Author(s): Tiwari, Meera
Title: Does FDI reduce poverty? Case studies from India.
Year of publication: 2009
Citation: Tiwari, M. (2009) 'Does FDI reduce poverty? Case studies from India', in Rugraff, Eric, Sánchez-Ancochea, Diego and Sumner, Andrew (eds.) *Transnational Corporations and Development Policy: Critical Perspectives* London: Palgrave Macmillan, pp.202-224.
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Does FDI reduce poverty? The Indian cases

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1. Introduction

Since the post reform period in the mid 1990s India has experienced aggregate economic growth of 5-8% per year and emerged as a global player along with China. Unlike China though, where the economic liberalisation began in 1979, India's reform process was launched in response to the fiscal and balance of payment crisis in 1991. The appropriateness of the inward looking policy stance based on import substitution and controlled economy adopted since her independence in 1947, had begun to be questioned in the 1980s. The limitations of the model over the years in all aspects of the economy led to the near collapse of the fiscal and the monetary systems by the beginning of the 1990s. The reforms were therefore wide ranging, targeting trade, industry and the financial sector[i]. The opening of the economy resulted in a decade of high aggregate growth per year, per capita income growth of 3-5% a year and a doubling of GDP per capita over the period (PPP, 1985 base year, World Bank, 2001). Poverty – both income and social poverty in the country though remains high.

The reforms included lifting of the restrictive approach to Foreign Direct Investment (FDI) in the country. What are the impacts, if any, of the progressively more liberal FDI regime on the income and social poverty in the country? Transnational Corporations (TNCs) – the main drivers of FDI, have been gaining increasing entry into the tertiary and the manufacturing sectors of the country. India's rapid entry as a global player and continuing expansion of her economy are notable achievements. But what has been the impact of TNC expansion on the poverty levels? There has been some progress in human development, though far less than needed. India remains the home to the largest number of the world's poor. More than a third (36%) - 433 million - of the world's dollar-a-day poor (1993 PPP line) reside in India, a fifth of the world's children not in primary school are in India and India is home to a quarter of the world's under five year old deaths and a quarter of maternal deaths each year. (Datt and Ravallion, 2002; World Bank, 2001).

The chapter explores the much contested linkages between poverty and the increasing more liberal FDI regimes. Attention is paid to the FDI inflows to the tertiary and the manufacturing sectors in Karnataka and Tamil Nadu respectively. The chapter is organised in five sections. An overview of the current debates on FDI and

poverty, followed by a brief discussion on the sectoral distribution of FDI and engagement with domestic economy is presented in section 2. Section 3 discusses the FDI trends in India, Tamil Nadu and Karnataka, identifying special features and the sectoral focus of FDI in each state. The links between the types of FDI and poverty within the context of Karnataka and Tamil Nadu are explored through a conceptual model of domestic human capital mapping in section 4. The conclusions of the chapter are presented in section 5.

2. FDI and links with poverty

This section provides an overview of the current debates on FDI and poverty. The discussions form the basis for the conceptual framework of how different sectors with FDI inflows engage with the domestic human capital and the spillovers that emerge in section 3. In addition it provides the foundations to examine the types of FDI and impacts on poverty through domestic linkages within the context of Karnataka and Tamil Nadu explored in section 4.

Whether FDI benefits the poor is an issue that remains disputed in the current literature. In general, globalisation, of which FDI and trade openness are critical drivers, is attributed to poverty reduction in South and East Asia by the pro-globalisation school. Though as Bardhan (2006) points out, this is more by correlation than any robust demonstration of evidence. In the three countries – China, Indonesia and India, that show a steep decline in poverty during the onset of globalisation between 1981-2001 (Chen and Ravallion, 2004), there are no in-depth studies exploring the impact of domestic policy and internal factor changes on poverty. Similarly, Bardhan argues that the poor progress of much of Sub-Sahara in poverty reduction during the same period could have other causal factors instead of simply attributing it to the negative impact of globalisation. Specific conclusions regarding the positive impact of trade liberalisation on poverty reduction can be drawn from recent works of Dollar and Kraay (2004), Ganuza et. al (2005) and Winters (2002) amongst others. With regards to FDI there is increasing recognition that FDI does not by itself lead to development. The studies conducted in the early part of this decade fall into two categories.[ii] The first group draws inclusive findings on the positive impact of FDI on poverty reduction. For example, Carkovic and Levine (2002) found no causative links between FDI and per capita income. While Agenor found no association between FDI and poverty, Milanovic (2002) presented similar conclusions for FDI and per capita growth at any level of income. More recently, Kamalakanthan and Laurenceson (2005) raise doubts regarding FDI driving

income growth in China and India. In the second category, Dollar and Kraay (2002), showed a rise of 10-13 percent in the average income with an increase of 1 percent FDI over a decade. Soto (2000) put forward similar findings showing that a rise in FDI/GNP raises per capita income by 3 percent. These outcomes are much contested on the grounds of data comparability and methodological consistency at cross-country level. There seems a better correlation between FDI and aggregate economic growth as seen, for example, in Balasubramanyam et al. (1999) and Lensink and Morrisey (2001).

There is absence of research on FDI and poverty in the current literature as also noted in Sumner (2005). Some areas draw consensus amidst researchers on conditions that maybe necessary for FDI to stimulate economic development. These are linkages with the local industry and linkages with the local economy (Hansen, 2004). This is a revival of the debate on linkages – forward and backward-- initiated by Hirshman in 1958. According to Hirshman (1958), the pattern of linkages between different industries played an important role in domestic development. Later, Mellor (1976) examined the role of linkages in the context of the non-farm sector and the rural economy to benefit the poor. Both Hirshman and Mellor emphasised the involvement of the local resources for either industrialisation or the non-farm sector to be beneficial to the local population.

The current thinking on linkages between FDI and the local industry and economy builds on the concept of engaging with the domestic industry, labour market and the overall economy. The deeper and more far reaching the spillovers from this domestic engagement, the higher the potential to stimulate local development. It can be argued here that it is not so much the level of investment *per se* but the level of engagement with the domestic resources – human, physical and markets – that acts as a stronger stimulant to the local economy. The point is illustrated through a number of FDI driven industries in the African subcontinent, China and India. For example, the precious metal mining sector in several African countries continues to attract very high levels of FDI with feeble local linkages (Larsen et al. 2006) particularly in terms of skilled employment, local industry and domestic market. By contrast, the manufacturing sector, which attracts the majority of China's overall FDI (UNCTAD, 2005), is fully integrated into the domestic context. Likewise the Information Technology sector in India remains a strong magnet for FDI with deep-rooted domestic market linkages. The FDI – domestic linkage conceptual framework can be used to partially explain the much lower FDI linked benefits in the African countries as compared with China and India.

The focus then shifts to examining which type of FDI creates deeper connections and stronger integrations with the domestic economy. A significant proportion of the FDI to the African countries is in the natural resources – the primary sector (UNCTAD, 2005: 43). A parallel can be drawn here with the large amount of FDI going into the state of Orissa in India. Orissa attracts the fourth largest FDI flows amidst all states in India (Tables 2 and 3) but remains in the cluster of the five most backward states (Table 5) – Bihar, Madhya Pradesh, Rajasthan, Uttar Pradesh and Orissa. Orissa has the highest head count index of 47.8 rural and 43.4 urban in the country, as well as the second lowest per capita income and one of the lowest HDI in the country.

It can be argued that the natural resources sector led FDI engages with the domestic human capital in a way that does not translate into significant improvement of the human development indicators for the wider population. The sectoral composition of FDI distribution appears to be a critical factor influencing linkages with the domestic economy. Conceptually then, FDI in sectors that engage most with the domestic resources bear high potential as stimulants to the local economy. Further, it is the level of engagement with domestic resources that impacts on the multidimensional development indicators. The direct benefits remain via the expansion of livelihood opportunities. This in turn though is expected to attract public and private sector investment in social sectors – education, health and infrastructure. The spillovers from improved social sectors reach the wider population spurring the betterment of the overall human capital. Hence, the wider the reach of the sectoral engagement with the domestic population is, the more widespread the benefits – both direct and indirect—will be. The poverty reduction impacts of FDI are therefore conceptualised via the level of engagement with the local population as noted above.

The next section examines the FDI trends in the two states – Tamil Nadu and Karnataka, within the overall trends for India. The discussions then highlight the poverty and development contexts of each state.

3. FDI trends in India, Tamil Nadu and Karnataka

The post reform period since the mid 1990s saw the rapid entry of India in the global markets, which become the subject of growing debate for the North-South and South-South economic configurations. This section draws attention to the increasing FDI inflows in the country and the mushrooming of TNCs in Tamil Nadu and Karnataka. The two states together account for nearly a fifth of the FDI inflows to the

country. In recent times, the states appear to be attracting TNCs in two distinct sectors.

As in most developing countries, FDI was viewed with suspicion in the post independence period in India. The stiff stance towards FDI in terms of ownership restrictions and sectors open, along with the protectionist import substitution oriented regime, began to ease in the early 1990s. The poor outcomes of the central planning led growth combined with the balance of payment crisis resulted in the near collapse of the fiscal system in 1991. This initiated the liberalisation process and the opening of the economy. The reforms ushered in deregulation, lifting of quotas and tariffs and a shift towards an export-led growth. Though a slow start in opening the country to FDI, the FDI regime is increasingly becoming more liberal. While India's net FDI inflows dwarf when compared to its economic rival China as shown in Table 1, there has been a consistent year on growth and expansion of FDI within the country. Furthermore, the subject has generated a rich debate within the research and the policy makers' community (Sachs et. al., 2000, Shand and Bhide, 2001, Bajpai, 2002, GoI, 2002, Singh and Srinivasan, 2004, Hansen, 2004, Kamalakanthan and Laurenceson, 2005).

[Insert table 1]

The main areas impeding the country's efforts to expanding the FDI inflows identified in the mentioned studies are: poor FDI approvals to actual ratio - less than 25 % of approvals are translated to actual FDI, chronic infrastructure difficulties especially regarding unreliable power coupled with poor roads network, serious governance issues, competitiveness and labour productivity.

FDI trends (Tables 2 and 3) for the different states appear to follow the overall regional variations in the development indicators shown in Table 5, though with some definite outliers. Kerala, the state with the highest HDI ranking in the country has the fourth lowest per capita FDI while Orissa attracts relatively high FDI but has poor development indicators (www.indiastat.com). A partial explanation is offered in Siddharthan (2006). The arguments though fall short of a detailed academic treatment of the causative and enabling factors for the outliers – perhaps because the study focuses on examining the regional FDI trends within India and China. A more in-depth understanding of the contrasting FDI and poverty trends in both states may further the FDI and poverty debate.

[Insert tables 2 and 3]

The outcomes have far reaching impact at both the domestic level and for other developing countries. The issue therefore needs to be explored in detail. The overall expansion of FDI in India indicates clustering around states with a high reform agenda such as Tamil Nadu, Karnataka and Andhra Pradesh in the south, Maharashtra and Gujarat in the west and more recently Delhi in the north of the country. Tamil Nadu and Karnataka together account for nearly a fifth of the country's FDI inflows. Karnataka's FDI is focussed in the tertiary sector through software and the ICT industries. Tamil Nadu on the other hand is emerging as an attractive destination for TNCs in the manufacturing sector.

The manufacturing sector in Tamil Nadu is dominated by the auto-industry and the textile knitwear industry. The knitwear industry cluster around Tirupur in Tamil Nadu accounts for three quarters of the country's knitwear exports. The cluster has expanded within the typical characteristic trajectory of the Indian textile and apparel industry. The key features as argued in Tewari (2005) being (a) global integration driven by competitive domestic firms, (b) presence of an existing strong domestic cotton fibre and textile base, (c) deregulation of the domestic textile and apparel industry in the mid 1980s which initiated the spurt in exports, (d) consolidation of the export strategy in the post liberalisation period after 1991 and (e) the absence of any significant inflows of FDI into expanding the export growth of the sector in recent years. The last feature is in stark contrast with the apparel exports trends in China where over a third of the apparel export firms are FDI driven. Similarly, other major exporters such as Bangladesh, Sri Lanka, Mauritius and Mexico are also dominated by foreign-invested capital firms (UNCTAD, 2005). India's textile and apparel exports industry on the other hand has a strong presence of the domestic firms. Furthermore, between1991-2004 the textile sector received a mere 1% of India's cumulative FDI compared with 9% in the auto industry (GoI, 2005, Tewari, 2005).

The auto-industry in Tamil Nadu has a different growth trajectory to the textile and apparel industry. Often referred to as the 'Detroit of India', the engineering-based industry in Tamil Nadu can be traced back to the late '40s and early '50s. The first auto component producer - India Pistons was established in 1949 in collaboration with a British engineering group. This laid the foundation for Tamil Nadu emerging as the country's hub for auto-component production. Functioning within the restrictive Import Substitution (ISI) framework until the early '80s, it catered mostly to the domestic market for heavy vehicles such as trucks, jeeps, tractors and buses. While innovation and technology development were limited, the ISI fostered skilled and

technical workforce in the region[iii]. The transformation of the auto industry started in the '80s with the arrival of Suzuki to set up a joint venture with the Government of India – Maruti Udyog Ltd. The modernisation of the industry was well under way after the liberalisation in 1991 with 16 international auto-makers establishing joint ventures and/or subsidiaries. The auto-industry nationally mushroomed in 3 main clusters with Tamil Nadu as the focal point of the Southern cluster hosting Ford, Mitsubishi and Hyundai. While the three assemblers have adopted very different approaches, linkages with the local supplier network are strong and remain the overarching feature for all three as pointed in Tewari (2001). The unique feature of the industry is its reliance on a number of relatively small domestic suppliers. Okada (2004) notes that a combination of India's ISI stance during 1950s through the 1970s and transformations within the New Economic Policy framework since 1991 led to the following outcomes. First, the advent of global suppliers resulted in the domestic suppliers upgrading their technologies, quality standards and capabilities. Second, the domestic suppliers began to adopt an export oriented production strategy to enable participation in global sourcing. Third, The more established vehicle assemblers such as the Tatas, the Birlas and Mahindra and Mahindra set up joint ventures with global suppliers to consolidate their supplier streams through improved productivity and technology. Fourth, the auto component industry expanded by over four times in production during the 90's through the mushrooming of a number of firms. Fifth, the continuing restrictive legislation forced the new entrants to almost solely (95%) use domestic component suppliers. The localization thus forced the Indian suppliers to upgrade. Overall, while the restructuring modernised the auto-industry it further strengthened the domestic linkages.

The IT cluster in Karnataka is the focus of the IT industry in India. The three southern states of Karnataka, Tamil Nadu and Andhra Pradesh dominate the ICT industry in terms of the human capital[iv] and revenue. The capitals of these states – Bangalore, Chennai and Hyderabad have emerged as the major ICT centres in the country. Bangalore, referred to as the Silicon Valley of India has the largest concentration of software development firms with 100 domestic firms and over 75 MNCs.

The origin of the ICT sector in India and its rapid growth are situated in the culmination of multiple factors during the 1980s and the early 1990s. These were a combination of global market forces, changing political ideologies and the growing numbers of skilled English speaking labour in the country. The number of Indian software firms grew from just 38 in 1988 to over 545 in 1999 with employment figures rising from 90,000 to 250,000 in the same period (ibid, NASSCOM, 2002). The

export revenue of the software industry has risen from $130 million in 1990 to almost $8 billion in 2001 (D'Costa, 2003;211). The rapid pace of expansion has led the World Bank to identify it as the model for exhibiting the potential of the private sector in India (World Bank, 2001; 6).

The ICT sector in India comprises three main sub-sectors. These are: the software industry – domestic[v] and exports, domestic computer maintenance services and business process outsourcing (BPO). The ICT sector as a whole represents 2.87% of the country's GDP while software exports make up over 16% of the total exports (NASSCOM, 2002). The National IT Task Force has set an annual export target of $50 billion and domestic target of $35 billion by 2008. The unique feature of the software industry is the dominance of the export oriented strategy. 65% of the total software revenue is generated through exports (Arora et. al, 2001). This is of particular significance given India's tradition of restrictive and inward looking stance on industry[vi].

The mushrooming of business process outsourcing (BPO) services in developing countries is the outcome of globalisation of the world economy (UNCTAD, 2003, D'Costa, 2002c, Correa, 1996). The opening of economies has facilitated the firms based in the US and Europe to not only tap into the pool of cheap skilled labour but also benefit from the much lower infrastructure costs (Gartner, 2003)[vii]. India has succeeded to date in capturing 80% of the international outsourcing market (UNCTAD, 2003; 135). An English speaking skilled workforce and savings linked to lower wages are major factors contributing to the growth of BPO in India (D'Costa, 2002c, Joseph, 2002). The bulk of the BPO clients are from the US and over a quarter from Europe – mainly the United Kingdom (UNCTAD, 2003; 138). The revenue from BPO in India in 2002 reached $2.3 billion (NASSCOM, 2003). The current workforce of 100, 000 in the BPO industry in India is expected to increase over ten times to 1.1 million by 2008 (Wipro, 2003).

Briefly then, the ICT sector is highly technical skill-intensive and requires command over English[viii]. It is therefore located in urban pockets that are situated in areas of 'regional advantage' as noted by (Saxenian, 1994).

What implications does the expansion of FDI into the ICT sector and the automobile sector discussed above have for the country in terms of capital accumulation, poverty and human development? The FDI-sectoral linkages mapping discussed in section 2 is examined within the context of each state. The development contexts in each state are first discussed below through human development and the growth trajectories.

The southern Indian states of Tamil Nadu and Karnataka emerged as major participants in the liberalisation process implemented in 1991. Both states experienced economic growth rates of above 6 percent year on – consistently above the all India average in the last ten years (GoI, 2001, Gopal and Bhakri, 2005). The overall trends in poverty reduction in both states have been impressive in the same period. Karnataka saw a reduction in the proportion of urban population living below poverty line from 40 percent to under 25 percent. Tamil Nadu's progress was marginally better with a reduction from 40 percent to under 23 percent urban population living below the poverty line. Both states experienced reductions in rural poverty as shown in Table 4.

[Insert table 4]

A close examination of the trends though raises some concerns. Both states have higher levels of urban headcount index than rural headcount ratio though in terms of absolute numbers rural poor outnumber the urban poor. This is because of the higher proportion of rural population in each state.[ix] Notably the largest numbers of rural poor are those employed in agriculture. This conforms to the overall trend for the country where the overwhelming majority - 75% of the poor are rural of which 80% - are dependent on agriculture (Deaton, 2001: 126; Datt and Ravallion, 2002:1; World Bank, 2001: 7, 9, 11, 35). The steep urbanisation trend in Tamil Nadu though is distinct from those for most other states and for the country on the whole. Tamil Nadu is more urbanised than any of the major states in India with 44 percent urban population as compared with the national average of 28 percent (GoI, 2005:44). The state's urban focus is further illustrated in a higher proportion of workforce employed in the secondary and tertiary sectors combined than in the primary sector. The trend is again unique to the state. Traditionally one of the most industrial states, it represents 11% of the country's GDP and 15% of the country's exports (GoI, 2005). Tamil Nadu has the third highest HDI ranking amidst the fifteen major states, an overall literacy of 73% with urban literacy of 84% and rural of 65%. The infant mortality is the third lowest in the country though very little progress has been made in the post reform period. Furthermore the gap between the state with the lowest infant mortality of 11 in Kerala and Tamil Nadu at 49 remains substantial.

Karnataka is one of India's fastest growing states with a growth rate of its GSDP at 7.3 % in the first half of the 1990s increasing to 8.3 % in the second half the 1990s. The state experienced growth in all three sectors of the economy – agricultural, industrial and service sectors grew at an average of 4.0%, 9.2% and

10.2 % respectively in the second half of the 1990s. This is above the all-India average for the same period at 3.6%, 5.0% and 8.7% respectively for the three sectors. The progress on poverty reduction is overall encouraging though the extent is contested when using different sources.

Deaton and Dreze's (2002) adjusted poverty estimates indicate a much higher level of rural headcount ratio of 30.7 % - a fall of 7.2 %. The official estimates are more optimistic putting the level at 16.9 % with a fall of 13.2 % for the same period. There is a large discrepancy in the urban poverty levels too though in the opposite direction. The official estimates put the urban headcount ratio at a much higher level – 24.6 % while Deaton and Dreze's (ibid) estimate it at an impressive 10.8 %.[x] What remains undisputed is that while there has been overall progress in poverty reduction, high levels of poverty continue to exist in the state. This is despite Karnataka experiencing the highest growth rate in the country in the latter part of the 1990s. Furthermore, the state's performance in the human development indicators at best exhibits an average trend in the country. The state of Karnataka therefore offers rich potential for re-visiting the discourse on growth and poverty reduction (Dollar and Kraay, 2002, Bhalla, 2003, Kanbur, 2002) as well as on pro-poor growth and poverty (Kakwani and Pernia, 2000, Baulch and McCullock, 2000, Ravallion, 2004, Kakwani, 2004, Sumner, 2006).

In short, the areas of concern regarding Tamil Nadu in particular are rural income poverty by both the Official and Deaton and Dreze estimates, and urban income poverty by the Official estimate in addition to 65% rural literacy and high infant mortality of 49. Interestingly, the three areas noted here are amongst the main components of the multidimensional framework of poverty (Sen, 1982, 1985, UNDP, 1989, 1990, WDR, 1980). Karnataka, as pointed earlier provides strong grounds for contesting the linkages between high growth and poverty reduction. The state with the highest growth in the country of over 8% in recent years has two thirds of its population in the rural sector. Almost three fifths of its rural population is employed in agriculture and over 80% of this population lives below the poverty line. An important point to note here is the significantly higher poverty elasticity of economic growth in Tamil Nadu than in Karnataka. Over the ten year period 1991-2001, Tamil Nadu experienced a fall in headcount ratio (urban) by 2.8 percentage points for every one percent growth while the figures for Karnataka were 1.9 percentage points for every one percent of growth (calculated from Table 4). What role might the FDI led manufacturing sector in the state play in this trend? Linkages with the domestic human capital and the FDI in Tamil Nadu and Karnataka are postulated in the next section.

[Insert table 5]

4. FDI links with domestic human capital – a conceptual model for Karnataka and Tamil Nadu

As discussed in the previous section, the states account for over a fifth of the country's FDI though in different sectors. What are the implications of FDI in the ICT (tertiary) sector for engaging with the domestic resources in Karnataka? What are the implications of FDI in the manufacturing (secondary) sector for engaging with the domestic resources in Tamil Nadu?

The conceptual framework for such linkages discussed in section 2 is postulated for each of the above two configurations. The discussion looks beyond the FDI and employment generation relationship and attempts to focus on the types of connections with the domestic human capital. It will be argued that the higher the participation rate and level of engaging with the domestic workforce the better the dissipation of benefits. The assumption here is that productive engagement will spur the growth of the non-economic indicators of development such as infrastructure, education and health facilities. As noted in section 2, the direct benefits remain via the expansion of livelihood opportunities. Investment in the social sectors – education, health and infrastructure can be speculated to follow an economically active community. The spill-overs from improved social sectors reach the wider population spurring the betterment of the overall human capital. Hence, wider the reach of the sectoral engagement with the domestic population, more widespread the benefits – both direct and indirect.

Tertiary Sector: The tertiary sector in Karnataka comprises primarily the software development industry and the business process outsourcing (BPO) through the call centres. The software development industry is highly specialised employing a highly skilled work force. The technical workforce is trained at the country's intensely competitive engineering institutions and colleges. In recent years the industry has attracted technically trained personnel with overseas qualifications. Figure 1 illustrates a generic mapping of human capital in the 'knowledge based' ICT sector. The ICT sector comprises four categories of workers indicated as HCI, HCII, HCIII and HCIV. HCI represents workers with specialised technical training & computing degrees acquired at the seven Indian Institutes of Technologies[xi] (IITs), top grade engineering colleges and good overseas degrees. HC II: managerial personnel with qualifications from Indian Institutes of Management (IIMs)[xii], other well known

management institutes and good overseas degree. HC III: technically trained with degrees/diplomas in computer sciences from regional engineering colleges. HC IV: Graduates with English as the medium of education with good command and fluency. HCI and HCII are clusters of highly skilled personnel, who make up the small proportion of India's elite labour in terms of skill and intellect. Such labour fetches one of the highest remuneration packages in the country and is considered to be one of the major drivers of the ICT growth propelling India as a global player (Joseph, 2002; Arora et. al, 2001). At the current rates, India is expected to face a shortage of such labour by over half a million by 2010 (Decan Herald, 2006). HCIII qualify from the twenty National Institutes of Technology (NITs) in the country and numerous private sector institutions. Originally known as Regional Engineering Colleges (RECs), these were upgraded in 2002 by the Government of India in the line with the prestigious Indian Institutes of Technology (IITs). These institutes are rated just next to the IITs in terms of student quality, research and placements. Located in every major state of India, the medium of instruction in all NIT's is English. The group represented by HCIV, are mostly graduates from urban universities where the medium of teaching is English.

[Insert figure 1]

This group does not have technical education and commands a much lower remuneration package as compared with HCI and HCII. However, when compared with the overall domestic job market for the same category of graduates, HCIV commands significantly higher wages. The centrality of English as the language of transaction in the ICT sector coupled with the specialised nature of the skill requirements make the sector highly urban focussed and accessible to those with technical qualifications and fluency in English. With just a third of the population living in the urban sector in Karnataka[xiii], the very nature of the ICT sector makes its engagement with the rural labour force a feeble one. The direct benefits therefore remain limited to the urban technically qualified labour. Though, there is a tangible expansion of the low skilled jobs that emerge to service the work and domestic environments of the high skilled personnel in the tertiary sector. This can offer a partial explanation for the shift in the urban population from 30 percent to almost 34 percent over a decade in Karnataka. While the issue of rural-urban migration is a complex one with multiple causative factors, the expanding opportunities for the unskilled rural labour in the urban sector is a strong determinant. However, these are low paid jobs where often the workers are slum dwellers. The poor infrastructure

and access to public services such as health, sanitation and education make it difficult for such workers to move up the economic and social ladder.

In summary therefore, while the tertiary sector offers immense opportunities and high returns, its engagement with the domestic human capital is narrow – employing a specialised cluster of labour. The direct benefits for the semiskilled and unskilled workers that make up the majority of the work force remain small. For the overall economy though, the growth in the tertiary sector has been very positive on the following accounts. Firstly, the export – oriented stance of the sector and the nature of the high returns is largely attributed to India's positive balance of payment (BoP) in recent years[xiv] (GoI, 2005). Secondly, the ICT revolution in the country has played a major role in productively employing its specialised labour. The number of Indian software firms grew from just 38 in 1988 to over 545 in 1999 with employment figures rising from 90,000 to 250,000 in the same period (NASSCOM, 2002). Prior to this expansion, a large proportion of such labour migrated to the Silicon Valley in the United States.

Secondary Sector: FDI in the secondary (manufacturing) sector in Tamil Nadu is dominated by the auto-industry and the textile knitwear industry. The conceptual model to explore the implications of FDI in the manufacturing sector for engaging with the domestic human capital in Tamil Nadu considers the auto-industry only. This is because of the low FDI inflows into the textile sector as compared with the auto-industry sector such that between1991-2004 the textile sector received a mere 1% of India's cumulative FDI compared with 9% in the auto industry (GoI, 2005, Tewari, 2005).

The auto-industry in Tamil Nadu is often referred to as the 'Detroit of India' as noted earlier. The unique features of the industry as discussed in section 3 are its deep-rooted linkages with the local supplier network. It continues to rely on a number of small local units.

Figure 2 illustrates a generic mapping of human capital in the engineering based auto-industry sector. HC1 represents high skilled engineers with specialised technical training and qualifications acquired at the seven Indian Institutes of Technologies (IITs), top grade engineering colleges and good overseas degrees. HC2 comprises managerial personnel with qualifications from Indian Institutes of Management (IIMs), from other well-known management institutes and good overseas degree. HC3 represents the technically trained labour through vocational training and diplomas. This group can be classified as the intermediate skilled labour class.

[Insert figure 2]

HC4 indicates the low skilled labour that would typically have secondary education and gained on the job training. Mapping these categories of human capital to the domestic facing supplier base of the industry comprising numerous small firms, the bulk of the labour employed would come under HC3 and HC4.

The expansion in the small local suppliers units has direct implications for the employment of the locally trained diploma holders and vocational trained workers. The following factors offer some explanation for the rapid expansion of the supplier base in Tamil Nadu. First, there is a high concentration of such training institutions in the region, such that the largest proportion of the country's engineering institutions – 51% of degree level and 31% of diploma are located in the southern cluster of Tamil Nadu, Karnataka and Andhra Pradesh (World Bank, 2000; 47). Second, Tamil Nadu has a long tradition of auto component production - India Pistons was established in 1949 in collaboration with a British engineering group. Generations of domestic workers have been trained and employed by the auto-component industry in Tamil Nadu throughout India's ISI policy framework. The entry of foreign assemblers spurred the competition, upgrading of skills and the expansion of the engineering colleges in the region. Furthermore, while the medium of training is English, the emphasis is on engineering skills as opposed to fluency in spoken and written English. This feature conceptually allows the sub-urban and the rural cohorts to seek the necessary training and find opportunities in the auto-industry. It can be argued then that the labour intake for the auto-industry is not limited to the urban clusters of the state. The nature of the skills requirement for the auto-industry thus facilitates the engagement of a wider section of the domestic human capital in the productive process. In addition, as with the tertiary sector, there is a tangible rise of the low skilled jobs that emerge to service the work and domestic environments of the high skilled personnel in the auto-industry. Also, as noted earlier, Tamil Nadu is more urbanised than any of the major states in India with 44 percent urban population as compared with the national average of 28 percent (GoI, 2005:44). The state's urban focus is further illustrated in a higher proportion of workforce employed in the secondary and tertiary sectors than in the primary sector.

In summary, the secondary sector examined through the auto-industry in Tamil Nadu, presents a wide platform for productive engagement with different categories of labour. It offers direct benefits to the semiskilled and unskilled workers who have the potential to be vocationally trained without the stringent linguistic and specialised structured training requirements. Therefore, while the secondary sector in

the country has grown much slower than the tertiary sector, its connections with the domestic human capital in regions where it has grown are wide and deep. It offers the potential to enable a higher direct participation of the working population in the growth process. Other industries in the manufacturing sector such as the textile and apparel may even have a higher potential to engage a wider cohort of semi-skilled and unskilled labour. While this and most industries in the manufacturing sector in India receive small to negligible levels of FDI and continue to grow at a slow pace, the potential to engage a wider section of the population remains high.

5. Conclusions

This chapter draws attention to the increasing FDI inflows and the impact on poverty reduction in Tamil Nadu and Karnataka in India. Poverty reduction is explored via the level of domestic human capital engagement in the two states. A conceptual mapping model is presented to study the human capital engagement in different sectors. While there is overall progress, poverty trends in Tamil Nadu show high rural multidimensional poverty indicators as well as high urban income poverty. Karnataka presents strong grounds for contesting the linkages between high growth and poverty reduction.

The two states together account for nearly a fifth of the FDI inflows to the country. In recent times, the states appear to be attracting TNCs in two distinct sectors. Karnataka's FDI is focussed in the tertiary sector through software and the ICT industries. Tamil Nadu on the other hand is emerging as an attractive destination for TNCs in the manufacturing sector. Tamil Nadu indicates significantly higher poverty elasticity of economic growth than Karnataka.

Karnataka is one of India's fastest growing states with a growth rate of its GSDP at 7.3 % in the first half of the 1990s increasing to 8.3 % in the second half the 1990s. The state experienced growth in all three sectors of the economy – agricultural, industrial and service sectors grew at an average of 4.0%, 9.2% and 10.2 % respectively in the second half of the 1990s. This is above the all-India average for the same period at 3.6%, 5.0% and 8.7% respectively for the three sectors. While there has been overall progress in poverty reduction, high levels of poverty continue to exist in the state. Furthermore, the state's performance in the human development indicators at best exhibits an average trend in the country. The state of Karnataka therefore offers rich potential for re-visiting the discourse on growth and poverty reduction as well as on pro-poor growth and poverty.

The chapter has conceptually explored the productive engagement with the domestic human capital in the FDI driven tertiary sector in Karnataka and the secondary sector in Tamil Nadu. The rationale is that the higher the participation rate and level of engaging with the domestic workforce the better the dissipation of benefits. It is argued that while the tertiary sector offers immense opportunities and high returns, its engagement with the domestic human capital is narrow – employing a specialised cluster of labour. The direct benefits for the semiskilled and unskilled workers that make up the majority of the work force remain small.

For the overall economy though, the growth in the tertiary sector has been very positive on the following accounts. Firstly, the export – oriented stance of the sector and the nature of the high returns is largely attributed to India's positive balance of payment (BoP) in recent years. Secondly, the ICT revolution in the country has played a major role in productively employing its specialised labour.

The secondary sector examined through the auto-industry in Tamil Nadu, presents a wide platform for productive engagement with different categories of labour. It offers direct benefits to the semiskilled and unskilled workers who have the potential to be vocationally trained without the stringent linguistic and specialised structured training requirements. Therefore, while the secondary sector in the country has grown much slower than the tertiary sector, its connections in regions where it has grown with the domestic human capital are wide and deep. It offers the potential to enable a higher direct participation of the working population in the growth process.

In conclusion both states show poor progress on the non-income poverty indicators, especially in the rural sector. FDI in the tertiary and the secondary sectors has boosted the growth in both states. The rural poverty in particular though remains untouched by the FDI led growth in the states. While there has been progress in the overall poverty reduction, a direct linking of this to the growing FDI inflows seems unlikely but needs to be explored further. FDI in the tertiary sector attracts a specific urban cohort of human capital while FDI in the manufacturing sector attracts a wider cohort of human capital. It can be argued therefore that the FDI in the manufacturing sector enables a higher percentage of lower skilled cohort to participate in the productive process. The assumption here is that productive engagement will spur the growth of the non-economic indicators of development such as infrastructure, education and health facilities. Further, the progress in the tertiary sector will continue to strengthen the knowledge capacities to remain globally competitive – an in valuable asset for the country. But, it is the manufacturing sector that can free large sections of poverty trapped populations in the short term. To summaries – FDI

led growth itself has not reduced poverty, rural poverty in particular which remains high. The benefits of such growth remain via the livelihood opportunities for certain cohorts of population and engagement with the domestic resources.

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Table 1 FDI Flows for India and China, 2002-04, (US$m)

	FDI Inflows				FDI Outflows			
Country	2002	2003	2004	2005	2002	2003	2004	2005
India	3, 449	4,269	5,335	6586	1,107	913	2,222	1364
China	52,743	53, 505	60, 630	72,406	2,518	-152	1,805	11,305

Source: World Investment Report, 2005, 2006

Table 2: FDI approvals % of gross capital formation 1991-2001 (average)

High income states		Middle-income states		Low-income states	
Punjab	3.1	Kerala	1.9	Bihar	1.2
Gujarat	8.2	Andhra Pradesh	9.4	Rajasthan	2.8
Maharashtra	12.4	Karnataka	14.2	Uttar Pradesh	2.0
Haryana	4.8	Tamil Nadu	13.1	Madhya Pradesh	1.9
Delhi	-	West Bengal	9.5	Orissa	14.1
Average	7.1		9.6		4.4

Source: Singh and Srinivasan (2004)

Table 3: Per capita FDI approvals 1991-2001

	PCFDI	FICCI FDI ranking
Maharashtra	362.89	1
Tamil Nadu	353.81	4
Karnataka	346.47	2
Orissa	216.90	-
Gujarat	211.38	5
Andhra Pradesh	146.89	3

PCFDI: per capita FDI approvals in Rs ten million
FICCI: Federation of Indian Chambers of Commerce and Industry
Source: www.indiastat.com, FICCI FDI Survey, 2004

Table 4: Poverty and Growth in Tamil Nadu and Karnataka

	Tamil Nadu				Karnataka			
	1991		2001		1991		2001	
GDSP annual growth rate* (%)	6.2				7.8			
% share in GDSP: Primary**	22.2 (52.4)		19.7 (41.9)		35.6 (66.4)		26.2 (58.4)	
% share in GDSP: Secondary**	34.5 (18.1)		30.0 (20.1)		26.2 (10.6)		27.7 (11.5)	
% share in GDSP):Tertiary **	43.3 (29.5)		50.4 (38.0)		38.2 (23.0)		46.2 (30.1)	
Infant mortality	54		49		74		58	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Population (in millions)	36.8	19.1	34.9	27.3	31.1	13.9	34.8	17.9
Headcount Ratio	33.0	39.9	20.1	22.5	30.2	39.8	16.9	24.6
Deaton and Dreze estimates (2002)	38.5	20.8	24.3	11.3	37.9	21.4	30.7	10.8
Absolute numbers in million	12.1	7.6	7.0	6.1	9.4	5.5	5.9	4.4
% BPL*** employed in agriculture	77.4	-	75.2	-	82.7	-	84.4	-
Literacy rate (%)	41.8	67.2	65.0	84.0	47.7	74.2	59.3	80.6

*1993-94-1999-00, **Figures in brackets give % distribution of workforce employed, *** BPL= below poverty line
Source: GoI, 2001, Deaton and Dreze, 2002

Table 5: Human Development in 15 major Indian states -2001

	HDI ranking	Per capita NSDP[1]	Urban population[2]	Head count index	
				Rural	Urban
Andhra Pradesh	10	9534	27.1	10.5	27.2
Assam	14	5933	12.7	40.2	7.2
Bihar	15	3294	10.5	44.0	33.5
Gujarat	6	13,163	37.4	12.4	14.8
Haryana	5	13, 681	29.0	7.4	10.0
Karnataka	7	11,257	34.0	16.9	24.6
Kerala	1	10, 141	26.0	9.4	20.0
Madhya Pradesh	12	7520	27.0	37.2	38.6
Maharashtra	4	14, 732	42.4	23.3	26.8
Orissa	11	5206	15.0	47.8	43.5
Punjab	2	14, 881	34.0	6.0	5.4
Rajasthan	9	8466	23.4	13.4	19.4
Tamil Nadu	3	12,315	43.9	20.1	22. 5
Uttar Pradesh	13	5633	20.8	31.0	30.7
West Bengal	8	9307	28.0	31.7	14.7
All India			28.0	26.5	24.0

[1]1993-94 prices annual average for 1998-9 to 2000-1, [2] % of total state population, Source: GoI, 2001

Figure 1

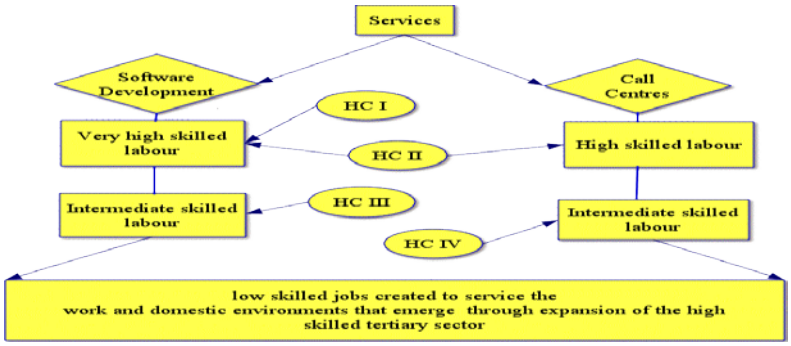
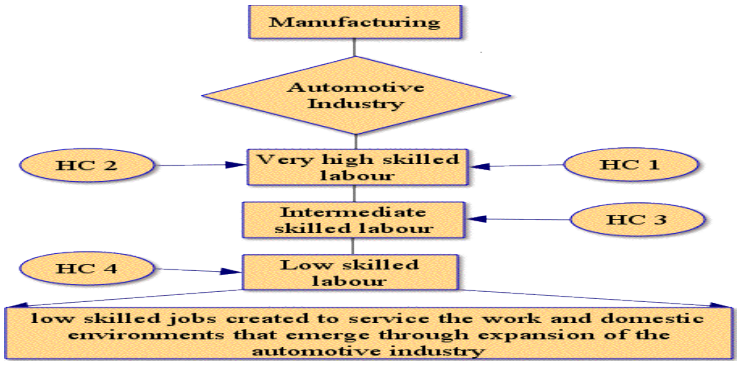


Figure 2



[i] Capital accounts remain restrictive while the agricultural sector remains completely closed to any forms of trade reforms.
[ii] For a detailed discussion, see Sumner (2005).
[iii] See Tewari (2001) for a detailed discussion on Tamil Nadu's automotive industry.
[iv] 36% of the ICT firms in the country are located in these three states and generate a revenue of 36% (NASSOM, 2003).
[v] Domestic export revenue totalled $2.5 billion in 2001-02 (NASSCOM, 2002)
[vi] Despite the opening up of the economy in the early 1990s, many sectors reflect the country's long legacy of heavy regulation and protection (World Bank, 2001; 14).
[vii] It is estimated that average salaries of IT workers in developing countries are lower by up to 80% of comparable workers in developed countries (UNCTAD, 2003, p. 135). D'Costa (2003, p. 218) notes that Indian salaries in various IT services are between 7-40 percent of the US industry figures. Arora et al. (2001; 1275) indicate that one person-year onsite work is billed at about $90,000-$100,000 while comparable offshore work is billed at about $25,000-$35,000.
[viii] In the absence of strong software development in the Indian dialects (Arora et al., 2001), English is used as a medium to operate the ICT sector in India.
[ix] The use of headcount ratio and aggregate headcount to measure poverty levels often reveal conflicting information as also pointed by Subramanian (2005).
[x] Karnataka along with Andhra Pradesh are the only two states where the discrepancy between the official method and Deaton and Dreze (2002) is close to 15 percentage points. The choice of the data source therefore has far reaching policy implications. Such differences will benefit from the much-needed fieldwork to validate the findings.
[xi] The seven Indian Institutes of Technology (IIT) are the country's premier institutions of science in technology. Set up during the 1950s and 1960s with foreign collaboration, they feature in the top ten global institutions for science and technology. Currently, under 2000 graduates are trained annually.
[xii] The five Indian Institutes of Management (IIM) are India's premier instutions on management. These were established in the mid 1960s. Like the IITs, the IIMs too feature high in the global ranking for social science institutions.
[xiii] The national figure is 28 % urban and 72 % rural (GoI, 2001)
[xiv]India's balance of payment (BoP) in the the fiscal year 2003-04 experienced a steep positive growth of 85.04 percent year-on-year basis . In terms of US$ the balance of payments stood at US$ 31.42 billion compared with US$ 16.98 billion in the previous fiscal year (GoI, 2005).