

Brain drain Problem: A Review

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Abstract

Brain drain or human capital flight is a large emigration of individuals with technical skills or knowledge, normally due to conflict, lack of opportunity, political instability, or health risks. A brain drain is usually regarded as an economic cost, since emigrants usually take with them the fraction of value of their training sponsored by the government. It is a parallel of capital flight which refers to the same movement of financial capital. The term was coined by the Royal Society to describe the emigration of "scientists and technologists" to North America from post-war Europe. The converse phenomenon is brain gain, which occurs when there is a large-scale immigration of technically qualified persons. Brain drain can be stopped by providing individuals who have expertise with career opportunities and giving them opportunities to prove their capabilities.

Keywords: Brain drain, immigration, Problem.

Introduction

Migration of people as a phenomenon differs from country to country and from time to time. It is misleading to generalize about the possible effects of migration from LDCs. But even more fundamentally, one can argue that different studies are measuring differing things. All migrations cannot be justifiably brought within a single analytic umbrella, though it has been so done in the contemporary literature on the subject. Migration of HQM from LDCs may be due to several different sets of underlying social, political and economic forces. The phenomenon of migration of high quality manpower can justify the use of the expression on the term "brain drain", but one has to be cautious in using the expression drain indiscriminately. To replace "drain" by a more general and value-free expression like "migration", the distinction may be emphasized by saying that while all brain drain constitutes brain migration, brain migration does not necessarily constitute brain drain. A classification of brain migration comprising the brain drain as well has been discussed later in this chapter. Brain drain represents the defacto transfer of resources spent on imparting education and nurturing technical skills of the drained brain in question by the parent country (DCs) to the country of the transfer.

The developed nations concerned saves her pounds and dollars on professional education and training and in the process obtains the services of trained doctors/ engineers who/earn very much more than their native counter parts and have more comfortable styles of living. The main crux of the matter is that emigrants as they enter developed countries are often in the most productive phase of his professional life and by the time they returns back, if they do, they are often spent force with wrong ideas not suited even for their native underdeveloped countries. There is thus a loss of human capital in excess of the normal contractual process of migration. There have been several efforts to define the concept of brain drain, mainly by international organizations. For example, we can read the following in a 1969 UNESCO report"The brain drain could be defined as an abnormal form of scientific exchange between countries, characterized by a one- way flow in favor of the most highly developed countries". One of the most comprehensive reports the main characteristics of brain drain as follows:

- a) There are numerous flows of skilled and trained persons from developing to developed countries;
- b) They are characterized by large flows from a comparatively small number of developed countries and by small flows from a larger number of developing countries;
- c) In these flows engineers, medical personnel and scientists usually tend to predominate;
- d) The above flows have grown with increasing rapidity in recent years;
- e) The higher the level of skill/training, the greater the susceptibility to migration tends to be
- f) The flows respond increasingly to the changed economic complexity of world societies and to legislation which reflects the demands of a new era.
- g) The migratory trends are stimulated both by the character of national educational systems by lack and inadequate planning for the training of students from developing countries, in developed states as well as the proper utilisation of their-skills in their home country; and

h) Except possibly for South America, there are no signs that the migration of talents is decreasing and there are fairly definite signs that its increase will, under present conditions, continue to accelerate.

As a Political Problem

When the best of professional manpower leave their home country and settle in a more developed one, it is a political phenomenon, but it only rarely occurs that the motives are exclusively political. It involves peculiar contradiction; it simultaneously indicates the lack of production and over production of professional manpower on the drained country. In this sense, brain drain is a symptomatic phenomenon, but at the same time it is expressive of a fundamental difficulty. To some extent it has an objective basis, as the attraction of a more developed country compared with those of the less developed ones has always existed in the course of history. The net effect of this is that the development of science and technology has been accelerated in the developed countries and has been slowed down in the drained countries.

As an Economic Problem

The economic aspect of brain drain cannot be divorced from the political aspect. First of all, it should be emphasized that it is in contradiction with the great international economic and political objective, namely the narrowing of the gap between the developed and the under developed countries. It expresses at the same time the complexity and the inter-dependence of different societies; it derives from disproportionate economic, technological and scientific development of the developed and the developing countries, entailing contradiction in the training of professional manpower and ability to satisfy the several demands for this group. It is characteristic of brain drain that the more underdeveloped a country is economically, the more it loses by brain drain while only developed countries profit from the process. It occurs through a complicated interplay of direct and indirect economic 'push' and 'pull' factors. It is stimulated by the lack of an educational system as well as the absence of a manpower policy in most of the under developed countries, these deficiencies normally hindering the really efficient use of those qualified as well as those having talent. As against this, there are higher living standards and better research and working opportunities of the more developed country, which provides thousands of possibilities for developing human potential. In addition to these objective economic factors brain drain is also stimulated by the actually realized intention of the developed countries to acquire intellectual capital free, and quick as possible.

As a psycho-social problem

The main flow of brain drain as a change of domicile starts from the under developed countries towards the developed one, due to social, cultural and psychological factors due to references for living in certain countries, A large number move from few LDCs to certain DCs and ;at the same time a less number of HQM move from a large number of LDCs. The major geographical direction of brain drain is from the South to the North, i.e. from Latin America to the United States, from Africa to Europe and to the U. S. and from the East to the West, i.e. from the Asian non-socialist countries to Europe, and from Europe to the united States and also from Asian countries to the middle East North African (MENA) Nations. It is a fact that human capital as strategic resource is flowing out of economies where it can make the greatest contribution to human welfare, into economies already well developed and having large number of trained, capable, scientific and administrative personnel. Of course, the latter under produce in relation to their needs and, therefore, import talent.

Classification of Brain Migration

In a wider perspective than brain drain only, brain migration may be of the following types:

- a) Brain over flow;
- b) Brain expert;
- c) Brain exchange; and
- d) Brain drain.

Brain over flow

Due to the over production or low rate of utilization of brain, some of the brains may remain wholly unabsorbed/surplus because of effective demand/excess supply at home, such brain spill over and get absorbed in a foreign market. Brain migration of this type is called brain overflow. Baldwin (1970) mainly depends on this type of brain migration and it is also implicit in the analysis of Internationalist model. In many LDCs, unplanned and comparatively cheap education added up with unemployment problems has produced a lot of unemployed skilled labour. For instance, in January, 1965, there were 75,000 unemployed engineers in India. India every year produces many more economists and statisticians than she could provide with job.

In Latin America, out of 600,000 professionals having university qualifications, only 25% are employed productively. (UNITAR, 1971). In Nigeria, 63% of the students in higher education qualify in social services where the counter needs maximum of 40%. In fact, educated unemployment problem which is the genesis of the brain overflow is to be witnessed in many LDCs, more particularly in Columbia, China, India, Iran, Nigeria, Pakistan, Philippines and South Korea. The surplus/unutilized brain power may arise due to (i) over production, (ii) low employment generation (iii) non-availability of suitable job where brain may be optimally utilized (iv) existing brain power lacking in experience/competence for the available jobs requiring a fairly high standard of efficiency, excellence and training. Surplus brain power may be interpreted both in absolute and relative senses. In quantitative term, there may be over production of brain, and qualitatively the jobs may be too good for the brains or the brains may be too good for the jobs, leading to non-utilization of brain power in a given economy. Surplus brain power has zero opportunity cost. The migration of this surplus brain constitutes an overflow and is not at all harmful; rather it is considered helpful for the solution of general unemployment problem.

(b) Brain expert

Brain migration may take the form of brain export by the sending country. The brain exporting country receives in exchange for brain, remittances continuously over a number of years. The payment may be spread over a number of years in the form of remittance of tax, it may be a once-for ever lump sum exit tax.

A consolidated price for the export of the commodity brain power may also be realized from the importing country. But the computational method that can be applied to price fixation of brain has obvious limitation. Market price of brain power does not very often reflect its public cost. In the case of brain export, the exchange price must be equal to the public and private cost of brain. Since the outgoing human capital from, LDCs mostly received only the private cost, and not the social cost, such as an outflow cannot be considered to constitute brain export. However it cannot be denied that it is very difficult to calculate the social cost; and shadow price keeps on changing along with the time horizon. If the rate of return is sufficient to cover the domestic opportunity cost of the transferred brain, it may be looked upon as a case of brain export.

For the purpose of export, a country will do best to produce that brain power in whose production it has the comparative advantage. The export of such brain power will be the best for both the trading partners. Some countries that cannot absorb human capital in their own economies such as Barbados and Philippines, deliberately train people for export. Some compensation for the human capital migration by the countries inflow to the countries of overflow has been suggested by Boudlin and Wantabe. As a payment for human capital import, the Government of recipient country could refund a fixed percentage of immigrant's income tax to the country of origin. It is no doubt a fact that a large number of countries sending brain power abroad receive remittances (UNITAR, 1970). Unless the remittances over the private and public cost on opportunity cost of migrants, the brain migration cannot be said to be of have brain export category.

(c) Brain Exchange

Brain migration may be in form of exchange of scholars, researchers and students between LDCs and DCs/ between LDCs themselves for the purpose of mutual benefits in terms of knowledge, expertise and training. Such type of brain migration can more appropriately be called brain exchange. Brain exchange is temporary phenomenon where brain loss is compensated by corresponding brain gain.

Problem in India

According to official estimates of India Overseas Employment Corporation, close to 36,000 professionals, including doctors, engineers and teachers, have migrated to other countries in the last 30 years. Interestingly, this number is indicative of only a small proportion of actual migration, since the majority of emigrants do not register. This trend is not particular to India though. Other South Asian states face the same shortfall. For example, India is the world's biggest exporter of doctors. The impact of the brain drain can be seen in this disturbing statistic: there is one Indian doctor in the United States for every 1,325 Americans. However, there is one Indian doctor in India for over 2,400 Indians. Overall, estimates from the late 1980s placed the number of South Asians in the United States between 525,000 and 800,000 permanent US residents. Of the migrants who have entered the US in the 30 years, two-thirds are college graduates. Once migrants reach here, they tend to do much better on average financially than even locals. For example, the median income in the late 1970s of Pakistanis was \$20,000, which is well above the US national average of \$17,000. For Indians, it was \$26,000. The annual aggregate income of Indians living in America in 1993 was estimated to be over \$3 billion. Although American immigration policy since 1965 claims to open up the country's doors to the world's "poor and huddled masses",

most of those it accepts as migrants do not fit this bill. Instead, entry into America has often been biased in favor of the best and brightest, highly educated professionals from places like Pakistan. This of course only fuels the brain drain from a country which needs all of the skilled manpower it can get, to one in which there is comparatively little shortage of such individuals. Interestingly, most skilled emigrants arriving on America's shores have studied in educational institutions in their home countries, where subsidies are often higher than 90 percent. Thus, the benefits of these subsidies, in the end, go to industrialized countries who have not invested a penny into the education of these skilled individuals.

Apart from a loss of skilled manpower, the brain drain also negatively affects the local economy, in particular, national salary structures. The 'demonstration effect' of foreign salaries artificially inflates local salaries, despite the lower average productivity of labor in the system. One proposal that has been suggested to offset the repercussions of the brain drain is for developing and industrialized countries to consider a tax policy that compensates developing countries for their loss of manpower, while discouraging further emigration of skilled labor. This could be done by imposing a special income tax on Pakistani and other South Asian professionals working in Northern countries. This would be collected by the governments of Northern countries and handed over to developing countries through the UN (Bhagwati and Dellalgar, 1973).

In the late 1970s, researchers Bhagwati and Dellalgar calculated that a uniform tax rate of 10 percent on migrants from the 1960s would lead to a tax collection figure of over \$62 million. When other countries in North America, Europe and East Asia were included, their yearly sum came out to over \$150 million. An updated estimate today would probably yield over \$1 billion.

But while the danger of the brain drain to India is clear, a large part of the problem is that there are not enough opportunities offered to the country's highly skilled labor for contribution and advancement opportunities. Educated unemployment is very high and salary levels for skilled workers (relative to unskilled workers) are often kept forcibly low by governments to maintain an egalitarian income policy. An additional problem is that advancement for the highly skilled is limited in a system where individuals often gain jobs and other opportunities through personal contacts versus merit. This also fuels a frustration with the system. This also leads to Pakistan's professionals leaving the country for one in which their skills and talents will be rewarded properly, based on what they do, not who they know.

Bottom of Form

The hype over the high rate of attrition (30 to 40 per cent) in the information technology industry has pushed into background similar problems being faced by India's old economy firms. For example, the capital goods industry, which employs more than 2 million people and where the average employment per crore of investment is over 50 times than that of a commodity-based industry, has been facing an attrition rate of over 30 per cent for several years now. The situation is serious, says A M Naik, chairman and managing director of Larsen & Toubro, India's premier capital goods firm. "It seems engineering and management graduates in India do not want to dirty their hands any more by working for a manufacturing firm," he adds. Naik should know. His company has been growing at around 20 per cent every year and needs 2,000 fresh engineers to keep up with the pace.

The problem is compounded by the fact that a similar number is leaving the company every year. This is despite an AC Nielsen survey last year, which showed that L&T is the most preferred choice for engineering graduates (including IITians). But the catch is that the number of students interested in hardcore engineering is dwindling fast. Naik attributes the problem to what he calls internal brain drain. Almost all multinationals have set up engineering centers in the country. "For them, the engineering man hour in India constitutes only 3 per cent of the cost of a project. They use this to build their own country by creating assets, which is 33 times of one engineering hour used. This means that for every \$30 million of engineering services that are provided by multinational centers in India, the country is deprived of assets worth over \$1 billion, which would have been created if these engineers had worked on Indian projects," he says, adding that the cost of one engineering hour used being 10 times more in their country, the multinationals can easily pay double or triple of what their Indian counterparts can afford. The chief of L&T, which prides itself as being an Indian multinational, says if the issue isn't addressed fast, the country will miss the bus again as far as its manufacturing sector's growth is concerned. "The problem earlier was retrograde government policies; the problem now is talent shortage. The future war will be fought based on who's got the best talent. Our biggest challenge is to attract talent laterally and to retain our talent pool," says Naik. Consider just how much this has hurt India. The share of manufacturing in India's GDP is 17 per cent compared to 50 per cent in China, 45 per cent in Korea and Malaysia and 40 per cent in Thailand.

"But we continue to be obsessed with the information technology industry, which contributed only 4 per cent to India's GDP," says Naik. Apart from the internal brain drain, the key problem area is availability of fresh talent. While graduates of the top schools prefer either to go abroad or work for consumer goods or IT companies, a minuscule percentage join engineering companies only to be poached by multinationals after being trained by Indian firms.

Naik blames the top B-schools for not paying enough attention to this aspect. "They are just adding to the hype by publicizing the mind-boggling salaries being offered by the global investment banks. Students are succumbing to peer pressure," says Naik. HR experts, however, say Naik is just being too emotional and idealistic. The name of the game is simple: if the market is willing to pay higher salaries, the option is obvious. You either join the game or watch from the sidelines. "L&T offers the opportunity to build the nation. Any B-school grad in India would love to do that provided the company pays market-linked salary," said an HR expert. Naik agrees, to an extent. That explains the company's focus on HR as a vehicle for change and a tool for transformation. L&T has introduced innovative and niche training like Glopac to train people in terms of country risk management, social and cultural integration and ability to convert contacts into hard business. The company has also introduced a new cadre of Global Managers who will have the ability to make a success out of the most complex business scenarios in global environments. For potential assessment, employees are assessed by outside experts. For example, senior management staff are expected to manage risk, strategies, have financial acumen, and ability to network. This assessment is carried out during a two-day exercise at the company's management development centre in Lonavla.

Who is responsible?

"Brain drain" has emerged as a significant policy challenge for developing countries undergoing globalization. Also known as "human capital flight," brain drain describes the emigration of educated and highly skilled workers. The lure of wealth and opportunity elsewhere leaves labor-exporting economies in a self-reinforcing bind: How to develop when the best and brightest routinely set out in search of greener pastures?

"Every day, in countries all over the world, people leave their home countries in search of a better life for themselves and their families. Emigration has a profound effect on the countries migrants leave, those through which they transit, and those to which they move," said then UN Secretary-General Kofi Annan on the occasion of International Migrants Day in 2003. While undoubtedly profound, it is yet unclear whether brain drain's net effects are positive or negative.

Policy Innovations recently hosted a lecture on the topic by Federico Macaranas, executive director of the Policy Center at the Asian Institute of Management in Manila. His remarks, delivered at the Carnegie Council, highlighted the lack of consensus on how to address this problem.

"These attractive, developed countries poach talent from less developed countries like sharks in the water. Who owns the problem? The individuals, the sovereign nations, or international bodies?" he asked.

Macaranas addressed how the global competition for medical talent has distorted the local market for health professionals in the Philippines. As the population of the developed world ages, many countries face shortages of quality doctors and registered nurses. Western nations are turning to younger nations such as the Philippines to fill this gap. According to Macaranas, his country is now the number one supplier of nurses worldwide because of their demonstrated talent and English language skills. But although the quality of Filipino nurses is not in question, their numbers are.

"There is no hard data that can document the number of Filipino nurses abroad. Researchers are left to guesstimate how many there are," said Macaranas. Rough estimates put the figure at 100,000, many of whom were trained as doctors. Filipino doctors have figured out that it is often more remunerative to emigrate and work as registered nurses than to remain at their hospital jobs in the Philippines.

Contrary to the tenets of classical economic analysis, as the number of medical professionals in the Philippines has decreased, so has the local wage rate. According to Macaranas, Filipino hospital administrators are keen to avoid over-investing in doctors and nurses that are likely to emigrate. As a result, wages are low and employees see the hospitals as stepping-stones to higher paying jobs overseas. More than 200 hospitals have closed in the Philippines in the last five years. Not surprisingly, brain drain is viewed as having a negative impact on less developed, labor-exporting countries. But most countries do not collect detailed personal data on departing citizens. In the absence of hard numbers, it has proven difficult to elevate brain drain above the level of mere theory.

Remittances further complicate the effort to sort out the costs and benefits associated with brain drain. In 2005, according to the World Bank's Global Economic Prospects report, expatriate Filipinos sent home \$11.6 billion. India received \$21.7 billion. In some cases, remittances have been found to correlate with higher local savings rates and reductions in poverty. But there is also evidence to suggest that remittances retard local development by crowding out entrepreneurial initiative. When it comes to the murky world of international migratory patterns, there are simply no reliable numbers for researchers to analyze.

A 2003 World Bank study by Richard H. Adams Jr. sought to overcome these empirical shortcomings by creating a data set based on U.S. and OECD estimates of migration and education levels. The vast majority of legal immigrants, according to Adams, are educated at the secondary level or higher. The impact of this migration is not as pernicious as one might think. In fact, only 10 percent of the university-educated population of labor-exporting countries was lost to migration.

"International migrants... tend to be much better educated than the rest of the population of their country of origin. However, in terms of actual brain drain on their country of origin, international migration does not seem to take a very high proportion of the best educated," writes Adams. Adams points to a different, non-traditional view, which sees brain drain as a net positive for less developed countries.

Since the world at large values education, allowing migration of the best and brightest from a developing country may actually increase the incentive to acquire education. Since only a small fraction of educated people in a specific country would migrate, this would encourage the average level of education of the remaining population to rise," he writes.

"Take the Indian Institute of Technology, suppose 50 percent of the top students choose to migrate, the bottom 50 percent of that class is still pretty good and they are better for having competed with the more talented group," said Hunter College economics professor Partha Deb, who left India after graduating from Calcutta University in 1986. He recounted his decision to emigrate in a recent interview with Policy Innovations.

"I knew that it would be hard to find interesting work for decent pay in India. There was very little opportunity to do the kinds of things I wanted to do [in India] at that time, so I left. It was that simple," he said. Macaranas would like to see the creation of an independent, international organization to regulate the flow of people across borders. He notes that Western importers of Filipino doctors and nurses are on the receiving end of a tremendous discount.

"Training costs are very low in less developed countries. It would take \$3 billion to train and replace the hospital workers that have left the Philippines. Filipino nurses need to be trained, but not at the expense of health care in the Philippines. We need an inter-country agency in the interest of global health," he said. If Thomas Friedman is correct and globalization is causing the world to flatten, then it is only a matter of time before the West feels the pinch of brain drain as well. In fact, according to a report in *The Independent*, emigration from Germany is now at levels not seen since the years immediately following World War II. Nearby Switzerland has become the number one destination for educated Germans fleeing high unemployment, followed by the United States and Austria. Emigration of German women ages 18–29 has increased 25 percent in recent years.

Conclusion

Sovereign nations seem unlikely to cede regulation of immigration policy to the type of outside body that Macaranas envisions, such as a World Migration Organization. After all, the arrangement currently works in Western nations' favor. But perhaps institutionalizing the issue would help to quantify the debate and provide a more accurate appraisal of brain drain's effects. As developed countries see more of their educated young people leaving for jobs in other, wealthier nations, perhaps demand for such a body will increase.

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