



## The economical and social aspects of highly - skilled human capital activity in global economy\*

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### Abstract

People have been in continuous progress in historical process. This process was started from finding and picking natural products (primitive society) to cultivating the soil and growing products (agricultural society) and then, to post industrial society by knowledge and information instead of land and capital as being basic production tool. Labour was the main element of production before Industrial Revolution and there was no advantage between societies. However, with the Industrial Revolution, production structure was changed by increasingly using machines and tools and this increased the resource and energy requirements. But, having only natural resources was not enough in this process and using these resources with machines and tools was a necessity. Industrial society process brought organizations which are using natural resources and machines/tools put in advantage compared to others.

Rapidly developing technology and globalization removed obstacles of the front of national markets while emphasizing increased competition and creativity and organizations. This new progress forced organizations with highly educated labour which are capable of transforming these elements in information and new Technologies. This process created the opportunity of catching new era by adopting qualified labour of less developed countries. However, this process caused much higher qualified labour requirements of economies, and put less developed countries in a situation that losing their high qualified labour to developed countries as result of increased competition which is called brain drain.

In this article; the concept of “brain drain” will be described and the theoretical approach will be explained; the figures and international development of brain drain will be examined; the possible social and economical results of international mobility will be discussed.

**Keywords:** Brain drain; labour; globalization; migration.

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## **Human Factor as a Standing Out as Set**

There have been many developments which caused radical changes in social-economic values of social life and social structures in history. It is possible to explain these changes in various ways. Considering the agricultural community period as the first wave and industrial community as the second wave, period of industrial community can be said to have changed the social life most radically. The main paradigm of this period was based on an understanding aiming at making people gain certain knowledge and skills such as centralism, specialization, mass production, bureaucratic administration, large-scale enterprises, salaried working, organizational understanding rather than giving importance to developing their views and using them (Bozkurt 2001: 15). Together with developing technology, increasing competition and globalization, industrialization which had been dominant until 1960's has also brought about radical changes. In order to reflect this change various concepts have been used for this period such as the third wave, post-industrial community, post-modern community, post-capitalist community, information community, service-community.

Economical structure of industrialized community used to determine capital accumulation for offering goods or services to markets and consolidation in business, factories and buildings as production and consumption places different but complementary factors. However, with the new period this structure has completely changed and instead of material, knowledge has become dominant and period of producing new information using the knowledge has become prominent (Erkan, 1994: 98). It is difficult to state exactly how and when this period, as we call it period of information community, emerged, but post-industrialized community can be said to have started in the lates of 1950s when blue-collared, in other words as K. Marx stated proletarians become minority against white-collared.

Global competition is a period in which no one has any scenario for future, and human power, devoted to creativity, and consistent reforms, is the essential source for enterprises (Bozkurt, 2001: 16). This is also a period that only those who owns the best quality of this source will be dominant. In competition, having production factors such as land, capital and workforce which help enterprises to be advantageous are not enough to become superior. In

information community period achieving strategical superiority means having highly skilled human force gaining knowledge and transforming it into new knowledge. Therefore, in forming economic circumstances, information makes those who can use it successful or unsuccessful.

In industrial community period, material capital made countries or enterprises superior, but in information community period, the most essential source is the human brain itself. For instance Microsoft has very few material sources such as physical conditions, stocks, raw-materials. On the other hand, human-force is the most important capital in this organization. ( scientists, engineers, experts etc.). Market value of this company is higher than General Motors which used to be a giant in industrial community period (Akın, 1999: 67). The change has both changed the nature of works and work-force. In the past, when you learn the job it was enough life-long but people, consistently, have to learn new skills (Bozkurt, 2001: 7). Together with globalization, competition gradually increased and economies relied largely an scientific fact. As a consequence of this, the demand for highly skilled persons has noticeably increased.

Increasing demand for highly-skilled persons has caused exterritorial movement among these people. During 1950's and 1960's many scientists and highly-skilled persons from England moved to North America. This, was called "Brain drain" in England (Kurtuluş 1999: 9). Sometimes, university graduate and knowledgeable people (Gençler, Çolak, 2002: 608) and highly-skilled people leave their countries and study abroad, but they do not return to their countries and prefer to live and work in that country (Tansel, Güngör, 2002: 621). This is also called brain-drain. The concept of "Brain - drain" includes well-qualified experts, administrators, senior managers, technically experts, merchants, investors, physicists, businessmen, some workers in key-position and subcontractor workers (Gençler, Çolak, 2002: 608).

In a competitive economic structure, organizations aim to have highly-skilled human-force. Individuals also make effort and spend money in order to increase their level of education and skills for the purpose of obtaining marginal income. In return to their efforts individuals aim to obtain monetary value. As a result of their success in their work, they hope to earn more than the others and seek to employ (Heric, Kindleberger, 1953: 196; Gençler, Çolak,

2002: 608). Expectations of individuals and exterritorial enterprises not meeting the human-force they need from domestic sources or the demand for more skilful people cause this type of migration.

In 1970's, dependence theorists, about the differences causing a activity between countries, in their analysis used to try to combine the pushing and appealing factors owing to insufficient working in his branch, promotion, wage and employment (Oğuzkan, 1971: 32). Later, they determined that there was brain drain between developed and less developed countries as a consequence of their prior and subsequent dependencies recent studies, show that global-scale education and inadequate progress will largely affect global-process in highly-skilled persons' migration. Primarily corresponding solidarity in economy (Multi-national enterprises' becoming strong and their increasing dependency to each other in economy) and presence and continuity of interaction in education field (the schools opened in developing countries and increasing education with foreign language) and strong international relations and inadequate progress cause highly-skilled people to migrate to developed countries particularly USA (Cheng, Yang, 1998: 628-630). However, migration of highly-skilled people from developing countries to developed countries is different from classical migration phenomenon approach.

This is because the activity also exists between developed countries. Therefore, as we know, brain drain can also be defined as brain exchange or brain circulation.

Among OECD countries, in which developed countries take place, migration of students, researchers, managers, it specialists from one country to another forms an example to brain circulation. It was determined that in the mids of 1990's the intra company tranfers from their Canadian firms to USA made by multinational companies forms %5-10 of the highly-skilled human flow (Cervantes, Guellec, 2002: 1). Although some countries such as Canada experience positive migration, they lose some of their highly-skilled people. Developing countries experience negative migration.

Highly-skilled people activity among developed countries generally periodical permanent or long-lasting (Cervantes, Guellec, 2002: 2). According to the UN's criterion, staying one year is accepted as periodical, staying longer than one year is accepted as migration.

In international field there is not systematic knowledge concerning highly-skilled people's migration. But in brain drain all-over the world countries admitting brain drain are mostly OECD countries.

The countries and policies are not comparable. Countries vary in their philosophies and experiences of managing migration some such as the UK, France, Germany, USA, Canada and Australia have long immigration policies, but others such as Ireland are experiencing the challenges of immigration for the first time. Mechanisms and policy initiatives of countries can be classified into five groups (McLaughlan, Salt, 2002: 3):

1. "Those countries where a comprehensive scheme exists such as the Green Card system in Germany and H1B visas in the USA, which are specifically aimed at attracting highly skilled migrants.
2. Governments which have made minor positive changes to the existing work permit system to facilitate quicker access to the labour market for highly skilled personnel, for example the fast-track work visas for IT specialists in the Netherlands and the work authorization system in Ireland.
3. Governments which have used exemptions from work permits or relaxation of work permit regulations to enable employers and foreign workers to gain easier access to the labour market, for example intra-company transfers in Ireland are exempt from work permit regulations and are exempt from a labour market test in the Netherlands.
4. Tax incentives are used to reduce the tax burden, particularly in Nordic countries for high earning foreign workers. These tend to be long standing rather than recent introductions.
5. Policies to encourage return migration of highly skilled, notably in Ireland "

The history demonstrates that, migration policies of countries do not change frequently but when it changes, there occur drastically differences (Borjas, 1996: 180).

USA policy is an important example in terms of appealing highly-skilled foreigner human force.

USA, which admits many immigrants, allowed British, German, Hollander, Scandinavian, Swiss and Canadian people to settle in the 19<sup>th</sup> and early 20<sup>th</sup> centuries. Subsequently Slavics, Romanian, even 36 percent of them were illiterate (Kurtuluş, 1999: 6).

The effect of the increasing demand for foreign work force can also be seen in migration policies. In the American migration policy based on quota system that based on national origin essence. It was separating the ones coming from Germany and United Kingdom, and applying quota to others. This system was cancelled in 1965. Some changes were made and family unions were facilitated (Borjas, 1996: 72). Together with ignoring skin colour discrimination, adopting qualification principle and expanding the visa extension are the most important changes brought about by this immigration Law. Moreover, President Johnson, while signing aforementioned Law, said "Those who contribute the power, ideal, wealth of this country will be admitted undoubtedly" (Oguzkan, 1971: 9) and he started a new period in which birth place and nationality aren't important, but those who will come will be evaluated by looking their quality level.

Of the people migrated to USA between 1907-1923 only 2,6 percent were highly-skilled, between 1947-1965 this proportion 16,9 percent, in 1965 it was 22 percent (Thomas, 1968: 33). After the second half of 20<sup>th</sup> century increasing competition between nations, the demand for highly-skilled people in economics and the fact that only the ones having highly-skilled man would be then first in this competition are standing out in the changing migration policies of the USA and this change in migration policies have increased the amount of highly-skilled ones noticeably.

In respect of highly-skilled human migration to the USA, until 1965, mainly Europeans were admitted because of race discrimination and quota limitation. However after the change in migration Law the origins of immigrants started to change and migration from developing countries was accelerated. (Pernia, 1973: 63; Iredale, 2000: 882). While 79 percent of immigrants were from Canada and Europe before 1960's, after 1970's the proportion of

immigrants from Latin America and Asia increased and reached the level of the level of 78 percent (Kurtuluş, 1999: 14).

With the aim of encouraging qualified migration needed by American inner markets, visa quotas which are applied according to 1990 migration Law (IMMACT) have been doubled. While this number was 65 thousand 1990, in 1999 it increased to 115 thousand and by the year 2003 it was determined to be as 195 thousand annually. There are two main reasons for increasing quotas. First; America's inability to meet the work force demand in inner markets requiring qualification and increasing sophisticated works; second the huge difference between existing and planned work force market. Thanks to this visa regulation more than 900 thousand qualified people were admitted to USA between 1990 and 1999. 193 thousand of the immigrants were from India, 62 thousand were from Philipines, 61 thousand were from United Kingdom and 19 thousand were from Russia (Martin, 2002: 273-279).

With regard to highly skilled human migrations, with a comparison of EU (European Union) countries to US, the EU countries stayed behind in this competition. It can be stated as causes of this situation that the EU countries have rigid migration policies and their universities are restrictive to students of that come from outside. The EU countries generally received the big amount of brain drain from the candidate countries negotiatton todays with EU (Straubhaar, 2000: 10; See Annex).

In order to prevent highly-skilled human migration to other countries, especially to America, EU countries issues a decision of recommendation about prevention of brain drain and encouraging researchers (No. R (95)7). In addition, with the aim of increasing the charm of European research areas, 1,8 billion Euro has been allocated in accordance with the Sixth Research Programme.

### **Economic and social aspect of brain drain**

There are various approaches concerning economic and social affects of brain drain, the activity of highly-skilled people. They are mainly considered in international and national models.

Those who are in favor of international model claim that brain drain shouldn't be considered as a problem, and they argue that the scientist, no matter where he is, should contribute to the progress of human and the global welfare (Johnson, 1968: 69-70).

Those who are in favor of national models claim that migration of highly-skilled people to developed countries doesn't contribute to human welfare but contribute to developed countries' welfare. They argue that this makes developing countries' problems even worse and there should be equal progress between regions (Oğuzkan, 1971: 24). Both models suggest controversial ideas.

Brain drain has both positive and negative effects on admitting and sending countries. Mostly, positive effects can be seen in inner markets of the admitting country. It is argued that the benefits of admitting country are much more than those the sending country in long term. It is suggested that the countries losing their people owing to brain drain are in a disadvantageous position; and also it is stated that brain drain causes a noticeable difference between the developing and developed countries in terms of capital, human and technical quality and this makes developing countries lose their ability to keep up with developed countries (Guellec, Cervantes, 2002: 85).

Migration of highly-skilled people brings about the loss of productive capacity. Their avoiding consumption in their countries may cause more loss than they get abroad (Herrick, Kindleberger, 1983: 197). A considerable amount of the money they sent to their countries is spent for consumption and only a little is used for can only contribute to the economic growth in long term (Devan, Tewari, 2001: 54).

Owing to their living abroad their countries are both deprived of goods, services and earnings, produced by their taxes. The nature of unemployment and development level is different between countries. The inner migration that Ireland experienced contributes 1.5 percent to GNP (Barrett, 2002: 154). If we evaluate the situation in respect of developing countries (Devan, Tewari, 2001: 55); see that GNP was \$454 billion in 1999 in India whose population was 1.014 billion. The annual income of the 20 million Indians living other countries was \$160 billion. In the same period with its 1.261 billion population China's GNP was \$1.030 billion. The annual income of 50 million Chinese living abroad was \$ 700 billion, This is equal to the two thirds of national income in China. There are only seven



countries exceeding this amount. If we add the incomes of the people living in other countries to national income, Per capita increases seven times from \$817 to \$14.000 in China. In India, Per capita increases eighteen times from \$448 to \$8.000. These figures clearly show the contribution they would make if they were to live in their native countries. However, we shouldn't ignore the possibility of the income earned in a developed country might be lower and this might not produce a high added value or might be very little.

Owing to non-existence of those who go abroad after graduation and for education, inner sources are spent uselessly (Guellec, Cervantes, 2002: 86). For instance, China allocated \$1,6 billion for 80.000 students studying abroad in 2000. Approximately, a quarter of the Chinese students went abroad for education don't return. (Guochu, Wenjun, 2002: 193, 195). Their not returning home have disputes on the subject. Developing countries are in need of the technological development of developed countries in order to make progress. Advanced technologies and administration methods can mainly be transferred by those who are sent to developed countries for education.

The students having completed their education and returned home can strengthen education the relations with foreign research foundations and provide cooperation and information flow. Managerial and administrative experience obtained abroad provide access to global network. Thanks to technology flow and developed communication, collective enterprises and money transfer become possible and this make way for increase in investments; as a consequence the merchandise and service can be exported (Guellec, Cervantes, 2002: 86). In 1999, 70 percent of \$50 billion direct foreign investment was sent by Chinese living abroad. Indians living abroad similarly, have \$5,5 billion in reserve in India State Bank (Devan, Tewari, 2001: 54). Although there is money transfer to these countries from abroad, an important amount of money is allocated for students studying abroad. The annual loss of India owing to brain drain is approximately \$2 billion. In other words, this is simply the poor's help to the rich (Gençler, Çolak, 2002:614).

If the people studying abroad return home, seeking for high-qualified persons can be encouraged. Thus, individual education investments can be hopeful and quality goods can be exported easily (Guellec, Cervantes, 2002: 86).

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Also they may bring about modernization. In wages, owing to their absence the wages of those took their place may be higher than normal, but their return may bring it down to a normal level. For instance there has been 4,7 percent decrease in Ireland owing to return of Irish from abroad (Barrett, 2002:154,156).

A person living abroad for a long time naturally affected by its social, cultural and politic values. When they return home, they are employed in strategic posts either in private or state enterprises. Those who are in educational and managerial position approach the events in a manner they attained abroad. This is another way of exporting their social-economical, political values to developing countries (westernisation). By this way, they take advantage of eminent those people's being in an important position.

It is difficult for the countries losing their highly skilled people owing to migration to compensate their loss. Because, it takes a great deal of time to train these people. The advantage of developing countries merely depends on possibilities and wishes except for transferred money, incomes from collective projects, technology transfer.

The countries admitting and employing foreign highly skilled people contribute to the growth of their countries. Thanks to foreign high-qualified man workforce, they contribute their research and development activities; thus they encourage entrepreneurship in high-grade progress areas. Presence of foreigners, their difference and creativity may produce new opportunities (Guellec, Cervantes, 2002: 86). For instance, there are many foreigners got Nobel Prize. The creators of advanced technology enterprises such as Intel, e Bay are foreigners (Cervantes, Guellec, 2002: 2). For example, in the Hsinchu Science Park in Taipei; a large fraction of companies have been started by returnees from the USA ( Luo, Wang, 2001 adapted from Docquies, 2006: 21).

Immigrant employees are a source of contact for these countries and they create the opportunity of potential market (Rent effect) (Guellec, Cervantes, 2002: 86). If foreigners concentrate on certain areas, this may create a deterrent effect on local enterprises. Strategic information may be transferred to enemies without control.

Although it can not be proved that developed countries benefit from this, it can be concluded that they experience positive effects because of the increasing demand for them.

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Highly skilled human force naturally has some effects on both sides. It may have certain effects in global-scale. Eliminating the barriers on the way of information and scientist and introducing them to humanity are essential. This suitable atmosphere encourages scientific progress and creates new opportunities. However, international activity of human capital allows finding suitable ones for duties. Thus, the influence of labor increases (Guellec, Cervantes, 2002: 86).

### **Evaluation**

Although there aren't any international economic and social blocks depending on ideological basis and barriers on the way of trade and capital. The effects of highly skilled people migration are not parallel on both sides economically and socially. The fact that humanity benefit from information and science is not true in terms of its effects on developing countries. Because it does not contribute to decrease the inequality between the nations. It can be stated that it contributes humanity in the field of health and makes man's life easier. However, the income obtained by this is not distributed equally among men. Although there have been a noticeable, increase in the incomes of developing and developed countries. The difference between them have been greater. In 1950's the income difference between developed and developing countries was twenty-three times, but it increased and become sixty times greater in 1990. It can be concluded from the figures that developed countries benefit from highly skilled human capital activity more effectively.

Highly skilled people's migrating from developing countries to developed countries can be considered helping developed countries in order that they will make further progress (Iredale,2000: 903). The creation of networks of people more mobility of immigrants, with immigrants' countries of goods between countries, allowing the mobility factor and the idea of "diaspora externality" constitutes (Docquier, 2006: 21). Thus contribute to the development of relations between the countries provide.

Although the desired thing can not be achieved in terms of these counties' welfare, brain drain may contribute different cultures to become familiar with each other and it may contribute to eliminate their negative ideas and prejudice about each other.

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### Annex. 1

**Table 1. Brain Drain from Eastern Europe According to the Literature**

Country of Emigration	Volume and Occupation of Emigrants	Country of Destinations
<b>Russia</b>		
1990	250 Scientist of the academy of science (20%)	Not specified; permanent contracts
	18.000 Scientist and Intellectuals	Among others Germany
1991-93	7.000-70.000 Scientist	
1992	600 members of the academy of science; the most productive	Israel (44.000 engineers, 8.500 Ph. D.s)
1991	4% of the emigrants are students, 80-90% want to leave permanently	Contracts, primaly Israel, Germany & the US
<b>Bulgaria</b>		
1990-92	40.000 Scientists	Work in the West
from 1989	20.000 Scientists per year	Primarily Germany, Ireland, France, UK; intend to emigrate permanently
<b>Ex CSSR</b>		
1989	34,4% of the emigrants are intellectuals	Germany
<b>Hungary</b>		
?	Many want to emigrate permanently	US
<b>Romania</b>		
1980-84	12,1% of the emigrants were highly qualified	Germany, Hungray & Israel
<b>Poland</b>		
1980-87	76.300 academics	Germany, US; France and others
1983-87	59.700 with university degree	Germany
1980s	19.800 engineers, 8.800 scientists & academics,	From 81-88 approx. 50-55%
	5.500 doctors, 6.000 nurses	migrated to Germany, a great part being ethnic German emigrants

Source: Thomas Straubhaar, "International Mobility Of the Highly Skilled: Brain Gain, Brain Drain or Brain Exchange", *Hamburgisches Welt-Wirtschafts-Archiv (HWWA) Hamburg Institute of International Economics*, Discussion Paper No:88, 2000, p. 11.