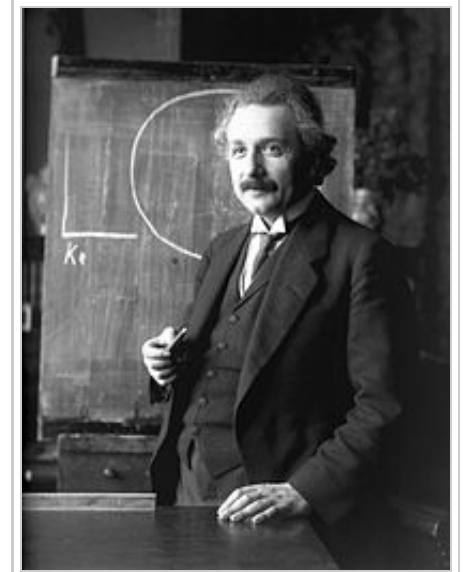


Human capital flight

From Wikipedia, the free encyclopedia
(Redirected from Brain drain)



Human capital flight is an Economics term equivalent to the Sociology term, **brain drain**, which refers to the emigration of intelligent, well-educated individuals to somewhere for better pay or conditions, causing the place they came from to lose those skilled people, or "brains." Typically, emigrating brains have learned English and have moved to the United Kingdom, the US or some other English-speaking country. An example is Albert Einstein. Brain drain is common in developing nations, particularly in former African colonies of the [United Kingdom],^[1] the island nations of the Caribbean,^[2] and in centralized economies such as the former East Germany and the Soviet Union. China and India have recently been discovered to be at the top of the list of countries with skilled students of English leaving.



A loss of "human capital" by Germany occurred when this "brain" moved elsewhere.

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Types

There are several types of brain drain:

- **Organizational:** The flight of talented, creative, and highly trained employees from large corporations—e.g. Yahoo,^[3] HubSpot,^[4] and Microsoft^[5]— that occurs when employees perceive the direction and leadership of the company to be unstable or stagnant, and thus, unable to keep up with their personal and professional ambitions.
- **Geographical:** The flight of highly trained individuals and college graduates from their area of residence, for instance, those migrating from the mid-western United States to the coastal states and large metropolises.^[6]
- **Industrial:** The movement of traditionally skilled workers from one sector of an industry to another. For example, jobs in the United States and other governments, also known as the public sector, have experienced significant generational brain drain as tenured boomer generation employees retire. Heightened competition for talent from the private sector and budgetary constraints have made it increasingly difficult to attract replacements for these retirees.^[7]

As with other human migration, the social environment is considered to be a key reason for this population shift. In source countries, lack of opportunities, political instability or oppression, economic depression, health risks and more contribute to brain drain, whereas host countries usually offer rich opportunities, political stability and freedom, a developed economy and better living conditions that attract talent. At the individual level, family influences (relatives living overseas, for example), as well as personal preferences, career ambitions and other motivating factors can be considered.

Origins and uses

The term "brain drain" was coined by the Royal Society to describe the emigration of "scientists and technologists" to North America from post-war Europe.^[8] Another source indicates that this term was first used in the United Kingdom to describe the influx of Indian scientists and engineers.^[9] The converse phenomenon is "brain gain", which occurs when there is a large-scale immigration of technically qualified persons. There are also other relevant phrases, "brain circulation" and "brain waste".

Although the term originally referred to technology workers leaving a nation, the meaning has broadened into "the departure of educated or professional people from one country, economic sector, or field for another, usually for better pay or living conditions".^[10]

Historical examples

Neoplatonic academy philosophers move

After Justinian closed the Platonic Academy in AD 529, according to the historian Agathias, its remaining members sought protection from the Sassanid ruler, Khosrau I, carrying with them precious scrolls of literature, philosophy, and to a lesser degree, science. After the peace treaty between the Persian and the Byzantine empires in 532 guaranteed their personal security, some members of this group found sanctuary in the Pagan stronghold of Harran, near Edessa. One of the last leading figures of this group was Simplicius, a pupil of Damascius, the last head of the Athenian school. The students of an academy-in-exile may have survived into the ninth century, long enough to facilitate the Arabic revival of the Neoplatonist commentary tradition in Baghdad.^[11]

Spanish expulsion of Jews and Moors

After the end of the Catholic reconquest of Spain, the Catholic Monarchs pursued a religiously uniform kingdom. Jews were expelled from the country in 1492. As they dominated financial services in the country, their expulsion was instrumental in causing future economic problems, for example the need for foreign bankers such as the Fugger family and others from Genoa. On January 7, 1492, the King ordered the expulsion of all the Jews from Spain — from the kingdoms of Castile, Catalonia, Aragon, Galicia, Majorca, Minorca, the Basque provinces, the islands of Sardinia and Sicily, and the Kingdom of Valencia. Before that, the Queen had also expelled them from the Kingdom of Andalusia.^[12]

The war against Turks and North African Moors affected internal policy in the uprising of the Alpujarras (1568–1571) and motivated the expulsion of the Moriscos in 1609. Despite being a minority group, they were a key part of the farming sector and trained artisans. Their departure contributed to economic decline in some regions of Spain. This way, the conservative aristocracy increased its power over economically developed provinces.

Huguenot exodus from France (17th century)

In 1685, Louis XIV revoked the Edict of Nantes and declared Protestantism to be illegal in the Edict of Fontainebleau. After this, many Huguenots (estimates range from 200,000 to 1,000,000^[13]) fled to surrounding Protestant countries: England, the Netherlands, Switzerland, Norway, Denmark and Prussia — whose Calvinist great elector, Frederick William, welcomed them to help rebuild his war-ravaged and under-populated country. Many went to the Dutch colony at the Cape (South Africa), where they were instrumental in establishing a wine industry.^[14] At least 10,000 went to Ireland, where they were assimilated into the Protestant minority during the plantations.

Many Huguenots and their descendants prospered. Henri Basnage de Beauval fled France and settled in the Netherlands, where he became an influential writer and historian. Abel Boyer, another noted writer, settled in London and became a tutor to the British Royal Family. Henry Fourdrinier, the descendant of Huguenot settlers in England, founded the modern paper industry. Augustin Courtauld fled to England, settling in Essex and established a dynasty that founded the British silk industry. Noted Swiss mathematician Gabriel Cramer was born in Geneva to Huguenot refugees. Sir John Houblon, the first Governor of the Bank of England, was born into a Huguenot family in London. Isaac Barré, the son of Huguenot settlers in Ireland, became an influential British soldier and politician. Gustav and Peter Carl Fabergé, the descendants of Huguenot refugees, founded the world famous Fabergé company in Russia, maker of the famous Faberge eggs.

The exodus of Huguenots from France created a brain drain, as Huguenots accounted for a disproportionate number of entrepreneurial, artisan, and technical occupations in the country. The loss of this technical expertise was a blow from which the kingdom did not fully recover for many years.

Antisemitism in pre-WWII Europe (1933-1943)

Antisemitic feelings and laws in Europe through the 1930s and 1940s, culminating in the Holocaust, caused an exodus of intelligentsia. Notable examples are:

- **Albert Einstein** (emigrated permanently to the United States in 1933)
- **Sigmund Freud** (finally decided to emigrate permanently with his wife and daughter to London, England, in 1938, two months after the Anschluss)
- **Enrico Fermi** (1938; though he was not Jewish himself, his wife, Laura, was)
- **Niels Bohr** (1943; his mother was Jewish)
- **Theodore von Karman**
- **John von Neumann**

Besides Jews, Nazi persecution extended to liberals and socialists in Germany, further contributing to emigration. Refugees in New York founded the University in Exile. The Bauhaus, perhaps the most important arts and design school of the 20th century, was forced to close down during the Nazi regime because of their liberal and socialist leanings, which the Nazis considered degenerate. The school had already been shut down in Weimar because of its political stance, but moved to Dessau prior to the closing. Following this abandonment, two of the three pioneers of modern architecture, Mies Van Der Rohe and Walter Gropius, left Germany for America (while Le Corbusier stayed in France). They introduced the European Modern movement to the American public and fostered the international style in architecture and design, helping to transform design education at American universities and influencing later architects.

Eastern Bloc brain drain crisis (1922-1961)

By 1922, the Soviet Union had issued restrictions making emigration of its citizens to other countries almost impossible.^[15] Soviet Premier Nikita Khrushchev later stated, "We were scared, really scared. We were afraid the thaw might unleash a flood, which we wouldn't be able to control and which could drown us. How could it drown us? It could have overflowed the banks of the Soviet riverbed and formed a tidal wave which would have washed away all the barriers and retaining walls of our society."^[16] After Soviet occupation of Eastern Europe at the end of World War II, the majority of those living in the newly acquired areas of the Eastern Bloc aspired to independence and wanted the Soviets to leave.^[17]

By the early 1950s, the approach of the Soviet Union to restricting emigration was emulated by most of the rest of the Eastern Bloc, including East Germany.^[18]

Even after the closing of the Inner German border officially in 1952,^[19] the border between the sectors of East Berlin and West Berlin remained considerably more accessible than the rest of the border because it was administered by all four occupying powers.^[20] The Berlin sector border was essentially a "loophole" through which East Bloc citizens could still emigrate.^[19] The 3.5 million East Germans, called *Republikflüchtlinge*, who had left by 1961 totalled approximately 20% of the entire East German population.^[21] The emigrants tended to be young and well-educated, leading to the brain drain feared by officials in East Germany.^[17] Yuri Andropov, then the CPSU director of Relations with Communist and Workers' Parties of Socialist Countries, decided on 28 August 1958 to write an urgent letter to the Central Committee about the 50% increase in the number of East German intelligentsia among the refugees.^[22] Andropov reported that, while the East German leadership stated that they were leaving for Ulbricht]] later claiming that West Germany owed him \$17 billion in compensation, including reparations as well as labour force losses.^[21] In addition, the drain of East Germany's young population potentially cost it over 22.5 billion marks in lost educational investment.^[23] In August 1961, East Germany erected a barbed-wire barrier that would eventually be expanded by construction into the Berlin Wall, effectively closing the loophole.^[24]



Berlin Wall in 1975

By region

Europe

Brain drain phenomena in Europe fall into two distinct trends. The first is an outflow of highly qualified scientists from 'Western Europe' mostly to the United States.^[25] The second is a migration of skilled workers from 'Central' and 'Southeastern Europe' into 'Western Europe', within the EU.^[26] While in some countries the trend may be slowing,^{[27][28]} certain Southeast European countries continue to suffer from extremely high rates of brain drain.^[29] The European Union has noted a net loss of highly skilled workers and introduced a "blue card" policy – much like the American green card – which "seeks to draw an additional 20 million workers from Asia, Africa and Latin America in the next two decades".^[30]

Although the EU recognizes a need for extensive immigration to mitigate the effects of an aging population,^[31] nationalist political parties have gained support in many European countries by calling for stronger laws restricting immigration.^[32] Immigrants are perceived as a burden on the state and cause of social problems like increased crime rates and major cultural differences.^[33]

Western Europe

In 2006, over 250,000 Europeans emigrated to the United States (164,285),^[34] Australia (40,455),^[35] Canada (37,946)^[36] and New Zealand (30,262).^[37] Germany alone saw 155,290 people leave the country (though mostly to destinations within Europe). This is the highest rate of worker emigration since reunification, and was equal to the rate in the aftermath of World War II.^[38] Portugal is suffering

the largest drain in Western Europe. The country has lost 19.5% of its qualified population and is struggling to absorb sufficient skilled immigrants to compensate for losses to Australia, Canada, Switzerland, Germany and Austria.^[39]

Central and Eastern Europe

Central and Eastern European countries have expressed concerns about extensive migration of skilled labourers to Ireland and the United Kingdom. Lithuania, for example, has lost about 100,000 citizens since 2003, many of them young and well-educated, to emigration to Ireland in particular. (Ireland itself used to suffer serious brain drain to America, Britain and Canada before the Celtic Tiger economic programmes.) A similar phenomenon occurred in Poland after its entry into the European Union. In the first year of its EU membership, 100,000 Poles registered to work in England, joining an estimated 750,000 residents of Polish descent.^[40] Research conducted by PKO Bank Polski, Poland's largest retail bank, shows that 63% of Polish immigrants to the UK were aged between 24 and 35, with 40% possessing a university degree.^[41] However, with the rapid growth of salaries in Poland, its booming economy, the strong value of the *złoty*, and decreasing unemployment (which fell from 14.2% in May 2006 to 8% in March 2008^[42]), the flight of Polish workers slowed.^[43] In 2008 and early 2009 people who came back outnumbered those leaving the country. The exodus is likely to continue, however.^[44]

Southeastern Europe

The rapid but small-scale departure of highly skilled workers from Southeastern Europe has caused concern about those nations developing towards inclusion in the European Union.^[45] This has sparked programmes to curb the outflow by encouraging skilled technicians and scientists to remain in the region to work on international projects.^[46]

Albania is also one of the countries that have experienced brain drain from the fall of communist regime. In 1991, people started emigrating to the closest countries, Italy and Greece, and with the passing of years began going farther, to the United Kingdom, Canada and the United States. In the last 10 years, educated people and professionals have been leaving the country and going to other countries where they feel they can have better possibilities for better and secure lives. This is a concern for Albania, as it is losing its skilled-workers and professionals.

Portugal, Ireland, Italy, Greece and Spain

Many citizens of the countries most stricken by the economic crisis in Europe have emigrated, many of them to Australia, Brazil, Angola and Argentina.^{[47][48]}

Turkey

In the 1960s, many skilled and educated people emigrated from Turkey, including many doctors and engineers. This emigration wave is believed to have been triggered by political instability, including the 1960 military coup. In later decades, into the 2000s, many Turkish professionals emigrated, and students studying overseas chose to remain abroad, mainly due to better economic opportunities. This brain drain was given national media attention, and in 2000, the government formed a task force to investigate the brain drain problem.^[49] However, in 2010 Turkish financial minister Mehmet Simsek said that Turkey's GDP would rise sharply by 2050, predicting it would reach US\$5–6 trillion.^[50]

United Kingdom

There are a considerable number of people leaving the United Kingdom for other countries, especially Australia and the United States.^[51] In the 2000s, some 3.5 million people emigrated from the UK. Most of this emigration was to seek work in a more favourable economic climate. Many young university graduates are among those leaving, which has caused this phenomenon to be labelled the "talent drain".^[52]

Sub-Saharan Africa

Countries in Sub-Saharan Africa have lost a tremendous amount of their educated and skilled populations as a result of emigration to more developed countries, which has harmed the ability of such nations to get out of poverty. Conservatively speaking, "Brain drain has cost the African continent over \$4 billion in the employment of 150,000 expatriate professionals annually."^[53] Nigeria, Kenya, and Ethiopia are believed to be the most affected. According to the United Nations Development Programme, Ethiopia lost 75% of its skilled workforce between 1980 and 1991.

South African President Thabo Mbeki said in his 1998 'African Renaissance' speech:

"In our world in which the generation of new knowledge and its application to change the human condition is the engine which moves human society further away from barbarism, do we not have need to recall Africa's hundreds of thousands of intellectuals back from their places of emigration in Western Europe and North America, to rejoin those who remain still within our shores!

I dream of the day when these, the African mathematicians and computer specialists in Washington and New York, the African physicists, engineers, doctors, business managers and economists, will return from London and Manchester and Paris and Brussels to add to the African pool of brain power, to enquire into and find solutions to Africa's problems and challenges, to open the African door to the world of knowledge, to elevate Africa's place within the universe of research the information of new knowledge, education and information."

Africarecruit is a joint initiative by NEPAD and the Commonwealth Business Council to recruit professional expatriate Africans to take employment back in Africa after working overseas.^[54]

In response to growing debate over brain drain of health care professionals, especially from lower income countries to some higher income countries, in 2010 the World Health Organization adopted the *Global Code of Practice on the International Recruitment of Health Personnel*, a policy framework for all countries for the ethical international recruitment of doctors, nurses and other health professionals.

The African brain drain has begun to reverse itself due to rapid growth and development in many African nations, and the emergence of an African middle class. Between 2001 and 2010, six of the world's ten fastest-growing economies were in Africa, and between 2011 and 2015, Africa's economic growth is expected to outpace Asia's. This, together with increased development, introduction of technologies such as fast Internet and mobile phones, a better-educated population, and the environment for business driven by new tech start-up companies, has resulted in many expatriates from Africa returning to their home countries, and more Africans staying at home to work.^[55]

Ghana

The trend for young doctors and nurses to seek higher salaries and better working conditions, mainly in higher income countries of the West, is having serious impacts on the health care sector in Ghana. Ghana currently has about 3,600 doctors—one for every 6,700 inhabitants. This compares with one doctor per 430 people in the United States.^[56] Many of the country's trained doctors and nurses leave to work in countries such as Britain, the United States, Jamaica and Canada, in what many refer to as the brain drain. It is estimated that up to 68% of the country's trained medical staff left between 1993 and 2000, and according to Ghana's official statistics institute, in the period 1999 to 2004, 448 doctors, or 54% of those trained in the period, left to work abroad.^[57]

South Africa

Along with many African nations, South Africa has been experiencing a "brain drain" in the past 20 years. This is believed to be potentially damaging for the regional economy,^[58] and is almost certainly detrimental to the wellbeing of the region's poor majority, desperately reliant on the health care infrastructure because of the HIV/AIDS epidemic.^[59] The skills drain in South Africa tends to reflect racial contours exacerbated by Black Economic Empowerment policies, and has thus resulted in large White South African communities abroad.^[60] The problem is further highlighted by South Africa's request in 2001 of Canada to stop recruiting its doctors and other highly skilled medical personnel.^[61]

For the medical sector, the loss of return from investment for all doctors emigrating from South Africa is \$1.41bn. The benefit to destination countries is huge: \$2.7bn for the United Kingdom alone, without compensation.^[62]

More recently, in a case of reverse brain drain a net 359,000 highly-skilled South Africans have returned to South Africa from foreign work assignments over a five year period from 2008 to 2013. This was catalysed by the global financial crisis of 2007-8 and perceptions of a higher quality of life in South Africa relative to the countries to which they had first emigrated. It is estimated that around 37% of those returning are professionals such as lawyers, doctors, engineers and accountants.^[63]

Western Asia

Iraq

During the Iraq War, especially during the early years, the lack of basic services and security fed an outflow of professionals from Iraq that began under Saddam Hussein, under whose rule four million Iraqis are believed to have left the country.^[64] In particular, the exodus was fed by the violence that plagued Iraq, which by 2006 had seen 89 university professors and senior lecturers killed.^[65]

Iran

In 2006, the International Monetary Fund ranked Iran highest in brain drain among 90 measured countries.^[66] In the early 1990s, more than 150,000 Iranians emigrated, and an estimated 25% of Iranians with post-secondary education were residing in developed countries of the OECD. In 2009, the International Monetary Fund reported that 150,000-180,000 Iranians emigrate annually, with up to 62%

of Iran's academic elite having emigrated, and that the yearly exodus is equivalent to an annual capital loss of \$50 billion.^[67] The brain drain is thought to be due to a poor job market and strict social codes imposed by the government.^{[68][69]}

Middle East

Israel

Israel has experienced varying levels of emigration throughout its history, with the majority of Israeli expatriates moving to the United States. Currently, some 330,000 native-born Israelis (including 230,000 Israeli Jews) are estimated to be living abroad, while the number of immigrants to Israel who later left is unclear. According to public opinion polls, the main motives for leaving Israel have not been the political and security situation, but include desire for higher living standards, pursuit of work opportunities and/or professional advancement, and higher education. Since those leaving are on average more educated than those who remain in Israel, the term "brain drain" has been applied to this emigration. Many Israelis with degrees in scientific or engineering fields have emigrated abroad, largely due to lack of job opportunities. From Israel's establishment in May 1948 to December 2006, about 400,000 doctors and academics left Israel. In 2009, Israel's Council for Higher Education informed the Knesset's Education Committee that 25% of Israel's academics were living overseas, and that Israel had the highest brain drain rate in the world. However, an OECD estimate put the highly educated Israeli emigrant rate at 5.3 per 1,000 highly educated Israelis, meaning that Israel actually retains more of its highly educated population than many other developed countries.

In addition, the majority of Israelis who emigrate eventually return after extended periods abroad. In 2007, the Israeli government began a programme to encourage Israelis living abroad to return; since then, the number of returning Israelis has doubled, and in 2010, Israeli expatriates, including academics, researchers, technical professionals, and business managers, began returning in record numbers. Israel launched additional programmes to open new opportunities in scientific fields to encourage Israeli scientists and researchers living abroad to return home. These programmes have since succeeded in luring many Israeli scientists back home.^{[70][71][72][73][74]}

Arab world

By 2010, the Arab countries were experiencing a brain drain, according to reports from the United Nations and Arab League. About one million Arab experts and specialists were living in developed countries, and the rate of return was extremely low. The reasons for this included attraction to opportunities in technical and scientific fields in the West and an absence of job opportunities in the Arab world, as well as wars and political turmoil that have plagued many Arab nations.^[75]

In 2012, this brain drain was showing signs of reversing, with many young students choosing to stay and more individuals from abroad returning. In particular, many young professionals are becoming entrepreneurs and starting their own businesses rather than going abroad to work for companies in Western countries. This was partially a result of the Arab Spring, after which many Arab countries began viewing science as the driving force for development, and as a result stepped up their science programmes. Another reason may be the ongoing global recession.^{[76][77]}

Asia Pacific

Malaysia

There has been a serious brain drain from Malaysia. Major pull factors have included better career opportunities abroad and compensation, while major push factors included corruption, social inequality, educational opportunities, and the government's Bumiputera affirmative action policies. As of 2011, Bernama has reported that there are a million talented Malaysians working overseas.^[78] Recently the brain drain has increased in pace: 305,000 Malaysians migrated overseas between March 2008 and August 2009, compared to 140,000 in 2007.^[79] Non-Bumiputeras, particularly Malaysian Indians and Malaysian Chinese, were over-represented in these statistics. Popular destinations included Singapore, Australia, the United States and the United Kingdom.^[80] This is reported to have caused Malaysia's economic growth rate to fall to an average of 4.6% per annum in the 2000s compared to 7.2% in the 1990s.^[81]

Philippines

The term “brain drain” has been applied to the Philippines since the 1960s and continues to be relevant to their economic situation today. In particular, the term has been used to describe the Filipino nursing sector. Although the economic situation has changed in the last several decades, academics have tended to discuss the brain drain phenomenon in the Philippines as a historical progression from colonial and international ties.

Post-colonial Philippines In 1946, colonialism in the Philippines ended with the election of Manuel Roxas.^[82] The Philippines' infrastructure and economy had been devastated by WWII, contributing to serious national health problems and uneven wealth distribution.^[83] As part of reconstruction efforts for the newly independent state, education of nurses was encouraged to combat the low ratio of 1 nurse per 12,000 Filipinos^[84] and to help raise national health care standards. However Roxas, having spent his last 3 years as the secretary of finance and chairman of the National Economic Council and a number of other Filipino companies, was particularly concerned with the country's financial (rather than health) problems.^[83] The lack of government funding for rural community clinics and hospitals, as well as low wages, continued to perpetuate low nurse retention rates in rural areas and slow economic recovery. When the United States relaxed their Immigration Act laws in 1965, labor export emerged as a possible solution for the Philippines.

Labour export from the 1960s on Since the 1960s and 1970s, the Philippines has been the largest supplier of nurses to the United States, in addition to export labour supplied to the UK and Saudi Arabia.^[85] In 1965, with a recovering post-WWII economy and facing labor shortages, the United States introduced a new occupational clause to the Immigration Act.^[86] The clause encouraged migration of skilled labour into sectors experiencing a shortage,^[86] particularly nursing, as well relaxing restrictions on race and origin.^[87] This was seen as an opportunity for mass Filipino labour exportation by the Filipino government, and was followed by a boom in public and private nursing educational programmes. Seeking access through the U.S. government-sponsored Exchange Visitors Programme (EVP), workers were encouraged to go abroad to learn more skills and earn higher pay, sending remittance payments back home.^[88] Nursing being regarded as a highly feminized profession, labour migrants have been predominantly female and young (25–30 years of age).^[89]

Pursuing economic gains through labour migration over infrastructural financing and improvement, the Philippines still faced slow economic growth during the 1970s and 1980s.^[90] With continuously rising demand for nurses in the international service sector and overseas, the Filipino government aggressively furthered their educational programmes under President Ferdinande Marcos, elected at this time. Although complete statistical data can be difficult to collect, studies done in the 1970s show 13,500

nurses (or 85% of all Filipino nurses) had left the country to pursue work elsewhere.^[91] Additionally, public and private nursing school programmes multiplied from a reported 17 nursing schools in 1950, to 140 nursing schools in 1970.^[92]

Remittances Studies show stark wage discrepancies between the Philippines and developed countries such as the US and the UK. This has led Filipino government officials to note that remittances sent home may be seen as more economically valuable than pursuit of local work. Around the turn of the 20th century, the average monthly wage of Filipino nurses who remained in their home country was between 550 - 1000 pesos per month (roughly \$70 – 140 US at that time).^[93] In comparison, the average nurse working in the U.S. was receiving \$800 – 1400 US per month.^[93]

However, scholars have noted that economic disparities in the Philippines have not been eased in the past decades. Although remittance payments account for a large portion of Filipino GDP (\$290.5 million US in 1978, increased to \$10.7 billion US in 2005),^[94] and are therefore regarded as a large economic boost to the state, Filipino unemployment has continued to rise (8.4% in 1990, increased to 12.7% in 2003).^[94] Here scholars have begun to look at the culture of nurse migration endorsed by the Filipino state as a contributing factor to the country's economic and health problems.

Migration culture of nursing The Philippines spent only 3.6% of their GDP on health care and facilities in 2011, ranking them 170th in health spending according to the World Health Organization.^[95] Their health system, particularly in rural areas, has been underfunded, understaffed and lacking advancements in health technologies, causing retention difficulties and poor access to services.^[96] However, with reported figures of Filipino nursing graduates reaching 27,000 between 1999 and 2003, and jumping to a total of 26,000 in 2005 alone, there are clear discrepancies between skilled Filipino nurses and availability of health services in the country.^[97] Scholars have pointed to the increasing privatization and commercialization of the nursing industry as a major reason for this loss of skill, i.e. brain drain.

Migration has arguably become a “taken-for-granted” aspect of a nursing career, particularly with regard to the culture of migration that has been institutionally perpetuated in the health sector.^[98] Most nursing schools have been built since the turn of the century and are concentrated primarily in metro Manila and other provincial cities. Of approximately 460 schools providing bachelors of nursing,^[99] the majority are privately controlled, in part due to the inability of the Filipino government to keep up with rising education demand. However, private schooling has also been a lucrative business, exploiting the desperation of Philippine labour looking for potential access to higher income.

Education industry In addition to the Philippine Overseas Employment Administration (POEA) run by the government as a source of overseas recruitment agreements, and as a marketer of Filipino labour overseas, private nursing schools have acted as migration funnels, expanding enrolment, asserting control over the licensure process, and entering into business agreements with other overseas recruitment agencies.^[100] However, retaining qualified instructors and staff has been reported to be as problematic as retaining actual nurses, contributing to low exam pass rates (only 12 of 175 reporting schools had pass rates of 90% or higher in 2005,^[101] with an average pass rate of 42% across the country in 2006).^[102] Private schools have also begun to control licensure exam review centres, providing extra preparation for international qualification exams at extra cost and with no guarantee of success.^[103] It is estimated that between 1999 and 2006, \$700 million US was spent on nursing education and licensure review courses by individuals who never even took the licensing exams or were able to complete the programming.^[104] With migrant nursing pushed as the most desirable route to higher income, it is easy to see why the country is experiencing a serious brain drain in the health sector, not only of nurses but physicians as well.

Discrepancies in wages between Filipino nurses working at home and those working abroad, as noted above, provide clear economic incentives for nurses to leave the country; however, physicians have also been lured into these promises of wealth through the creation of “Second Course” nursing programs.^[105] Studies compare wages of Filipino nurses at home and abroad from 2005 to 2010, with at-home nurses receiving \$170 US per month, or \$2040 US per annum, compared to \$3000–4000 US salary per month in the US, or \$36,000–48,000 US per annum.^[106] Filipino physician salaries for those working at home are not much more competitive; they earn on average \$300–800 US per month, or \$3600–9600 US per annum.^[107] Although it is important to note along with such discrepancies that the costs of living are also higher in the US, and that remittance payment transfers back home are not free, there is still evidently a large economic pull to studying as a nurse and migrating overseas.

The push and pull, and the lasting effects The Philippines’ colonial and post-WWII history contribute an understanding of the process by which nurses have increasingly turned to migration for greater economic benefits. Discussed in terms of numbers and financial gains, export labour migration has been suggested as a solution to the struggling Filipino economy, with labour transfers and remittance payments seen as beneficial for both countries.^[108] However, since in 2004, 80% of all Filipino physicians had taken ‘second courses’ to retrain as nurses, it is suggested that export labour migration is undermining the national health sector of the country.^[109]

With physicians and nurses leaving en masse for greater financial promise abroad, the ratio of nurses to patients in the Philippines has worsened from 1 nurse per 15–20 patients in 1990 to 1 nurse per 40–60 patients in 2007.^[110] Additionally, the increase in private institution recruitment has evaded government oversight, and arguably has led to lower standards and working conditions for nurses actually working abroad. Once abroad, Filipino nurses have identified discriminatory workplace practices, receiving more night and holiday shifts, as well as more mundane tasks than non-Filipino counterparts.^[111] Nurses also discuss the lack of opportunity to train and learn new skills, an enticement that is advertised by the Filipino export labour migration system.^[112] Homesickness and lack of community integration can also cause great emotional duress on migrants, and with the majority of migrants female, family separation can cause negative impacts on both the migrants and their families.

Further critical enquiries into the success of export labour migration for the Philippines are needed. As noted, financial and economic statistics cannot fully describe the complexity of en-masse migration of nurses and physicians. It is important to understand the multitude of elements which combine to encourage a culture of migration. Brain-drain as a phenomenon can be currently applied to the Filipino situation; however, it is important to note, this does not suggest export labour migration as the primary causal factor of the country’s current economic situation. Lack of government funding for health care systems, in addition to the export labour migration culture, as well as other local factors, all contribute to what is described as the current brain-drain phenomenon occurring in the Philippines. It is important to understand the complexity of the nation’s history with regard to labour export and government funding in order to determine benefits, costs, and perpetuated problems within the society’s infrastructure.

South Asia

India

The UNDP estimates that India loses \$2 billion a year because of the emigration of computer experts to the U.S.^[113] Indian students going abroad for their higher studies cost India a foreign exchange outflow of \$10 billion annually.^[114]

Nepal

Every year 250,000 youth are reported to leave Nepal for various reasons. They seek opportunity in its various manifestation — higher living standards, employment, better income, education, a luring western lifestyle, stability and security.^[115]

Pakistan

The ever-increasing Pakistani diaspora through the migration of skilled labour from Pakistan to industrialized nations in Europe, North America and the oil-rich Middle East has contributed to a professional brain drain in the country. In recent years, the uncertain political situation and better job opportunities abroad have caused many Pakistanis to seek prospective gains outside the country.

While Pakistan is a semi-industrialised country that has not been overtly affected by a brain drain, a continuous emigration of professionals is thought to be an impediment to its long-term economic growth.^[116] Each year, thousands of highly qualified doctors, engineers and scientists are said to move abroad, the most visible effect being an overall loss of skilled human resources.^[117]

Sri Lanka

Sri Lanka has lost a significant portion of its intellectuals, mainly due to civil war and the resulting uncertainty that prevailed in the country for the thirty-year period prior to the end of the conflict in 2009. Most of these sought refuge in countries such as the United States of America, Australia, Canada, and Great Britain. In recent years, many expatriates have indicated interest in returning to Sri Lanka, but have been deterred by slow economic growth and political instability. Both the government and private organizations are making efforts to encourage professionals to return to Sri Lanka and to retain resident intellectuals and professionals.

Eastern Asia

China

With rapid GDP growth and a higher degree of openness towards the rest of the world, China has been facing brain drain. A popular Internet writer recently caused a stir when he asserted that “all Chinese who earn more than 120,000 yuan (\$17,650) a year want to immigrate [sic].” There has been an upsurge in Chinese emigration to Western countries—particularly the United States, Canada and Australia—since about 2005.^[118] China became the biggest worldwide contributor of emigrants in 2007. According to the official Chinese media, 65,000 Chinese last year secured immigration or permanent resident status in the United States, 25,000 in Canada and 15,000 in Australia.^[118] The largest group of emigrants consists of professionals and experts with a middle-class background,^[118] who are the backbone for the development of China. As the biggest contributor of emigrants, China also suffers the worst brain drain in the world, according to a new study that found seven out of every ten students who enroll in an overseas university never return to live in their homeland.^[119]

The brain drain usually happens in two ways, when skilled intellectuals migrate to other countries, and when students study overseas and then stay abroad. In China, both ways exist, but the second is more popular and common.

Since the beginning of the last century, international students were sent to different countries to learn advanced skills, and they were expected to return to save the nation from invasion and poverty. While most of these students came back to make a living, there were still those who chose to stay abroad. From the 1950s to the 1970s, China was in a period of widespread upheaval due to political instability. As a result, many Chinese felt upset and disappointed about the situation. The situation did not improve after the gradual liberalization of China during the 1980s; just as many people chose to go abroad, since there were more opportunities overseas. More social upheavals happened with the Tiananmen Square Massacre—the result of which was an increasing Chinese diaspora. As steady economic growth boosts GDP per capita, more families in China are able to pay for their children to go abroad for study or to live. All of these factors contribute to the current brain drain in China. In this day and age, most students do not go back to China if they are able to find a good job abroad. Wealthy Chinese people tend to settle down abroad to enjoy a high quality of life.

Statistics of brain drain in China

Chart 1: Return rate of Chinese international students

Year	# of students	# returned	Rate (%)
1978	860	248	28.84
1979	1777	231	12.99
1980	2124	162	7.63
1981	2922	1143	39.12
1982	2326	2116	90.97
1983	2633	2303	87.47
1984	3073	2290	74.52
1985	4888	1424	29.13
1986	4676	1388	29.68
1987	4703	1605	34.12
1988	3786	3000	79.12
1989	3329	1753	52.65
1990	2950	1593	54.00
1991	2900	2069	71.34
1992	6540	3611	55.21
1993	10742	5128	47.73
1994	19071	4230	22.18
1995	20381	5750	28.21
1996	20905	6570	31.43
1997	22410	7130	31.82
1998	17622	7379	38.05
1999	23749	7748	37.36
2000	38989	9121	34.92
2001	83973	12243	29.36
2002	125179	17945	25.01
2003	117307	20152	23.34
2004	114682	24726	23.03
2005	118515	34987	24.02
2006	134000	42000	25.09

The statistics in this chart show an increasing trend of Chinese international students from 1978 to 2006, while the number of people returning to China also increased. However, the return rate has fallen overall from about one-half to one-quarter.

Chart 2: Chinese students and scholars in US

Year	Chinese students (rank, of US international students)	% international students in US	Chinese scholars	% foreign scholars in US
1990-1	39600 (1)	9.7	N/A	N/A
1991-2	42910 (1)	10.2	N/A	N/A
1992-3	45130 (1)	10.3	N/A	N/A
1993-4	44380 (1)	9.9	11156	18.6
1994-5	39403 (2)	8.7	9866	17.0
1995-6	39613 (2)	8.7	9228	15.5
1996-7	42503 (2)	7.8	9724	15.6
1997-8	46958 (2)	9.8	10709	16.4
1998-9	51001 (1)	10.4	11854	16.8
1999-0	54466 (1)	10.6	13229	17.7
2000-1	59939 (1)	10.9	14772	18.5
2001-2	63211 (2)	10.8	15624	18.2
2002-3	64757 (2)	11.0	15171	18.0
2003-4	61765 (2)	10.8	14923	18.0
2004-5	62523 (2)	11.1	17035	19.0
2005-6	62582 (2)	11.1	19017	19.6
2006-7	67723 (2)	11.6	20149	20.5

Statistics sources^[120]

Taiwan

For many years, Taiwan experienced a brain drain, with many Taiwanese educated in the United States remaining there. Taiwanese engineers who completed their undergraduate education at home often went to the US to obtain a PhD at an American university, and many remained in the United States afterwards. This was long a source of frustration to the country's microelectronics industry, but by 2013, the trend was reversing, with many Taiwanese returning after completing their studies in the US.^[121]

Australasia

Pacific Islands

The post-WWII migration trends in the Pacific Islands have essentially followed this pattern:

- Most Pacific island nations that were formerly under UK mandate have had migration outflows to Australia and New Zealand since the de-colonialization of the region from the 1960s to the 1990s. There has only been a limited outflow from these islands to Canada and the UK since de-colonialization. Fiji, Tonga, and Samoa also have had large outflows to the United States.
- Most Pacific islands administered by France (like Tahiti) have had an outflow to France.
- Most Pacific islands under some kind of US administration have had outflows to the US, and to a

lesser extent, Canada.

New Zealand

During the 1990s, 30,000 New Zealanders were emigrating each year. An OECD report released in 2005 revealed that 24.2% of New Zealanders with a tertiary education were living outside of New Zealand, predominantly in Australia.^[122] In 2007, around 24,000 New Zealanders settled in Australia.^[123]

During the 2008 election campaign, the National Party campaigned on the ruling Labour Party's inability to keep New Zealanders at home, with a series of billboards announcing "Wave goodbye to higher taxes, not your loved ones".^[124] However, four years after the National Party won that election, the exodus to Australia had intensified, surpassing 53,000 per annum in 2012.^[125] Prime Minister John Key blamed the global financial crisis for the continuing drain.^[126]

It was estimated in December 2012 that 170,000 New Zealanders had left for Australia since the Key government came to power in late 2008.^[127]

It has been noted that New Zealand also enjoys immigration of qualified foreigners, potentially leaving a net gain of skills.^[128] Nevertheless, one reason for New Zealand's attempt to target immigration at 1% of its population per year is because of its high rate of emigration, which leaves its migration balance either neutral or slightly positive.

North America

Canada

Colonial administrators in Canada observed the trend of human capital flight to the United States as early as the 1860s, when it was already clear that a majority of immigrants arriving at Quebec City were en route to destinations in the United States. Alexander C. Buchanan, government agent at Quebec, argued that prospective emigrants should be offered free land to remain in Canada. The problem of attracting and keeping the right immigrants has been a constant in Canadian immigration history.^[129]

In the 1920s, over 20% of university graduating classes in engineering and science were emigrating to the United States. When governments displayed no interest, concerned industrialists formed the Technical Service Council in 1927 to combat the brain drain. As a practical means of doing so, the council operated a placement service that was free to graduates.

By 1976, the council had placed over 16,000 men and women. Between 1960 and 1979 over 17,000 engineers and scientists emigrated to the United States. However, the exodus of technically trained Canadians dropped from 27% of graduating classes in 1927 to under 10% in 1951 and 5% in 1967.

In Canada today, the idea of a brain drain to the United States is occasionally a domestic political issue. At times, brain drain is used as a justification for income tax cuts. During the 1990s, some alleged a brain drain from Canada to the United States, especially in the software, aerospace, health care and entertainment industries, due to the perception of higher wages and lower income taxes in the US.^[130] Some also suggest that engineers and scientists were also attracted by the greater diversity of jobs and a perceived lack of research funding in Canada.

The evidence suggests that, in the 1990s, Canada did lose some of its homegrown talent to the US.^[131] Nevertheless, Canada hedged against these losses by attracting more highly skilled workers from abroad. This allowed the country to realize a net brain gain as more professionals entered Canada than left.^[131] Sometimes, the qualifications of these migrants are given no recognition in Canada (see credentialism), resulting in some - though not all - highly skilled professionals being forced into lower paying service sector jobs.

Brain drain is still a significant issue in Atlantic provinces such as New Brunswick, where a relative lack of jobs results in many of the fully educated moving to other provinces such as Ontario, Alberta, or British Columbia. Brain gain also occurs here, however, through immigration. This often causes controversy among the working class as to whether enough jobs are available for born Canadians.

More recently, however, Canada is facing a threat of brain drain, with a struggling labor environment that is trending towards pushing out the newest generation of workers.^[132] A mix of political, demographic (baby boomers yet to retire) and socio-economic factors and policies, are contributing to youth, predominantly 'millennials' (ages 20–32), seeking work outside of Canada.

United States

The 2000 United States Census led to a special report on domestic worker migration, with a focus on the movement of young, single, college-educated migrants.^[133] The data show a trend of such people moving away from the Rust Belt and northern Great Plains region towards the West Coast and Southeast. The area with the largest net influx of young, single, college-educated persons was the San Francisco Bay Area.

The country as a whole does not experience a large-scale brain drain as compared with other countries, with an emigration rate of only 0.7 per 1,000 educated people,^[134] but it is often the destination of skilled workers migrating from elsewhere in the world.^[135] However, the United States has been experiencing widespread rural depopulation in the past few decades, which have seen many young rural graduates moving to urban/suburban areas. This has negatively impacted US rural communities.^[136] Regarding this issue, Danielle Guichard-Ashbrook of the Massachusetts Institute of Technology has been quoted as stating "We educate them, but then we don't make it easy for them to stay".^[137]

Latin America

There is a surge of intellectuals leaving Latin America, professionals who are often doctors, architects, and engineers. Many choose the US as their destination. However, after migrating, most of them work in jobs that have nothing to do with their original majors. Therefore, it is not only brain drain for their own countries, but also brain waste for the larger world.^[138]

In some Latin American nations, while enrolment at local medical schools is very high, there is a chronic shortage of doctors.

A 2000 study revealed that a number of Latin American countries had, over the years, suffered a considerable loss of professionals. As a percentage of each country's corps of university graduates, the following percentages lived overseas:

Country	Loss of professionals
Argentina	2.9%
Brazil	3.3%
Chile	5.3%
Colombia	11.0%
Ecuador	10.9%
Mexico	14.3% ^[139]

The same study revealed that during the 1990s, a significant number of those who emigrated from Latin America were specialized professionals, constituting the following proportions as a percent of each country's volume of emigrants:

Country	Loss of professionals
Argentina	19.1%
Chile	15.6%
Mexico	2.6%
Peru	10.0% ^[140]

Cuba

In 1997, Cuban officials claimed that 31,000 Cuban doctors were deployed in 61 countries.^[141] A large number practice in South America. 20,000 are employed in Venezuela in exchange for nearly 100,000 barrels (16,000 m³) of oil per day.^[142] State employees serving at assigned foreign posts who earn money or resources for their government do not exactly fall under the definition of brain drain.

However, in Venezuela and Bolivia, where another 1,700 doctors work, it is stated that as many as 500 doctors may have fled the missions in the years preceding 2007 into countries nearby.^[141] This number raised to dramatically, with 1,289 visas being given to Cuban medical professionals in the United States alone in 2014, with the majority of Cuban medical personnel fleeing from Venezuela due to poor social conditions and not receiving adequate payment; the Cuban government allegedly receives the majority of payments while some doctors are left with about \$100 per month in earnings.^[143] These situations would constitute brain drain.

Venezuela

Following the election of Hugo Chávez as president and his establishment of the Bolivarian Revolution, millions of Venezuelans emigrated from Venezuela.^{[144][145][146]} In 2009, it was estimated that more than 1 million Venezuelan emigrated since Hugo Chávez became president.^[145] It has been calculated that from 1998 to 2013, over 1.5 million Venezuelans, between 4% and 6% of the Venezuela's total population, left the country following the Bolivarian Revolution.^[146] Academics and business leaders have stated that emigration from Venezuela increased significantly during the last years of Chávez's presidency and especially during the presidency of Nicolás Maduro.^[147]

The analysis of a study by the Central University of Venezuela titled *Venezuelan Community Abroad. A New Method of Exile* states that the Bolivarian diaspora was caused by the "deterioration of both the economy and the social fabric, rampant crime, uncertainty and lack of hope for a change in leadership in the near future".^[144] *The Wall Street Journal* stated that many "white-collar Venezuelans have fled the country's high crime rates, soaring inflation and expanding statist controls".^[148] Many of former Venezuelan citizens studied gave reasons for leaving Venezuela that included lack of freedom, high levels of insecurity and lack of opportunity in the country.^{[146][149]}

In the *Venezuelan Community Abroad. A New Method of Exile* study, of the more than 1.5 million Venezuelans who had left the country following the Bolivarian Revolution, more than 90% of those who left were college graduates, with 40% holding a Master's degree and 12% having a doctorates and post doctorates.^{[146][149]} It has also been stated that some parents in Venezuela encourage their children to leave the country in protection of their children due to the insecurities Venezuelans face.^[146]

Caribbean

Many of the Caribbean Islands endure a substantial emigration of qualified workers. Approximately 30% of the labour forces of many islands have left, and more than 80% of college graduates from Suriname, Haiti, Grenada and Guyana have emigrated, mostly to the United States.^[150] Over 80% of Jamaicans with higher education live abroad.^[151] However, it is noted that these nationals pay valuable remittances. In Jamaica, the money sent back amounts to 18% of GNP.^[152]

Preventive measures

Talent plays an important role in helping a country develop. The economy of a country that has a large number of world-class scientists and technicians can be more innovative than those of others that do not.^[153] Different areas and nations have distinct policies to retain skilled workers due to the different national or regional situation. For instance, in African countries, the health systems have been severely affected by brain drain, so various measures have been suggested and tried to limit the migration of health workers to rich countries.^[154] In Kuwait, people have argued that the country should cultivate a sense of security and hope among the elite to curb brain drain because people are not so confident of their country's future.^[155] China tries to create a normal and free atmosphere and mechanism that would help talents flourish.^[153] And in India, although suffering severe brain drain every year, the Indian government has not adopted strict policies because they believe that the overseas talent will eventually contribute to the nation in the future.^[156] Germany established a government-funded initiative called GAIN to assist Germans working abroad to return to their home country. Other countries (Switzerland, Austria, France) have similar initiatives.

An opposite situation to brain drain, in which many trained and talented individuals seek entrance into a country, is called a brain gain; this may create a brain drain in the nations that the individuals are leaving. A Canadian symposium in the late 1990s gave circulation to the new term, in response to Canada's luring more skilled professionals to the country than it lost.

In 2000, the US Congress announced that it was raising the annual cap on the number of temporary work visas granted to highly skilled professionals under its H1B visa programme, from 115,000 to 195,000 per year, effective through 2003. That suggests a rough figure for the influx of talent into the United States at that time. A significant portion of this programme was initiated by lobbyists from the computer industry, including Bill Gates.^[157] In the same year the government of the United Kingdom, in

cooperation with the Wolfson Foundation, a research charity, launched a £20 million, five-year research award scheme aimed at bringing about the return of the UK's leading expatriate scientists and sparking the migration of top young researchers to the United Kingdom.

Brain circulation

In general most developing countries suffer brain drain because emigrant intellectuals refuse to return. Some migrants do return to their home countries or become transnational, with homes in different countries.^[158]

Advantages of the brain drain

A brain drain is effectively an export of human resources such as “education services”, which has inadvertently “become a money machine for countries such as the US, contributing over \$7 billion to the US economy”.^[159] However, it is important to note that the knowledge and wealth generated is twofold, both for the country of origin and the host country, which acquires additional human capital to fill labour gaps, thus increasing economic development. The country of origin, exporting their skilled and highly educated workforce, benefit from a brain gain both in terms of the increase in the labour power they possess, and also in the fact that “skilled migrants leaving the country generate increased demand for higher level education amongst the population”^[160] Furthermore, the sending back of remittances increases economic development in the country and its standard of living. Circular migration presents a number of benefits associated with brain drain. First, the economy of the origin country may not be able to take advantage of the skilled labourers, so it becomes more beneficial for the workers to migrate and send back remittances. Second, when the migrant workers return home as part of the circular pattern, they may bring with them new skills and knowledge.

Remittances are a positive effect of the brain drain because they increase living standards in society; as Faini notes, “skilled migrants typically earn more therefore remit more thus fostering growth”.^[161] Nevertheless, this is not a precedent. The remittance economy is a significant part of the brain drain as well an integral source of income for developed economies: “2011 remittances were estimated at \$372bn”,^[162] and for countries such as Mexico and the Philippines were worth “\$24 and \$34 billion”^[162] respectively.

Negative consequences of brain drain

While a brain drain is beneficial, its flaws are inherent in its title, since it usually involves the loss of human capital, i.e. a skilled labour force which is vital to the development of society and the country as a whole. In the case of skilled manpower, Alam et al. recognise emigration of these skilled workers as “essentially providing personal benefits for individuals rather than public benefits”.^[163]

The brain drain benefits individuals more than society; however, “implementing policies to reduce their movement”, according to Skeldon, “is in effect to act against the process of development”.^[160] This means society is inadvertently caught in a catch-22 scenario, whereby “allowing the Brain Drain to continue is likely to result in knowledge being distributed unevenly”^[159] across space, resulting in a fall in economic development for either the country of origin or destination countries.

Another consequence of the brain drain is the existence of social marginalisation, which occurs due to several reasons. For example, highly skilled labourers have been villainised by society because they may be perceived as a disruption to existing society. The migrants themselves, who have struggled to adapt to their new surroundings and way of life, may subsequently perceive themselves as living 'parallel lives.' The most pressing issue skilled migrants face in contemporary society, however, is what Tsuda refers to as “double marginalisation”,^[164] which is when migrants are kept from integrating into their new surroundings either by society or by existing governments, and upon their return home are shunned by the community they originally migrated from due to their earlier departure. Double marginalisation has become a common feature in contemporary society, which has in some respects reduced the amount of skilled migration occurring.

Impact on the health systems of developing countries

Despite the existence of significant global efforts trying to improve health and healthcare systems in the developing world, the money invested is insufficient, as health workers from the developing countries leave their home countries and immigrate to the developed world, assuming low-status positions in rich countries. As a result of many local health workers abandoning their countries, countries in the developing world lack sufficient health care workers, which harms the local health system. Health systems in the developing world are receiving financial aid to deal with significant diseases and health issues such as child mortality, AIDS, and malaria. However, the money is ineffective, as there is not sufficient manpower in the form of medical and health professionals to do the work required, which further damages the health system rather than strengthening it.^[165]

The utility of the brain drain

In assessing the usefulness of brain drain, it is important to understand that for some of the world's developing countries "the gains from migration accrue neither from migrant remittances nor do they return home with amplified skills acquired abroad".^[166] The gains come instead from the increase in promotion of education of highly skilled labour in developing countries, as well as investment in infrastructure. Nonetheless there does exist a vast "remittance economy worldwide worth \$510 billion in 2007".^[162]

See also

- Nations and intelligence
- Convergence (economics)
- Foot voting
- Human capital
- Immigration
- Instructional capital
- Free rider problem
- Canadians of convenience
- Great Migration (African American)
- **Reverse brain drain**
- Emigration from Colombia

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