

The Diaspora and Development

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Abstract: The migration of skilled labour from developing countries such as India, Korea and in recent years from several African countries has been of concern to these countries. During the decade of the seventies there was much discussion on the pros and cons of imposing a "brains tax" on the skilled migrants, the proceeds from which would be transferred to the developing countries in the form of aid. In the recent past though opinion has shifted from the view that migration of skilled people imposes unrecoverable costs on the developing countries to one which sees the skilled migrants - the diaspora - as a positive force in the development efforts of their countries of origin. This paper subscribes to the view that the diaspora makes a sizeable contribution to the developing countries and argues that the social rate of return to a unit of diaspora investment in developing countries exceeds that due to a unit of conventional foreign direct investment (FDI) from the multinationals.

1. Introduction

International labour flows are as much a part of the globalisation phenomenon as international capital flows and trade. In the year 1998 immigrants accounted for 11.7 per cent of the US labour force, a statistic which is strikingly close to the share of net capital flows in total US capital stock, estimated at 11.8 per cent. Every year, around 1 million people enter the US legally and 1.2 million enter the EU legally. And around 140 million persons – roughly 2 per cent of the world's population – live in countries where they were not born.

The literature on international labour flows though is sparse compared with that on FDI. That which is available addresses the implications of migration for the economic welfare of the host and home countries of the migrants. It is generally believed that inflows of labour, although it has income distributional consequences, increase national income of the recipient country. But this so called immigrant surplus or income accruing to natives from inflows of labour from abroad is estimated to be fairly low. In the case of the US, it is estimated to be around USD6 billion and almost certainly less than USD20 billion, around 0.1 per cent of US GDP (Borjas 1994). These estimates, though, change dramatically when the skill composition of the immigrant labour force is taken into account in the models underlying the estimates. Based on various plausible assumptions relating to the elasticity of skilled wage rates with respect to inflows of skilled labour and complementarities between capital and skilled labour, and skills of immigrants with that of native workers, it is suggested that if the US were to admit only skilled workers from abroad, the immigration surplus could be of the order of USD40 billion.

The focus of much of the debate on international labour flows is, in fact, on migration of skilled labour. Debates on labour flows from developing countries to the developed countries, during the decades of the late seventies and the eighties, focused on the so-called brain drain phenomenon. Whilst the cosmopolitan model of international flows of skilled

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labour argued that the outcome of such flows was in the nature of a positive sum game, the nationalist model of the brain drain viewed it as a zero sum game- that which the receiving countries gained, the sending countries lost.

Loss of educated manpower is understandably a matter of concern to the developing countries. Whilst the beginnings of international flows of human capital can be traced to the decades of the sixties and the seventies, recent data suggests that emigration of skilled people from the developing countries continues unabated. For small African and Latin American countries the outflows of such human capital are substantial – 75 per cent of Jamaica's population with higher education is in the US, 12 per cent of Mexicans with higher education is in the US, and in the case of 40 African countries, more than a third of their college graduates are reported to live abroad. Amongst the Asian countries, around 17 per cent of educated Koreans live abroad and this figure for Taiwan is around 9 per cent. Although precise data are not available, a substantial proportion of the 1.7 million Indians living in the US (0.6 per cent of US population) are educated up to and beyond a high school diploma level, and 43 per cent of those employed are in senior management positions. In 1998 a staggering 4092 Indian professors were teaching in the US universities. Well known is the contribution of Indian-born information technology experts to the growth of the Silicon Valley in the US. Indians are also prominent in the British IT industry. More than two-thirds of IT professionals entering Britain in the year 2000 (nearly 20,000) were from India. Add to this the substantial number of Indians in the health sector of both the UK and the US; the size of the Indian diaspora is substantial.

This sizable outflow of human capital from the developing countries has evoked varied reactions from academics and policy analysts. One response is to limit the outflows through the institution of exit visas and the imposition of exit taxes on prospective emigrants. Yet another response is to stake a claim for a portion of the increased earnings of the emigrants in their adopted countries, through the levy of a tax – a brains tax advocated by Bhagwati during the decade of the eighties, and recently resurrected by Mihir Desai and his associates (Desai *et al.* 2001).

These measures, though attractive in theory, do not seem to be practical. They pose complex problems relating to tax jurisdictions and administration. They also call into question the legitimacy of governments to intervene in the free movement of people (Balasubramanyam 1993). In any case, it is legitimate to ask, 'if free trade and free movement of capital across borders is reckoned to promote growth and welfare, why can't free movement of human capital do so as well?' The cosmopolitan model of the brain drain enunciated by the late Johnson (1964) amongst others, suggests as much. Recent developments seem to further substantiate the arguments of the cosmopolitan model. Whilst the model largely rested on propositions concerning world-wide reallocation of existing resources, recent developments which reinforce the model include the sizeable repatriation of funds by the migrants to the countries of their origin, which in total exceed the volume of foreign aid allocated to many of these countries (Table 1), and the active participation of the migrants in the development of their countries of origin through investments, aid and transmission of technology and know-how. Of particular significance in this context is the substantial volumes of FDI in China, around 40 per cent of an annual average inflow in excess of USD50 billion in recent years, undertaken by the Chinese diaspora.

Table 1: Foreign aids and remittances, 1970-2003 (USD Million)

	Developing Countries		Bangladesh		China		Ecuador		Egypt		El Salvador		India		Indonesia	
	Aid	REM	Aid	REM	Aid	REM	Aid	REM	Aid	REM	Aid	REM	Aid	REM	Aid	REM
1970	172	409		0	0	0	2	0	0	0	0	0	60	121	3	0
1975	1086	3355	91	0	0	0	7	0	48	0	1	0	485	430	107	0
1980	1556	17067	156	339	0	0	0	0	41	2696	3	49	637	2757	40	0
1985	2758	19251	274	502	212	271	-1	0	50	3212	0	157	994	2469	33	61
1990	4097	31229	451	779	507	124	-1	51	1	4284	-1	366	648	2384	-11	166
1995	4934	56043	156	1202	798	350	-1	386	69	3226	-1	1064	503	6223	-20	651
2000	4271	75637	275	1968	314	758	-1	1322	26	2852	-1	1765	688	11695	33	1190
2003	5056	115860	395	3191	-6	4625	-1	1545	-4	2961	-1	2122	243	17406	64	1489

	Jordan		Morocco		Nigeria		Pakistan		Philippines		Sri Lanka		Turkey		Yemen	
	Aid	REM	Aid	REM	Aid	REM	Aid	REM	Aid	REM	Aid	REM	Aid	REM	Aid	REM
1970	0	0	2	0	1	0	23	0	0	0	1	0	7	0	0	0
1975	10	167	1	533	1	0	21	0	8	0	14	9	17	1312	8	0
1980	9	794	1	1054	0	22	70	2048	2	626	20	152	-1	2071	28	0
1985	-1	1022	0	973	-1	10	100	2537	13	806	73	292	-4	1714	44	0
1990	-1	499	-1	2006	6	10	116	2006	-1	1465	124	401	-4	3246	25	1498
1995	-2	1441	-1	1970	85	804	219	1712	8	5360	98	809	-6	3327	34	1080
2000	-3	1845	-1	2161	51	1705	77	1075	7	6212	28	1166	-6	4560	51	1288
2003	-3	2201	-1	3614	46	1677	29	3964	-6	7880	166	1438	-6	729	66	1270

Notes: Aid = Foreign aids, defined as net flows of international development aids. REM = Remittances, defined as workers' remittances and compensation of employees.
 Source: Global Development Finance CD-ROM (2005)

Over the years the attitudes of policy makers have also changed perceptibly. Now the talk is about brain circulation and not brain drain. Korea, Taiwan and China actively encourage migrants to return to their home country. A high-level committee of the government of India has produced a detailed report on India's diaspora with recommendations on ways and means of actively engaging the diaspora in the development efforts of the country (Singhvi Committee Report, 2000).

This paper is concerned with the economic welfare implications of the involvement of the diaspora in the economic activity of the countries of their origin. In the main it focuses on FDI undertaken by the diaspora, drawing upon the experience of India and China. Section 2 of the paper analyses the determinants of diaspora investments in the countries of their origin. Section 3 discusses the impact of such investments on growth and development of the countries of origin of the diaspora and Section 4 concludes.

2. Determinants

The literature on why do firms go abroad is vast, beginning with Stephen Hymer's industrial organisation-based approach, centring on the proposition that firms undertake FDI in order to overcome market imperfections and maximise returns to ownership advantages, further expounded by internalisation and transaction cost theories. Later developments emphasise location advantages. All three of these facets are neatly captured in Dunning's well-known OLI paradigm (Dunning 1973). For a firm to successfully invest abroad, it has to own advantages which no other firm possesses (O); it must be capable of internalising operations (I); and the countries in which they invest should offer location advantages (L). Internalisation is synonymous with the ability of firms to exercise control over operations. Such control is essential for the exploitation of the ownership advantages which firms possess, and the location advantages which host countries offer.

Investments by the diaspora in their countries of origin exhibit all these features. Chief of these is location advantages. Indian diaspora as well as Chinese diaspora, for instance, are much more conversant with location advantages/disadvantages in the countries of their origin than non diaspora investors. Apart from a shared culture, including language, they are able to assess the competence and ability of cooperant factors, negotiate much more efficiently with local bureaucracy, and organise and manage local resources, chiefly labour, effectively.

Most members of the diaspora are educated in the higher education institutions of their countries of origin, many of them graduates of elite institutions such as the Indian Institutes of Technology (IIT) in India. India, for instance, produces around 25,000 engineering graduates every year, but only 2,000 of them graduate from the prestigious Indian Institutes of Technology. Every year about 100,000 of India's top students take a competitive examination for the 2,000 places at the IITs, in contrast to about 10,000 applicants for the 1,000 places at MIT (Bhagwati 1998). Graduates from the elite IITs in India head many of the IT companies owned by Indians in Silicon Valley. This education background provides the diaspora in the US with an intimate knowledge of the capabilities of Indian engineers they seek to employ in the companies they set up in India. Also, the old school boy network knits together the diaspora in Silicon Valley, and promotes exchange of information on investment opportunities in their country of origin.

The diaspora possess a unique combination of ownership advantages. Again, taking

Indians in Silicon Valley as an example, the ownership advantages they possess extend from engineering expertise to the networks they have established in the US with customers for software, and an ability to forecast new developments. Seventy-three per cent of the 1.7 million Indians in the US are employed, of which 43 percent are in managerial positions and another 33 per cent are in the technical, sales and service sectors. Around 300,000 Indians work in the IT sector in Silicon Valley, and there are 700 Indian-owned companies in Silicon Valley. These figures suggest that there is a substantial volume of human capital embedded in the diaspora of Indian origin. As the jargon relating to FDI would have it, they possess transferable tacit knowledge.

They are also able to internalise operations. They are able to link the software manufacturing establishments in India with marketing outlets of their establishments in the US. The Indian subsidiaries thus are tied to their firms in the US. Internalisation—the setting up of an integrated production and marketing establishment—is only one of the activities of the diaspora. Much more significant is their contribution to the marketing and networking activities of Indian companies, and their mentoring of Indian entrepreneurs.

The determinants of diaspora investments follow the traditional FDI determinants, but are notable for the unique location and ownership advantages the diaspora possess. Even so, it is often asked, in the context of India, why is Indian diaspora investment so low, especially compared with that of the Chinese diaspora investments in China (Guha and Ray, 2000). Total investments by Indian expatriates (NRIs) over the period 1991-2001 is put at USD2.6 billion (Table 2), which is meagre compared with around 50 per cent of USD40 billion or so per annum received by China during the late eighties and the nineties. It should however be noted that the reported data on the Indian diaspora's FDI may understate their participation in the Indian economy, which extends to technology and know-how made available by Indian expatriates to India's IT industry.

Even so, diaspora investments in India pale into insignificance compared with that undertaken by the Chinese diaspora in China. There are several reasons for the low volume of Indian expatriate investments. First, the Indian diaspora principally consists of professionals including those in the health and education sectors in the UK and the US. The exception here is the IT professionals who have increasingly entered into business ventures. These health and education professionals have relatively little experience or ownership advantages in business. Their investments in India consist mostly of repatriated funds, bank deposits, and investments mainly in real estate. The other reason for their low investments is that they possess little expertise in managing labour-intensive exports. It is here that the Chinese diaspora score over the Indians; their investments in China are in labour-intensive exports relocated from other East Asian countries in the face of rising wage rates in these countries. Hence the high proportion of investments from East Asian Chinese in the total investments in the mainland.

It is also arguable if the Indian diaspora are able to find a market niche in labour-intensive export sectors such as garments, sports goods and assembly of electronic products. Locally owned firms, protected from international competition for many years, may be better placed to capture such labour-intensive segments than the diaspora, following liberalisation of trade and domestic licensing regulations implemented in 1991. In this context it is well worth pondering the thesis that the relatively large volumes of FDI in China are a consequence of China's policy framework, which has failed to provide incentives for domestically owned

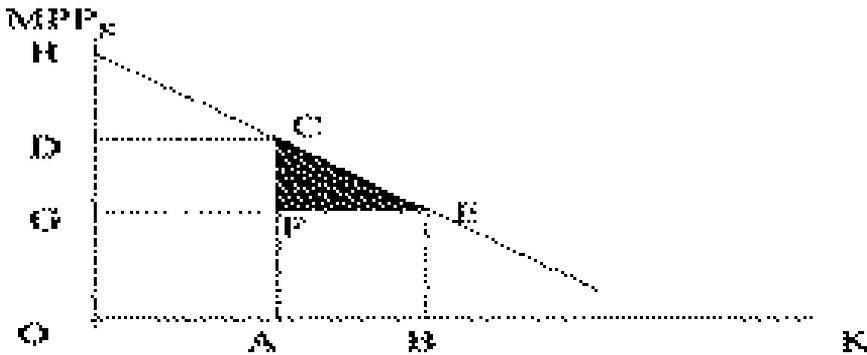
Table 2: Foreign direct investment in China and India (USD Million)

	China	India
1980	57	79
1981	265	92
1982	430	72
1983	916	6
1984	1,419	19
1985	1,956	106
1986	2,244	118
1987	2,314	212
1988	3,194	91
1989	3,393	252
1990	3,487	237
1991	4,366	75
1992	11,008	252
1993	27,515	532
1994	33,767	974
1995	37,521	2,151
1996	41,726	2,525
1997	45,257	3,619
1998	45,463	2,633
1999	40,319	2,168
2000	40,715	2,319
2001	46,878	3,403
2002	52,743	3,449
2003	53,505	4,269

Source: UNCTAD, World Investment Report 2004: www.unctad.org/fdistatistics

firms if not actively discouraged their growth (Huang 2002). Foreign firms, with all the incentives offered to them, may have taken advantage of the opportunities denied to the locally owned Chinese firms. The visible presence of large firms in India in most segments of the manufacturing sector, albeit sheltered from competition because of the inward looking industrialisation strategy of India, may be a factor in the low volumes of FDI India, including diaspora investments. The overriding reason for the relatively low investments by the diaspora and the non diaspora in India is the presence of market distortions of various sorts. These include arcane labour laws, reservation of production to certain sections of industry, such as in the case of garments production for small scale industries until recently.

Yet another reason for the low level of investments is the Indian bureaucracy and red tape, which even the diaspora find forbidding. The delays, corruption and red tape are frequently cited as major obstacles to their business interests in India by the diaspora (Singhvi Committee Report 2000). Diaspora which belong to the professions may take a much more dim view of the rules, regulations and a highly hierarchical bureaucracy than those who belong to trade and business. Most of the Indian professional classes left the country during the heyday of the highly regulated economic regime in search of not only pecuniary rewards abroad but also better working conditions. They may have not only little



AB: Inflows of FDI
 ABEF: Returns to FDI
 OGFA: Returns to domestic capital
 Labour's share goes up from HCD to HEG
 CFE: Additional gains to labour

Figure 1

patience with the slow unwinding of the rules and regulations, but also little empathy for a country they left voluntarily.

In this context it is interesting to note an explanation given for the relatively low involvement of the Scottish diaspora in the Scottish economy compared with the active involvement of the Irish diaspora in the economy of Ireland. It is said that the Scottish diaspora are not all that keen on contributing to Scottish development as they are mostly professionals who left Scotland voluntarily and look upon Scotland as a miserable left wing place. This is in contrast to the Irish diaspora who were poor and unskilled and were pushed into exile by the English, and take pride in their new-found ability to liberate Ireland economically (*Economist* 2001). Perhaps the Indian diaspora, who are skilled professionals, more nearly resemble the Scots than the Irish, and the Chinese diaspora resemble the Irish. These attitudes though may be changing with the economic liberalisation in India, and many of the entrepreneurs in Silicon Valley are actively lobbying the Indian government for further liberalisation.

3. Impact

The word diaspora is of Greek origin meaning dispersal of pollen by the bees. This would be an apt description of the contribution of the diaspora to development. They disperse technology and know-how, broadly defined, to countries of their origin. It could be argued that their contribution to growth and development is not much different from that of traditional FDI and requires no new analysis. This would be simplistic, for the contribution of the diaspora to development differs from that of FDI in some significant respects. The diaspora occupy an intermediate position between inflows of FDI (flows of capital to labour) and immigration (flows of labour to capital). It is the contribution of capital made by the diaspora that is emphasised in the literature. No doubt the diaspora do invest, and they have

the means to do so; for example, based on median income, Indian-born residents in the US comprise one of the highest-paid groups in the country. The *Fortune* magazine places the wealth generated by Indian IT experts in the Silicon Valley at USD250 billion (market value), which is more than half of India's GNP. Apart from bringing capital to labour, they also, perhaps more importantly, bring labour skills to capital. The skills they transfer to their countries of origin are mostly tacit knowledge, rather than knowledge embodied in capital equipment.

There are also other significant differences between diaspora involvement in the development of their countries of origin and the traditional varieties of FDI and labour flows. First, the motives and pattern of diaspora investments are significantly different from that of traditional FDI and labour flows. Second, for a variety of reasons, externalities, a recognised contribution of FDI to host countries, is a much more readily recognisable feature of diaspora investments. Third, the nature and extent of diaspora involvement and their contribution to the development of the countries of their origin are influenced by the structural characteristics and levels of development of their countries of origin. Fourth, quite often the factors which influenced the diaspora to migrate from their homelands may influence their involvement and contribution to the development of their countries of origin. Fifth, diaspora involvement in the economies of their countries of origin may contribute to growth of human capital and increased flows of FDI to these countries. Sixth, whilst diaspora investments may encourage temporary migration of skilled labour from the countries of their origin, they may also serve to limit permanent migration.

For all these reasons it is argued here that the contribution of the diaspora to the social product of their countries of origin could be much higher than that of traditional types of capital and labour flows. Put differently, the social rate of return to a unit of investment by the diaspora may be higher than that in the case of non diaspora FDI.

The diaspora's links with the countries of their origin combine features of both FDI and labour flows. Just as there are several types of FDI including resource-seeking FDI, asset-seeking or capability-seeking FDI, market-seeking FDI and efficiency-seeking FDI, there are varieties of diaspora investments. The Chinese diaspora investments in the Mainland are mostly of the efficiency- and market-seeking variety. They are attracted by the presence of efficient labour, which command relatively low wage rates. The type of investments which are much more pertinent to the proposition concerning social rates of return cited above relate to the sort of investments by India's diaspora in the US in India's software industry. These are broadly of the asset seeking or capability seeking variety. The assets the diaspora seek are human capital capable of further training at a competitive wage rate. Although most of the American diaspora investments in India essentially consist of tacit knowledge, they can be classified into the following broad categories:

1. Setting up wholly diaspora-owned development centres for software design and engineering.
2. Heading American-owned firms in India (Texas Instruments, Hewlett Packard)
3. Provide a link between diaspora-owned US firms and Indian firms producing software. (HCL, WIPRO, INFOSYS)
4. Facilitate bodyshopping work by Indian firms.
5. Investments in education; donations of substantial amounts of money to Indian education institutions such as the IITs.

In the case of (1), capital investment by the diaspora occurs, but does not involve much technology transfer. Case (2) is the traditional type of FDI, but with the difference that the operations are all conducted by Indian diaspora. In the case of (3), there may be no capital investments, but the diaspora involvement may consist of marketing know-how and other types of networking along with technical know-how transmitted to Indian firms. Case 4 brings labour to capital.

The essential point to note is that it is know-how including marketing knowledge which is central to all diaspora investments, especially so in the case of the Indian IT sector. The software industry by nature is human capital intensive with the physical capital requirements confined to office space and hardware. Much of the investment goes towards payments to Indian human capital. It is this characteristic which leads to the proposition that the contribution of the diaspora to the social marginal product (SMP) of the country is relatively high.

Case (1): The diaspora sets up wholly-owned firms for software development of the low-level engineering variety. In this case, standard analysis of FDI inflows based on the usual assumptions of two factors of production, capital and labour, constant returns to scale and perfect competition will suffice. Following inflows of diaspora FDI, there will be a redistribution of income from capital to labour and also a redistribution of income from domestic capital to foreign capital (Figure 1).

Here, skilled American labour in the US cooperates with relatively less skilled Indian labour. It is the complementarity between the two types of labour, which enhances the returns to Indian labour. Note here that the government can gain tax revenues from taxing both labour incomes (wider base) and diaspora profits. The diagram assumes fixed labour, but employment may increase albeit at a lower wage. No new technology accompanies diaspora capital. This is a case where capital comes to labour because of the availability of relatively low cost skilled labour. This could limit brain drain or the urge to leave the country on the part of local labour. It may also limit the bodysopping type of software work. The diaspora invest in India because of location advantages—knowledge of local labour markets and culture.

Case (2): Diaspora investment more nearly resembles the traditional type of FDI, except that the management of the operations rests with the Indian diaspora. American-owned firms who wish to invest in India are reported to frequently seek the assistance of the Indian diaspora in Silicon Valley. It is arguable if such investments would have taken place but for the Indian diaspora. Further, American firms seek the Indian diaspora to head their operations in India. These managers are tested and tried in American MNEs such as Texas Instruments and Hewlett Packard, and they are able to link Indian expertise in software with that of American MNEs. Such investments serve to limit brain drain. Professionals aspire to migrate not only because of higher pecuniary returns to their skills abroad, but also because of the superior working conditions and the ambience for work and development available abroad. If the Indian diaspora can replicate these conditions at home, with the added advantage that they are better able to train and communicate with the Indian workforce, they would serve to limit brain drain. Here, the Indian diaspora not only transmits technical know-how but also marketing and management know-how. These are rich sources of externalities for the Indian software industry, both because young Indian engineers quite often set up their own

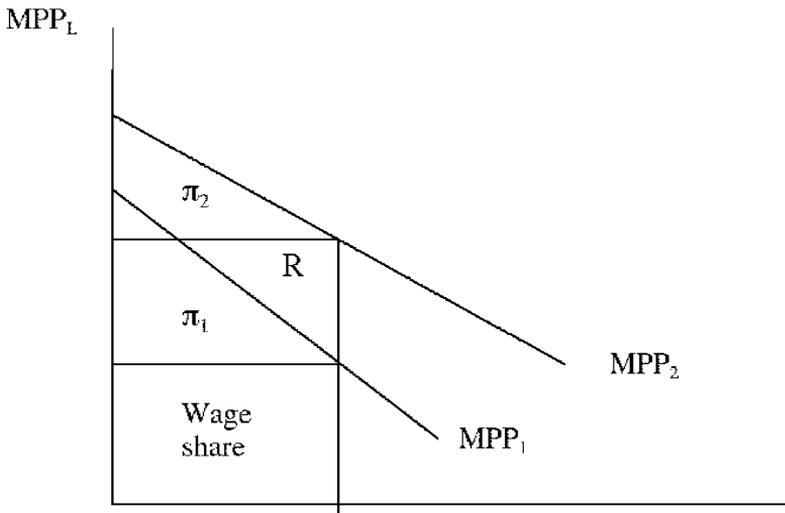


Figure 2

firms after a spell of work in the foreign-owned firms, but also because of the public good nature of software knowledge. The welfare impact of diaspora FDI is much the same as in Case 1. It serves to increase wages for local labour and reduce returns to capital, with all the standard assumptions in place.

One of the issues widely discussed in the literature on FDI relates to the allegiance of the managers. If an MNE employs Indian nationals in senior executive positions, would they owe allegiance to India or the foreign MNE? This problem does not seem to arise in the case of diaspora managers of MNEs because they may not suffer from the problem of divided loyalties. Their mission is to train Indian engineers and contribute to India's development whilst at the same time contribute to the objectives of the parent firm.

Case (3) is the most interesting of the ones listed above. Here the Indian diaspora provides a variety of know-how to Indian-owned firms. More often than not their contribution is confined to advice and help with organisation, marketing and linkups with modern technical know-how. They also assist Indian firms in raising venture capital in the US. Although in this case there may be little labour and capital flows from abroad, the technology and know-how provided by the diaspora tends to increase productivity. In the parlance of the endogenous growth theory, the diaspora serves to provide knowledge, which shifts the production function outwards at the level of the firm and enhances the marginal productivity of existing labour. This growth in productivity enhances wage shares and the wage rate and also provides additional returns (Figure 2).

At the level of the industry the knowledge transmitted by the diaspora can result in increasing returns to scale. In any case, there are externalities at the level of the industry. The diaspora for their part gain from access to relatively low cost intermediate inputs produced by the Indian firms, which enhances their profits at home in America. This case more nearly

resembles a putting out system with the diaspora providing the tacit knowledge and an assured market.

The other two cases are in the nature of aid provided by the diaspora for the development of education, which makes a contribution to the social product. These diaspora investments contribute substantially to the social product because they are not guided by just profit motives but also by altruism—a desire to actively participate in the development of the country of origin. The externalities they provide mostly relate to training of labour and the assistance they provide with marketing and organisation. They are better able to select and successfully train local labour because of their knowledge of the local labour markets, their education background and cultural affinities with local labour.

4. Conclusions

This paper has analysed the determinants and welfare implications of diaspora investments in the countries of their origin. It is generally acknowledged that diaspora investments in the countries of their origin are influenced by not only profit motives but also other influences such as altruism and ethnic ties. One issue which has frequently surfaced in the literature is the significant difference in the volume of investments undertaken by the Chinese and Indian diaspora in their respective countries of origin. It is argued here that these differences are explained by the differing nature of the Chinese and Indian diaspora and the structure of the Indian and the Chinese economies. Also, there is no reason to dismiss diaspora investments such as the labour-intensive export oriented overseas Chinese investments as of little significance. They do provide employment and marketing networks, both of which may be of significance to the Chinese economy. It is also likely that the diaspora-owned firms in China are a conduit for the transmission of technology and know-how from the American and British multinationals to the locally owned firms in China. They are well equipped to perform this function because of their cultural ties to mainland China and their exposure to western multinationals through trade and investment (Wei and Liu 2003). The paper has also analysed the impact of diaspora investments on the economies of the countries of their origin and argued that the social rate of return to a unit of diaspora investment may be higher than that from non diaspora investments. This is because of the ability of the diaspora to fully utilise and exploit location advantages in the countries of their origin; the fact that diaspora investments more often than not consist of both labour and capital flows; they are able to transmit tacit knowledge; they provide much needed marketing networks to locally owned firms and their investments in knowledge intensive sectors such as the Indian software industry may serve to limit brain drain from their countries of origin.

Admittedly the analysis here is heavily influenced by the experience of India's software industry and its connections with the Indian diaspora abroad that in many respects differs from other manufacturing industries. It is arguable if the analysis and propositions here are applicable to other areas of economic activity.

References

Balasubramanyam, V.N. 1993. Economics of the brain drain: the case for a tax on brains. In *Topics*

- in Policy Appraisal*, ed. V.N. Balasubramanyam and J.M. Bates. New York: St.Martin's Press.
- Bhagwati J.N. 1998. *A Stream of Windows*. Cambridge, Massachusetts: MIT Press.
- Desai, M.A, D. Kapur and J. Mchale. 2001. The Fiscal Impact of the Brain Drain: Indian Emigration to the US. NBER Conference paper.
- Borjas G.J. 1994. The Economic Benefits from Immigration. National Bureau of Economic Research, Cambridge, Ma, Working paper No. 4995.
- Dunning J.H 1973. The determinants of international production. *Oxford Economic Papers* **25**: 289-336.
- Economist*. 2001. Keep your kilt to yourself, 20 October 2001.
- Guha, A and A. S. Ray. 2000. Multinational versus Expatriate FDI: A Comparative Analysis of the Chinese and Indian Experience. Indian Council For Research on International Economic Relations
- Huang, Y. 2002. *Selling China: Foreign Direct Investment During the Reform Era*. New York: Cambridge University Press.
- Johnson, H.G. 1964. An internationalist model. In *The Brain Drain*, ed. M. Adams. Macmillan.
- Singhvi, L.M. 2000. Report of the High Level Committee on the Indian Diaspora. Ministry of External Affairs, Government of India.
- Wei, Y. and X. Liu. 2003. Productivity Spillovers among OECD, Diaspora and Indigenous Firms in Chinese Manufacturing. International Business Research Group, Lancaster University, Working Paper.