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E-mail: drsaifsiddiqui@rediffmail.com

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FDI in India: An Overview of Trends and Policies

Sourabh Ghosh*

ABSTRACT

Backed by progressive economic reforms, India's performance in terms of attracting FDI has been very strong. However, FDI flow to India is extremely skewed in nature, starting from the source right upto the destination, not only in terms of the States receiving FDI flows but also the sectors. On one hand, where only two countries account for more than half of the cumulative equity investments, on the other, only two States cumulatively account for more than half of the FDI equity inflows. At the same time, FDI equity inflow is skewed across major sectors of the economy with the services sector accounting for close to half of the inflow in recent years. This paper tracks FDI inflow in India historically from 2000-01 and highlights the recent policy initiatives of the Government of India.

Keywords: Foreign Direct Investment; Services Sector; Manufacturing Sector; Economic Growth; Employment

FDI FLOW INTO INDIA

Foreign direct investment (FDI) flows to India started picking up in the globalised era post 1991, which saw the beginning of economic reforms characterised by industrial decontrol, liberalisation of foreign trade, market determined exchange rates, beginning of privatisation of public sector entities, and progressive FDI policies.

According to estimates based on international best practices, as provided by the Department of Industrial Policy and Promotion (DIPP), FDI inflows into India reached a record US\$61.96 billion in 2017-18 (DIPP, 2018). As far as trend of FDI inflow is concerned, the period 2000-01 to 2008-09 saw an increasing trend of FDI flows to India, but thereafter declined for a couple of years in the aftermath of the global economic crisis of 2008-09 (Figure 1). The inflows once again started to follow an upward trend from 2012-13 onwards, growing rapidly in 2014-15 and 2015-16. Backed by a slew of reforms, the year-on-year growth rate of FDI inflows after reaching a peak of 25 per cent in 2014-15 and followed by 23 per cent in 2015-16, tapered to a mere 8 per cent in 2016-17 and 3 per cent in 2017-18 (Figure 2).

However, according to the *World Investment Report 2018* brought out by the United Nations Conference on Trade and Development (UNCTAD), FDI flows to India decreased to US\$39.92 billion in 2017 after touching a high of US\$44.48 billion in 2016, i.e., a decline of over 10 per cent (UNCTAD, 2018). During the same time, with global FDI inflows declining by over 23 per cent, share of India in global FDI inflows increased from 2.4 per cent in 2016 to 2.8 per cent in 2017 (Figure 3).

* Independent Researcher based in New Delhi, India E-mail: writetosourabh@gmail.com

Much of the FDI inflow into India is in the form of fresh equity infusion which adds to the quality of FDI inflow (Varma, 2016). Between 2000-01 and 2017-18, FDI equity inflow into India has accounted for more than two-thirds of the total FDI inflows with the proportion touching 72 per cent or above from 2015-16 onwards (Figure 4).

As per the DIPP's FDI database based on equity capital components only, the flow of FDI equity to India has been following an increasing trend from 2000-01 onwards barring the years affected by global economic crisis (Figure 5), and touching a record US\$44.86 billion in 2017-18 (DIPP, 2018).

On the other hand, the FDI equity inflow to GDP ratio has been on an increasing trend from 2000-01 onwards and touching a peak value of 2.6 per cent in 2008-09. Thereafter, barring a couple of years of fluctuation, the FDI equity inflow to GDP ratio has been on an increasing trend from 2012-13 onwards till 2016-17 and dipping slightly in 2017-18 (Figure 5). As far as growth rate of FDI equity inflows is concerned, in recent years, the year-on-year growth rate started to increase from 2013-14 onwards. After reaching a peak of 29 per cent in 2015-16, the growth rate of FDI equity inflow into India declined to 9 per cent in 2016-17 and 3 per cent in 2017-18 (Figure 6).

COUNTRY-WISE FDI EQUITY INVESTMENTS IN INDIA

In terms of sources of FDI inflows, Mauritius and Singapore account for about 52 per cent of cumulative equity investments in India between 2000-01 and 2017-18 (Figure 7). Historically, the other major sources of such investments are Japan, United Kingdom (UK), Netherlands, and United States of America (USA).

In recent years between 2013-14 and 2017-18, the combined share of Mauritius and Singapore in FDI equity investments in India has been increasing systematically. Their share in FDI equity investments increased from about 56 per cent in 2016-17 to 63 per cent in 2017-18 (Figure 8) inspite of the implementation of an amended double taxation avoidance agreement by India with these countries in a phased manner effective from April 2017 to thwart tax evasion on incomes and capital gains (RBI, 2018b).

STATE-WISE SHARES IN FDI EQUITY INFLOWS

It is observed that Maharashtra, Delhi, Karnataka, Tamil Nadu, Gujarat and Andhra Pradesh (the States mentioned include other peripheral States / regions)¹ account for about three-fourth of the FDI equity inflows cumulatively for the period 2000-01 to 2017-18 (Figure 9).

Maharashtra has historically been the highest recipient of FDI equity followed by Delhi. But from 2013-14 till 2015-16, Delhi outpaced all other States in terms of share of FDI equity received, followed by Maharashtra (Figure 10). In 2016-17, the trend got reversed again with Maharashtra accounting for about 45 per cent of total FDI equity inflows followed by Delhi at just over 14 per cent. In 2017-18, Maharashtra held on to the position of the topmost recipient of FDI equity at 30 per cent, followed by Karnataka at 19 per cent and Delhi at 17 per cent.

FDI inflows into Maharashtra and Delhi are mostly for development of infrastructure (transportation, electrical equipment, and telecommunications) or for services sectors (Chatterjee, Mishra & Chatterjee, 2013). FDI equity inflows into Karnataka have witnessed a massive increase in FDI equity inflows by 302 per cent in 2017-18 (DIPP, 2018). This is owing to FDI flows mainly to the information technology (IT) and start-up companies (Kumar, 2018).

SECTOR-WISE SHARES IN FDI EQUITY INFLOWS

FDI equity inflow into India for several years has been extremely skewed across the major sectors of the economy. Notably, the share of services sector² in FDI equity inflows increased significantly from

about 29 per cent in 2013-14 to 52 per cent in 2015-16, but dropping to 43 per cent in 2016-17, and then recovering to 47 per cent in 2017-18 (Figure 11). On the other hand, the manufacturing sector lost its share from about 51 per cent in 2013-14 to 25 per cent in 2015-16, but recovering to more than 32 per cent in 2016-17, and again dropping to 21 per cent in 2017-18. The share of infrastructure sector (including energy) in total FDI equity inflows increased from about 19 per cent in 2013-14 to 31 per cent in 2017-18. The primary sector (including agriculture and mining) never really picked up in terms of FDI equity inflows and languishes at less than 0.5 per cent after having reached a peak of almost 3 per cent in 2014-15.

Further, FDI inflow in India has historically been skewed towards a few sectors only. Cumulatively, between 2000-01 and 2017-18, the top 10 FDI destination sectors accounted for about 65 per cent of the total FDI equity inflows (Table 1). The services sector (as per DIPP classification) along with computer software and hardware, and trading featured in the list of top 10 recipients of FDI equity flows accounting for about 31 per cent of the total FDI equity inflow. The manufacturing sector represented by automobile, drugs and pharmaceuticals, and chemicals (other than fertilisers) industries in the top 10 sectors accounted for 13 per cent of the total FDI equity inflow. The infrastructure (including energy) sector represented by telecommunications, construction development, power, and construction (infrastructure) activities in the top 10 sectors accounted for over 21 per cent of the total FDI equity inflow.

Based on DIPP data, in 2017-18, the skewness in FDI inflow reached epic proportions with the top 10 FDI equity receiving sectors accounting for about 75 per cent of the total FDI equity inflow (Table 2). The services sector (as per DIPP classification) along with computer software and hardware, trading, and hotels and tourism accounted for about 41 per cent of the total FDI equity inflow. The manufacturing sector represented by automobile and chemicals (other than fertilisers) industries in the list of top 10 sectors accounted for about 8 per cent of the FDI equity inflow. The infrastructure (including energy) sector represented by telecommunications, construction (infrastructure) activities, power, and non-conventional energy in the list of top 10 sectors accounted for over 26 per cent of the FDI equity inflow in 2017-18 (Table 2).

RECENT CHANGES IN FDI POLICY

The announcements made by the Government of India (GoI) on reforms to the existing FDI policy on June 20, 2016 were meant to liberalise and simplify the FDI policy so as to provide ease of doing business in India leading to larger FDI inflows contributing to growth of investment, income and employment (GoI 2016). The amendments have resulted in India becoming the most open economy for FDI with majority of the sectors coming under the automatic approval route. The amendments, later incorporated in Consolidated FDI Policy effective from August 28, 2017 (DIPP, 2017b), are presented in Table 3.

FDI policy has been further liberalised in key sectors according to the amendments announced by the GoI on January 10, 2018. These include: (a) 100 per cent FDI under automatic route for single brand retail trading; (b) 100 per cent FDI under automatic route in construction development; (c) Foreign airlines allowed to invest up to 49 per cent under approval route in Air India; (d) Foreign institutional and portfolio investors allowed to invest in power exchanges through primary market; and (e) Amendment of the definition of medical devices as contained in the FDI policy (GoI, 2018).

CONCLUSION AND WAY FORWARD

The government has amended the FDI policy to facilitate ease of doing business, attract investment, and promote growth in income and employment. These amendments, with a focus on boosting the Make in India programme, have resulted in India becoming the most open economy for FDI with majority of the sectors coming under the automatic approval route. The Make in India programme is

showing some early positive signs of attracting FDI towards establishing manufacturing facilities in India (Singh & Sasi, 2016). To illustrate, Samsung has launched the world's biggest mobile factory in Noida near Delhi in July 2018. With this, Samsung's smartphone manufacturing capacity in India is expected to increase from 68 million to 120 million per year (Kotoky & Rai, 2018). Xiaomi after its foray into India in July 2014, started manufacturing smartphones from August 2015 onwards in partnership with Taiwanese contract manufacturer Foxconn (TNN, 2017). In a bid to ramp up its manufacturing capacity in the country, the company has announced the opening of three new plants (Bhatia, 2018).

A lot of expectation has been placed on the Make in India manufacturing sector to attract foreign investment and generate employment. But with so much technological innovation / advancement and use of capital-intensive (and labour displacing) mode of production, it remains to be seen how far the manufacturing sector succeeds in generating employment along with economic growth, in line with the well-intentioned goals of the Make in India programme. Therefore, the government should not lose sight of the traditionally labour-intensive sectors and should ensure an enabling environment for FDI flow to such sectors (e.g., light machine tools, textiles and readymade garments, leather and leather products, and food processing), with plants set up in small towns close to rural and suburban areas (NCAER, 2009). The government should also focus on simplifying the existing labour laws and make them more flexible as this would not only help in attracting FDI, but also generate employment opportunities particularly in the manufacturing sector (PTI, 2014; ET, 2016) which is increasingly adopting capital-intensive mode of production (Sen & Das, 2015; Kapoor, 2016).

Another area of concern is regional concentration of FDI flows in India (Mukherjee, 2011) with a handful of States accounting for a major part of the total inflow. In this age of co-operative federalism, to avoid regional inequality from getting escalated by such skewed FDI inflows, it is necessary that FDI-related policies, rules and regulations are framed and adapted keeping regional and State-level issues in consideration (Malhotra, 2014). This however, would require political will, both at the Centre and State level.

Given the nature and trend of flow of FDI experienced so far in India, the challenge lies in attracting FDI flows into sectors having the potential for generating growth and employment, in the context of a rapidly evolving economic and technological landscape (Basu & Ghosh, 2017). To over-emphasise the role of FDI or even belittle the role it has played in creating jobs as well as contributing to growth would be inappropriate. At best, FDI flow can play the role of supplementary investment in relation to domestic investment required for growth and development of the economy.

ENDNOTES

¹ Maharashtra includes Maharashtra, Dadra & Nagar Haveli, and Daman & Diu; Delhi includes New Delhi and parts of Uttar Pradesh and Haryana; Tamil Nadu includes Tamil Nadu and Puducherry; Andhra Pradesh includes Andhra Pradesh and Telangana.

² Services sector includes sub-sectors as per DIPP classification (financial, banking, insurance, non-financial / business, outsourcing, R&D, courier, and technical testing and analysis) plus computer software and hardware, trading, hospitals and diagnostic centres, consultancy services, hotel and tourism, information and broadcasting, and printing of books.

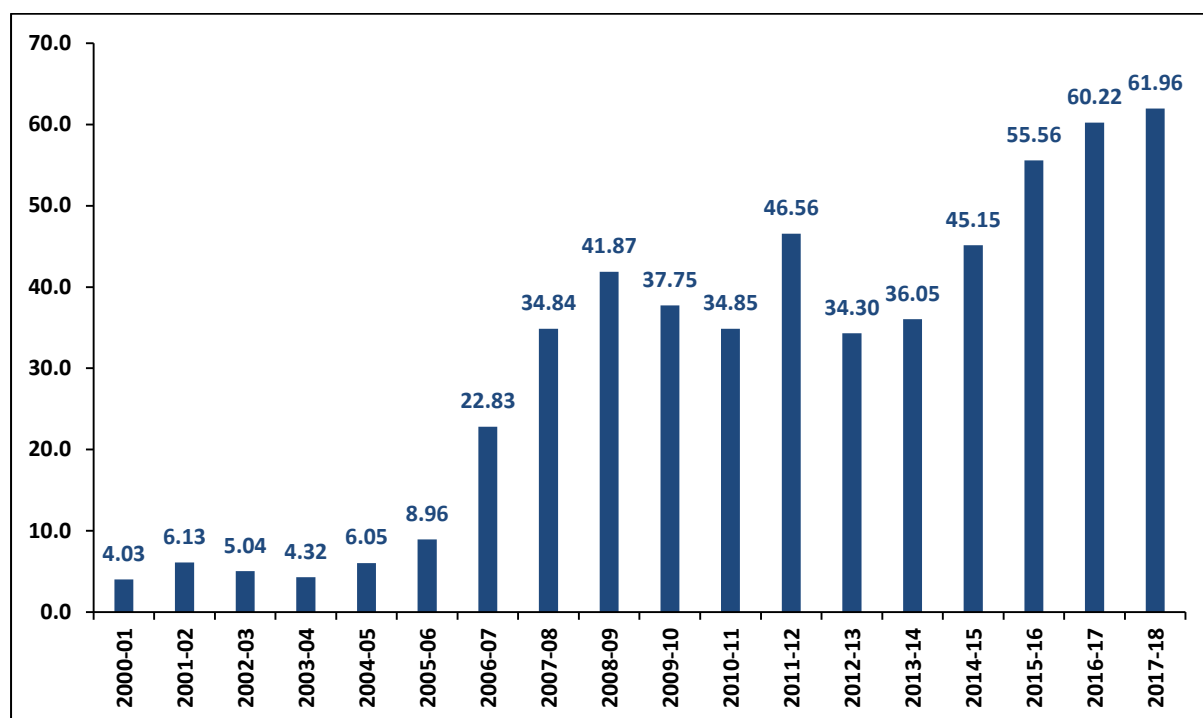
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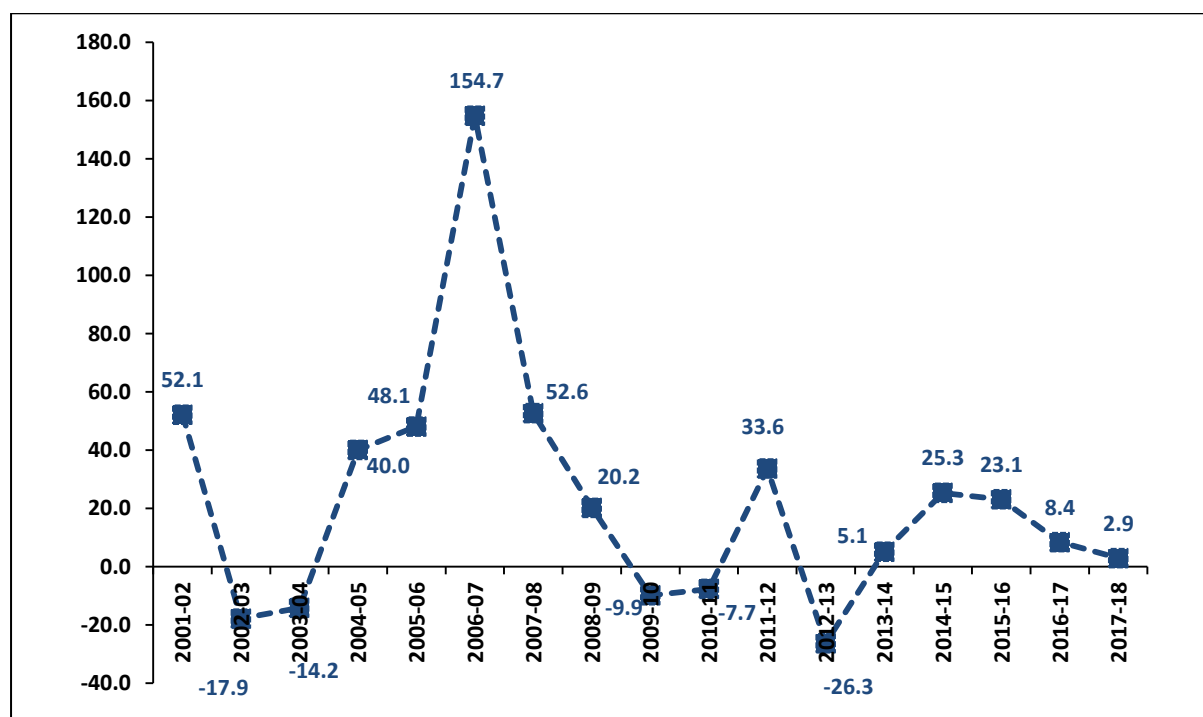
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Figure 1: FDI Inflow into India (2000-01 to 2017-18) (US\$ Billion)



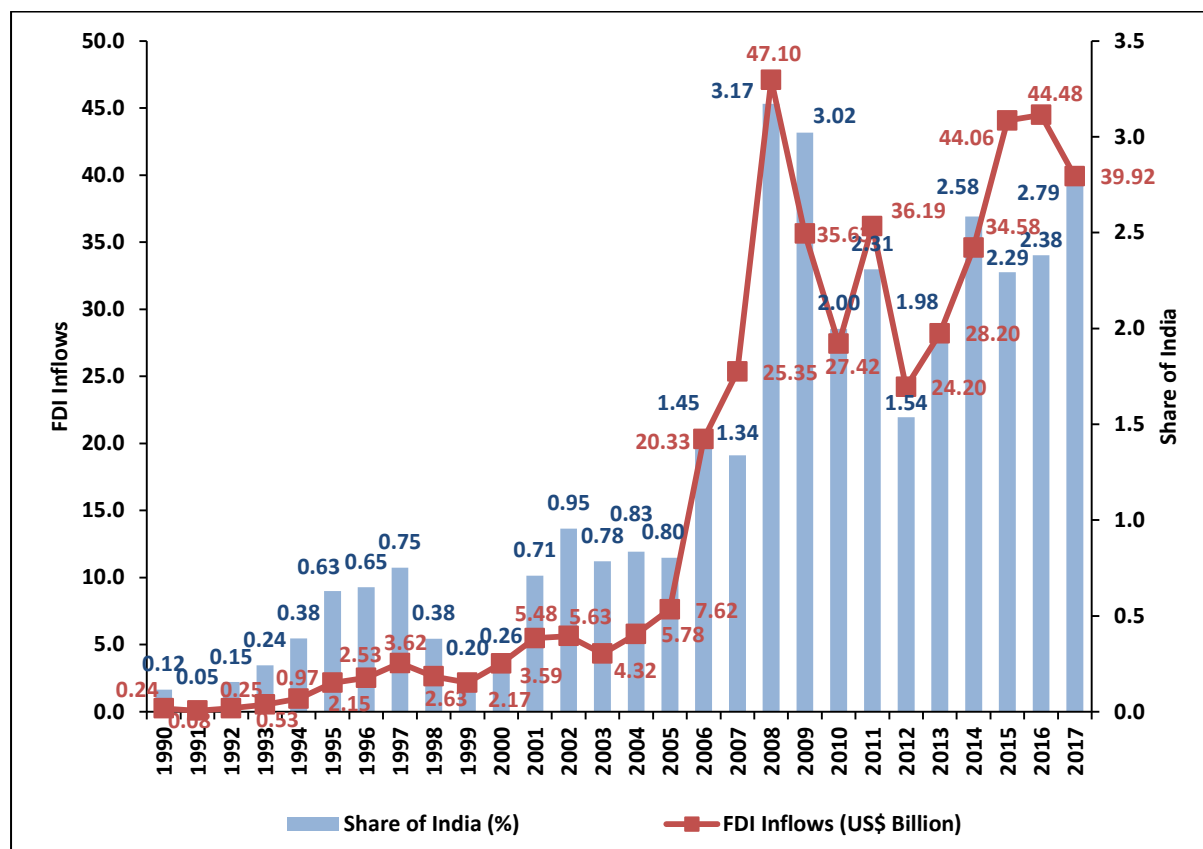
Source: DIPP (2018).

Figure 2: Growth Rate of FDI Inflow into India (per cent)



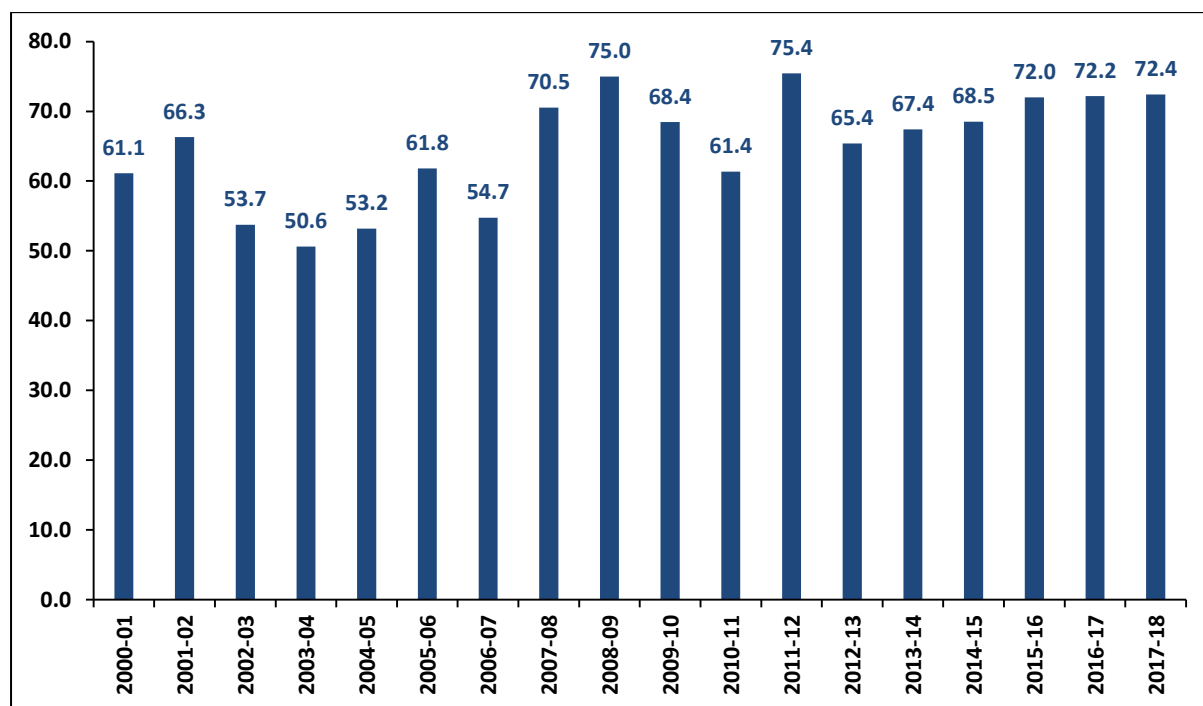
Source: DIPP (2018).

Figure 3: FDI Inflow into India and India's Share in Global FDI Inflows – The UNCTAD Estimates (1990 to 2017)



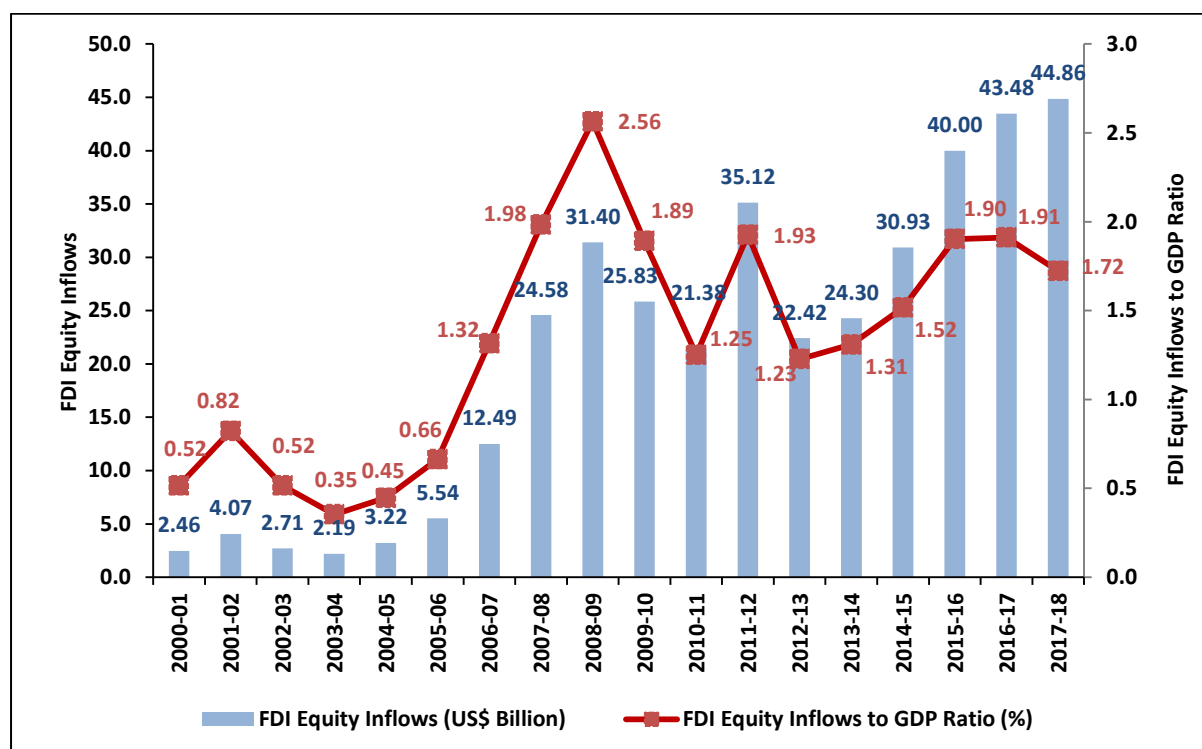
Source: UNCTAD (2018).

Figure 4: Share of FDI Equity Inflow in Total FDI Inflow into India (2000-01 to 2017-18) (per cent)



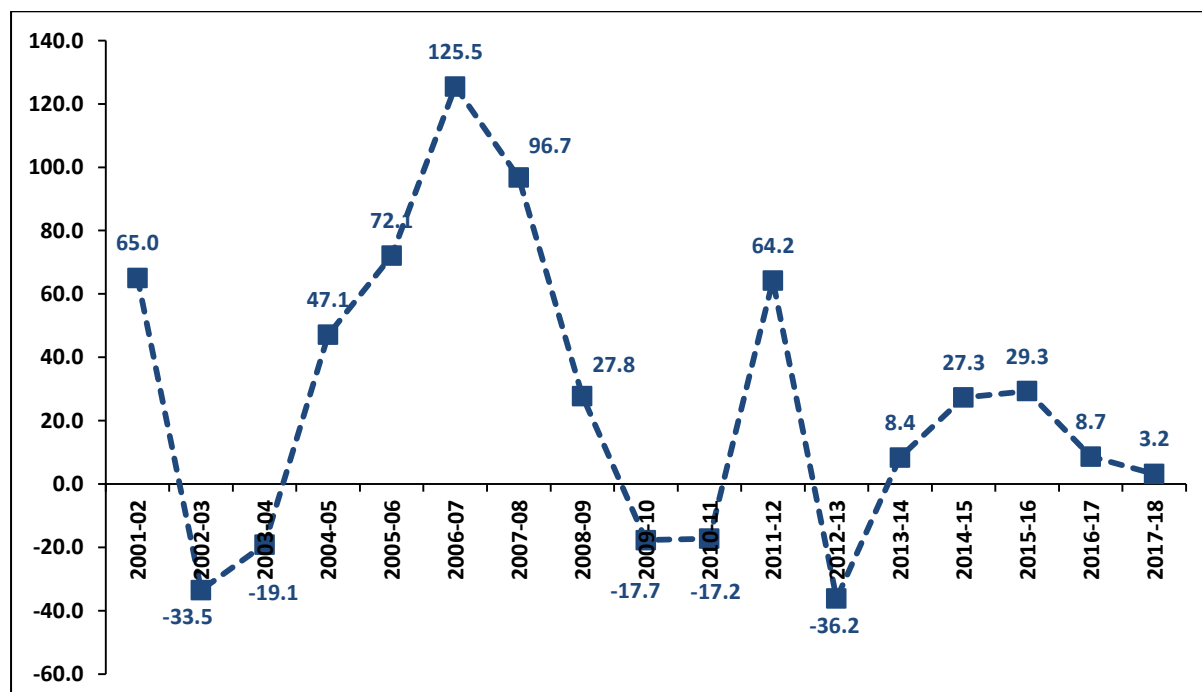
Source: DIPP (2018).

Figure 5: FDI Equity Inflows and FDI Equity Inflows to GDP Ratio for India (2000-01 to 2017-18)



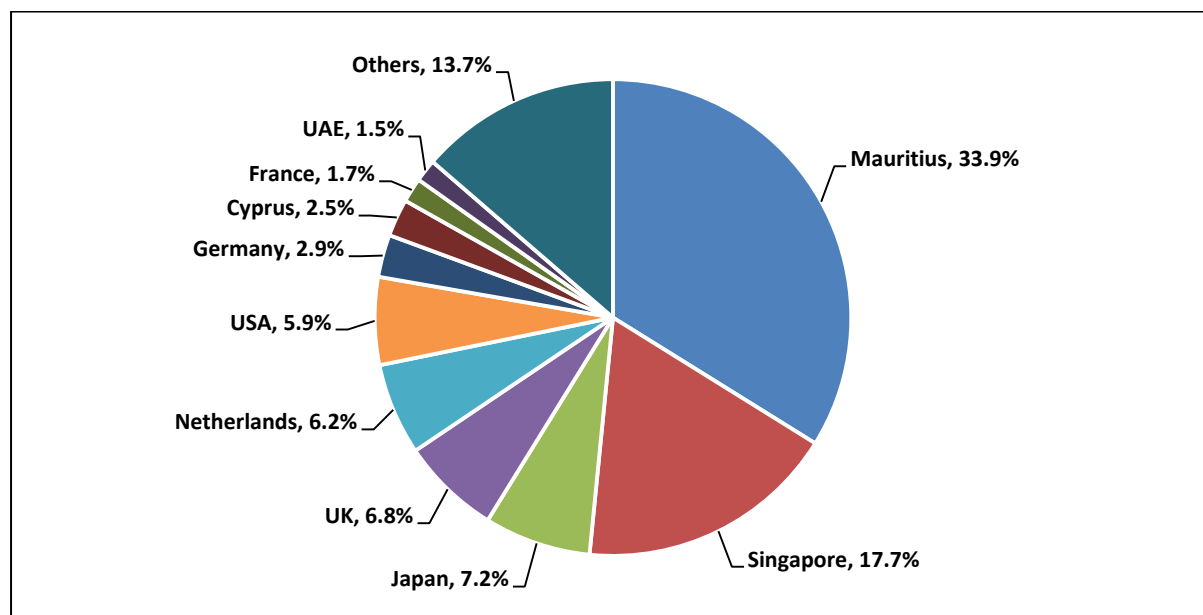
Sources: DIPP (2018); RBI (2017, 2018a).

Figure 6: Growth Rate of FDI Equity Inflow into India (per cent)



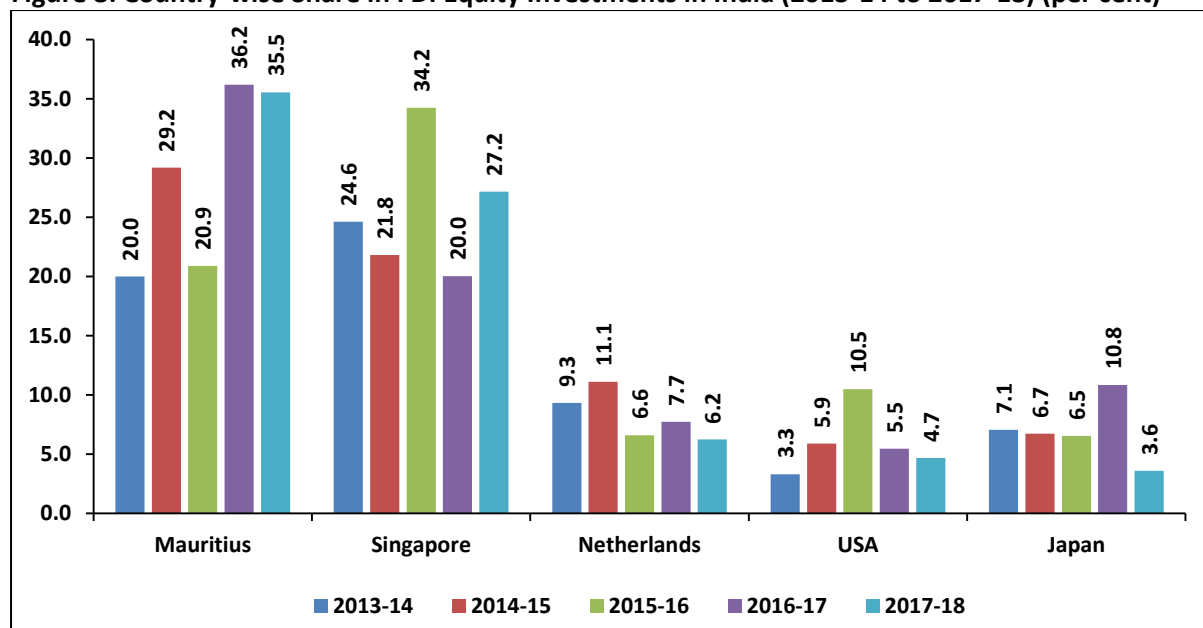
Source: DIPP (2018).

Figure 7: Country-wise Share in Cumulative FDI Equity Investments in India (2000-01 to 2017-18) (per cent)



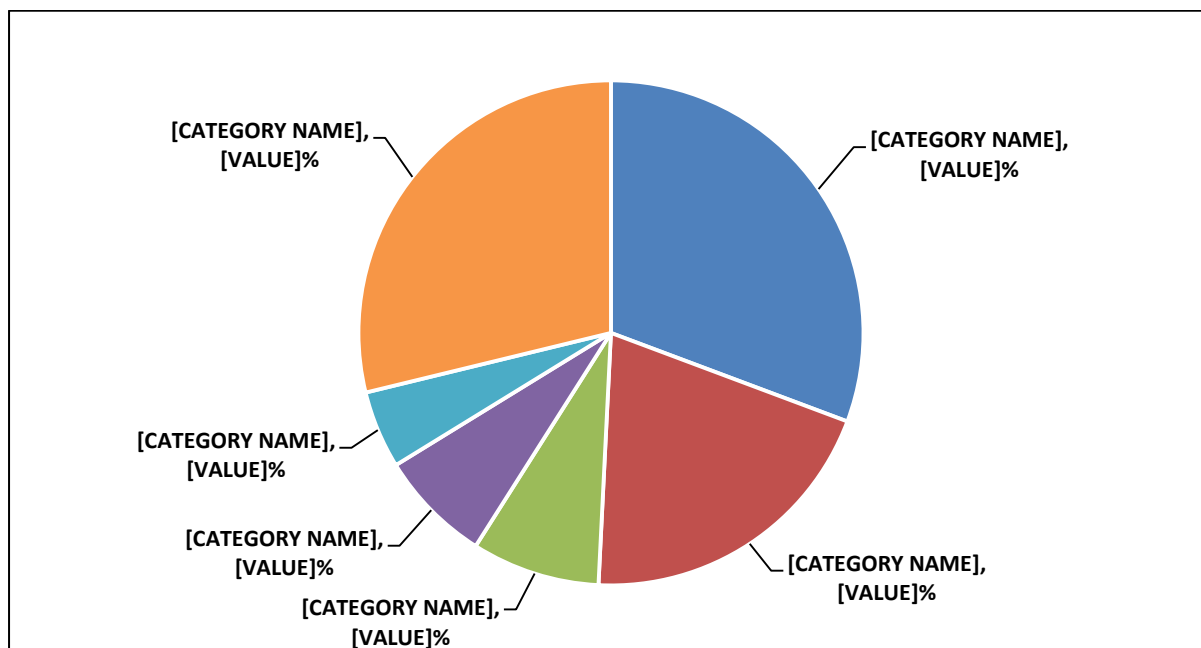
Source: DIPP (2018).

Figure 8: Country-wise Share in FDI Equity Investments in India (2013-14 to 2017-18) (per cent)



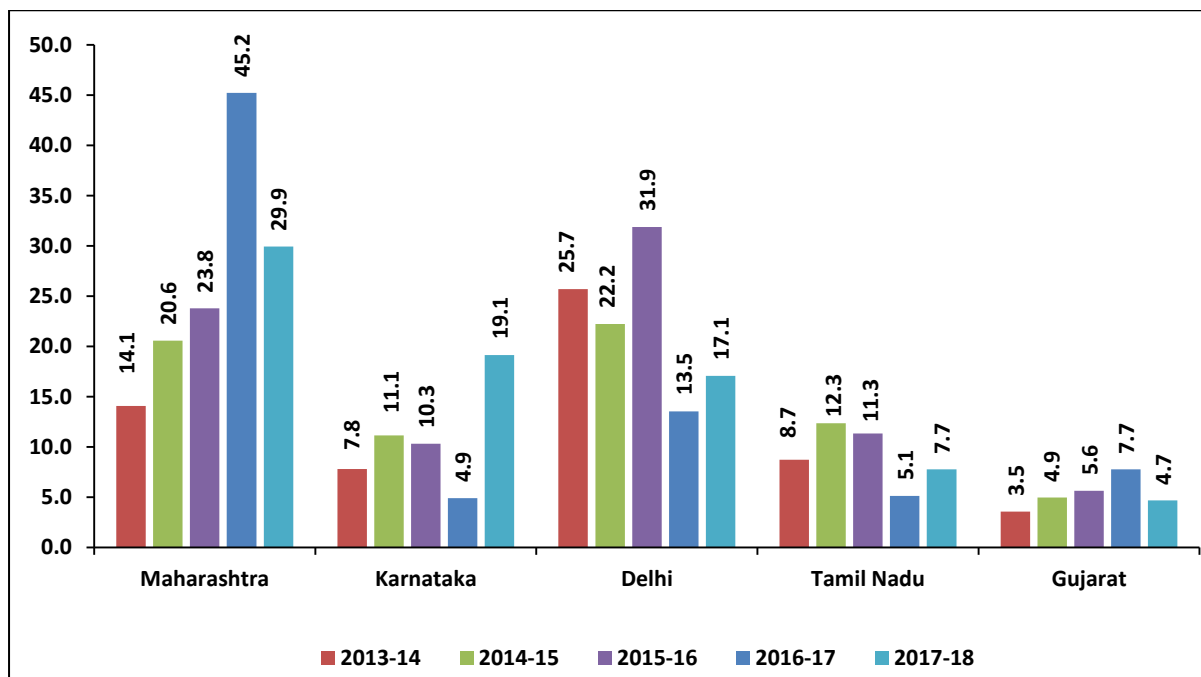
Sources: DIPP (2016a, 2017a, 2018).

Figure 9: State-wise Share in Cumulative FDI Equity Inflows (2000-01 to 2017-18) (per cent)



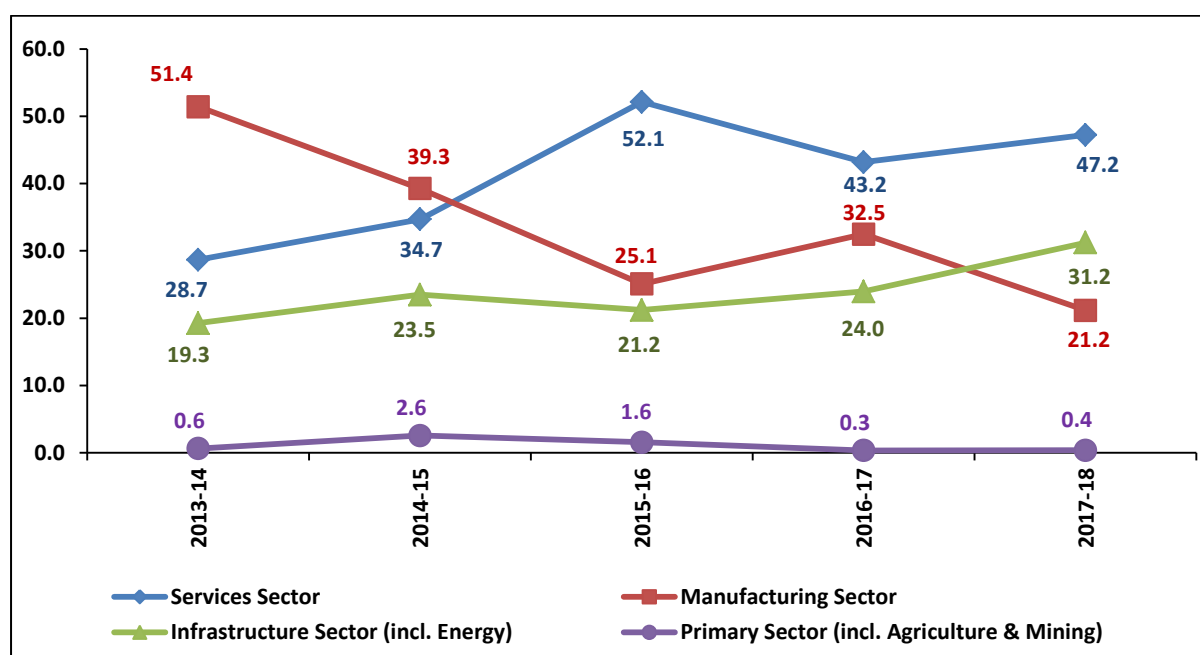
Source: DIPP (2018).

Figure 10: State-wise Share in FDI Equity Inflows (2013-14 to 2017-18) (per cent)



Sources: DIPP (2016a; 2017a; 2018).

Figure 11: Shares of FDI Equity Inflows in Major Sectors in India (2011-12 to 2017-18) (per cent)



Sources: Secretariat of Industrial Assistance (SIA) Newsletter, DIPP (various years); DIPP (2018).

Table 1: Sector-wise Cumulative FDI Equity Inflows in India (2000-01 to 2017-18)

Sector	Amount (US\$ Billion)	Share (%)
Services (as per DIPP classification)	66.19	17.56
Computer Software & Hardware	30.82	8.18
Telecommunications	30.16	8.00
Construction Development: Townships, housing, built-up infrastructure and construction development projects	24.83	6.59
Automobile Industry	18.76	4.98
Trading	18.56	4.92
Drugs & Pharmaceuticals	15.72	4.17
Chemicals (other than Fertilisers)	14.60	3.87
Power	13.21	3.51
Construction (Infrastructure) Activities	12.55	3.33
Total of Top 10	245.40	65.12
Grand Total	376.85	100.00

Source: DIPP (2018).

Table 2: Sector-wise FDI Equity Inflows (2017-18)

Sector	Amount (US\$ Billion)	Share (%)
Services (as per DIPP classification)	6.71	14.96
Telecommunications	6.21	13.85
Computer Software & Hardware	6.15	13.72

Trading	4.35	9.69
Construction (Infrastructure) Activities	2.73	6.09
Automobile Industry	2.09	4.66
Power	1.62	3.61
Chemicals (other than Fertilisers)	1.31	2.92
Non-Conventional Energy	1.20	2.69
Hotel & Tourism	1.13	2.52
Total of Top 10	33.51	74.70
Grand Total	44.86	100.00

Sources: DIPP (2017a, 2018).

Table 3: Major Amendments to FDI Policy

Sector / Activity	% of Equity / FDI Cap and Route	
	Consolidated FDI Policy effective from June 7, 2016	Amendments announced on June 20, 2016 later incorporated in the Consolidated FDI Policy effective from August 28, 2017
Defence		
Defence Industry subject to Industrial license under the Industries (Development & Regulation) Act, 1951	49% Automatic route Above 49%, government approval on case to case basis, wherever it is likely to result in access to modern and 'state-of-art' technology.	100% Government route beyond 49% in cases resulting in access to modern technology in the country or for other reasons to be recorded. The condition of access to 'state-of-art' technology in the country has been done away with. FDI limit for defence sector has also been made applicable to Manufacturing of Small Arms and Ammunitions covered under Arms Act 1959.
Broadcasting Carriage Services		
(1) Teleports (2) Direct to Home (DTH) (3) Cable Networks [Multi-System operators (MSOs) operating at National or State or District level and undertaking upgradation of networks towards digitalization and addressability] (4) Mobile TV (5) Headend-in-the Sky Broadcasting Service (HITS)	100% Government route beyond 49%	100% Automatic route Infusion of fresh foreign investment, beyond 49% in a company not seeking license / permission from sectoral Ministry, resulting in change in the ownership pattern or transfer of stake by existing

Cable Networks [Other MSOs not undertaking upgradation of networks towards digitalisation and addressability and Local Cable Operators (LCOs)]	100% Government route beyond 49%	investor to new foreign investor, will require Government approval.
Pharmaceuticals		
Greenfield Pharma	100% Automatic route	100% Automatic route
Brownfield Pharma	100% Government route	100% Government route beyond 74%
Civil Aviation		
(A) Airports		
Greenfield Projects	100% Automatic route	100% Automatic route
Brownfield Projects	100% Government route beyond 74%	100% Automatic route
(B) Air Transport Services		
(1) Scheduled Air Transport Service / Domestic Scheduled Passenger Airline (2) Regional Air Transport Service	49% (100% for NRIs) Automatic route	100% Automatic route upto 49% (100% for NRIs) Government route beyond 49% Foreign airlines would continue to be allowed to invest in capital of Indian companies operating scheduled and non-scheduled air transport services upto the limit of 49% of their paid-up capital and subject to the laid down conditions in the existing policy.
Private Security Agencies		
Private Security Agencies	49% Government	74% Government route beyond 49%
Animal Husbandry		
Animal Husbandry (including breeding of dogs), Pisciculture, Aquaculture and Apiculture	100% Automatic route under 'controlled conditions'	100% Automatic route Requirement of 'controlled conditions' has been done away with.
Single Brand Product Retail Trading		

Single Brand product retail trading	100% Government route beyond 49%	Sourcing norms will not be applicable upto three years from commencement of the business for entities undertaking single brand retail trading of products having 'state-of-art' and 'cutting-edge' technology and where local sourcing is not possible.
Food Products Manufactured / Produced in India		
Food Products manufactured / produced in India	No regulation	100% Government route (for trading, including through e-commerce, in respect of food products manufactured or produced in India)

Sources: DIPP (2016b, 2017b); GoI (2016).

High-Speed Rail Corridor: The Indian Assessment

Chitresh Shrivastva* and Mahmoud Ali**

ABSTRACT

The Indian High – Speed dream is 85 years old. The dream was first fulfilled by Germany in 1933 after the successful run of the flying Hamburg at 160kmph (99 mph) between Berlin and Hamburg. The speed barrier further broke with the introduction of the Shinkansen Bullet Train between Tokyo and Osaka in 1964 at a Maximum Operating Speed of 320 kmph (198 mph). India made its first attempt to join the consortium of High-Speed Railway System in 1969 with the inauguration of Rajdhani Express between Howrah and New Delhi. Fast forwarding to the contemporary economy, India has signed an MoU with Japan for Technology Transfer of High-Speed Railways. The estimated cost of the project is expected to be approximately 90,000 crores. The anticipated cost of track laying is between 100–200 crores per kilometre in comparison to the conventional track construction which costs 3-10 crores a kilometre and each trainset would cost `120 crore. The project will be executed on a cost sharing basis, with JICA (Japan International Co-operation Agency) providing funds at an interest rate of 0.3% and 81% of the financing being done by Japan. The following paper discusses the projected returns on investment through Cost benefit analysis of the Bullet Train Project

Keywords: Rajdhani, Bullet Train, High- Speed, Cost Benefit Analysis, Returns on Investment

INTRODUCTION

The Indian High-Speed dream is 85 years old. The dream was first fulfilled by Germany in 1933 after the successful run of the flying Hamburg at 160kmph (99 mph) between Berlin and Hamburg. The speed barrier further broke with the introduction of the Shinkansen Bullet Train between Tokyo and Osaka in 1964 at a Maximum Operating Speed of 320 kmph (198 mph). India made its first attempt to join the consortium of High Speed Railway System on 3rd March 1969 with the inauguration of Rajdhani Express between Howrah and New Delhi during the tenure of Ram Subhag Singh as Railway Minister, becoming the first train to be classified as a high-speed train, which had a Maximum Permissible Speed of 115kmph (71 mph) in comparison to 80 kmph (49 mph) of other trains during the period¹.

The Rajdhani² was a distinct train in terms of its operating speed of 115 kmph, which was in 1971 increased to 130 kmph under orders issued by the Railway Board proposing the increment of speed

* Railway Policy Analyst, ThunderBuzz, Hyderabad, India

E-mail: chitresh.shrivastva22694@gmail.com

** Assistant Professor (Railway Engineering), Department of Civil Engineering, Minia University, Al Minyā, Egypt

of Rajdhani. The need for a high-speed train driven by the need of reducing distance between the metro cities with the Indian capital. Most metros are a part of today's golden quadrilateral, which is further proposed to be developed into a diamond quadrilateral³.

THE BEGINNING OF A LEGACY

With the aviation sector reeling under the inception stage, the railway seized the opportunity not just from the perspective of attracting people by assuring reduced travel time, but also signalled change in the way the train fares were determined, with the catering charges being included in the fare and Rajdhani being the first experimental train under this scheme, which was also a contribution from Ratan Chandra, who was the first train attendant, the successful advent of Rajdhani, paved way for faster intercity travel which was started by the name of Shatabdi Express⁴ in 1988 between New Delhi and Jhansi with Madhav Rao Scindia as the Railway Minister with a sanctioned speed of 140 kmph (86 mph), with fare structures on the lines of Shatabdi Express.

The Indian high – speed scenario saw diversification post economic reforms, with the focus also shifting to common people, with prices affordable to the working class or the middle class with the introduction of Jan Shatabdi, which was on the lines of Shatabdi, which was regarded as the Jan Shatabdi in 2002 during the Nitish Kumar's ministry. What distinguished the train from the conventional Shatabdi Train was the precedence with regards to operations and the fare structure, with a maximum operating speed of 110 kmph (68 mph), which was succeeded by the introduction of Garib Rath Express in 2005. The coming of every new minister brought along with them a new train, which again was seen in 2009 with the coming of Durgam and Yuva trains with the former aiming at elite passengers, while the latter (Yuva Express) providing fully air – conditioned chair car, affordable travel for unemployed youth or migrant laborers.

While diversifying train services, it is equally important to establish a strong infrastructure, which was realized even before the ambitious diamond quadrilateral was incepted, under the leadership Dr. E. Sreedharan, former member of engineering, Railway Board, marking a paradigm shift in track and bridge engineering.

SIGNIFICANCE OF INFORMATION TECHNOLOGY

The route has been developed for fool-proof operations through extensive use of Information Technology and deployment of Anti – Collision Device and Signalling Circuit⁵ to prevent any untoward incidents, though it has been partially successful in this attempt. The Konkan Railways in line with Japan's Automatic Train Control, has developed Automatic Train Driving Device. In the face of technical and geographical challenges the project was finally completed in 1998 and dedicated to the nation by former Prime Minister Atal Vihari Vajpayee.

REGULATION OF FOREIGN INVESTMENTS

While India witnessed paradigm shifts in the field of railway technology post-independence, the participation of more countries in the progress of Indian Railways technically and in terms of infrastructure, led to competition between the nations. The very first time we were provided assistance by an external actor was in 1951 by Switzerland in procuring technologies for production of coaches, much to the efforts of the then transport minister N. Gopala Swamy Iyengar, the Swiss technology of coach manufacturing which led to the establishment of the first Integral Coach Factory in Chennai marking the end of Indian dependence on Britain for its railway coaches and subsequently we established the Diesel Locomotive Works at Varanasi, under assistance from ALCO (American Locomotive Company) in 1961 and thus continue to build our relations beyond conventional relations through railway as an effective tool of diplomacy.

CONTEMPORARY FOREIGN INVESTMENTS

With trainsets growing popularity since 2015 budget announcement, Talgo and CAF from Spain, while Bombardier from Canada, emerged as potential candidates for the bidding process, of which Talgo has had to withdraw owing to technical and bidding issues owing to lack of framework. On the other hand, Germany has not only emerged as a major player in the rolling stock, but is also carrying out the feasibility study for a High – Speed Corridor between Mysuru and Chennai, the costs of which will be borne by Germany over a yearlong study which it will be carrying out, after an apparent withdrawal of China from the project following the Doklam Stand-off.

India has also entered into agreements with Alstom for the manufacture of electric locomotives with Alstom, Siemens, GE and Bombardier have been shortlisted to manufacture Electric Locomotives. While Nations like Switzerland, Germany, US have been consistent contributors and less of an aggressive competition has been witnessed, when coming to these nations, the biggest competition is amongst China and Japan, both keen to seize the opportunity to spread their influence into India through the High – Speed Railway Corridor Project of India.

The difference that is to be noted here is the management style of both countries railways. While China is a state – owned railway, Japan on the other hand is a private venture that is divided into seven divisions. There is also a distinction drawn in terms of management. While Operations and Management are unilaterally managed in case of state owned Railways (e.g. India), there is a line of distinction drawn between Operations and Management department in the case of Private owned railways (e.g. Amtrak, Japanese Railways)

Apart from the production units, financial institutions also play an important role in the development of Railway infrastructure. When we look at the Indian scenario, two financial institutions – The World Bank and Japan International Cooperation Agency play an important role. High – Speed Corridors will also include the Dedicated Freight Corridor, which aims to decongest the existing networks and enable the smooth flow of freight traffic, with greater hauling capacities and higher speeds of 100 kmph (The current speed of freight trains is 75 kmph). Japan was initially selected as a partner in the development of Dedicated Freight Corridor, but later was phased out of the project.

Recently, World Bank provided a loan of `5 Lakh Crores for the rehabilitation of core and non – core operations of Indian Railways amongst which Catering and Safety have been given the paramount importance. In the present scenario, Japan has become an influential exporter in the Railroad market and through its financial institution JICA has facilitated building of overseas facilities through commercial aid and technology transfer. The very reason why Japan has been trying to roll out its railway technology in the Asian and Southeast Asian Nations is owing to the decline in demand for railways in Japan against the road and aviation.

Thus for, countries like India, Japan appears to be an idle participant to the growing need of High – Speed Corridors and Dedicated Freight Corridors, which will lead to the development of Industrial Corridors. Tokyo thus has greater monopoly in terms of High – Speed Rail Technology compared to China or other countries like Germany, Spain, US, etc. The advent of High-Speed Railway in India has attracted immense Foreign Direct Investment post the coming of NDA government into power. If we are to compare the amount of foreign investments in the last 17 years, which amounts to \$897 million, with \$291 million in the form of equity flows between April 2014 and March 2017. The FDI investment since 2014 can be ordered in the following manner:

FOREIGN COLLABORATOR	COUNTRY	INDIAN COMPANY	FDI INFLOW (IN USD MILLION)
ALSTOM Transport Holdings B.V.	Netherland	ALSTOM Transport India Ltd	85.20
Bombardier Transportation Holdings	Singapore	Bombardier Transportation India Pvt. Ltd	39.50
Ansaldo STS Australia Pty Ltd	Australia	Ansaldo STS Transportation Systems in India	21.52
GE Capital International	Mauritius	Titlagarh Wagons Ltd	14.73
Inversiones EN Concessions	Spain	CAF India Pvt Ltd	11.57

Source: Department of Industrial Policy and Promotion, Ministry of Railways

The coming up of high – speed railway has further given impetus to Research and Development. The Technology Mission on Indian Railways initiated by Indian Railways aims at development/research/innovation in railway technologies through domestic and international collaboration. At the domestic level, the railways is being assisted by Department of Science and Technology, Ministry of Human Resource Development and representatives of industry

COST-BENEFIT ANALYSIS OF MUMBAI-AHMEDABAD HIGH SPEED RAIL

The government of India set forth the idea of High-Speed Rail Corridors in 2008, during the tenure of Lalu Prasad Yadav as the Railway Minister. The change in regime in 2014, further catalysed the process with the Honourable Prime Minister Narendra Modi taking personal interest in the establishment of High-Speed Rail Corridor in India after his visit to Japan and his journey on the Shinkansen Bullet Train, regarded as one of the safest train operations, with an accident free record of 62 years, the dream of establishing the High-Speed Rail Corridor spreading over 10,000 kilometres covering the four important points of the Golden Quadrilateral, further upgrading to Diamond Quadrilateral with speeds up to 320kmph (198 mph) for medium distances. In the case of the Mumbai-Ahmedabad Bullet Train Project, the total distance to be covered by the Bullet Train is 508 kilometres, with 12 stops, with a total investment amounting to Rs.90,000 crores INR. As we draw comparison to the conventional railway network, where the per kilometre track laying cost is approximately Rs. 3 Crore INR in comparison to High – Speed Railway Network with 90% elevation, will amount Rs. 100 Crores INR 200 crores INR per kilometre complementing with technical sophistication of assets such as rolling stock which amount to approximately Rs. 125 Crores against Rs.1.8 crore, the cost of an ALSTOM LHB Coach and Rs. 64 Lakhs for an ICF Coach, making it an expensive affair.

Indian Railways being the vehicle of the common public also faces challenge in justifying the social benefits of the bullet train between Mumbai and Ahmedabad, and the anticipated returns on investments, given the wide variation of the Indian Currency. In order to understand the consequences of the anticipated High- Speed Rail Corridor, the research will employ the use of Cost benefit Analysis to understand the various costs, viz. direct and indirect costs involved in the High-Speed Rail construction.

COST-BENEFIT ANALYSIS

In order to understand the long-term impact of transport, the cost – benefit analysis forms an important tool to assess the direct and indirect effects of a project in the financial and non-financial viz. Administrative and Technical domains, which are important fields of investment in the case of infrastructure projects.

The process involves synthesis and evaluation of the project to strike a socio – economic balance, which would ensure favourable returns on investment. In the case of Indian Railways, the desired Returns on Investment is slated at 14%. The use of Cost Benefit Analysis can be traced back to 1930, when the American Congress recommended for improvement of inland waterways through constitution of flood disposal systems under the 1936 Flood Control Act. In order to understand the benefits of the proposed High – Speed Rail Corridor the methodology will be employed in the research, which will comprise of the following components:

- A. Total Cost
 - (i) Infrastructure Costs
 - (ii) Operating Costs
 - (iii) External Costs

Further in the final step of the method, we shall try to understand the benefit of the project by comparing with the existing railway network in India.

MUMBAI-AHMEDABAD HIGH SPEED RAIL CORRIDOR

The Mumbai – Ahmedabad Bullet Train Project is a 530-kilometre project which intends to operate trains at speeds of 320 kilometres per hour (198 miles per hour). The journey currently takes 8 hours by India’s fastest intercity train Shatabdi Express at a speed of 145 kilometres per hour (90 miles per hour). The High – Speed Rail Corridor is expected to cut the travel time to 2 hours between the two capital cities.

DETAILS OF MUMBAI – AHMEDABAD HIGH – SPEED RAILWAY CORRIDOR

Termini	Bandra Kurla Complex – Ahmedabad
Intermediate Stations	Bandra Kurla Complex, Thane, Virar, Boisar, Vapi, Bilimora, Surat, Bharuch, Baroda Anand, Sabarmati, Ahmedabad
Route length	530 kilometres
Scheduled Train Frequency	20 minutes
Job Opportunity	Approximately 40,000
Ticket Price	3000 – 5000 rupees approx.
Speed	320 kilometres
Estimated Journey Time	2 hours
Maximum Passenger Carrying Capacity	750 passengers
Commencement Date	15 August 2023
Estimated Completion Date	15 August 2023
Project Costs	90,000 crores
Carbon Emission	81,040 tonnes

THE COSTS OF A BULLET TRAIN: THE DIMENSIONS

The Infrastructure costs involve a major part of the project. The train set alone will amount anywhere up to 60,000 crore rupees and the permanent way will cost rupees 100 – 200 crores per kilometre as compared to 3 crore rupees for a conventional track, other infrastructure setup comprises of stations, communication lines, signalling and electrification, safety equipment, etc., The operating costs involve three parts, which involve labour and energy costs, energy and other materials consumed by tracks, terminal, traffic management, safety systems, etc., The bullet train on commencement of operation as per RITES would yield an annual revenue of 2,499 crore rupees annually, while the maintenance costs per day would amount to 1.12 crore rupees.

The overall cost annually as maintenance would amount to 412 crore rupees. (RITES: 2013) There however, remains a trace of scepticism on the external costs involved in the project in terms of the

environmental impact of the project. One of the challenges to the project is that of Tunnel Boom (Rus: 2008) air pollution and global warming, since the production of electricity is dependent on the use of fossil fuel. The High-Speed Rail involves high costs of construction, both internally and externally. On the internal front, the High – Speed Railways would be an attractive substitute to the passengers travelling by road or air.

This is clearly evident in the distances over which the High-Speed Rail Projects are being undertaken. On the environment front as well, the project comes as a win – win situation, as it will enable the railways to boost its electrification programme and immensely cut its dependence on Diesel Locomotives. The railway currently faces a combined expenditure of 28,000 crores on diesel and electric expenditure.⁶ The Railways consumes 300 crore litres of diesel annually, of which every locomotive waste 10 – 25 litres of diesel in the process of idling.

The High-Speed Rail provides an opportunity to switch to a greener source of energy for the railways. It is undeniable that a major part of the electricity produced comes from the thermal plants. Yet, the railways through a complete electrification programme can save the 11,000 crores and channel it to harnessing other sources of energy. In order to manage its energy costs, the Indian Railways has undertaken a number of initiatives, such as procuring cheaper power, improving the efficiency of power utilization, enhancing its renewable energy capacity and engaging in power trade.⁷

Electrification in Indian Railways has been taken up on a large scale with the following objectives:

1. Increase capacity to meet the growing traffic demand
2. Improve cost effectiveness
3. Utilize energy efficient traction
4. Strengthen the organization in the selected operational areas
5. However, over the years, the electrification programme was slow to pick up owing to the financial returns that would be earned.
6. This takes into consideration the traffic density and the cost of operation by Diesel and Electric Traction. The high cost of generation in the case of Electric traction are also another reason behind the slow momentum of electric traction.

CHALLENGES OF HIGH-SPEED RAILWAY IN INDIA

Indian Railways in the recent light of accidents highlights an undeniable fact that while opportunities exist, there are more challenges that surround it despite numerous opportunities, given the nature of Railway administration that dominates the affairs of railways and the fragile financial standing of the railways, though it has been comparatively better than the 2001 financial crisis. There exists a huge barrier between the expert recommendations and political willingness to implement the recommendations of the committees over the years.

Indian Railways has been in desperate need of rolling stock rehabilitation, new locomotives, immediate maintenance of tracks and bridges, which has been a warning sign for the railways right from the 2002 Rafiganj Train Disaster to 2016 Pukhrayan Train Disaster. A brief overview of railway safety post Fatehpur Train Disaster of 2011, the rising trend in train accidents due to failure of rolling stock, locomotives and tracks is strong evidence to growing negligence of the railways towards the existing infrastructure and excessive emphasis on the increment in the rail traffic, which has led to lesser maintenance time and increased stress on the tracks. The lack of maintenance time was very much evident in the Khatauli Train accident. As of 2018, India recorded 74 accidents, which has been a considerable decrease from the earlier 254 accidents. The railways have currently created a lapsable safety fund to ensure safe operation of trains through the Railway Raksha Kosh amounting Rs. 100,000 crores. Some of the operational and technical challenges are discussed hereunder.

Network and Capacity Augmentation

The network is divided into four categories for better management and operational effectiveness:

1. High Density Corridors
2. Feeder Lines
3. Alternative routes
4. Low traffic density routes

High Density Corridors include the four metropolitan cities of the Golden Quadrilateral viz. Delhi, Kolkata, Chennai and Mumbai, including diagonals. This route carries 55% of passengers 65% of India's total railway traffic. The Broad-Gauge forms 70.7% of the total route. The Golden Quadrilateral forms 15.8% of the total network. There however, exists an excess of 56% of the total freight transport and 47% of the passenger traffic. The current golden quadrilateral has been slated to be further upgraded to diamond quadrilateral with the high – speed network measuring 10,000 kilometres in length, with trains operating at speeds of 300 kmph.

High-Saturation Rates

Indian Railways unlike Australia or America does not have dedicated lines to run trains. In the Indian scenario, all trains run on the same line, although, it is anticipated that the much-awaited Dedicated Freight Corridor construction which commenced in 2009 is to be completed by 2019. The current saturation rate as estimated in the 2016 budget stands at 180% compared to previous 120% in 2003

Train Length and Level Crossings

If we are to achieve higher speeds, the aforementioned points form the first crucial element to achieving the goal. This however is not valid in the case of India. When we look at both the criteria, India fails to meet the criteria. Firstly, the train length exceeds 10 coaches (this is ideal for High – Speed Services) while in India the maximum length for the train is 24 coaches and there are close to 100,000 level crossings, which results in speed reduction. The second concern is the location of homes close to tracks and trespassing of tracks, which is another hindrance for the speed increment. The railways has paced up its programme to replace level crossings with Overbridges and underbridges.

Signalling and Communication

Indian Railways has still not achieved modern signalling system. Many sections still rely in the British-Era signalling system and the existing Route Relay Interlocking⁸ systems prone to technical faults and glitches. In July 2015, a major fire at the Route Relay Interlocking Cabin in Itarsi led to cancellation of 50,000 tickets and a loss of 2500 crores. It is just not the fault in the system, but also the financial constraints involved in dealing with glitches of such a magnitude. When compared to the Indian Railways, the Japanese Railways are fully automated, and the trains in Japan are also equipped with automatic earthquake detection system, which halts train operations in situations of earthquakes. The technology upgradation inclusive of infrastructure will cost the Indian railways approximately 17 trillion dollars

High Technology Costs

Currently, railways are facing challenges in the implementation of existing technology when we look at the ALSTOM Coaches or the implementation of ACD on all the 10,500 locomotives. Post 2010 Santragachi Train Disaster, it was estimated to cost the railways a whopping 16 lakh a locomotive as per reports, while on other hand, the high cost per unit coach anywhere between 75 lakhs-1.8 crore rupees per coach the current production is at 4000 coaches annually. The railways aim to switch over to ALSTOM by next year, which would lead to an increment in the speeds of the trains. In comparison to ALSTOM Coaches, the trainsets will cost approximately 125 crores, which is 1.6 times

the cost of ALSTOM Coaches, thus posing a challenge to the ambitious goal of High-Speed Rail Corridor

DOMESTIC AND INTERNATIONAL PARAMETERS

While there exists a common definition of High-Speed rail proposed by the International Union of Railways (UIC), the parameters for classification of trains as High-Speed is dependent on the local conditions of the country. In the present context, when determining the speed of trains, two very critical factors are taken into due consideration, namely the track and rolling stock. When comparing Indian Railways and Japanese Railways, we can find the following differences:

Track

When considering track as one of the many determinants, there exists humungous difference between Indian Railways and Japanese Railways. The Japanese Railways comprises of a standard track measuring 4'8.5" against the multi gauge system of Indian Railways. Since the proposed High – Speed Rail Corridor will be connecting the metropolitan cities, we will consider only the broad gauge, which measures 5'6". Tracks in Indian Railways vary in terms of their speed and weight. Other characteristics, which act as a possible hindrance to the High – Speed Rail Corridor are the curves on the Indian Railway tracks, which again are a hindrance to the high-speeds. As per the Research Design and Standards Organization, the sanctioned speed for trains on curves is 60 kmph and the track joints also inhibit the speed of trains.

Speed

There is also a great difference in speed on the network of railways on the network of Indian Railways based on the gauge and the topographical conditions and the traffic conditions on the lines. In the current scenario, the multi – gauge system acts as a hindrance to the uniformity of speed. The government therefore introduced the uni-gauge system in 1992 in order to promote the broad gauge along the entire network of Indian Railways.

Weight

Weight also plays an important role as it enables the stability of train when passing at speed. The speed of the train is inversely proportional to the weight of the track. The weight of the tracks. Currently two types of rails are being used on the Indian Railways, which are of weights: 60kg/m³ and 52kg/m³ respectively.

Rolling Stock

Rolling stock again plays an important role in determining the speed of trains. When we look at train sets like the Bullet train, they do not have a separate locomotive for powering the train, whereas when looked at the Indian scenario, not just the separate locomotive and coach arrangement but also the total length of the train plays the spoilsport. The total length of a train in India is 24 coaches in the case of passenger trains across all variants. Secondly, India is still operating the old Swiss Technology coaches for a majority of trains despite having entered into agreements with German company Linke Hoffman Busch or LHB Coaches, which are feasible from the safety point of view and greater speeds. Currently Indian Railways is producing only 4000 coaches on an average. After a spate of train accidents, the ministry has decided to completely phase out ICF coaches by 2017 end completely switch over to LHB coaches.

The switch over is concerned with the rising safety concerns and low speeds of ICF coaches. While ICF coaches can achieve a maximum speed of 130 kmph and are telescopic, LHB have a maximum operating speed of 200kmph with an anti-telescopic feature.⁹

Superfast trains as per Indian and International Standards

Given the nature of tracks and rolling stock, the definition for a superfast train also differs across different regions. A superfast train as per UIC definitions is defined as a train which operates at speeds of 160kmph, which is not the case in the Indian scenario. The maximum speed of a superfast train in India has recently been upgraded to 160 kmph with the introduction of Gatimaan Express. Currently, the proposed increment of speeds of trains is slated as follows:

Train Category	Current Speed	Proposed Speed Increase
Express/ Passenger	110 kmph	130 kmph
Rajdhani	135 kmph	145 kmph
Shatabdi	145 kmph	160 kmph
Duronto	130 kmph	130 kmph
Tejas	130 kmph	200 kmph
Garib Rath	130 kmph	130 kmph
Freight Train	75 kmph	100 kmph

CONCLUSION

Having discussed the various dimensions of costs involved in the construction, and the social and environmental costs that complement with the tangible costs that accompany the project, yet it is to be noted that the Indian government has been making sincere efforts in reinventing Indian Railway network through increase in train speeds as was earlier declared by the Railway Ministry in the year 2016, facilitating reduction in the travel time through High-Speed Rail Corridors and also helping the government cut its expenses on fossil fuels such as diesel, which will also enable greener solution through expansive use of electricity, which would help in improving the acceleration and deceleration of the trains and also be a competitive mode of railway transport, competing against the alternative modes such as air and road, which have been giving stiff competition. The High-Speed Rail Corridor is anticipated to help railways gain the lost ground and also generate revenue for the financially deprived organisation and also help improve the passenger traffic. What has been seen in common is that the external actors have been actively involved in the revival of rail transportation taking into consideration the state of affairs of developing countries like India. The participation of countries like Spain, Germany, France, Switzerland, US have been over 70 years old. The train diplomacy has been a growing trend with the coming of the NDA government, which is evident by the fact that 100% FDI have been cleared by the cabinet.

High-Speed Railway though is not impossible a dream, but, it is at this juncture a far – fetched idea by the current government. The International Union of Railways defines Superfast trains as trains capable of running at the speed of 160 kmph, which currently the speed of Gatimaan Express, while a major chunk of Indian trains struggle between 110-150kmph given the length of our trains, which is 24 coaches for a passenger train compared to the maximum length of High – Speed Trains to be 10 coaches, which apart from multi gauges and speed restriction along different sections of Indian Railways. While High – Speed trains operate in excess of 220 kmph (136 mph). It should also be added that we are yet to gain self- sufficiency in production of ALSTOM Coaches introduced way back in 2003, owing to high production costs. Having spoken on the technical feasibility, another domain of contradiction that lies between Indian Railways and Japanese Railways is the nature of top management.

While Japan Railways is divided into seven zones and is a private entity, Indian Railways on the other hand is a government entity operating at the central and zonal level with seventeen zones under the vigilance of the ministry. The railways incur humungous variable costs owing to maintenance of overaged tracks, fuel procurement, water and electricity consumption to name a few. It has been estimated that the railways would need 17 trillion dollars to overhaul its entire network by 2020.

This partnership though brings ample opportunities for innovation of railway technology, at the same time it has led to compromise on crucial rail lines and projects, such as the Dedicated Freight Corridor which awaits completion 9 years after the work first commenced. Indian Railways employs 1.7 million people and is the ninth largest utility employer in the world. It takes 12 years in the Indian scenario to become a full-fledged driver in the Indian Railways. Post the 2011 Kalka Mail disaster, it was pointed out that close to one lakh safety related posts of Signalman, Pointsman, Gangman, Train Engineers remain vacant.

In the light of such instances, the prospects of having a bullet train are remote for the fact, at a time when we are unable to modernize our current training facilities, the setting up of a training school and a longer duration of training would invite further delays to the project. Indian Railways has been in despair need of rolling stock rehabilitation, new locomotives, immediate maintenance of tracks and bridges, which has been a warning sign for the railways right from the 2002 Rafiganj Train Disaster to 2016 Pukhrayan Train Disaster. A brief overview of railway safety post Fatehpur Train Disaster of 2011, the rising trend in train accidents due to failure of rolling stock, locomotives and tracks is strong evidence to growing negligence of the railways towards the existing infrastructure and excessive emphasis on the increment in the rail traffic, which has led to lesser maintenance time and increased stress on the tracks. The lack of maintenance time was very much evident in the Khatauli Train accident. A more detailed look at the inhibiting factors barring aging assets is imperative.

Currently Indian Railways is producing only 4000 coaches on an average. After a spate of train accidents, the ministry has decided to completely phase out ICF coaches by 2017 end completely switch over to LHB coaches. In the year 2000, the Khanna Committee recommended a non-lapsable railway safety fund of Rs.17000 crore (Approx. \$2,324,835,000) was created, of which 12000 crores (Approx. \$ 1,641,060,000) was contributed by the Union Government and 5000 crores (Approx. \$ 683,775,000) was mobilized via safety surcharge.

At the moment, the railway seems to be in the midst of excessive dependence on external actors, without due regard for institutions such as RDSO, further adding to the burdens of the railway and communication gap between opinions and decisions further detoriating the plight of the railways. A closer look at the two reports of the Khakodkar and Pitroda Committee displays the lack of comprehensiveness in the estimates being drawn up. Khakodkar Committee in its list of recommendations does not mention about Human Resources, Organization, Stations or the Dedicated Freight Corridors, while the Pitroda Committee has drawn up an estimate of 1.27 crores (Approx.1.27 billion) for rehabilitation of the stations and 2.4 lakh crores (Approx. \$ 32,808,000) for Dedicated Freight Corridors. Two sectors: Tracks and Bridges and Signalling systems have seen an increase in the investment from Khakodkar to Pitroda committee, which highlights the growing depreciation of assets and the increase in costs for rehabilitation of the fast dwindling assets. The entry of GE, Alstom, Bombardier MNCs who have long been a contributor to the development of the railways, have revived ties with the railways by entering into the field, augmenting the locomotive production and also contributing to the rehabilitation of essential railway assets such as Rolling Stock and Locomotives.

The much-needed track renewal is growing at a sluggish pace. Suresh Prabhu's budget has had a short-sighted target with just 2,668 km per year (1657 miles). This was again increased to 3,600 kms (2236 miles) after the merger of the budget. There needs to be far sighted and sustaining targets for the development of railways. Besides, India should also use this opportunity to understand the best available practices in the field of track laying and also improve the strength of the workforce in order to overcome the staff shortage in crucial departments such as safety if at all India is to progress in the field of Railways.

Lastly, exclusion of conventional lines is by no means a solution to achieving the High-Speed Dream. Rather, Chinese railways should serve as a learning experience for the Indian Railways of striking a balance between the conventional and future High-Speed Railway systems.

ENDNOTES

¹ The speeds of Express/ Superfast trains were increased to 110 kmph (68 mph) in 2004

² Rajdhani refers to air – conditioned high – speed train service connecting the state capital to the national capital

³ Diamond Quadrilateral has been proposed by the present government, which will be 10,000 km High – Speed Rail Corridor

⁴ Shatabdi Express refers to air – conditioned high – speed intercity travel connecting the major metros

⁵ The signalling circuits used on railways are developed in a manner so as to cause the signal to turn red even by a minor displacement, which might be caused by landslides in the Konkan Region, thus preventing derailments

⁶ According to India Today reports, Piyush Goyal has announced complete electrification of the Railway network by 2020 and the phasing out of Diesel Locomotives

⁷ Infrastructure, India. 2017. "Need of the Hour: IR's initiatives to reduce energy consumption." *Indian Infrastructure*, April: 49.

⁸ Bhandari, R.R, Indian Railways – Glorious 150 years.2005. (New Delhi: Ministry of Broadcasting and Information)

⁹ Telescopic refers to the feature of one coach climbing upon another in the event of a collision or derailment

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CSR Practices among Public and Private Sector Companies: A Community Development Approach in Indian context

Manosmita Mahapatra*

ABSTRACT

Business environment today and the higher expectation of the stakeholders demand for good CSR programmes bringing in greater benefits. Besides the key stakeholders such as the Government, investors and customers, community come out as important stakeholders who actually provide the license to the corporate to operate. The companies have already realized that it is the communities surrounding their vicinity that they have to satisfy to maintain their operations. Through good CSR interventions the companies can attract, retain and motivate their employees. CSR practices benefit the community by enhancing their livelihood and increasing their income levels and become corporate citizens. Corporate social responsibility becomes a way of promoting good company practices wherein the private sector is encouraged to be more engaged in social mission. The paper attempts to show the CSR practices across public and private sectors in an Indian context by taking few companies as sample study. The research is carried on by secondary sources of information through the reported information of the company's annual sustainability reports. The results show that the Private sector companies are spending more on CSR and community and in a better strategic manner compared to the Public sectors that basically focus on issue based requirement of the community.

Keywords: Corporate Social Responsibility, Women Empowerment, Community Development.

INTRODUCTION

CSR in India has traditionally been seen as a philanthropic activity and keeping with the Indian tradition, it was an activity that was performed but not deliberated. Hence documentation on specific activities related to CSR is quite less. Although philanthropic, much of their activities had a natural character encapsulated within them. Due to global influence and with communities becoming more active and demanding, there is a discernible trend found in corporate CSR activities that they have gone beyond the community development to more strategic in nature. Hence a large number of companies are now reporting the activities undertaken towards CSR in their official website as annual report, sustainability reports and attempt publishing CSR reports. A single universally accepted definition of CSR, although, does not exist, and vary from author to author, each definition emphasizes the impact that businesses have on society at large and the societal expectation on them. CSR is generally understood as being the way through which a company

* Guest Faculty, Department of Sociology, Ravenshaw University, Cuttack, India
E-mail: manosmita7@gmail.com

achieves a balance of economic, environment and social imperatives (Triple Bottom Line Approach), while simultaneously addressing the expectations of shareholders and stakeholders. CSR needs to address the wellbeing at all stakeholders and not just the company shareholders.

CSR AT PUBLIC AND PRIVATE SECTOR

Public sector has unique competencies to bring maximum contribution to sustainable development through policy and regulatory framework within which business operates (Fox, Ward and Howard, 2002), though many of them are explicitly described as CSR or considered to be CSR enabling. Role of public sector in CSR agenda shows that in different CSR related contexts the role taken by public sector is different. Role of government in promoting corporate sustainability shows setting of vision and goals for the role of business in society, creating framework conditions for the market, fiscal policy especially taxation and promoting innovation (Bell, 2005). In a study conducted by Zadek (2007), a new third generation CSR framework depicting the public sector roles in promoting concept of corporate citizenship, developing market that encourage corporate citizenship, negotiate enforce global principle and goods for business are accountable to civil society.

Role of public sector in CSR agenda in countries other than India shows that public policies to reinforce best business CSR practices where the public sector role is to promote good produce, education advocacy, encourage partnership in supply chains and between stakeholders, provides economic instruments and incentive. Public influence of CSR shows the role of public sector as developing markets that encourage corporate citizenship; CSR receives a higher profile and coordinates across department, promoting partnership and international standards as the basis for business reporting (Aaronson and Reeves, 2002). World Bank in its report (2002) brings out the range of roles that the government can play in providing an enabling environment of CSR covering a wide range of issues related to business conduct, human rights and national economic development. Partnership can also be made as single sector such as strategies alliances between companies and cross sectoral involving government agencies, civil society organizations and private sector business. The later are sometimes referred to as public-private Partnership (PPP). NGOs and UN agencies are concerned that partnerships could threaten their integrity and independence (Visser et al, 2007).

In private companies the innovative, proactive CEO who is convinced of the intrinsic value of CSR treats it as an opportunity to maximize company capabilities and identify new competitive advantage. The CSR strategies in different industries reveal that the CSR threshold varies among the firms depending upon the actions of competitors, cultural environment in which it is operating. Although the value of an effective CSR policy within specific industries and firms is becoming increasingly accepted, the point at which such a policy becomes ripe for implementation varies.

CSR Guidelines and Laws

A comprehensive guidance for companies pertaining to CSR is available in the form of several globally recognized guidelines, frameworks, principles and tools. Most of these guidelines relate to the large concept of sustainability or business responsibility keeping the notion of CSR as the central concern. The guidelines relate to the UN Global compact (UNGC) with an objective to mainstream the adoption of sustainable and socially responsible policies by businesses around the world. The corporate are judged for ethical practices on the basis of The United Nation Guiding Principles on Business and Human Rights, International Labour Organization Tripartite declaration of principles on multinational enterprises and social policy for organizations. The UN Global Impact Self-Assessment Tools is a guide designed to be used by companies of all sizes and across sectors committed to uphold the social and environmental standards within their respective operations.

National Voluntary guidelines on social, environmental and economic responsibilities of business are the guidelines formulated by the Ministry of Corporate Affairs, Govt. of India in 2011, with the objective of providing a distinctive India-centric approach for Indian Businesses, applicable to large and small companies alike. In India, the concept of CSR is governed by clause 135 of the companies Act, 2013 which was enacted by the Govt. on 29th Aug, 2013 and subsequently brought an amendment to Schedule VII of the said Act. Corporate Social Responsibility Rules, 2014 was notified by the Govt. on 27th Feb, 2014. Both the Act and its Rules were to be implemented with effect from 1st April, 2014. As per the act, every company shall have to spend in every financial year, at least 2% of its average net profits made during the three immediately preceding financial years on CSR activities. The CSR committee will be responsible for preparing a detailed plan of CSR activities, for each financial year including the expenditure, the type of activities, role and responsibility of various stakeholders of a monitoring mechanism for each activity. The recommendations of CSR committee are to be approved by the board of the company. After that, it is mandatory for the board to publish its CSR contents, activities or programmes along with expenditure incurred towards each activity during the financial year in its web site or in annual report or even by publishing a special CSR report.

OBJECTIVES AND METHODOLOGY

The business in community concept as given by Albareda (2006) highlights how company interpret the role of business in society and its role in the community development. Pinney (2001) says CSR promotes corporate citizenship which improves the quality of life of local community and enhances stakeholder participation relying on Business-Community Partnership (Lee, 2011). In order to access how the public sector and private sector companies in India undertake their CSR activities and programmes, an attempt has been made to analyze the CSR activities of few companies. The paper has two objectives i.e first, to understand the practices of corporate social responsibility of Private and Public sector companies in an Indian context and second, to study the impact of CSR bringing a significant impact on the community development with special focus on health care, education and women empowerment.

Since CSR initiatives of a company depend largely on its size, location, annual expenditure, CSR policy and activity to be undertaken, stakeholder, the community to be served and it becomes difficult to compare against common indicators. Therefore, keeping in view, the specific CSR activities as recommended in Schedule VII of the Companies Act, 2013, an analysis of 21 companies, 10 from public sector undertakings and 11 from private sector is presented in this paper. The study is carried out by reported information of the company through the analysis of annual sustainable reports. Based on the ranking available in the business journal regarding the quantum of CSR activities the companies were selected to understand the corporate social performance. Table 1 provides the names of the PSUs along with their year of incorporation and field of operation. A state owned enterprise in India is called a public sector undertaking (PSU) or Public sector enterprise (PSE). These companies are owned by the union government or one of the many states or territorial government or both. The companies both public and private are sampled from the published list of top companies practicing CSR in India as found in the Business World Magazine special issue on November 2014 issue. PSUs are categorized into three categories based on their average annual net profit or average annual net worth or average annual turnover such as (i) Maharatna, (ii) Navaratna, and (iii) Miniratna. It can be noted that financial service companies such as nationalized banks are not included in the list. Only those companies which have earned the status of only one of the category out of the three i.e. Maharatna, Navaratna and Miniratna are considered .

Table 1: The Public sector companies and their field of activities

Sl. No	Name of the company	Head Quarter	Year of Incorporation	Field of operation	Status
1	Bharat Heavy Electricals Limited (BHEL)	New Delhi	1964	Heavy Engineering	Maharatna
2	Gas Authority of India Ltd (GAIL)	New Delhi	1984	Petroleum, Refining and Marketing	Maharatna
3	Indian Oil Corporation (IOC)	New Delhi	1964	Petroleum, Refining and Marketing	Maharatna
4	National Hydro-electric power corporation (NHPC)	Faridabad	1975	Electricities power generation	Miniratna
5	National Aluminium Company Limited (NALCO)	Bhubaneswar	1981	Mining, mineral and metal	Navaratna
6	National Mineral Development Corporation (NMDC)	Hyderabad	1958	Minerals and metals	Navaratna
7	National Thermal Power Corporation Limited (NTPC)	New Delhi	1975	Electricity generation	Maharatna
8	Power Grid Corporation of India (POWER GRID)	Gurgaon	1989	Electricity transmission	Navaratna
9	Steel Authority of India Limited (SAIL)	New Delhi	1973	Steel	Maharatna
10	Western Coalfields Limited (Coal India Ltd)	Nagpur	1975	Mining, coals and lignite	Miniratna

Names of 11 companies from the private sector are listed in Table 2 along with their year of incorporation and field of operation. Data related to companies' CSR activities and initiatives were collected from the secondary sources such as companies' own websites, annual reports, sustainability reports and specially published CSR reports. Data related to Long term initiatives/projects were emphasized while few piecemeal CSR activities of different companies were only recorded. It was not possible to include each and every CSR activity of a company. CSR initiatives/projects of the companies were grouped according to the recommendation of the Schedule VII of the Companies Act, 2013 for analysis.

Table 2: The Private sector companies and their field of activities

Sl. No.	Name of the Company	Headquarter	Year of incorporation	Field of operation
1	Aditya Birla Nuva Ltd (ABNL)	Mumbai	1956	Various fields manufacturing

2	Bharati Airtel Limited	New Delhi	1995	Telecommunication service
3	Cairn India Limited	Gurgaon	2007	Oil and Gas Exploration
4	Hindustan Unilever Limited	Mumbai	1933	Consumer goods
5	ITC Limited (ITC)	Kolkata	1910	Various fields manufacturing service
6	Jindal Steel and Power Limited	New Delhi	1952	Steel and Energy
7	Larsen and Tourbro Limited	Mumbai	1938	Various fields manufacturing service
8	Maruti Suzuki India Limited	Gurgaon	1982	Motor car
9	Reliance Industries Limited	Mumbai	1966	Various fields manufacturing and service
10	Tata Steel Limited	Jamshedpur	1907	Steel
11	Tata Consultancy Services	Mumbai	1968	Information Technology

FINDINGS

CSR Initiatives and Projects

As per the requirements of the Company Act, 2013, every company coming under this Act constitutes a CSR committee which is responsible for formulating its CSR policy for particular fiscal year. The committee also identifies the thrust areas to be undertaken and the expenditure to be incurred for each area. The following are important thrust areas that the companies have adopted during the year 2016-17: Healthcare, maternity health care and child, sanitation and safe drinking water; skill building, employment and vocational training; income enhancement and livelihood opportunities; education; infrastructure development; renewable energy; ecology and environment; ethnicity and heritage conservation and Prime Minister National Relief Fund. Out of these, this paper focuses on only three aspects namely health care services, educational initiatives and livelihood generation programmes towards women empowerment. The CSR initiatives and projects are implemented by the companies mostly in collaboration with the government. Other collaborators are the district authorities, the village panchayats, registered NGOs and other likeminded stakeholders and service providers, from whom the companies take help for implementation of their CSR programmes.

Health Initiatives

Health initiatives feature in the top priority list in the CSR activities of all the companies whether public or private. These initiatives include long-term projects as well as piecemeal health supports. It is seen that Project Arogya by GAIL Operates mobile medical units in various villages benefitting 6 lakh villagers. Project Sarjivari by HIJL provides a free mobile medical service camp, near the company's Doom Dooma factory in Assam, provided medical assistance to nearly 2.5 lakh patients covering more than 4000 camps. Indian Oil Sachal SwasthiyaSeva of IOL which is IOL's largest CSR programmes on healthcare to the door step of rural villages through mobile medical units (MMUs)with Kisan Seva Kendras (a network of 6002 Kendras) on a base. Each MMU has a

registered qualified doctor, a pharmacist, a driver and a community mobilizer benefiting 1.5 million patients in 681 villages in 13 districts of the 3 states. Project Sarve Santu Niramaya of (IOL) has a unique project launched in 8 villages in Assam to provide free health consultation and medicines for both human beings and livestock population. During 2015-16, 2035 patients and 25,274 cattle/poultry (including 500 free vaccinations) have been treated. Project MANASI of Tata Steel's maternal and New born survival Initiative project aims at saving lives and treating illness in new born through Home based New born care (HBNC) by the Sahiyaa (ASHA) under the National Rural Health mission. In 2016-17, antenatal care was provided to 14000 women while 15000 infants were immunized. Project Hamrahi and Project Khushi of RIL has clinic of HIV/AIDS for truckers and near by residents of Allahabad for HIV prevention, treatment, care and counseling support started in 2013 at Jamnagar. Whereas, project Dristi has the largest cornea transplant drive for visually impaired in India.

Almost all companies organize their health care services by three methods such as health camps, mobile medical units, health centre and hospitals for the benefit of mother & child, women & rural communities and disabled persons as part of their health initiatives. During the FY 2015-16, L&T organized family planning camps in Mumbai, Pune and villages around Surat benefiting 50,000 women. Over 4300 camps have been organized by SAIL benefiting more than 2 lakh people by providing health check-ups. POWERGRID organized special health clinics for providing maternal and child health care services in 15 villages in backward areas of Haryana benefitting 45,000 villages. Reliance Industries has counseling, antenatal care, child delivery, supply of sterilised and disposable delivery kits. Mobile health van services are provided by CIL to over 250,000 people every year. In association with Ambuja Cement Foundation, POWERGRID is operating one mobile medical unit services covering denizens of 23 villages in remote areas of Nalgarh; 6099 patients were diagnosed and treated during 2015-16. BHEL has provided 4 mobile medical units to Help Age India to operate in the vicinity of remote project sites of its power sector region. NTPC provided mobile medical services benefitting around 60,000 people of 80 villages in 7 locations. 4 Mobile Health units are being operated by the NALIO during 2015-16, in collaboration with Wockhardt Foundation. SAIL has established 7 health centres (Kalyan Chikitsahaya) to provide free medical care including medicines to poor and nearby families. So far, SAIL has established 53 primary health centres, 7 RCH centres, 23 hospitals, 7 specialty hospitals. Tata Steel has hospitals and clinics at Jamshedpur as well as at all its outstations. In 2013-14, the company set in motion the process of establishing two large hospitals - a 500 - bedded hospital at Gopalpur, Ganjam, Odisha near its rehabilitation colony and 200 – bedded at Kalinganagar, Odisha. The Reliance HIV & TB contact centre has catered to more than 78,000 patients, PHCs at Dahej catered to community needs covering 23 nearby villages under the National Rural Health Mission programmes.

Education Initiatives

Education initiatives also feature in the top priority list of CSR initiatives of the companies. Most of these initiatives are in the form of financial assistance to educational institutions and scholarships and awards to students. In comparison to health initiatives, the long-term projects on Education are less. Project Utkarsh of GAIL aims to provide financial help to brilliant students for educational expenses, residential coaching/intensive mentoring for professional studies. 300 beneficiaries so far are benefitted in this project, where 250 non-formal education centres have been functioning in slums of Delhi covering over 26,000 out of school slum children. Project Science on Wheels of L&T brings hands-on science education to the rural masses. In the year 2012, the laboratory traversed the state of Gujarat visiting 41 schools and enriching over 13,500 students. Project Shikshak Datkshyata Vikas Abhiyan of IOC aims to improve soft skills of government school teachers, in collaboration with the district education department of Govt. of Assam. The Airtel's the Satya Bharti

School programme was launched in 2006. Under this programmes (2014-15), 254 Satya Bharti Schools in India were set up, 39534 students were enrolled in schools of which 49% are girl students. An amount of Rs 1,442.94 million was invested in schools and young people were engaged as teachers. The Reliance Dhirubai Ambani Protsahan Scheme (RIL) provides learning opportunities to meritorious students who performed well in SSC (State level) examination, arranges admission to intermediate courses in leading residential colleges, and provides them free education. So far, 1134 students are benefitted. Project Lifting every voice of Children of BHEL provides quality education to children belonging to under privileged/weaker economic sections of the society. 300 children living in settlement colonies of Delhi are taken in the project through 10 integrated learning centres. The children are provided with mid-day meals.

The companies help the needy students with scholarships and awards. Some of the important one's are mentioned below. GAIL Charitable and Education Trust, set up in 2009, awards scholarships to meritorious poor students. Indian Oil Education Scholarship scheme awards each year 50 scholarships on merit – cum – mean basis to SC/ST students. Maruti has instituted Academic Excellence Award for students securing top three positions in 10th and 12th standard examinations. Jyoti Fellowships of Tata Steel are given to nearly 3000 meritorious students from the SC/ST communities across Jharkhand, Chhattisgarh and Odisha. Tata Steel has established 9 pre-primary centres for 487 children in its R&R colonies during 2014-15. Dhirubai Ambani Foundation (RIL) has two scholarship schools i.e.; i) Dhirubai Ambani Undergraduate Scholarship Scheme and ii) Dhirubai Ambani SSC Matric Award Scheme which are in implementation in Maharashtra, Goa, Gujarat, Daman Diu and Dadra Nagar Haveli. The Foundation has also a special scheme that provides assistance to the physically challenged students to pursue graduate courses. The scheme has benefitted about 10,000 students of whom about 2,000 students are physically challenged. Almost all companies provide financial support to educational institutions for infrastructure development, setting up of libraries and laboratories, etc. as part of their educational initiatives. 7 special schools (KalyanVidyalaya) were established by SAIL in 5 Steel plants for under privileged students. In these schools free education, mid-day meals, uniforms including shoes, text books, stationary items, school bags etc. are provided to more than 1500 students. SAIL is providing mid-day meals to more than 22,000 students. ABNL directs its educational initiatives towards creation and support of Balwadin, Aditya Bal Vidya Mandir, Girl child education and non-formal education.

Skill Development and Women Empowerment Initiatives

Skill development and Women empowerment initiatives feature in the top priority list of CSR programmes of the companies. Since both the categories are interdependent, they are considered together in this sub section. Project Swavalanubh of GAIL has multi skill schools in Madhya Pradesh, Andhra Pradesh and Gujarat implanting skill based training in retail, hospitality and facility management in rural youth along with placement support. In the year 2015-16, nearly 2700 youth have been provided training in various fields. In addition, self-employment opportunities have been made available to open 5000 women beneficiaries in trades like embroidery, stitching and tailoring at various locations spread across Uttar Pradesh, Madhya Pradesh, Tamil Nadu and Delhi. Project Shakti of HUL has an objective of financially empowering rural women and creating livelihood opportunities for them. Shakti Entrepreneurs commonly referred to as Shakti Ammas are rural women appointed by the company, educated and trained by the rural promoter about the company products and their utility in day to day life in maintaining health and hygiene. After the training the Shakti Ammas receive the stock of the products at a much reduced price and sell them to a consumer (through home to home selling) which provide their earning and makes them financially independent. A typical Shakti Amma earns around Rs. 1,000/- per month through selling the products. The company tried to increase the number of Shakti Ammas from 45,000 in 2010 to 75,000 in 2015.

Project Kishori of SAIL has a unique project ongoing in the peripheral villages of Rourkela (Odisha), which empowers adolescent girls and women, enhancing their sense of self-worth, making them aware of their rights to various opportunities and resources, right to control their own lives and their ability to bring about the social change at the local as well as regional, national and international levels. Project Udaan of TCS has a joint initiative by the National Skill Development Corporation (NSDC), Govt. of India and Special Industry Initiative to help Kashmiri youth join the mainstream of corporate India. Through this project, TCS endeavors to catalyze the Kashmiri youth connect with Indian Industry, coupled with polishing their skill, making them more employable. L&T has established 8 Skill Training Institutes since its inception in 1995 in Ahmedabad, Bangalore, Chennai, Cuttack, Delhi, Hyderabad, Kolkata and Mumbai which provide skill training as well as employment to the trainees at its project sites. In collaboration with NGOs, L&T provides vocational training to women (so far 4,470 women) across different trades. Through Project Uddyam, 150 underprivileged women were trained, 50% of them have been employed. Through Project Aadhaar, tailoring training was given to 70 women of Damka village, Gujarat (2012-13).

SAIL's vocational training and income generation trades include agriculture, mushroom cultivation, goatery, poultry, fishery, piggery, achar/papad/agarbatti making, welder, fitter and electrician training, sewing and embroidery, smokeless chullah making etc. SAIL instituted training centres for rural unemployed youth, Bhilai Ispat Kaushal Kutir & Swayam Sidhha Project in Bhilai, Skill Development and Self Employment Training Institute in Durgapur, Garment Technical Training in Salem, JHARCRAFT centre in Bokaro and self-employment centre, KIRAN in Kiribunu one mines, Jharkhand. IOC has established Assam Oil School of Nursing in Digboi in 1986, which provides professional nursing/midwifery/ 4-year Diploma courses to unemployed girls of the North East. All expenses of the students during the entire program are borne by the company. So far 334 students have successfully completed the course with 100% placement record. Maruti Suzuki Training Academy, established in 2012, originally meant for the employees, but later registered a vocational training provider with the State of Haryana under the Skill Development Initiative Scheme.

Maruti is currently working with 85 ITIs spread across 21 states to upgrade automobile related trades, which benefitted over 5500 students. In the year 2013-14, Tata Steel trained 200 youth in various vocational trades at its operational sites, which included 27% from SC/ST communities. After the training, most of them were employed. In addition to the technical institutes established at Tamar in Jharkhand and Gopalpur in Odisha, Tata Steel established Samarath Skill Development Centre at Berhampur in Odisha with support of CMC Ltd. NHPC has adopted 13 ITIs (7 in Jammu & Kashmir, 4 in Uttrakhand, 3 in Arunachal Pradesh) through partnership mode as a part of its skill development initiatives. BHEL has conducted 2 programmes of cutting and tailoring, and 3 programmes of beauty culture for women in the year 2015-16 in the nearby villages of Jhansi. 250 women have benefitted from these programmes.

Livelihood and Infrastructure Development initiatives

All the companies undertake livelihood and infrastructure development of different communities as part of their CSR initiatives. Most of these initiatives are specific or piecemeal initiatives, depending upon the specific local needs. Happy homes: Asha Daan and Ankur of HUL where Asha Daan (set up in 1976), is a home in Mumbai for abandoned, challenging children, HIV-positive and destitute, over 400 infants, destitute men and women and HIV positive patients are taken care of in Asha Daan. Ankur (set up in 1993) is a centre for special education for otherwise challenged children at the Doom Dooma in Assam. Model Steel Villages of SAIL shows in order to bridge the gap between rural and urban areas and to provide comprehensive development of both physical and social

infrastructure. 79 villages have been identified for developing these as 'Model Steel Villages' across the country (in 8 states). The development activities undertaken in these villages include medical and health services, education, roads and connectivity, sanitation community centres, livelihood generation, sports facilities etc.

Gyan Jyoti Yojana for Birhor Tribe of SAIL where Bokaro Steel plant runs a project known as Gyan Jyoti to improve the conditions related to poverty, illiteracy and lack of socio-political awareness of Birhor community, a primitive tribal group (a tribe on the verge of extinction) in Jharkhand since 2001 under its CSR initiative. ITC e-choupal: Recognizing the various challenges faced by the farmer, the ITC e-choupal was designed to provide a 360-degree intervention to trigger a virtuous cycle of higher farm productivity, higher income and enlarged capacity for farmer risk management. E-choupal covers 40,000 villages benefitting 4 million farmers. Project ArhadGram of BHEL has supported the project in 25 villages of the backward district of Murgar in Bihar with 4 objectives such as dairy development, bio-mass fuel, women health and hygiene, food processing and preservation. SAIL has provided access to over 75 lakh people across 435 villages across the country since inception by constructing, repairing of roads and construction of foot cross over bridges. To empower farmers of Patamda, a market yard was set up in Jan, 2014 by Tata Steel to provide options to aggregate and market the agriculture produce at a fair price. Tata Steel supported about 800 Self Help Groups with 9700-plus women, predominantly from economically challenged families in 2013-14 assisting the women to set up small business units for handicrafts, vermi composting, tamarind cake and pickle making, mushroom cultivation etc.

CONCLUSION

The findings on the CSR practices of both the public and private undertakings in India reveal that all the companies attempt to implement their CSR practices more or less in line with the recommendation of the Companies Act, 2013 and publish in their annual reports. Besides the long-term projects/initiatives undertaken by the companies, they incur expenditure on specific activities depending upon the local requirements on piecemeal basis. It has become difficult to analyze the details of the particular CSR activities undertaken by the companies along with the expenditure incurred by them on those activities, because many of them (except few PSUs) do not declare the same in their websites or sustainability reports. They briefly mention their thrust areas as outlined in Schedule VII of the companies Act, 2013. As per requirement of the Act, they should have provided the details of the CSR activities undertaken during the financial year. The companies have various CSR activities but this paper concentrates mostly with health care, education initiatives and women sustainability livelihood.

When seen individually, 7 PSUs namely, i) Bharat Heavy Electrical Limited, ii) GAIL (India) Ltd., iii) Indian Oil Corporation, iv) National Thermal Power Corporation Limited, vi) Power grid corporation of India and vii) Steel Authority of India Limited report their CSR projects/initiatives elaborately with occasional mentioning of the expenditure incurred. Among the private undertakings 5 of them namely, i) Hindustan Unilever Limited, ii) Larsen and Toubno Limited, iii) Reliance Industries Limited, iv) Tata Steel Limited, and v) Tata consultancy services have provided elaborate reports of their CSR projects/initiatives.

As per requirement of the Act, 2013, the companies are to be assessed towards the impact of their CSR activities by a third party, but most of the corporate have not reported anything regarding this. ITC Limited is the only company in this survey that has reported the impact studies which were conducted in depth during 2013-14. There are few recommendations in the Schedule VII of the companies Act, 2013, which attracted less attention of the companies. Few of them are, i) setting up

old age homes, day care centres and such other facilities of senior citizens, ii) protection of flora and fauna, iii) animal welfare, iv) measures for the benefit of armed forces veterans, war widows and their dependents. These areas of social importance remains neglected and companies have a major role to attend on these areas. Private companies are more strategic in their approach towards CSR practices compared to Public sector.

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Role of Industry in Shielding the Environment: Insights from 2019 CII Conference on Sustainability

Srirang K. Jha*

ABSTRACT

This article is based on a report on Conference on Sustainability organized by Confederation of Indian Industry (CII) in New Delhi on 28 June 2019. The distinguished delegates of the conference deliberated on a range of issues such as diminishing water tables, excessive use of plastics in packaging, need for augmenting resource efficiency, and low carbon mobility for future cities. The panel of speakers included Dr Jitendra Das, Director, Fore School of Management; Mr Sundeep Gupta, Vice Chairman & Managing Director, Jakson Group; Mr S S Acharya, Managing Director, Mott Macdonald India Pvt. Ltd.; Mr A P Abraham, Head, Operations, Continental Carbon India Ltd.; Mr Manoj Pande, Managing Director, Statcon Energia Pvt. Ltd.; Mr Santanu Gupta, Chief General Manager (AE & SD), Indian Oil Corporation Ltd.; Mr Anuj Khanna, Managing Director, C&S Electric Ltd.; Mr Sandeep Singh, Chief Executive Officer, Shuddhoday PMPL; Mr Dheeraj Verma, Associate Vice President & Head, Environment, Health, Safety & Sustainability, JCB Ltd.; Mr Jeevraj Pillai, Joint President, Packaging & New Product Development, Uflex Ltd.; Mr Saroj Banerjee, Chief, Environment, Tata Steel BSL Ltd.; Mr Jajib Rahman, Vice President, Corp HSE & Sustainability, Sterlite Power; Mr Prabhat Kumar, National Program Manager (Technical), Energy Efficiency Services Ltd.; Mr Neeraj Kumar Singhal, Director, Semco Group; and Mr Inshu Minocha, Principal Consultant, Steer Group India among others. This incisive report may be quite useful for practising managers while planning sustainable development initiatives.

Keywords: Environment, Sustainability, Resource Efficiency, Low Carbon Mobility, India

Confederation of Indian Industry (CII) organized Conference on Sustainability on 28 June 2019 in New Delhi to reaffirm the role of industry in fostering environmental sustainability. The distinguished delegates of the conference deliberated on a range of issues such as diminishing water tables, excessive use of plastics in packaging, need for augmenting resource efficiency, and low carbon mobility for future cities.

Mr Sundeep Gupta, Convenor, CII WUP Core Group on Sustainability and Vice Chairman & Managing Director, Jakson Group, emphasized the need of water conservation, in his welcome address. Mr Gupta observed that every drop of water at home or shop-floor should be

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conserved and recycled wherever possible. He said that the companies should make concerted efforts to reduce water requirements factories and other commercial establishments. Mr Gupta also reiterated the need to reduce plastics in packaging to the extent possible and look for creative and innovative alternatives in packaging. Joining the chorus on water conservation, Mr Santanu Gupta, Chief General Manager (AE & SD), Indian Oil Corporation Ltd., shared how Indian Oil was conserving each drop of rain water in most of its refineries and sales outlets.

Speaking on the occasion, Mr Manoj Pande, Managing Director, Statcon Energia Pvt. Ltd. observed that pollution in high measure is caused by overuse or misuse of energy. He said that all the stakeholders should collaborate in order to make electricity network sustainable in the long run. He also reiterated that there was an urgent need for adoption of nuclear, solar and wind energy to meet burgeoning energy demands of an aspirational country –India. He lamented that in spite of advanced technologies in place, the country has failed to harness full potential of solar power. Aside the governmental apathy, people need to conserve energy both at home and workplaces out of their own volition so as to avert any serious energy crisis in future, Mr Pande added.

Dr Jitendra Das, Director, FORE School of Management, highlighted some of the acute challenges in sustainability i.e. carbon footprints and ecosystem stating how eco-systems work while remaining interconnected and dependent on other ecosystems, while chairing the session on ‘Resource Efficiency –Linear to Circular Economy for Indian Manufacturing: Challenges and Opportunities’. According to Dr Das, any by-product of one ecosystem in nature is used by another ecosystem; anything which is a waste for one ecosystem is a reasonably good input for another ecosystem –an example of circular economy. Recycling things implies bringing back to itself even small components as well; if it is not possible for a business entity to entirely eliminate carbon emission, they should start buying out carbon credits, observed Dr Das. He asserted that the traditional model of reuse, recycle and reduce is not enough anymore to achieve sustainability goals in the industry. Further, he vociferously advocated the urgent need for up-cycling, down-cycling and closed loop. Policymakers should incorporate the circular economy to ensure that the sought goals are achieved, Dr Das added.

Mr Dheeraj Verma, Associate Vice President & Head, Environment, Health, Safety & Sustainability, JCB Ltd., said that protection of environment should be the prime objective of all as it is the natural component of the earth where air, water, land, soil, flora, fauna are all interrelated. Sustainable development has to be planned in such a manner that meeting the need of the present can be done without compromising the ability of future generation to meet their needs, he added. Mr Verma also talked about circular economy which minimizes waste and optimizes resources during production and consumption through closed loop material flow while linking the independency on virgin resource extraction and generation of waste at all stages including pollution. He observed that the industry needs to move away from the current linear economy process where extract, produce, consume and trash happen with little or no attention vis-a-vis pollution to a *circular economy* with focus on how can we consume goods and services and yet not depend on extraction of resource and ensure closed loops that prevent the eventual disposal during and after the production process.

Mr Saroj Banerjee, Chief, Environment, Tata Steel BSL Ltd. highlighted the eco-friendly technologies used in his company. He stressed upon his organization’s aggressive sustainability goals in waste management including minimizing of CO₂ emissions by 2025 by utilizing 100% blast furnace slag in cement production and avoiding fugitive air emissions during transportation. Mr Banerjee mentioned that TATA Steel is the 1st Indian company to implement an internal carbon pricing in the financial appraisal of the capital project.

Mr. Sandeep Singh, Chief Executive Officer, Shuddhoday PMPL, spoke about various ways and means of water harvesting and water treatment and the hydrological cycle, affecting the environment and the effect of which is already being faced by the country. Mr Singh emphasized the importance of water and how its pollution is putting civilizations in danger. He suggested acceleration of water treatment facilities and making sure that everyone shares the responsibility of saving the water resources.

Mr Jeevraj Pillai, Joint President, Packaging & New Product Development, Uflex Ltd., observed that only 10% waste is recycled successfully in India, of which – 30% in land fill; 20% dumped, 35% littered in the environment as compared to Sweden where 67% waste is recycled. Incidentally, one of the most successful countries in managing waste has been Belgium (95%) with a goal to achieve 'Zero Waste', he added. Mr Pillai, also elaborated on the current scenario of reduction in carbon emission using PNG, reduction in VOC emission by using energy curing systems like E-beam, LED Curing and using water based link and use of incineration – one of several waste-to-energy technologies and other high-temperature waste treatment systems where materials converts the waste into ash, with energy recovery in the process. However, efforts are inadequate with regard to colossal waste disposal problem faced by India, Mr Pillai stated.

A Knowledge Paper was also released on the occasion by CII in collaboration with Mott Macdonald. The Knowledge Paper has research-based incisive readings carbon accounting; Energy: Clean, Green and Credible; Reducing Carbon Footprint through Energy Efficiency; Sustainable Management of Water; Circular Economy: Embedding Circularity in the Infrastructure Asset Life Cycle; Future Mobility and Economic, Social and Environmental Well-being; and Linear to Circular Economy for Indian Manufacturing.



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