returnees, an assessment of the role of policy interventions in these outcomes could not be carried out. Thus was underscored the need for closer cooperation between the governments of countries of origin and those of countries of destination, with the assistance of international organizations and NGOs.

Protection of asylum-seekers. People were generally impelled to migrate by a complex mix of factors, which might include individual persecution as well as economic needs, family ties, environmental problems and other considerations. One of the key problems confronting the institution of asylum was considered to be the real difficulty in deciding, for each asylum-seeker, whether individual persecution was the major cause of flight. It seemed necessary to search for cooperation between sending and receiving countries and measures that responded to the diversity of protection needs, including the use of flexible responses such as the granting of temporary protection. To achieve this, receiving countries and countries of origin need to engage in a constructive dialogue with a view to negotiating practical solutions, for example, a number of readmission agreements which already existed.

International migration has clearly become a major concern in domestic and foreign policy. The importance of stressing that international cooperation should be based on an appropriate balance of the concerns of
the various parties. Notwithstanding globalization, countries still had considerable power to control international migration. However, ill-conceived control mechanisms or a disproportionate focus on control might be contributing to the rise in irregular migration.

All in all, global economic restructuring leads to worsening migration pressures and brings much higher scale of labor mobility in the twenty-first century. Economic structures are relatively diverse in that they have adequate supply of labor and financial systems capable of mopping up small amounts of savings from a wide variety of sources and channeling them to businesses willing and able to respond to rising demand for their output. As would any other external stimulus to the economy, this promotes economic growth. In these conditions, either international migration or any other stimulus will be of much value to national development.