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SOCIAL IMPACT OF GLOBALISING TRANSPORT SERVICES: THE CASE OF INDIA

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SUMMARY

In an emerging economy like India, transport services play a crucial role in boosting economic growth and facilitating trade. An efficient transport sector reduces the cost of transportation and thereby contributes directly to a country's international competitiveness. This sector acts as an economic catalyst by opening up new market opportunities, moving products and services with speed and efficiency. India is trying to develop as a global outsourcing hub and the quality of the transport network not only has direct implications on the inflow of foreign direct investment (FDI) but also on prompt just-in-time deliveries. It increases welfare of the population through increased accessibility and connectivity. Lower transport cost enhances labour mobility and people-to-people contact. Improvements in transportation facilitate geographical specialization that increases productivity and spatial interactions and encourages competition by widening the potential market for a given product or service. A wider array of goods and services becomes available to consumers through competition which tends to reduce costs and promote quality and innovation. Investments in transport infrastructure contribute to poverty reduction through increased access to economic opportunities in the form of job creations and by making goods consumed by poor people more affordable.

Prior to 1991, government was the main provider of transport services in India due to the requirement of large-scale investment, long gestation periods, uncertain returns, and public good nature of such services (consumer protection, welfare and equity). Although there was investment in transport infrastructure during that period, the prolonged government monopoly led to monopoly-induced inefficiency and low productivity. In the 1990s, when India embarked upon an ambitious reform programme, trade volumes increased and the existing transport infrastructure was not adequate to handle it. Also, the government funding could no longer support the growing need for transport and the sector was gradually liberalised to attract private/foreign investment. Thus, liberalisation and reforms in transport services became an integral part of the overall reform programme. Increase in trade volumes also led to considerable pressure on the operating environment of the existing transport infrastructure forcing it to adopt new, improved and more reliable technology. The objectives of liberalisation were to reduce the demand-supply gap, improve efficiency and productivity, modernise the transport infrastructure by upgrading technological and skills and enhance connectivity and access for poor. Various measures have been taken by successive governments to encourage private participation. These include different public-private partnership models, allowing private sector to collect user charges, tax concessions and other fiscal incentives, etc.

This paper analyses the liberalisation of transport services in India, emphasising on the social impacts. Four different modes of transport are discussed namely – road transport, railways, maritime transport and air transport. The structure of the paper is as follows: Section 1 presents an overview of the transport sector in India, emphasising on liberalisation and recent trends and developments. Section 2 discusses the social impacts of liberalisation/globalisation. Section 3 highlights the issues and concerns and suggests policy measures that would enhance the productivity, efficiency and global competitiveness of transport services in India and enable the government to achieve the social goals.

1. An Overview

India is now one of the fastest growing economies in the world. Prior to 1990s, it was a closed economy with a low rate of growth. During this period, the government had a monopoly in key transport sectors such as air transport, highways and railways. In 1991-92, the country faced a severe balance of

payment crisis. To stabilise the economy a series of reforms and liberalisation measures were undertaken. This restored macroeconomic stability. Between 2003/04 and 2007/08, India experienced a high growth rate averaging 8.8% a year. With the global slowdown, the Indian economy also started to slow down from the mid-2008. The growth rate was 7.1% in 2008-09 and it is predicted to further reduce to around 5% in 2009-10.

Post-liberalisation, India's GDP growth and international trade have been primarily driven by the service sector. From 41% in 1990-91, services now contribute to around 60% of the country's GDP and organized sector employment.[1] Between 2002-03 and 2006-07, services contributed 69% to India's overall GDP growth[2]. It has the largest share in the FDI inflows – over 28% of the total FDI inflows between January 2000 and November 2008. Trade in services as a percentage of total trade increased from 20% in 1995 to 30% in 2007. Services exports as percentage of total exports have more than doubled since 1995. Unlike in goods, India enjoys a favourable trade balance in services. Before 1995, India was a small player in the global trade in services. In 1995, among WTO member countries, India ranked 34th and 28th respectively in commercial services export and import which improved to 9th and 12th respectively in 2008.[3] India's share in the world services exports and imports was around one per cent respectively in 2000 which increased to around 2.7% for exports and 2.3% for imports in 2006.[4] Over the years, India has created a niche for itself as an exporter of commercial services, especially knowledge-based services. In recent years, India's export of commercial services has increased at a much faster rate than the world's average.[5] India needs investment and technology in certain services such as transport services, energy and telecommunication, and the government is providing various incentives to attract private/foreign investment.

Transport sector contributes significantly to India's GDP (around 6.4% in 2007-08), employment (around 40 million people)[6] and FDI inflows (Table 1). Within transport, road transport is the dominant mode of transport accounting for over two-thirds of the total contribution of the transport sector to the GDP. India's international trade has increased almost 9 folds since 1991 creating a huge demand for all types of transport services. It is estimated that if the Indian economy grow at around 7-8% on an average the transport demand will grow by 10% annually.[7] The overall logistics market is estimated to reach over US$125 billion in 2010.[8]

Table 1. **Cumulative FDI Inflows: April 2000 to January 2009**

S. No.	Sector	Amount of FDI Inflows		% to total FDI Inflows
		(in Rs.)	(in US$)	
1	Construction Activities	213 595.12	5 029.01	6.07
2	Automobile Industry	146 799.41	3 310.23	4.17
3	Ports	63 290.50	1 551.88	1.80
4	Sea transport	17 653.81	402.59	0.50
5	Air transport (including Air Freight)	10 552.19	240.71	0.30
6	Earth-moving machinery	5 749.34	134.22	0.16
7	Railway related components	3 281.85	75.11	0.09
Total Inflows		**460 922.2**	**10 743.75**	**13.09**
	India's Total FDI Inflows	**3 517 309.64**	**81 010.57**	

Source: DIPP (2009), Fact Sheet on Foreign Direct Investment - From August 1991 to January 2009, January 2009, Government of India.

With the increase in demand, the transport industry is undergoing structural changes and modernisation. Bulk cargo is being replaced by containerised cargo and multimodal transportation has developed. Companies are now providing integrated logistic services and the use of EDI (electronic data interchange) and IT (information technology) has improved the operational efficiency of this sector. There has been decline in obsolete assets, improvements in self-financing capacity of the sector and commercial management of transport assets and operations. Use of sophisticated technology requires integrated service providers who can provide services across the value chain and skilled personnel. The fragment market in certain segments such as trucking is gradually becoming consolidated. With development of logistic industry and just-in-time deliveries, the share of traffic by different modes of transport has changed. The share of road transport for both passenger and freight traffic have increased while that of railways have decreased. The share of road transport has increased from 50 per cent of freight traffic and 80 per cent of passenger traffic in 1990-91 to 65 per cent of freight traffic and 85 per cent of passenger traffic respectively by the end of 2006-07.[9]

Liberalisation in the 1990s brought about a change in the transport policy. From a social sector, transport is now treated as an economic sector which will facilitate growth and poverty alleviation. The government's role gradually changed from a direct provider to a facilitator. To ensure that the services are made available to all consumers at affordable prices, the government adopted a cautious approach to privatisation. As a result, reforms were undertaken in a phased manner. Post-reform, foreign participation in terms of FDI and technology inflows increased. Due to the quasi-federal nature of governance, the central, state and local governments regulate the transport sector. The central government is responsible for railways, national highways, major ports, international shipping, civil aviation, and inland waterways. State governments are responsible for state and rural roads, minor ports and coastal shipping, inland water transport, urban transport and trucking, intercity bus services, etc. In many areas such as rural roads the state government work closely with the local/municipal bodies and the central government.

Recent changes and developments in different types of transport are discussed below:

1.1. Road Transport

India has the second largest road network in the world (after the Unites States). The network increased from around 2 million kms (kilometers) in 1990-91 to over 3.3 million kms in 2007-08. The total number of registered motor vehicles increased from 2.13 million in 1991 to 72.7 million in 2004.[10] The national highways/expressways, which connect different states, constitute only 2% of the country's total network while state highways constitute around 4%. The remaining network is covered by rural roads and district roads. The national highways carry about 40 per cent of the total traffic.[11] Many national highways are two-lane and are not linked to the major economic centres. On an average, a commercial vehicle in India runs at a speed of 20 miles per hour (mph) compared to over 60 mph in the mature logistics markets of Western Europe and the US.[12] To enhance the capacity of the national highways, the National Highway Act 1956 was amended in 1995 to encourage private participation. In 1998-99 the government launched the National Highway Development Project (NHDP) which comprised of 5 846 km of Golden Quadrilateral (GQ) connecting four metro cities, 7 300 km of North-South and East-West corridors and 1 133 km of port connectivity and other projects at an investment of US$12 billion. Innovative methods of financing through BOT (build, operate and transfer), annuity based BOT and SPV (special purpose vehicle) was adopted to attract private sector. The FDI regime was liberalised to attract foreign investment and FDI up to 100% is now allowed through automatic route in all road development projects, including construction and maintenance of roads, highways, bridges and tunnels; in all sub-sectors of road transport, namely passenger, freight, rental of commercial vehicles with operators, maintenance and repair of road transport equipment and supporting services; and in all sub-sectors of services auxiliary to all modes of transport, *i.e.* cargo handling services, storage and warehousing, freight transport agency and other services. Private sectors have been allowed to collect user charges, they have

been given incentives in the form of 100 per cent income tax exemption for a period of 10 years, cheaper loans, duty free import of road building equipment and machineries, allowed to develop rest areas along the roads entrusted to them, among others. With private and foreign investments, the total length of national highways increased from 16 200 thousand kms in early 1990s to 66 754 thousand km in 2007-08. To meet the funding requirements of all categories of roads, the government created a Central Road Fund and levied an excise tax on petrol and high-speed diesel. Fifty per cent of this duty is allocated to rural roads and the rest to national highways and other roads.

While private sector has shown an interest in investing in national highways, they have shown less interest in investing in rural roads and roads in inaccessible areas such as hilly states where the investment is not profitable. In these areas, the government supports the road development projects through various programmes/schemes. In India, 70 per cent of the population live in villages and the country has around 661 000 villages. The rural road network consists of district (zilla parishads) roads, village panchayat roads and community roads, with total length of around 2.7 million kms. Although the existing network is extensive, about 40 per cent of the villages are not yet connected with all weather roads to market centres and main road networks. Also there is a wide disparity in connectivity between states. In order to give a boost to rural connectivity, a rural road development programme - *Pradhan Mantri Gram Sadak Yojana (PMGSY)* was launched by the government in December 2000. The primary objective of the PMGSY is to provide connectivity to all the eligible unconnected habitations of more than 500 persons in the rural areas (250 persons in the hilly and desert areas) by good quality all-weather roads by 2007. It is funded from the Central Road Fund and through borrowing from domestic financial institutions and funding agencies. In 2005, this programme became a part of the *Bharat Nirman* Programme, in which the central, state and local (panchayat) governments work together to modernise India. Along with new roads, upgrading the existing rural network is a part of this programme. To develop the backward region, such as the northeast, the government is coming up with programmes that will connect state and district roads to national highways and state capitals to district headquarters and remote places. In the 11th five-year plan (2007-12), the government aims to consolidate the existing road network and integrate the state highways and district roads with the rural roads.

The road freight transport industry is highly fragmented. Transporters with fleets smaller than five trucks account for over two-thirds of the total trucks owned and operated and 80 per cent of the total revenue.[13] Only 15 per cent of the domestic logistics providers are in the organised sector. The small truck operators are mainly engaged in haulage function and are depended on a large number of intermediaries (brokers, booking agents, etc.). This sector has a huge employment potential at low skill levels. With liberalisation, the sector is becoming organised and the market is becoming consolidated. Integrated logistic providers have reduced the requirements for intermediaries and the skill levels are increasing. Better road conditions facilitate the use of multi-axle vehicles which are gradually replacing the single-axle vehicles/trucks. In the past, passenger transport was a government monopoly but post-liberalisation private players have been allowed to enter this segment and the share of government is declining.

It is predicted that with the growth of population and economic development, both road freight and passenger volume will grow. It is estimated that the road freight industry will grow at a compound annual growth rate (CAGR) of 9.9 per cent from 2007-08 to 2011-12.[14] Various studies[15] have forecasted that this sector will attract large foreign investment in the near future.

1.2. Railways

Indian Railways (81 511 route kilometre) is the world's fourth largest rail network and the second largest in Asia. It is the world's fourth largest freight carrier. It accounts for about 1.2 per cent of GDP and employs about 1.4 million people (in 2006-07) directly. It is the principle mode of transport for inland

bulk cargo and long distance passenger traffic. It carries more than 13 million passenger and 1.25 million tonnes of freight every day.[16]

Railway is one of the few sectors in which the government still has a monopoly. With liberalisation, the demand for value-added transport services increased and the railways faced capacity constraints in high-density corridors and suffered from monopoly induced inefficiencies and maintenance backlog. Moreover, railways increased the freight rates to subsidise passenger transport. This led to the shift in freight traffic from rail to road transport. Post-liberalisation there was also a shift in passenger traffic from railways to the airlines, especially no-frill private airlines. Also, higher freight charges for commodities like petroleum, steel and cement increased the cost of production and affected India's global competitiveness. In the 1990s and early 2000, railways took various measures to rebalance tariff and involve private sector in non-core activities. However, the sector continued to be supported by budgetary grants and suffered operational losses.

In 2005-06, the Ministry of Railways formulated an integrated modernization plan for 2005-2006 to 2009–2010 to upgrade the operations (both passenger and freight services) to global standards. The total expenditure is estimated to be US$5.5 billion. Some of the important incentives in which private players are allowed to participate through the PPP (public private partnership) route include operating container train on designated route; developing rail-side warehouses, logistic parks, budget hotels, etc.; strengthening railways-port connectivity; developing dedicated freight corridors; among others. Non-core activities such as product manufacturing have been opened up for FDI and corporate management has been introduced. After these measures, Indian railways recorded an impressive growth. In the last four years, railway has generated a cumulative cash surplus before dividend of US$ 16.94 billion. The operating ratio of railways has improved from 83.72 per cent in 2005-06 to 78.68 per cent in 2006-07 and it is expected to come down further.[17] There has been an increase in the freight and passenger traffic. In 1990-91 the freight traffic was around 3.3 billion tonnes which increased to 7.9 million tonnes in 2007-08 due to improvement in service quality and increase in route length. In future, private investment in this sector is likely to increase due to the PPP initiatives. The government has already signed various agreements with companies from countries such as Japan, Russia, Germany and France for high-speed passenger corridors, manufacturing, consultancy services, etc.

1.3. Air Transport

Air transport is the fastest mode of transport for long distance passenger and high value cargo. Post liberalisation, with development of services (financial, telecommunication, IT, etc.) and growth in exports of gems and jewelleries, pharmaceutical, etc. this sector has witnessed a rapid growth. According to International Air Transport Association, India has one of the fastest growing aviation industries and the country's rank has improved from 9th position in world's aviation market in 2006 to 12th in 2008. The market grew at a CAGR of 18 per cent and was worth US$5.6 billion in 2008. Indian carriers currently have a fleet size of 310 aircrafts.[18] Passenger (domestic and international) traffic has almost doubled between 2004 and 2007 while cargo traffic increased by 33.8 per cent between 2004-05 and 2007-08.[19]

The air transport sector has been liberalised in a phased manner. In 1994, the monopoly of government in airline operations ended and private players were allowed to enter the market. In 2007, private operators catered to nearly 82 per cent of the market. Competition among private operators brought down prices and no-frill airlines made air travel affordable for a large number of people. The number of domestic passengers availing private air services (both scheduled and non-scheduled) increased from 15 000 in 1990 to 35 163 in 2006-07.[20] Important policy changes include open sky policy for cargo, Indian private airlines are allowed to fly on designated international routes, among others. There are, however, some FDI restrictions on ownership by foreign airlines. With the growth in demand, airports started facing capacity constraints and the government is now encouraging private investments in

development and maintenance of airport. For Greenfield airports, up to 100 per cent FDI is allowed through the automatic route while for others, clearances are required beyond 74 per cent. FDI up to 100 per cent is allowed in ground handling services (74 per cent through automatic route), in maintenance and repair, flying training institutes and technical institutes. Private developers are allowed to set up captive airstrips and general airports 150 km away from an existing airport and they can avail 100 per cent tax exemption for airport projects for a period of 10 years.

The global slowdown and high fuel prices has adversely affected the growth of the Indian aviation industry. However, the government has focused on upgrading the infrastructure. The Vision 2020 statement announced by the Ministry of Civil Aviation[21] projected that there will be investment opportunities of US$110 billion in the Indian civil aviation sector (US$80 billion in new aircrafts and US$30 billion in development of airport infrastructure). Air cargo traffic will grow at over 11.4 per cent per annum and will exceed 2.8 million tonnes by 2010.[22]

1.4 Maritime Transport

India is strategically located in the global shipping routes and has a long coastline which makes it an important maritime nation. Maritime transport caters to 95 per cent of the country's trade in terms of volume and 70 per cent in terms of value. India has 13 major ports which are regulated by the central government and 187 minor ports which are under the jurisdiction of the state governments. Major ports handle over three-fourth of the sea borne traffic. The quantity of cargo handled and container traffic in the major ports has increased from 152.6 million tonnes and 7.9 million tonnes in 1990-91 to 519.1 million tonnes and 92.13 million tonnes, respectively in 2007-08.[23] In India, coastal shipping and inland water transport are very limited. Apart from ports and shipping, the maritime sector also consists of other facilities such as shipbuilding, ship repair and maintenance, training of seafarers, etc. India is a global supplier of seafarers and accounts for around 6 per cent of the world's seafarers.[24]

With increase in trade during the post-liberalisation period, it became necessary to enhance the port capacities. FDI up to 100% is now allowed in port development projects (construction and maintenance) and private players are offered other incentives such as 100 per cent income tax exemptions for port development for a period of 10 years. In the shipping sector, foreign ships calling at Indian ports no longer require a license for overseas trade. The cargo reservation policy has been relaxed to allow foreign vessels on a case-by-case basis.

It has been estimated that the cargo handling capacity of the Indian ports will increase to 1 855 million tonnes by 2012 with an investment of about US$20.61 billion (over 60 per cent of this will be from the private sector). Indian ship building industry accounts for 1.7 per cent of the global ship building market. The share is expected to increase to 15 per cent by 2020 and this industry is expected to grow at 30 per cent CAGR to US$22 billion in 2020 from around US$3.7 billion at present.[25] Indian shipping companies have a large number of obsolete vessels. Large companies such as Shipping Corporation of India[26] are making huge investment in ship purchase.

2. Social Impact of Liberalisation

It is often argued that while liberalisation and globalisation provide opportunities for developing countries to integrate with the global market and attain a high growth rate it may be accompanied by social inequalities. Since independence, Indian policy makers have been concerned about inequalities and, therefore, followed a socialist model with low growth rates. From the mid-1980s, the government gradually moved towards market-oriented reform policy and the pace of reform accelerated in the 1990s. The focus of the policy was a shift from direct state intervention to government as a facilitator for more equitable distribution of benefits of liberalisation, privatisation and globalisation. It was believed that

benefits of high growth rate will trickle down to the poor. However, whether or not the country has actually achieved this objective is widely debated. Some studies such as Sen and Himanshu (2005), Banerjee and Piketty (2001) and Jha (2004) have shown that inequalities have increased while others such Bhalla (2003) have shown that inequalities have declined in the post-reform period.[27] Overall, the official data shows that people below the poverty line have declined in the post-reform period.

Increase in trade volumes in the post-liberalisation period created a huge demand for transport infrastructure. With liberalisation, private investment in this sector increased manifolds which have complemented the government initiatives in reducing the demand-supply gap in the transport sector. The social impacts of liberalising the transport sector are discussed below:

2.1. Better connectivity to domestic and international markets and increase in income

Connectivity to urban markets and trade centres are crucial for increase in income and poverty reduction. The NHDP is in the process of connecting the major urban and trade centres (ports, etc.) of India. Between 2000 and 2005, about 11 per cent of unconnected habitations were provided connectivity under PMGSY and other schemes. These roads are now being linked to national highways providing opportunities to farmers to access international markets. In the absence of proper road connectivity, farmers in remote areas often find it difficult to sell agricultural goods in bigger markets located at a distance from their village. They have to sell their agricultural products to the middlemen and due to a large number of intermediaries they often get a low price for their products while consumers have to pay a high price. Also, due to the lack of connectivity they do not have access to farm inputs as and when required. Poor connectivity along with lack of cold storage facilities leads to wastage. In India, 5-7% of food grains and 25-30% of the fruits and vegetables get wasted in the supply chain.[28]

The rural roads have facilitated access of farmers to the markets and reduced wastage. Farmers are now more informed. A study (Fan *et al.* 1999)[29] carried out by the International Food Policy Research Institute has revealed that an investment of Rs 1 crore in roads lifts 1 650 poor persons above the poverty line in India. Binswanger, Deininger and Feder (1993)[30], in a study of 13 states in India, found that investments in rural infrastructure lowered transportation costs, increased farmers' access to markets, and led to substantial agricultural expansion. Better roads also lowered the transaction costs of credit services, resulting in increased lending to farmers, higher demands for agricultural inputs, and higher crop yields. *Impact Assessment of PMGSY* in the state of West Bengal[31] found that it has significant forward and backward linkages. Improved linkages with the markets and reduction in transportation cost have led to an increase in accessibility and use of chemical fertilizers and pesticides. Poultry production, for commercial dairy purpose, has increased due to better accessibility to markets. In some habitations, poultry industry started only after road connectivity was established. The study also found that in some places there were changes in the cropping patterns from food crops to cash crops.

To help the farmers to connect to the markets for their goods, Indian Railways have plans to invite private players through PPP to develop agricultural outlets/agri-retail hubs, cold storage houses, multi-purpose warehouses and logistic parks in the surplus land of the railways. It also plans to develop cold storage and freezer containers at stations so that farmers don't have to travel long distances in search for market. These measures will help to reduce wastage in the supply chain and increase farmers' earnings.

With development of roads, non-motorized transports such as bullock carts are being replaced by faster and more reliable modes of transport. The *Impact Assessment of PMGSY* in the state of West Bengal found an overall increase in the use of motorized agricultural vehicles, like tractors and threshing machines after the development of rural roads. Some villages bought or rented tractors for the very first time after road connectivity was established. Since the use of tractors is cost and time saving, it helps to increase the agricultural productivity. A study conducted by ADB (Asian Development Bank) on the

socio-economic impact of road improvement in some Indian states[32] found that more and better quality transport services are available around the clock once the road infrastructure improves. In fact, in five out of six sample villages there were no bus services before the road projects. After the implementation of the projects, there were privately operated bus services. With developments of roads, the land prices have increased and therefore the wealth of farmers have increased.

2.2. Increased access to social sector

Road connectivity enables better access to basic services such as schools and healthcare facilities and improves the quality of life. The development of rural roads has increased school enrollment and attendance. It has increased attendance in middle and high schools and colleges. Those in connected areas have better access to public healthcare centres and health workers and there have been increase in childbirth in medical institutions. Road connectivity has increased the frequency of visits by Government functionaries. This has led to an improvement in the implementation of various development schemes and programmes. The ADB study found that improvements in rural roads have led to sharp increases in the number of girls going to high schools and colleges outside their villages. There has been significant reduction in primary and middle school dropouts. The *Impact Assessment of PMGSY* in the state of West Bengal found that better roads not only increase access to healthcare facilities it offers more choice to consumers. Reduction in travel time enables faster access to curative care and better management of medical emergencies. It has reduced instances of neo-natal mortality as frequent interaction with health workers has made the villagers more aware of obstetric risks and essential care for the new born. Children immunization has also increased. Overall, increase in mobility and improvement in access to social and health services have directly benefited the poor.

2.3. Increase in efficiency and reduction in time and cost

Modern transport infrastructure increases efficiency and reduces costs of transportation. The development of national highways has reduced travel time by 50 per cent or more.[33] Reduction in travel time has reduced the vehicle operating and maintaining costs, reduced fuel consumption and increased profits.

With private investment, the cargo handling capacity (especially containerised cargo) of Indian ports have improved significantly. Better port facilities have improved the global competitiveness of Indian businesses. The high-density corridors have facilitated faster movement of passengers and cargoes and reduced commuting time. Mass rapid transport such as the DMRC (Delhi Metro Rail Corporation) built with government and private initiatives have increased speed, reduced congestions, and saved time and fuel. Prior to the DMRC, about 12 million people in the Indian capital commuted by buses and private transports. Buses were inadequate to cater to the population and were overcrowded. This led to pollution and accidents. The DMRC has provided a comfortable and reliable mode of transportation at reasonable prices for the middle and low-income groups.

Post-privatisation with increase in competition the cost of air travel has come down on an average between 30-40 per cent. In the past, only rich people could afford travel by air but no-frill airlines made air travel affordable to a large number of people. In fact, lower airfares, posed competition to railways and the latter also revised its fares downwards. Better air transport facilities have led to the growth of express delivery sector which has benefitted both business and consumers (for instance, life saving drugs can now reach patients at a much faster pace). Increase in seating capacity due to increase in private and foreign flights has made air travel easier. With private/foreign investment, India is developing airports of international standards and, this in turn, is attracting foreign tourists and international businesses. Private players introduced facilities such as on-line air ticket booking which saves time and costs. Consumers

now have more choice. In airline, prior to liberalisation, there was a single service provider for domestic services. Today, there are a large number of service providers with different prices, services and timings.

Better transport infrastructure reduces the cost of commodities purchased. A survey conducted in the states of Rajasthan (Bhilwada) and Uttar Pradesh (Muzaffarnagar) found that cost of basic commodities such as sugar is lower in places connected by roads compared to unconnected areas (the price difference is Re.1 per kilogram of sugar).[34]

2.4 Impact on employment and development of local industries

The impact of liberalisation on employment has been mixed. Prior to liberalisation, many government-owned transport sectors were overstaffed and suffered from low labour productivity. Post-liberalisation with the introduction of corporate management productivity increased. Employment in public sector declined as the role of government in direct provision of many services minimised. On the other hand, there has been increase in employment in the private sector – both in transport and overall logistic services. Industry estimates[35] show that employment in transport services will increase. For instance, there were around 3 million truck drivers in India in 2007 which is likely to increase to nearly 5 million by 2015. With the entry of private airlines employment in this sector has increased.

With large investments in construction of transport infrastructure employment in this segment increased. In fact, government's employment generation programmes such as National Rural Employment Guarantee programme (which provides employment to a rural poor for 100 days) are closely linked to projects like PMGSY and NHDP. The rural community is getting involved in such projects and community participation has increased. Also, many of these projects source materials locally, which have increased employment. Access to markets has created various non-farm employment opportunities in rural areas (such as shops, small businesses, cottage industries). Local industries have now been connected to the national and international markets. The Impact Assessment of PMGSY in the state of West Bengal found that the local weavers in Nadia District have benefited from the upgradation/construction of roads. They have access to bigger and better markets and can source raw materials at lower costs. This has expanded the weaving industry and increased employment in this sector.

The ADB study found that after the improvements in roads people living in urban and other areas are investing in rural areas along the upgraded highways. Connectivity has increased private investments in non-agricultural micro enterprises and in transport services. Local villagers are investing in small petrol pumps, hotels, etc. along the highways. Wage labourers can now seek employment in nearby towns and there are more opportunities to commute between workplace and villages.

With improvements in transport sector, there has been an increase in demand for vehicles, rail equipment, auto-component, etc., and this segment has generated employment. Improvements in air transport have led to the growth of allied sectors such as tourism. The number of foreign tourists/business visitors has increased and this has boosted the tourism sector which has a high employment potential.

Overall, with globalisation, inflows of FDI and development of logistic services, there has been an improvement in the skill levels – from unskilled to semi-skilled and skilled. In India, labour reforms are still pending. Due to rigid labour laws it is difficult for private industries to hire or fire workers in few sectors such as ports. With increased mechanisation the working conditions in dockyards, ground handling, etc. have improved. With increase in demand, salaries of skilled/trained workers have increased manifolds and the wage difference between skilled/trained and unskilled workers have widened.

2.5. Other impacts

With developments in roads, ownership of vehicles increased. Improvements in road infrastructure have positive spillovers on other basic facilities. For instance, with better quality roads, water supply and sanitation has improved. Villages now have access to better postal services and banking facilities. Connectivity has exposed villagers to modern technology such as mobile telephones and televisions. After the upgradation of the roads, there have been a shift in the type of houses constructed - from *kuchcha* (mud houses) to semi *pucca* or fully *pucca* (concrete) houses since accessibility to and transportation of raw materials have become easier. Also, areas connected by roads can respond better to emergency situations (fire, drought, floods, etc.). Prior to road improvements, monsoon rains cut off many villages but now they have access to emergency facilities.

3. Issues and the Way Forward

The discussion in the above section highlights that investment in the transport sector has positive social impacts. In India, private investment has complemented public investment in this sector. The transport network has increased and this has improved efficiency, productivity, income of poor, access to basic facilities, employment, etc., and reduced travel costs and time. It is often argued that by connecting distant regions transport helps in the development of backward regions and reduces regional inequalities. Studies in India have shown that although schemes such as PMGSY have been successful in providing connectivity to unconnected habitations, there are regional imbalances in developments. Although the total road length has increased many folds, the expansion of road networks has been unequal across states.[36] Even government sponsored schemes such as the PMGSY covered better endowed states while the progress in more needy states has been slow. India has one of the largest road networks in the world but there is further scope for private/foreign investment since the road density is still very low. The road density of Japan is 14 times higher as compared to India and the road-people[37] ratio in the US is 33 times higher than that of India. [38] With a growing population the demand-supply gap in transport infrastructure is rising. There is an urgent need to speed up the infrastructure projects. Poor maintenance has been a major issue, especially for rural roads. To reduce regional imbalances, the road development programmes in India should focus on the needy/poorer states. The focus should not only be on creation of new roads but also on innovative methods of raising funds for road maintenance. Local community can be made more involved in road maintenance projects.

With privatisation and development of sophisticated transport system, the sector is facing skill shortages. Majority of the players in the trucking segment are small entrepreneurs running family-owned businesses. They have limited capability to invest in manpower development or training. The profession attracts largely illiterate people with limited formal training. There are very few formal training institutes in India for driver training. With multi-axle vehicles (run by logistic companies) replacing the single-axle vehicles, there is a growing need for trained truck drivers. Similarly, there are skill shortages in other areas of logistic such as warehousing, air transport (before the global slowdown the airline industry was facing a shortage of pilots) and seafarers. Unskilled labourers are finding it difficult to operate sophisticated machineries and equipment and skill levels have to be upgraded. The government can work closely with the private sector in providing training. This will increase the skill levels and better skilled workers will get a higher pay.

The impact of privatisation on fares/cost of use of the facility is also debated. In India, fuel prices are high and rising. Transport fuels also face multiple taxes. This has repercussions on the fares/cost of using the facilities. Private road developers are implementing user charges (toll charges, etc.) which have increased the cost of transportation. In certain cases, such as air transport, competition has brought down prices but prices again rose due to high ATF (aviation turbine fuel). In the case of road transport, many studies have shown that there has been an increase in fares primarily due to increase in fuel costs.[39]

Moreover, in many states the private sectors are more interested to run transport services on profitable routes. High fuel prices and pressure to keep rates low for equity reasons, operational inefficiencies, lack of investment, etc. has deteriorated the service quality in many non-profitable routes (villages, small towns etc.). The government needs to examine the high taxes on fuels such as ATF and the interstate differences in taxes which results in differences in fuel prices across states. Incentives should be provided for fuel efficient modes of transport. The government also needs to carefully monitor the bus route allocated to private enterprises.

A major problem in development of transport infrastructure, especially through private initiatives, is resettlement and rehabilitation. Often land is taken away with no prior consultation on "voluntary donation of land principle".[40] The ADB study found that although compensation was paid in the case of national highways, it was less than the current market value. Rightful owners should be paid the market value of their lands.

In spite of the investments in the transport and logistics sector, the logistic cost in India is still very high which affects the prices, supply, global competitiveness, etc. of goods and services. Logistic costs as a percentage of GDP is 13% for India compared to less than 10% of GDP in Western Europe and North America.[41] The turnaround time in Indian ports is much higher than international norms (average turnaround time was 3.6 days in 2006-07 for major ports compared to a few hours in Hong Kong). The average trucking speed is lower, there is a lack of planning in terms of vehicle routing, optimal dispatch, etc., the use of IT is limited and administrative delays add to the cost. Overall, the industry is fragmented and suffers from poor infrastructure planning. For instance, India has a large number of ports but none of them are hub ports. Due to this, India looses valuable foreign exchanges to other transhipment ports in the region such as Colombo or Singapore. India spends around US$30 billion more than it should due to logistic inefficiencies.[42] There is scope for further investment and improvement in productivity and efficiency of the transport sector. The government should have an integrated transport planning and there is need to prioritise the investment. For instance, instead of developing so many ports simultaneously India can develop two hub ports one in the east and one in the west coast and connect them through a proper road and rail network. This will facilitate faster movement of cargo and save time and valuable foreign exchanges. Some of the regulations related to transport are outdated. For instance, the Multimodal Transport of Goods Act (1993) excludes air freight operators. Some of the new regulations that the government plan to implement create uncertain operating environment. For instance, with the entry of private airline operators the ground handling sector was opened up. Now the government wants to implement a new ground handling regulation which will restrict the number of service providers. Requirements of multiple clearances from different agencies of the central, state and local governments to set up or expand operations also act as a barrier. Overall, there is need for regulatory and administrative reforms/certainty to encourage private participations.

India has been impacted by the global financial crisis although to a much lower extend than many developed countries. The transport sector has also been adversely affected due to lower trade/demand. Indian stock market has crashed in the second half of 2008 and the private investors are facing financial crunch. The government realized that investment in infrastructure can help the economy to recover and there is immense scope for investment in transport sector. In its stimulus packages, the government has come up with various incentives to attract private investment to promote rural and urban infrastructure (including transport). If properly implemented, such schemes will enable the economy to revive, modernize and grow. Through backward and forward linkages it will increase employment and productivity.

NOTES

1. The data is not available for the unorganized sector. Certain services such as retail and construction are major employers in the unorganized sector. (Source: WTO (2007), *Trade Policy Review – India*, http://www.wto.org/english/tratop_e/tpr_e/tp283_e.htm)

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5. WTO (2008), International Trade Statistics, http://www.wto.org/english/res_e/statis_e/its2008_e/its08_toc_e.htm

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9. http://www.ibef.org/Archives/ViewArticles.aspx?art_id=17585&cat_id=808; http://indiabudget.nic.in/es1990-91/4%20Infrastructure.pdf

10. http://morth.nic.in/writereaddata/sublinkimages/table-12458822488.htm

11. http://www.ibef.org/economy/roads.aspx and *Annual Report (2007-08),* Department of Road Transport and Highways, Ministry of Shipping, Road Transport and Highways, Government of India

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13. Datamonitor (2007), *Indian Logistics Outlook 2007: An analysis of India and its rapidly growing logistic industry,* March 2007, http://www.datamonitor.com/Products/Free/Brief/BFAU0159/010BFAU0159.pdf

14. The information is provided by the Planning Commission of India

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16. http://www.asiatradehub.com/India/railways.asp and http://www.indianrailways.gov.in/evolution/ rail-network.htm

17. http://www.ibef.org/Archives/ViewArticles.aspx?art_id=17585&cat_id=808

18. http://www.ibef.org/industry/aviation.aspx

19. Figures taken from Airport Authority of India, http://www.airportsindia.org.in/AAI/main.jsp

20. http://indiabudget.nic.in/es2000-01/chap99.pdf; www.indiastat.com

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22. http://www.ibef.org/artdispview.aspx?cat_id=503&art_id=21353&in=5

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