

Chapter **2**

Literature survey

2.1. Impact of globalisation on tertiary education and student mobility

Governments in Asia have heavily already invested in secondary education. Since completion rates have become better in many countries, more secondary graduates have now qualified for the tertiary study. But the industrialising economies are characterised by a lag in expanding access to higher education. This lag has led to a period of undersupply, thus fostering a strong growth in outbound student mobility from these countries. Gürüz (2008) found that foreign direct investment in combination with export-oriented development generates demand for qualifications in business, information and communication technology and skills like the English language. International student mobility is to be seen as one means of transferring skills from rich countries to emerging economies, accompanied by transfers facilitated by relocating manufacturing operations and the outsourcing of services related to business. Adopting such advanced technologies demands highest levels of skills; thus student demand for international study may be seen as a response by families to the massive amount of money paid for such acquired skills in Asian labour markets. International students in general and Indians, in particular, are in reality buying their way into the world knowledge economy. Naidoo (2010) views that FDI is a facilitator of cross-border education, and not necessarily its catalyst. Four rationales explain the growth of globalised higher education, such as 1) Mutual Understanding: The internationalisation of education is based on strengthened alliances among countries through complex networks of political and business elites. 2) Skilled Migration: Under this rationale, internationalisation attracts foreign students who are encouraged to stay back and contribute to the knowledge economy; e.g. Germany. Nevertheless, transnational programmes also facilitate student mobility to the origin country e.g., twinning programs. 3) Revenue Generation: The market and trade approach of higher education reflect income as important rationale for recruiting overseas students, e.g. The United Kingdom and Singapore 4) Capacity Building: It views international higher education as a means of fulfilling the unmet educational demand and capability for providing quality education, e.g. Malaysia, where higher education cannot meet domestic demands for higher education. Cao, (1996) found interdependence of international scientific manpower and the rise of technology in post-cold war age. Given the scale of apparent income growth from incremental migration, negative spillovers would be very big to validate restricting labour flows on international efficiency grounds. Even as research on the topic is still at a premature stage, there is as of yet no convincing proof that spillovers of such extent do exist, suggesting that it would be difficult to make an economic case in opposition to drastically increasing global migration.

These four rationales are rarely mutually exclusive. A source country is benefited from revenue generation, but the receiving country is benefited through capacity and capability building. Instead of confining the phenomenon into the north-south debate, a more balanced debate should be considered, because the impacts of cross-border higher education are wide-ranging and involve both receiving as well as source countries.

The globalisation of education has been defined by Bonk, (2009:7) as an entwined set of globalised processes casting impact on education, understandable from international discussions of human capital, monetary progress, and multiculturalism; intergovernmental organisations; ICT; dynamic role of NGOs; and multinational corporations. Knight (2004) provides a general idea of the development of the term and idea of internationalisation, elucidating that, in the framework of education; it achieved esteem during the 1980s.

The effect of globalisation on tertiary education is many-sided, thus the impacts may be summed up as below:

- the higher education arrangement, curriculum and its implementation;
- the organisation of higher education;
- the structure, function together with structure-function relations;
- the certification and assessment of higher education;
- the function of authoritarian bodies;
- the individual institutional policy and programmes
- the acts plus statutes of universities with state education acts.

The trade in education is unquestionably the most versatile one on account of its complicated character and its long-standing profits. Yet, at present efforts are in progress to build up directing principles and regulations to start free trade also in higher education. The WTO is likely to assist academic institutions plus other education providers, minus control to establish branches in other countries also, send abroad degree programs, award degrees as well as certificates with negligible control, invest in foreign educational institutions, make use of instructors for their foreign projects, set up learning and training programmes through distance method etc (Singh, undated). The General Agreement on Trade in Services (GATS) was envisaged in the Uruguay Round of GATT discussions. GATS cover more than 160 services, including education. A number of

obstructions to trade in higher education services as stated by Knight, (2006) are explicit in higher education services as shown in table 2.1.; moreover a good number of them may be phrased as —softll or —invisiblell barriers.

Table 2.1: Barriers to Trade in Higher Education Services

Mode	Barrier	Barrier types
Mode 1 Cross-Border supply	Restriction on import of electronic educational material Restriction on electronic transmission of course material Non recognition of degree in distance mode	Invisible
Mode 2 Consumption abroad	Restriction on travel based on area of study control on foreign exchange	Invisible
Mode 3 Commercial presence	Insistence on local partner Provider be accredited in home country Collaborator from formal academics Equal academic participation by local & foreign partner Disapproval of franchisee Restricting certain programmes perceived to be against national interest Limiting FDI by education providers Difficulty in approval of joint ventures	Invisible
Mode 4 Presence of natural Persons	Visa & entry restrictions Restriction based on quota for countries and disciplines Nationality or language requirements Restriction on repatriation of earnings	Invisible

Source: Knight (2006)

Globalisation is a development through which open stream of ideas, human capital, goods, services in addition to capital leads to the incorporation of markets and civilisations across geographies. Smyth (1996) argues that globalisation of capitalism has had a major impact on higher education policy and produced changes in higher education sector. In particular, globalisation has led to major restructuring of the economy, and governments have reacted —within corporatist and technocratic frameworkll to create niche technology-based industries. This has led to reform higher education with a goal to produce necessary technocrats. This strategy Smyth thinks will fail; and that if it fails, higher education will be made the scapegoat.

Cowen (1996) makes a point of similar nature concerning an ideological swing in what he recognizes as the changeover from contemporary to late-modern educational systems, whereby the well-built political as well as civic motivations of the former are substituted by the supremacy of international monetary paradigms in the latter. Hazlehurst (2011) views that during last two decades, an added flare-up in globalisation has been observed, mainly due to the growth of knowledge economies across the world. The business schools have grabbed the forces of globalisation earnestly. Wood (2010) views that the certainty of globalisation (bigger competition, unyielding pressures to innovate, fresh international markets and production choices, growing apprehensions over cultural and ecological dilapidation) have caused a common awareness that —knowledge societies, continuously developing new ideas, expertise, methods, goods and services are critical for future success. This has resulted in even better demands on universities to extend innate entrepreneurial cultures that are global in extent, such that the formation, transfer and utilisation of knowledge is continuing and developing. Similarly, the rising competition among universities and other bodies that now expand, distribute and market education are convincing academic leaders to look for exclusive ways to distinguish their curriculum from others' programs. To meet these challenges, higher educational institutions are in quest of ways to further unite their faculty, students and external society in a tactical infrastructure where ideas flow, new enterprises bloom and become flexible; and global reputation as a result increases. Knowledge expansion and the —McDonaldization of that knowledge in the global context are viewed as the key effort of 21st century universities. Internationalisation is a major factor to universities because knowledge transfers are now progressively global in nature, academic standing is more and more guided by global standing, and financial support is gradually more dependent on global issues, for instance access to cross-national research resources or tuition fees collected from foreign students. Furthermore, the competitiveness of universities in the worldwide marketplace for tertiary education is of rising magnitude for the excellence of human capital in the knowledge oriented financial system. (Barrow et. al., 2003: 3; Coulby, 2005: 24). The effect of globalisation is very much visible in educational sector. With the advent of information and communication sector, there have been changes in the Nigerian educational system also.

The institutions of higher learning have two fundamental tasks in society nowadays, including: 1) informing and getting ready, not just their students, but their own communities en bloc for the challenges and occasions brought on by globalisation, and 2) being the main

supplier of the knowledge workers that communities want to carry on and thrive in the era of globalisation. Agachi (2012) in a study has found that the eminence of Romanian higher education stands on missions like worthy education, research at the global level, and services for humanity. The contest among Romanian universities is somewhat an innovative model, which has been materialized under the fresh situations of truncated funding as well as international competition etc. in recent times. Several studies reveal that the most productive globally focused plans, whilst meshing with extensive university values like exclusive scholarship, brilliance in teaching, lofty moral standards, a student centric environment, were also intended to establish a campus and community-wide international orientation. The striking global initiatives among the universities comprise outstanding visiting scholar support, distinctive degree and non-degree certification choices, characteristic overseas study programmes, elite worldwide internships, pioneering student scholarships, part-time job alternatives in the global showground; stupendous cross-disciplinary grant occasions for faculty, and gifted overseas partnerships, all of which intertwined with their particular institutional apparitions and strengths. Back in 1995, among the universities, the role of the faculty was fundamental and decisive to an institution's involvedness in the process of globalisation. Even as many globally-focused programmes tend to accomplish, along with firm support from the key leaders (as well as enthusiastic and skilled support staff), it was a dedicated, industrial faculty, which drove worldwide accomplishment. The globally focused faculty may belong to many different places, including one's own campus, institutions abroad, associations of numerous institutions etc. Students are essential to the achievement of any university's effort to globalize its campus as well as community, and students are the main reason why a university ought to hold close internationalisation. No institution is considered as an island. Alliances with local, regional, national and international communities are critical components of international educational development and a global focus. The organisation behind a university's international efforts appears to work best when it is both centralized and decentralized. Branding of the university in the international arena is a responsibility that all must understand and share.

Singapore's —Global Schoolhouse Strategy was launched in 2003, which aimed to establish Singapore as a regional hub for education, with a goal of pulling 1,50,000 international students by 2015. The multi-pronged approach resulted in expanding local provision, attracting renowned foreign education providers in branch campuses, and enhanced quality assurance and registration for local private providers by ensuring consumer

protection for students. Therefore, drawing foreign investment by encouraging concentrations of specialized services facilitating business in the global knowledge economy has become very important. FDI in R&D, accounting IT, finance, advertising, legal services and property development has become essential for survival in this competitive world. The knowledge-intensive aspects of companies' modus operandi require a highly skilled workforce and collaborations with a range of higher educational institutions. (Ziguras et al. 2011: 135-139). Hanson (2009) views that at present, labour flows between countries are governed by policies devised by labour importing countries. The gains out of labour mobility are proved by vast cross country differences in labour productivity, which the free market economy in less developed countries has been incapable to remove. If goods, capital, and technologies cannot lift poor countries' incomes to well-off country heights, then the free mobility of labour proves to be a reliable solution.

The four dimensions of a knowledge-based economy were identified by McKeon et al. (2001):

- Innovation and technological transformations are all-encompassing, and sustained by an efficient national innovation system (i.e. a set-up of institutions in the public as well as private sector whose actions and interactions kick off, import, amend and disperse innovative technologies along with practices).
- Human resource progress is pervasive: education plus training are of lofty standard, extensive and persist throughout a person's working life and beyond.
- A capable infrastructure functions, mostly in information and communications technology (ICT) that lets people and businesses to willingly and affordably access related information from around the planet.
- The business setting (i.e. the monetary and legal guidelines of government and the blend of enterprises working in the market) is accommodating enterprise and novelty.

The forces of globalisation have caused the rising demand and value of international education, thus creating an increasingly competitive worldwide marketplace for higher educational institutions. So, students seek international educational exposure for international marketability. Many institutions now collaborate on research activities across the borders to attract and retain talent and also to access new sources of funding.

As IT industry is important in STEM, Castells (1989) found four spatial implications in the IT industries. 1. There are discrete spatial divisions of labour in tandem with their own labour and functions. 2. There is a spatial hierarchy around the —milieus of innovation located in specific locations. (3) The decentralised production functions tend to drive and reproduce the spatial hierarchies. (4) The central —milieus of innovation in spite of the fact that the industry is otherwise footloose. The milieus form universities, places of higher education, e.g. Silicon Valley; government sponsored R&D sites (e.g. Cold War LA), R&D divisions of corporations already linked to technology (e.g. IBM's New York), and networks of R&D centers (e.g. Austin). Choi (1995) has shown differences in performance between international and domestic S&E researchers working in the U.S. While there was no significant difference in the number of grants, amount of grants, or success rates in getting access to grants, in both normal and fractional count of publications, and the international scientists were consistently more productive compared to their domestic counterparts. These differences may be the result of strong incentive among international scientists to engage in research.

2.2. Challenges and Commitments under WTO and GATT

WTO was set up on January 1, 1995 by substituting GATT at the Uruguay Round. As said by European Commission —the GATS is first and foremost an instrument for the benefit of business. GATS has two mechanisms: (i) The structure of agreement including 29 articles and (ii) a number of Annexes, Ministerial resolutions and so forth., plus the schedules of pledges accepted by each Member government, which connect them to permit market access and/or eliminate present limitations to market access. This accord by and large covers all the services incorporating the education services. This is an earliest multilateral accord, which provides —legally enforceable rights to trade in all services. Only the services offered wholly by the government do not fall within the purview of GATS. While the services afforded either by the Government partly, or some prices are charged, as happens in education or provided by the private players shall fall under the ambit of GATS rule. Some disagree that any institution that should make payment, like fees, ought to fall under GATS as it presently exists (WTO, 1994).

The broad modus operandi of commitment under GATS is that —countries submit their schedules under five sub sectors of education and four modes of supply of education (WTO, 1998). Singh (undated) views that the four means of supply of education include cross-border Supply; consumption out of the country; profit-making

presence/franchisee besides twinning programmes. The design is of an open, international marketplace where services, resembling education, may be traded to the top bidder. GATS cover the international educational services whose educational organizations are not solely provided by the public sector or those that have profitable principles. In India, exemption in education from the application of GATS is not possible since education at all stages, predominantly at higher education, is not completely free; i.e. some fees are paid. According to UNESCO (2006) the academic profession is fundamental to the modern university. Nevertheless, the professoriate has stern problems like worsening of salaries and working situation, augmented responsibility, and other stresses. The trademark of the modern University is mass right of entry. Higher education makes both private as well as public goods. Though there will be camaraderie, each society will identify its public good in its own way. Recently, the public good characteristic of the university is retreating, yielding place to market forces and private profit. Private higher education is the top growing sector of postsecondary education internationally, and tertiary education systems are fairly miscellaneous across the world. Globalisation has internationalized higher education a propos the dynamics as well as patterns of student mobility. Research universities are essential establishments in the new knowledge-based financial system.

Neoliberalism first emerged as a distinguishing strand of liberal ideology in the 1940s with a key influence from the 1970s (Gamble, 2007). As an ideology, its major doctrines can be summed up as —free-market individualism, private property, constitutional order, and the minimal state (Robertson and Scholte, 2007: 865). Neoliberalism indicates specific policies for comprehensive governance (Robertson and Scholte, 2007). The scope of neoliberalism is not limited to the monetary sphere, nonetheless, but has been extended to the political, cultural along with ideological fields. The expression neoliberal globalisation is applied because neoliberalism has been entrenched in globalisation since the 1950s. The scheme of free market economy was widely promulgated by Margaret Thatcher and Ronald Reagan after 1980 and this still has deep influences in modern political, economic as well as cultural systems. Under the disguise of globalisation, neoliberalism has turned out to be the prevailing philosophy and has been embraced by the world (Zheng, 2010). As documented in the Department of State (2013) of the United States press release, the U.S. and India announced 21st Century Knowledge Initiative in November 2009 to fund institutional enterprises between Indian and U.S. higher education institutions, through exchanges of faculty and research and innovation partnership in the areas of import.

Moreover, climate change, food security, sustainable health as well as public health received attention. Each side committed US\$5 million for the resourcefulness, leading to grant awards of up to US\$250,000 to nominated projects.

The other controls from neoliberal globalisation on tertiary education and ISM are—a vision of students as human capital (Apple, 2000:60). Besides, neoliberal globalisation, endorsed by multilateral or bilateral activity, has influenced higher education and ISM. As Torres et al. (2006: 10) argue, the World Bank and the OECD have advocated more privatisation and decentralization of education, which include a thrust toward privatised and decentralised education. The neoliberal globalisation suggests four most important reforms for universities correlated to a) competence and accountability, b) accreditation as well as universalisation, c) international competitiveness, and d) privatisation. Two of the core bases of globalisation are information along with innovation, and they, in sequence, are greatly knowledge intensive. The enormous movement of capital is dependent on information, communication, and knowledge in the global market. Since knowledge is decidedly moveable, it lends itself to globalisation without difficulty. There is evidence that globalisation enhances the demand for education and also the quality of education by ways like *economic*: increasing payoffs to tertiary education in an international, science based and knowledge based market make university education a bare —necessity to acquire —good jobs. This, in sequence, transforms the stakes at subordinate levels of schooling, and radically alters the meaning of secondary schooling. The next part is *socio-political*: demographics or the changing family institution and democratic principles increase demands on universities to offer access to groups that conventionally have not attended higher education (Carnoy, 2005). Globalisation and internationalisation of higher education and student mobility across geographies is imperative area of study in the present context mostly because of the pressing requirement of generating skilled human capital in modern knowledge economy. Building a modern labour force necessitates teaching 21st century skillfulness. This 21st century expertise must embrace the aptitude to solve comprehensive problems by thinking ingeniously and generating innovative ideas from several sources of information (Silva, 2009). The past nine years have observed a 53 percent increase in enrolment in higher education leading to 153 million university students internationally (Labi, 2009). On the flip side, Altbach (2012) in a recent paper views candidly about the realities of brain drain and the pitfalls of globalised higher education. Globalisation heralds a time of an internationally mobile and exceedingly knowledgeable workers causing brain exchange among nations. But

the current events suggest that mobility, is in one direction, typically from developing as well as rising economies to better-off nations. There is an increasing stream of ideas and funds back to countries of origin, however it is undeniable that the major monetary and social input is made in the country where a person is first and foremost located. The unpleasant truth about globalisation; as he argues is that it remains exceedingly imbalanced. Even as brains may not be drained permanently, they are nevertheless drained off, with the likelihood (not that normally put into service) of returning to their origins.

Under the financial weight in the present circumstances, universities in the industrialised countries decided not to continue to maintain international students, particularly with a waning number of scholarships presented by governments. Overlaid upon these reactions surface a novel discussion of educational markets along with institutional restructuring associated with the apprehensions of revenue creation for universities, constructing institutional profile and reputation, bringing diversification of the campus, and the improvement of human capital for a rapidly globalizing market. The variable imaginaries have been portrayed as —driven largely by developments in information and communication technologies, globalisation has given rise to new forms of transnational interconnectivity. It has implied that while people continue to live in particular localities, these localities are increasingly integrated into larger systems of global networks¹. As a range of freely related ideas, the neo-liberal ideas of globalisation entails the expansion of market associations through which citizens, societies, institutions, and states are nowadays assumed to be interconnected globally. It speaks of the rule of international ‘free trade’, applying it uniformly to both goods as well as services, comprising education, which was once known for its national disposition only (Rizvi, 2011: 693-700). According to the OECD Policy Brief (2009) several issues contribute to the movement of human resources in science and technology (HRST). On top of economic inducements, such as chances for healthier pay and career progression and right to use better research aid, mobile talent also expects greater quality research structure, the prospect of working with —starl scientists and more liberty to debate. Policies vis-à-vis research, ethics in addition to intellectual property also impact their selections. The researches of Wildavsky (2010) discloses a rising number of countries are striving to produce a choice group of —global universitiesl that are proficient of contending

¹ Rizvi also mentions the text in quotation in ‘Making a Difference’, Australian International Education’ by Davis Dorothy & Mackintosh Bruce, UNSW Press.

with the foremost American institutions. The examples are cited from the French and German cases battling with educational egalitarians in an effort to fashion European Ivy Leagues.

Loose regulations of tertiary education, growth of institutional self-rule, and the introduction of added market mechanisms are applied by governments to make institutions more receptive to fresh demands, snowballing competition and market prospects. A stronger stress on the specific paybacks of higher education and user-pay methods inspires a bigger role of private funding and providers. As stated by NCITE, (2000); the U.S. higher education in addition to training, have a significant stake in up keeping that their remunerations as an industry are suitably represented, both for national information purposes as well as their international trade discussions. Altbach (2006) finds the effects of globalising higher education summarised as *The Academic Profession in the Era of Globalisation* where the academic profession is central to the modern university. But, the professoriate faces several problems like decreasing salaries and working conditions, greater accountability, and also other pressures. *Access and equity* are major issues. The hallmark of the 21st century tertiary education is mass access. *Higher education and social cohesion* are vital since higher education produces both private plus public goods. Despite some commonalities, each society defines its public good differently. Recently, the public good angle of the university have retreated yielding place to market dynamics and private benefits. *The private and public mix in the development process* is an obvious offshoot of 21st century higher education. Emerging international model for the research universities are sophisticated central institutions in the new knowledge economies, and many countries are facing challenges of developing and sustaining them.

2.3 Population trends, international migration and brain drain debates

The factors controlling the Indian student mobility to the U.S. may be linked to the U.S. policies like short American study time, with Master's courses lasting 1 or 2 years. And most importantly successful foreign students traditionally have had a fair chance to bag an allowance to stay further in the U.S. In early 2000, the U.S. congress discussed a Brain Act (Bringing Resources from Academia to the Industry of our Nation Act) offering foreign students the scope to receive a work permit in the U.S. provided a U.S. employer willing to pay a fee of US\$ 1000 can hire graduate students (Straubhaar, 2000). According to Lavakare (2007) over the years, the widespread characteristic of the Indo-U.S. education has continued to be the topmost goal of the Indian students to pursue study in the United States and for the academic circles and professionals to view the U.S. for original fields of research and

knowledge creation in sophisticated areas of technology. The U.S. is looked at as a prospect to proficient and financial development of the academia. For Indians, the U.S. has all the time offered innovative opportunities for education as well as research in cutting edge areas, with a growing admittance to the budding international job market. In the current decade of globalisation of economy in India, smart job offers in India's corporate sector have given a new face to the mobility of Indian students many of whom now consider returning to India to engage in demanding and rewarding assignments in the emergent transnational sector in India.

Since 1990s, skilled labour migration has been growing swiftly. Skilled migrants; frequently defined as those holding a tertiary degree or inclusive specialised job skill – consist of architects, monetary professionals, accountants, engineers, scientists, technicians, teachers, researchers, health professionals, chefs and experts in information technology (IT, including computing experts, computing engineers, management professionals etc.) (Vertovec, 2002). Students from low-income to middle-income countries often study abroad for long duration to pursue whole academic programmes (Ziguras, et al., 2011). Internationally mobile students are distinguished with citizenship, permanent citizenship and educational background. North America and, Western Europe (NA-WE) are the most coveted destinations because the lion's share of the HSM as well as the ISM belong to third world. HSM settled within this region constituted 30.2 percent of the total (Dunnewijk, 2008).

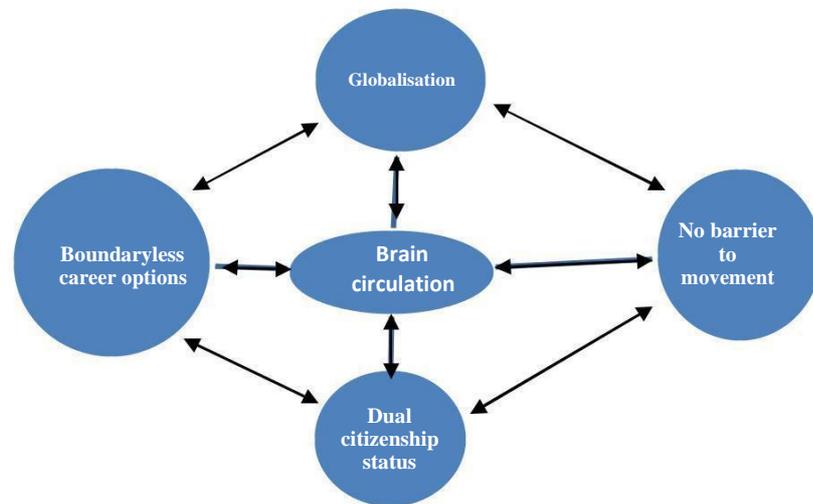
Human migration and mobility from developing to developed region has become a key concept of brain drain and brain circulation literature in last few decades. As a proponent of brain drain debate, Bhagwati and Hamada (1974) argued that the fiscal cost was predominantly vital, with several developing nations subsidising education with the hard earned money of taxpayers, and at the same time the high-skilled persons who leave the country hardly contribute back into the tax arrangement. More lately, much of the apprehension has been with the hypothetical externalities health and education trained people have on the welfare of others in their societies. The possible significance of such externalities, complementarities, as well as economic costs in reality strikes us as imperative monetary questions. It was mentioned by Rizvi (2005), also, that a great proportion of global students did not go back to their native places to engage in the developmental responsibilities, leading to the phenomenon of 'brain drain'. The term —brain drain‖ gained popularity in the late 1960s when growth of skilled migration from developing to developed regions gathered momentum. The industrialised nations, by drawing meagre skilled labour, were following

policies that were expensive to poorer countries in short and long term. The outlays were not only the result of output and service creation, but also counting on the means in which education was funded through added monetary costs linked with public financial support to education. A variety of policy suggestions, mainly focussed on taxation, was floated, although none were ultimately put into action. Part of this may be ascribed to possible complications related to execution measurement (including impermanent migration and migration related to education enrolment in developed world) and vagueness about the welfare consequences (Commander et al. 2001). Brain-drain has become a significant factor of global politics and educational scholarship. A growing number of developing countries are taking into account their highly skilled people abroad as a prospective talent for national progress. Transformed policies are accordingly being developed with the aim of pick up these expatriated faculties. Above and beyond the repatriation return alternative generally endorsed in these policies with uneven success, and a second one has lately emerged, called the Diaspora option. The so-called brain drain is a major problem in the case of Africa, characterised by severe lack of skilled people like doctors and engineers often hinder progress of the continent. Of the total African emigrants to USA, about 74 percent are well educated experts. Certainly this truth makes it obvious that uneducated African migrants to USA are trivial (Maru, 2008). It is striking, that immigrants from Africa comprise chiefly of well educated persons (about 95,000 of the 128,000 African migrants) (Carrington and Detragiache 1999). Findlay (2001) finds that the multinational corporations have their head offices in the capital metropolises of the developed part of the globe, whereas most labour intensive production and service work systems are situated in branches in developing countries. All these factors have demanded an escalating intensity of skilled labour migration between —sites of controll in the industrialised world and other parts of their worldwide organisation. Kalça et al. (2012) view that the developing countries endeavouring to raise their physical capital stock by overseas funds cannot find a sizeable resource in terms of human capital due to factors like brain drain.

The present emphasis on circulatory migration of skilled persons may be highlighted in this literature review. The students after receiving industrial knowledge develop into skilled migrants often moving from one country or region to another. Concerning brain circulation, Daugeliene et al. (2009:49) views that in today's knowledge society, although the one-way ticket is still considered important, globalisation has ensured the temporary workflows almost common-place. Brain exchange has allowed both the sending and

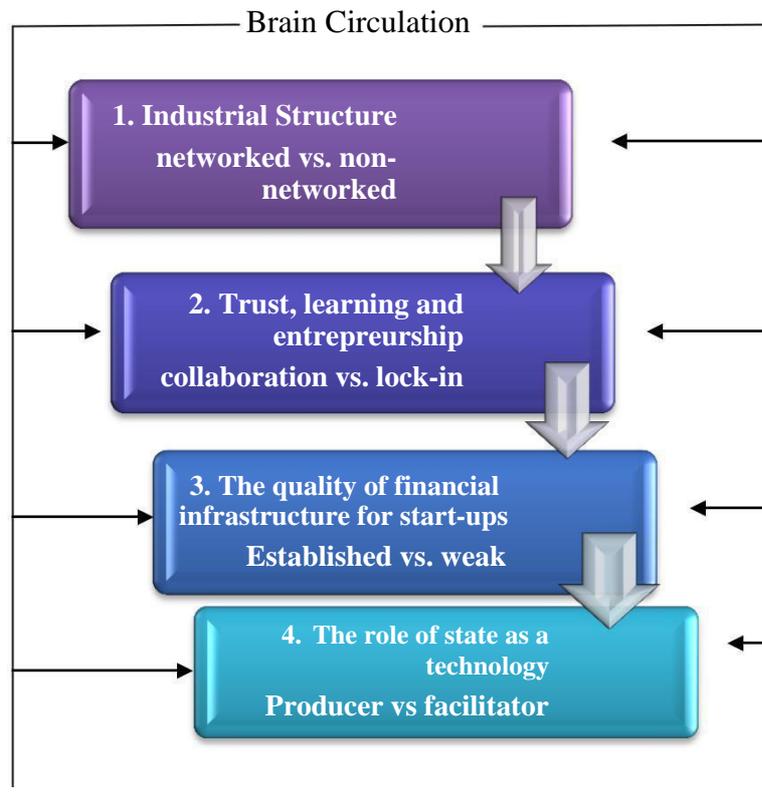
receiving countries to benefit from the specialised experiences of expatriate professionals – and not only from their remittances. Brain circulation is thus a multifaceted phenomenon, covering the movement of highly skilled human resource among different countries and institutions, with the purpose to create, share and spread knowledge and thus stimulate the knowledge-based economies. Hence, it is important to comprehend the factors having a considerable impact for surfacing, expression and consolidation of brain circulation worldwide. As Tung (2008), mentions brain circulation becoming achievable on account of quite a few key developments (Fig. 2.1):

Figure 2.1: The factors stimulating brain circulation



Source: Tung (2008)

Figure 2.2 Structural factors of brain circulation



Source: Yun-Chung, 2007

Yun-Chung (2007) stresses upon four main structural factors of the brain circulation construction in Fig. 2.2. These four structural elements focus on highly skilled people working in two different geographies and these organizations are required to team up when inspiring brain circulation (in this case Silicon Valley and Hsinchu). 1) There ought to be a decentralised industrial system with well-built division of labour and novelty among networked firms. 2) The agglomerated financial systems between the two places, firms must support free enterprise and knowledge between the firms on the regional plane. Equally, high-tech firms have to try to stay away from being locked into the social relations while continuing the collaborative division of labor and inter-firm learning in the high-tech sector (e.g. Hsinchu – Silicon Valley). 3) Venture capital is important to technologically uncertain establishments with super-profit compensation when it does Initial Public Offering (IPO) or is obtained by other corporations. 4) The function of the state in supporting technology transfer must be considerable. Governments ought to finance private sectors, since they put more importance on their innovation, thus stirring economic development and its competitiveness. Brain circulation has received considerable attention in international policy

circles as Vertovec (2007) stresses those multiplicities of policy-makers in national and international institutions advocate actions to ease the movement of highly skilled people, working both in their native soil and in foreign countries. Their thought is that brain circulation could be handled in methods that bring recognizable —win-win-winl consequences; to be precise, payback for receiving countries by meeting labour market deficiencies, for sending countries through assuaging remittances for progress, and for migrants through offering service and control over the utilisation of their salaries. The circulation of knowledge-workers is also being recognised as a possible answer to a number of challenges involving modern-day migration.

The diaspora option has come under full completion in relation to migrations of highly skilled human resources. As a brain gain policy it differs from the return opportunity in the sense that it barely focuses on the physical repatriation of the citizens living and working out of the country. Its purpose is the remote enlistment of the Diaspora's resources and their association to the country of origin's programmes. The surfacing of international computer software industry has facilitated electronically skilled emigrants to circulate their skills back to home countries. The growth of software industry in Bangalore, India, has made probable for the Indians trained in the United States, often green card holders, to initiate their individual firms in India or start ups rather than take less significant positions in Silicon Valley.

The brain drain literature is full of contradictory resources. Sahay (2003) argues that in the case of the Indian Diaspora, human migration has hardly resulted in Brain-Drain but Gain as brain drain from India during 1990 to 2000 hardly impeded the economic growth. The Indian Diaspora in the U.S. did not stimulate the growth rate in the United States during the phase vis-à-vis other diasporas. Nevertheless, the Indian Diaspora has contributed towards the progress of India. Economically influential as well as politically well-connected Indian Americans have contributed towards the improvement of Indo-American relationships. As per the estimate of IOM (2008) ever since the 1960s, the average annual net number of migrants moving to the rich countries has generally been rising, with the maximum value of 3.3 million people each year reached during the period of 2000 to 2005. For 2005 to 2010 period, the possible value is close to standard net migration stage likely for the 1990s (specifically 2.5 million persons annually), but the long-standing level expected for 2010-2050 is rather lower at 2.3 million people every year. Although this anticipated long-term point is almost a third lower than the pinnacle achieved during 2000 to 2005, it is also 40

percent above the normal annual net migration to developed countries between 1960 and 2005 (1.6 million).

The population of developed nations is ageing rapidly. In the preponderance of developed countries, the fall in fertility started over a century ago and, since the 1980s, their fertility has reached the lowest level. As a result, in developed nations there are already less kids than people of 60 years or older. Additionally, their working-age people are to fall in spite of the expected increase from net migration. The following figure shows the past trends and future projection of migration from developing to the developed countries.

In accordance with existing estimation, for Asia and Latin America during 2000-2005, about 1.4 million people annually were lost in emigration by each region. In contrast with urbanized countries, the lion's share the developing countries expect ample swell in their working-age human resources and the emigration is anticipated to generate only diminutive decline in those populations. These figures underscore a key point, explicitly over the subsequent four decades; the developing world can basically be the supply region of as many inhabitants of working age as are probably be in demand in developed countries with declining working age populations.

The dynamics of student mobility over and above the internationalisation of higher education have altered deeply since the 1990s. Formerly, the primary incentives to study abroad were linked with educational, political, cultural, geo-strategic plus development aid matters. In general there was a positive vision of the mobility of students and academics as an opportunity to the world, in the expectation of constructing elite international networks. Universities received overseas students and academics but made hardly any unique attempt to enlist them. These days, although the original impetus remains valid, cross-border education (Knight, 2004) is being increasingly controlled by financial concerns. Governments perceive it as a pivot of economic growth and as a way of improving the superiority of their higher education and also a source of income giving them a competitive advantage. Individuals distinguish it as an added boost to their profession in the international job market, or even as investment for potential future emigration. This trend is the outcome of larger-scale mobility of skilled people in a globalised market; the declining transport cost and communication; countries supporting university and cultural interactions and to drawing highly competent workers; the aspiration of tertiary institutions to make added income or boost their status and elevate their profiles, both nationally as well as internationally; or the necessity for a well-read labour force in promising economies where local capabilities are often quantitatively and

qualitatively insufficient. The prime trends in cross-border tertiary education are characterised by growth and diversification, i.e. growth in the number of students registered in overseas education programmes; and diversification of the supply of cross-border education.

2.4 Student mobility in a globalised economy

According to UN (2010) World Migration Report, during the subsequent few decades, worldwide migration is expected to differ in size, access and difficulty, as a result of increasing demographic inequality, the effects of ecological alteration, and most recently international political and fiscal dynamics, industrial revolutions as well as social networks and so on. These makeovers will be related to increasing opportunities – from fiscal growth and poverty decline, to social and cultural novelty. The economic recession has slowed emigration in many parts of the planet, though it does not appear to have enthused considerable return migration. With financial revival and job growth, the majority experts anticipate this recession (which started in 2008) to be a brief phase. Carefully administered migration may be a dominant strength for financial growth and novelty in destination countries, and reduction of poverty and progress in poorer countries of origin, in addition to provide significant human freedom and human development results for migrants and their families. Contemporary societies are knowledge societies. Their development depends more on the accrual and exploitation of intellectual rather than material assets. The creation and communiqué of innovative knowledge come to pass ceaselessly and at mounting rapidity (Shils, 1992). Beine et. al. (2001) emphasize, in a poor financial system with a scarce growth prospective, the return to human capital is expected to be little and therefore leads to a restricted incentive to obtain education, which further restricts growth. Nevertheless, the key distinction between a clogged economy and one allowed for migration is not only in openings but also in the inducements faced by people. The likelihood of migration constitutes a greater than before motivation to gain skills and consequently there is a probability of a useful brain drain in conditions of ambiguity. Given that only a section of the human resources will truly emigrate, in the long run the sending country might possess a higher average stage of human capital, i.e. a brain gain happens. A further method for advantageous results is also discussed in Mountford, concerning the development of educational classes in a financial system. A brain drain can modify the dynamics of ‘class’ construction and thus an under-educated class do not develop (Mountford, 1997). Schiff (1999) put forward that due to emigrants an ‘empty space’ in their families and work place is

created, hence worsening the social capital but thanks to the current advancements in communication technology the issue can be solved and thus form an indispensable part in the migratory process. Even if this is a novel strategy and still budding, the global Diaspora has an imposing prospective of information, skill flows, representing a potential ex-post channel of brain gain. (Pănescu, undated). Another more customary potential for brain gain is in the course of return migration. When migrants revisit home country they are expected to bring back knowledge and skill, monetary resources, networks and innovative skills which may be industriously exploited. There is some proof that return migrants tend to pick for entrepreneurship and well educated persons are more likely to be dynamic after arrival (Commander, 2001).

The research on brain drain has of late shifted focus to brain circulation (Chaudhuri, 2011). GATS agreement of the WTO under Mode 4 encompasses movement of natural persons. GATS mode 4 appears to present the best of both hemispheres for endorsing circulation at least in theory. Whereas GATS has been in effect since the execution of the Uruguay Round in 1995, its significance for global migration is inadequate. Nowadays, the preponderance of labour flows between countries is directed by guidelines designed, monitored and enforced by labour importing nations. The United States is an important destination for skilled workers availing of H1B visa as well as for international students. The U.S. hosts about 19.7 percent of all global migrants from less developed countries. Hitherto, the United States is the origin country for merely 1.2 percent of the intercontinental migrants. Industrialised countries retain obstacle to immigration not because they do not recognize noteworthy profit from greater worker inflows. Paradoxically, the labour mobility makes migrants considerably wealthier but their prosperity has unassuming effects on net incomes in receiving nations (Hanson, 2009:4). In a financial crisis, the well-off nations have certain political compulsions also, particularly in view of unprecedented unemployment level in those countries. The United States has been the hard-hit country due to high unemployment rate. The geographical boundaries appear ineffective as the skilled persons constantly immigrate and emigrate as an integral part of brain circulation. India's technical prowess has eased the globalisation of the IT industry accompanied by the globalisation of Indian skills. Consequently owing to technological innovations in the IT industry substantial amount of investment was drawn by the IT sector through past few years. The IT industry even in a global recessionary period has remained a decidedly vivacious and fluid industry. All these led the U.S. in the 1990's to assuage their tough approach towards immigration, and H1B

visa advanced to the Indian techies is an outcome of Indian ingenuity. In this circumstance of a healthy economic milieu, the much coveted H1B was allowed for thousands of skilled Indian Diaspora for working in the United States. The demand for an H1B visa was skyrocketing until the world monetary system went topsy-turvy from 2008. In contemporary knowledge and information age, substantial information formation, knowledge management, knowledge utilisation, and knowledge propagation have become the catchphrase of the 21st century. As a consequence, countries for instance the United States have made relaxation in their immigration policies to draw sophisticated proficiency in IT, pharmaceutical, biotech and drug manufacturing, in addition to other advanced fields prior to September 11 disaster. The IT and other associated industries have pressurised the U.S. government to double H1-B visas from 65,000 to 130,000. This excluded the 586,000 students who preferred to study in the U.S. institutions from around the world (Altbach, 2004). Several researchers prove that a majority of Indian students engaged in higher education in the U.S., never return to India. Given the popularity of courses like MBA, IT, engineering and biotechnology among the Indian students in the American campuses; it seems to be plausible that a majority of the skilled diaspora form a significant share of brain bank in the U.S. (Bhuimali et al. 2006). The relative advantage of the United States due to its control of brain bank may be gauged from the fact that about 50 percent of all U.S. science and engineering human resources possessing doctorates are immigrants. Globally cross-border educational trade has been on the rise. Over 2.5 million university scholars are at present studying abroad resulting in a 70 percent boost in the figure in the past decade and despite recession, the number of overseas students will continue rising in the long run. India and China form a majority of overseas student population in the U.S. campuses. The American institutions of higher learning have been facing scarcity of funding in the present times. However, the restricted degree of globalisation in India's institutions has protected the Indian establishments from the depredation of worldwide financial depression in 2008-09, as noticed in archetypal American organisations. Ranging from the Ivy League universities to lesser-known colleges, diminishing proceeds and the dilapidated worth of endowments have resulted in joblessness, annulment of latest construction works and even slash in enrolment figures. But after enrolment advertisers, the slump is not widespread across the U.S. A few states for example Texas and Wyoming possess a tax base in oil or minerals besides being not part of the financial decline. So educational hiring has been stable. The preponderance of states with hard-hit manufacturing base or with tax deficit, though, has harshly truncated hiring in the commerce along with academic segments. Graduates keen to enter academic circles are

equally experiencing a much tougher marketplace. Scholars belonging to the baby-boom age group, appointed in the late 1960s, were anticipated to have started retiring at this time. Chaudhuri (2010) viewed that student mobility from the science and technology departments to the U.S. has been guided by few key factors, such as, income, career prospects, better teaching and learning and acquaintances. The back mobility is influenced by growing economy in India accompanied by growing salary.

2.5 The Causes of Mobility

The factors shaping the option of a foreign destination comprise: *The destination country's immigration/visa policy* for overseas students is a significant determinant. The probable determinants are the minimalism of obtaining a visa, the work prospect during the study period or to stay in the country upon achievement of a foreign degree. Employment prospective in the host country plus the country of origin determines the option of immigrants. A host country will be more attractive if students are allowed to continue work there after completing their studies, or if their education is really recognized in the neighbouring job market after they revisit home.

Acknowledgment of skills and overseas qualifications in the country of origin in addition to the host country needs more discussion. The lack of sanction of degrees along with professional schooling attained at home can drive mobility. Students may wish to study in a foreign country since they may have decided to work there and have hardly any alternative but to attain the local qualifications that would permit them to do so. Furthermore, the qualifications gained in the host country may have the superior global appreciation. Conversely, the absence of recognition of foreign schooling restrains mobility as it may limit their job scenario after homecoming. The UNESCO and OECD together have prepared the *'Guidelines for Quality Provision in Cross-border Higher Education'*, demanding better intelligibility and global collaboration as a way of making possible the worldwide acceptance of skills (OECD, 2005).

The cost of studies abroad includes living expenses, tuition fees; financial assistance etc. judged against the country of origin deserves mention. The lesser the cost disparity, the more mobile scholars are likely to be. Besides geographical and cultural immediacy, the same tuition fees as local students are a very important factor guiding student mobility.

The status and supposed excellence of the institutions of learning along with educational structure in the host country weighed against the country of origin guides the

mobility of students. A destination country supposed to be having a benefit in this field is an incentive to mobility. International ranking systems are making it gradually more achievable to evaluate institutions of higher learning all over the world (Salmi et al., 2007).

The option of post-secondary education existing in the country of origin and the potential of admission could encourage students to move to a foreign country.

The networks of current and former students from the country of origin are vital when information about overseas institutions is comparatively inadequate, the advice of other students will play a central role, as will the outlook of becoming incorporated into one's own (student) society abroad (OECD, 2004).

The language spoken in the destination country plus the language of training is an encouraging factor of student mobility. English presently is the major globalised language and it ranks second as the most extensively spoken lingua franca in the world, the English-speaking countries enjoy a distinct advantage.

The perceived quality of lifestyle in the host nation is with all varieties of travel, environment, religion, cultural and tourist attractions are crucial factors.

The geographical, as well as the cultural closeness of the host country and the country of origin in addition to historical ties, justifies the considerable student flows between the countries of French-speaking Africa and France for example.

The infrastructure and community benefits obtainable to foreign students in the host nation embrace medical treatment; university lodging, language education centres, etc. are enthralling factors too (IOM, 2008).

Boyd, (1989) has mentioned about family, friendship, and community networks guiding much of the recent migrations to industrialised nations. Current interest in these networks accompanies the development of a migration system and the rising awareness of the macro and micro determinants of migration.

2.6 STEM migration

A special emphasis has been given in this study on the STEM disciplines, which includes science, technology, engineering and mathematics. Globalised economy worldwide has drawn much of its vital power from technical areas. Hence, the technical subjects have become immensely popular in recent times as a consequence of the dynamics of the globalised economy. In accordance with S&E Indicators published by the U.S. National

Science Foundation (NSF) 2010, S&E means physical/biological sciences; mathematics/computer sciences; agricultural sciences; social/behavioral sciences; and engineering. It is somewhat dissimilar from the OECD definition. The OECD (2009) definition does not incorporate programmes such as agricultural and social and behavioral sciences as are contained in the NSF definition.

The STEM graduates are most likely to get H-1B visa due to their technical knowledge and skill. Human resources moving to the U.S. under H-1B visa category are categorised as the skilled immigrant in the U.S. The H-1B ‘non-immigrant’ impermanent overseas guest worker programme is a precious instrument for employers to draw and keep the —best and brightestl immigrants in the science, technology, engineering, and math (STEM) categories. Since employers may appeal for a permanent home for their H-1B workers, the visa is at times depicted as a —bridge to immigrationl that can permanently retain the efficient foreign STEM workforce in the U.S. and therefore develop the competitiveness of United States. Partly because of this, the Senators Hatch, Rubio, Coons and Klobuchar elucidate their fresh bill —the —I-Squared Actl — that might more than quadruple the volume of the H-1B programme. Nonetheless, for the major users of the H-1B programme, this view is a sham as in 2012, the 10 employers accepting the major number of H-1B visas belonged to the industry of outsourcing and offshoring advanced American jobs. Scores of the jobs benefitting the H-1B employees should have as a substitute gone to U.S. workforce. The top 10 H-1B employee companies were approved an astounding 40,170 visas, which is approximately half the total yearly quota. The table below has shown the H1B visa rules facilitating the permanent immigration status to the immigrants in the United States. Hira (2016) has mentioned about the H-1B program can serve as a conduit to permanent immigration for educated and skilled foreign workers.

Table: 2.2**Green Card Applications for H-1B Workers & Immigration Yield****Top 10 H-1B Employers Sponsored Few Workers for Permanent Immigration in 2014**

2014 H-1B Rank	H-1B Employer	Offshoring Business Model	2014 Applications by Employers for Permanent Labor Certification	New H-1B Workers, 2014	Immigration Yield = Green Card Applications/ New H-1B Workers
<i>1</i>	TATA CONSLTANCY	Yes	2	5,650	0 percent
<i>2</i>	COGNIZANT TECH	Yes	57	4,293	1 percent
<i>3</i>	INFOSYS	Yes	552	3,454	16 percent
<i>4</i>	WIPRO	Yes	0	3,048	0 percent
<i>5</i>	ACCENTURE	Yes	13	2,275	1 percent
<i>6</i>	TECH MAHINDRA	Yes	48	1,781	3 percent
<i>7</i>	IBM	Yes	161	1,462	11 percent
<i>8</i>	LARSEN & TOUBRO	Yes	35	1,298	3 percent
<i>9</i>	SYNTEL	Yes	23	1,080	2 percent
<i>10</i>	IGATE	Yes	127	886	14 percent

Source: Website: <https://www.foreignlaborcert.doleta.gov/performance/cfm>, Economic Policy Institute and Hitra (2016)

There is two bases these firms employ H-1Bs rather than Americans: 1) an H-1B employee can lawfully be paid less than an American worker, and 2) the H-1B employee gain knowledge of the job and subsequently migrates back to the country of birth and takes away the job with him. Hence, the H-1B was christened as the —Outsourcing Visa by the political circle of India. Rather than retaining jobs from leaving the shores of the U.S., the H-1B does the contrary, by aiding offshoring and providing companies with inexpensive, temporary

service – while sinking job openings for American high-tech workforce in the course of action. The I-Squared Act hardly does anything to defend against this, whereas greatly increasing the dimension of a profoundly faulty programme that hastens the off-shoring of the U.S. high-tech jobs and diminishes the future capacity of America to innovate (Hira, 2013).

Sperotti, (2014) has discussed a new dimension of student enrolment in STEM at the backdrop of the globalised knowledge economy. Over the last twenty years, novel forms of doctoral degrees being merged with practical working experiences have emerged. These professional or industrial PhDs-doctorates are the ‘modern doctorates’. Most of them in Australia, UK, and the United States are adult professionals; who plan to further augment their qualifications and skills. Here, doctoral students or employees work on research projects at the funding company or employer with the objective of further boosting collaboration between academia and the private sector while enhancing the career prospects of students or employees by combining employment, learning, and research. Altbach (2012a) has found that the brain drain is now euphemistically called brain exchange, and it seems to be alive and well.

2.7 Conclusion

The waves of globalisation and internationalisation of tertiary education have touched the developed as well as the developing world in an unprecedented manner in the last few decades. Much of the strength of today’s globalised economy lies in innovation and increased spending on R&D, The overarching influence of science and technology in modern civilisation has been a deciding factor of increasing student mobility worldwide. The United States is a world leader in the graduate enrolment of STEM subjects. India is a major source country from where every year more than one lakh students go to the U.S. for pursuing higher studies. The exodus of human capital in various subjects including business/management, humanities, and social sciences have raised heated debates in India – often termed as ‘brain drain’ of merit which could have benefitted India in the long run. The counter arguments are also in vogue since; brain circulation has become common nowadays due to heavily interconnected world economy and production model located in different geographies of the world. The economic recession of the 21st century has further established the increased human mobility in reverse direction from countries, for example like the U.S. to India of scientific manpower employed in the U.S. The growing economy of India has caused further

diversification of jobs on the Indian soil. On the flip side, the H1B visa restrictions in the U.S., growing joblessness etc. have prompted the expatriate Indians to move to India or other greener pastures.

The idea of brain gain has also become popular in recent literature, in the context of the highly interconnected global economy. Apart from remittance income, the supposed gains through invisible remittances in the form of social remittances are considered to be vital for developing countries like India. Hence, no such concrete proof exists in favour or against the theories of brain drain or brain gain. However, some sectors like the IT, computer science have witnessed more brain circulation in recent times owing to the nature of the industry. This may not be the case of the Indian physicians who migrate to the U.S. in maximum number compared to other OECD countries. Indian healthcare sector is woefully short of physicians, particularly in rural areas. Although the medical brain drain from India to the U.S. is not so serious, the problem is cognizable. Moreover, the lopsided nature of global trade relations has placed the industrialised countries in an advantageous position. The Indian scientists after completing their studies in the developed nations generally find the research environment and infrastructure of the U.S. more attractive. So, brain drain or brain gain concepts must be judged very carefully, rather than generalizing the terms.