

India Infrastructure: A Boon Or A Bane?

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ABSTRACT: Infrastructure: The roots of growth for emerging markets: “When you don't invest in infrastructure, you are going to pay sooner or later”- Mike Parker. With the developed, developing economies becoming Integrated, Interrelated, Interdependent, the need of infrastructure is growing day by day. It helps the economy to keep up the pace with the dynamic changing environment. India, being the second largest economy in Asia, is becoming the epicenter of trade. Constant GDP growth between 7-9% was seen from past few years and with business, finance & trade developments taking place in the nation, India is now known to be the economy which is on the verge of becoming the super power, after its competitor and neighbor China. The recent Euro Zone Crisis and the risk of Double Dip recession, the Indian economy is left with the threat of recession similar to the kind seen during the year 2007. A change in the monetary policy and fiscal policy was implemented by Government of India to do the damage control so that the economic recession is not experienced and the growth is not disrupted to a large extent. These changes though have resulted in the slow growth. Recently Standard and Poor's (S&P) Ratings Services in its report said “India needs to reform policies concerning project execution and long term funding to fix its creaky infrastructure, which is a major roadblock to its target of achieving a 9-9.5 percent annual growth during 2012-2017”. Government has stepped up spending in recent years but the slow pace of reforms and a lack of long-term funding options constrain the infrastructure growth, on the contrast the country's twelfth plan, focuses on removing these roadblocks and creating a framework for private-sector participation, the feasibility of which lies with the leaders. In the draft of twelfth five-year plan the government proposes to invest \$1 trillion to upgrade infrastructure which is double that in the earlier plan, which ends in March 2017. The delays in government and regulatory decision-making have caused several infrastructure projects to fall way behind schedule, it added. However, the rating agency's outlook for the infrastructure sector in India is stable thus commenting on India's Infrastructure as a Boon or Bane won't be right at this point of time. What can be said is that the current stature of India's Infrastructure is definitely a hindrance to India's growth.

KEYWORDS: Infrastructure, Indian economy, Debt, Equity, GDP, FiveYear Plan

I. INTRODUCTION

All you need to know about Infrastructure! What, Why and How?

Infrastructure can be thought as the basic physical and organizational structures which are required for the proper operation of society or enterprise, also it can be thought of as the services and facilities necessary for an economy to function smoothly.

“Infrastructure, in general, defined as the set of interconnected structural elements that provide framework supporting an entire structure of development”

A well-knit and coordinated system of transport plays an important role in the sustained economic growth of a country. Thus infrastructure can be regarded as one of the major requirements for sustainable development of an economy. It also helps a nation develop a stature in today's world where globalization is the buzzword. Evidence also suggests that creation of infrastructure, through its direct and indirect effects, has a significant impact on poverty reduction. Now when the need of infrastructure is defined, its working is a mandate to be discussed. To accelerate the pace of infrastructure development and simultaneously reduce the deficit of the same, the Government has taken the initiative and has started a host of projects and schemes with the sole motive to upgrade physical infrastructure in all crucial sectors. Despite several challenges, the positive results of the Government's initiatives are showing in some sectors. However, required capacity addition in a time-bound manner needs focused attention in other sectors. With the rising industrial growth and development of the economy keeping its pace, the pick-up in overall industrial growth, core industries and infrastructure services have also evinced signs of recovery with easing of supply bottlenecks in certain sectors and demand recovery in others. In the Indian context, though there has been some improvement in infrastructure development in transport, communication and energy sectors in recent years, there are still significant gaps that need to be bridged.

The current economic slowdown provides an opportunity for countries like India that have a substantial degree of unmet infrastructure requirements. This is reinforced by the understanding that spending on infrastructure has large multiplier effects.

II. INDIAN ECONOMY

2.1. Post Independence Era (1947-1975):

Indian Economy during the time of Independence was known to be an agrarian economy wherein the major part of the revenue, to an extent of 70%, was generated from the agriculture sector. Despite being an agriculture front economy, food deficit was seen as a major issue besides the Colonial Exploitation and Zamindari system. The main objective of planning in India at this stage was to initiate a process of development which will raise living standards and also to open out to the people for new opportunities and for a richer, and more varied life. The sole problem of development of an under developed economy is one of utilizing the potential resources available to the community effectively. An underdeveloped economy is characterized by the co-existence, in greater or less degree, of unutilized or underutilized manpower on the one hand and of unexploited natural resources on the other. Indian economy, post independence, was somewhat more focused towards increasing the investment the reason being accounted to the fact that being a fresh, new economy freed from the British Raj it was necessary for the government to stabilize itself so as to control its economy in future. A somewhat low rate of capital formation might have been adequate for countries like the U.K. and the U.S.A., wherein the modern industrialization took root early. On the other side the under developed countries which make a late start have to aim at comparable development within a briefer period. The First Five Year Plan involves an outlay on development by public authorities of around ` 2069 Crores over the period of 1951—56. In determining this target of expenditure, the main considerations that have been taken into account are:

- Need for initiating a process of development that will form the basis of the much larger effort needed in the future
- Total resources likely to be available to the country for the purpose of development
- The close relationship between the rates of development and the requirements of resources in the public and in the private sectors
- The necessity of completing the schemes of development initiated by the Central and State Governments prior to the commencement of the Plan ; and
- The need to correct the maladjustments in the economy caused by the war and the partition.

Following the budgetary plan formulated by the Planning Commission, since its inception in the year 1950, for the year 1951-1956 which is the First Five Year Plan of and for the Indian Economy. It is seen from the chart that a major portion of the plan was focused on areas like agriculture and irrigation, the duo accounting to as high as 45% of the total plan.

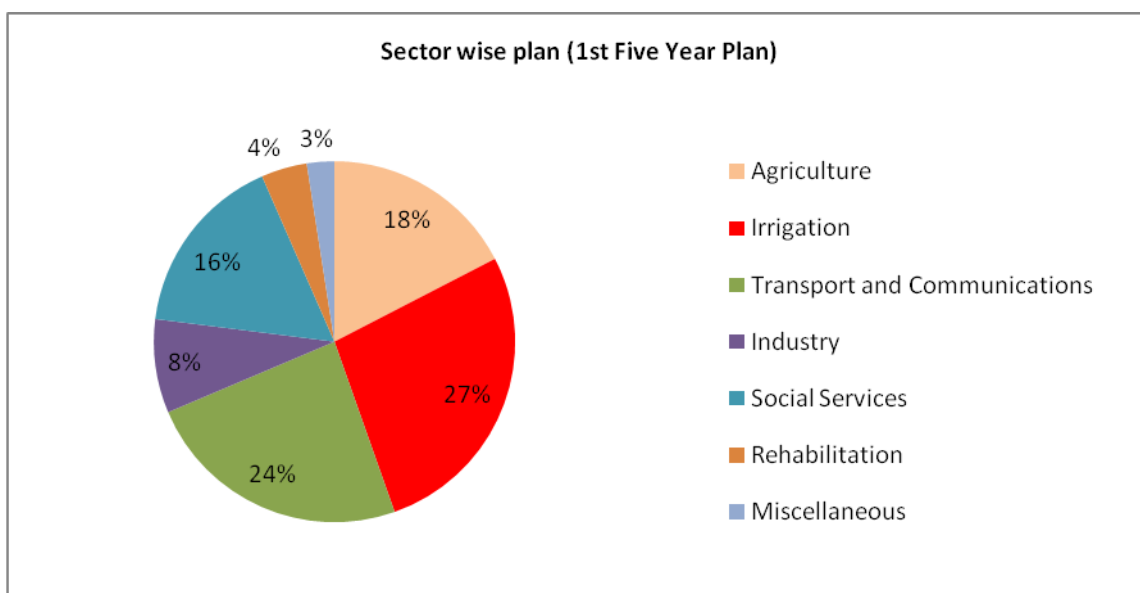


Figure I: Sectorwise Plan for 1st Five year Plan

Sector	Amount
Agriculture	360
Irrigation	561
Transport and Communications	497
Industry	173
Social Services	339
Rehabilitation	85
Miscellaneous	51
Total	2066

Table 1: Sectorwise Plan for 1st Five year Plan

Thus we can see that Indian economy was not focused into infrastructure development rather the development of the economy so as to ensure utmost utilization of the resources and also enhancing the investment for the economy as a whole to the maximum. During the period of 1947-1965, the rate of growth of the Indian economy in the first three decades after independence was derisively referred to as the Hindu rate of growth by economists, because of the unfavorable growth rate. Since 1965, after the number of revolution in the agricultural sector like the Green Revolution, Yellow Revolution or the White Revolution which enhanced the use of high-yielding varieties of seeds, increased fertilisers and improved irrigation facilities collectively contributed to the improved condition of agriculture by increasing crop productivity, crop patterns and strengthening forward and backward linkages between agriculture and industry. However, the method was also criticized accounting to the fact of unsustainable effort, resulting in the growth of capitalistic farming, ignoring institutional reforms and widening income disparities.

2.2 Liberalization of Economy (1991)

Liberalization Period- Is it liberalized or Paralyzed?

The major breakthrough in the economy came during the year 1991, when the current Prime Minister Dr. Manmohan Singh served as the Finance Minister. He incorporated the Policy of **Liberalization**,

2.3 Privatization and Globalization also known as the LPG Policy.

In 1991, after India faced a balance of payments crisis, it had to pledge 67 tons of gold to Union Bank of Switzerland and Bank of England as part of a bailout deal with the International Monetary Fund (IMF). In addition to the bailout, IMF required Indian government to undertake a series of structural economic reforms. As a result of which, the government of P. V. Narasimha Rao and finance minister Manmohan Singh started breakthrough reforms, though all the reforms were not implemented as demanded by IMF.

The new neo-liberal policies included

- Opening for international trade and investment,
- Deregulation,
- Initiation of privatization,
- Tax reforms, and
- Inflation-controlling measures

With the sole motive to achieve a quality life for the common people of the nation, the main objective of the government was to transform the economic system from socialism to capitalism so that a high economic growth is achieved and industrialization can be seen in the nation which was, at the end of the day, intended for the well-being of Indian citizens. Today India is mainly characterized as a market economy.

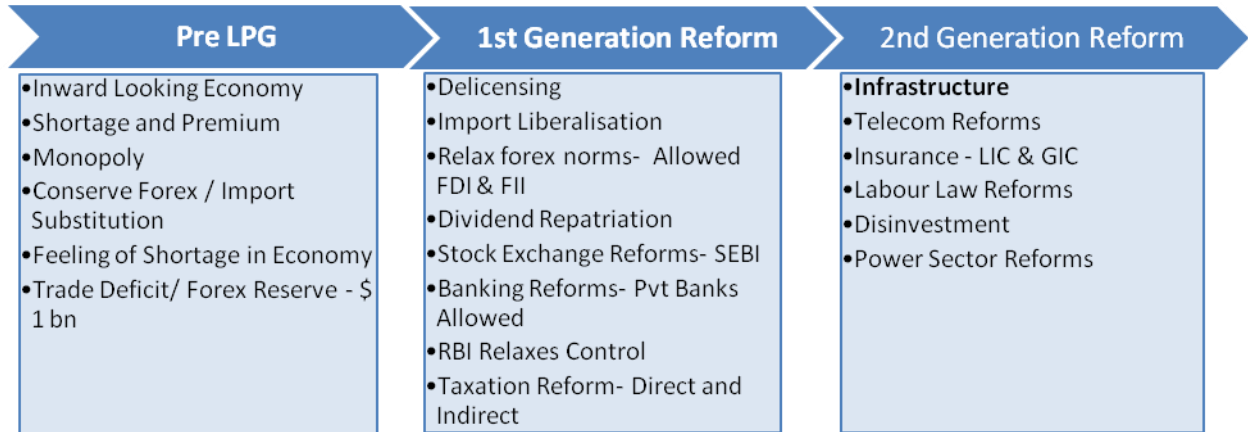


Figure II: Timeline

Following chart clearly depicts about the growth of the Indian Economy since LPG policy was incorporated in 1991. Indian economy saw a rapid growth as compared to the slow growth seen during the Post Independence period of 1947-1991.

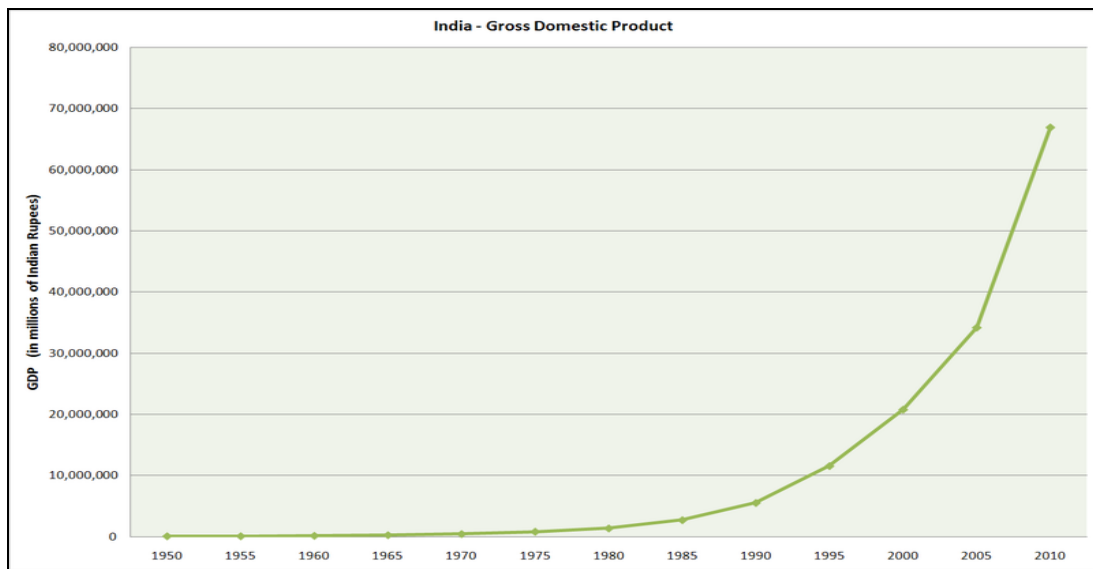


Figure III: India's GDP

Economy Liberalization in India in the 1990s and first decade of the 21st century led to large changes in the economy. This is a chart of trend of gross domestic product.

Year	GDP	Comparison	
		w.r.t year 1975	w.r.t year 1990
1975	8,42,210	1	0.151949
1980	13,80,334	1.638943	0.249036
1985	27,29,350	3.2407	0.492422
1990	55,42,706	6.581145	1
1995	1,15,71,882	13.7399	2.087768
2000	2,07,91,898	24.68731	3.751218

Table 2: India's GDP

The figures itself shows how the GDP of the economy in 2000 grew by more than 24 times than that of the GDP in the year 1975 and also grew 4 times as compared to the GDP in the year 1990. Thus the trio policy of LPG came out to be a boon for the nation where in the infrastructure was also taken care of in the second generation reforms. The Indian economy which generated around 70% of its revenue from the agriculture sector has now turned the scenario with the services sector taking the lead with 57% followed by the manufacturing sector at 28% and remaining being the agriculture sector at mere 15%.

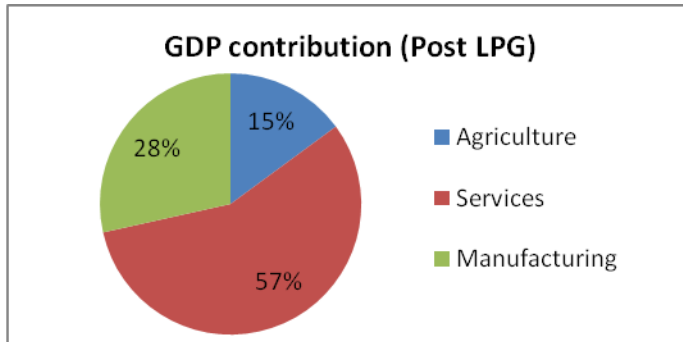


Figure IV: GDP Contribution (Sectorwise)

Sector	Contribution (%)
Agriculture	14.9
Services	56.6
Manufacturing	28.5
Total	100

Table 3: GDP Contribution (Sectorwise) Post LPG

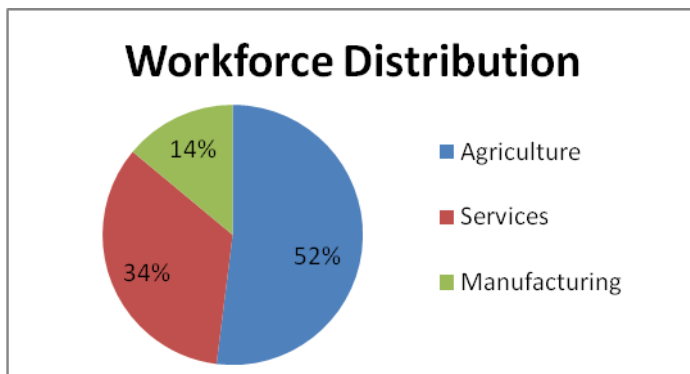


Figure V: Workforce Distribution Sector Wise (Post LPG)

Sector	Workforce
Agriculture	52
Services	34
Manufacturing	14
Total	100

Table 4: Workforce Distribution

Now when the economic growth, development and reforms are taken care of, infrastructure was one key area which needed utmost action and was of great importance. In the past, development of infrastructure was completely in the hands of the public sector which was characterized by:

- Slow Progress,
- Poor Quality, and
- Inefficiency

INFRASTRUCTURE – A DETAILED LOOK

The Planning Commission of India categorizes infrastructure into the following 10 sectors:

- Electricity
- Roads and Bridges
- Telecommunications
- Railways
- Irrigation
- Water supply and Sanitation
- Ports
- Airports
- Storage
- Oil and Gas pipelines

The investment figures can be seen to almost double from the 10th Five-year plan (US\$ 217.86 billion) to the 11th Five-year plan (US\$ 514.04 billion). To that extent, the projected investment in the 12th Five-year plan (2012-2017) has also doubled from the previous plan to US \$ 1 trillion in order to re-achieve and sustain a

GDP growth rate of 9%. The policy of Public Private Partnership (PPP) was also strengthened to incorporate 30% private funding in the 11th Five-year plan from 20% in the 10th Five-year plan. For the 12th Five-year plan, this is expected to rise to 50%. India is privileged to rank #1 in terms of Public Private Partnership for the execution of projects which is a moment of pride in itself.

III. ELECTRICITY

India has the 5th largest power generating capacity in the world. The table below shows the electricity production in India and their percentage contribution. We can see only 2.5 % of electricity is contributed by Nuclear sources and maximum contribution to an extent of 55% is coming from coal itself which is again a non-renewable source of energy and equally polluting. Thus India needs to work on the generation of electricity from Hydro Power, Wind, Tidal, Bio-Gas, etc which are pollution free and are renewable.

All India	Thermal				Nuclear	Hydro (Renewable)	RES@ (MNRE)	Grand Total
	Coal	Gas	Diesel	Total				
MW	104816.38	17742.85	1199.75	123758.98	4780	38848.4	20162.24	187549.62
%age	55.9	9.5	0.6	66	2.5	20.7	10.8	100

Table 5: Electricity Production in India

	Hydro	Thermal	Nuclear	Total
MW	15627	59693	3380	78700
%age	19.9	75.8	4.3	100

Table 6: Planned generation of energy in 11th Five Year Plan

Based on ownership of the installed capacity, approximately 46% is owned by the state governments, 31 % by the central government and 23% by the private sectors.

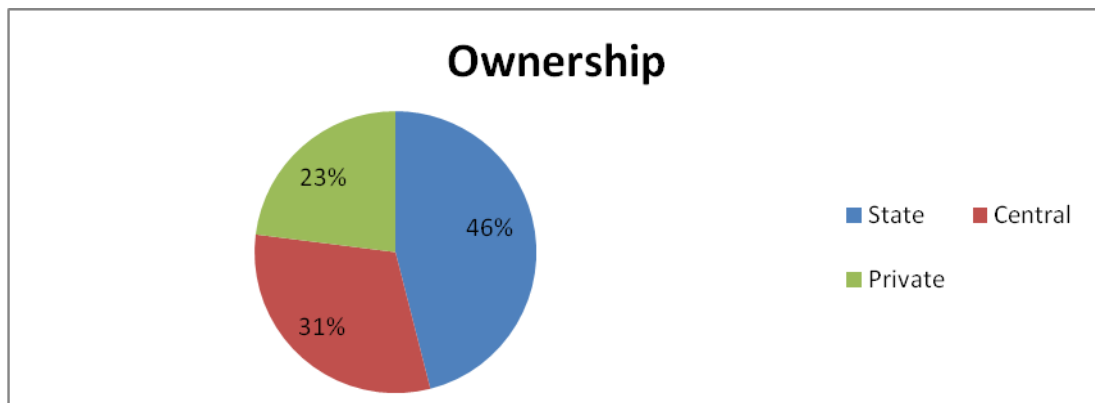


Figure VI: Ownership Structure for Energy

The growth rate of power generation has been 5.56% over the last year 2010-11 from 2009-10 and similar figure of 5.7% CAGR during the 11th Five-year plan. Transmission and Distribution network of power is of 5.7 million circuit kilometres in length which is the 3rd largest in world.

FDI policy– 100% FDI permitted in Generation, Transmission and Distribution to draw private investment in the sector which is currently seen at 23%

Incentives – Income tax waiver for first 10 years and import duty waiver on capital goods for mega power plant projects (above 1000 MW generation capacity).

The graph below shows the electricity requirement, availability and shortfall in last 10 years. A rising demand can be clearly seen from the graph. A rising supply too can be seen, however the supply is not sufficient enough

to meet the requirements. The demand supply gap compels people in many parts of the country to live only on sunlight as the source of light.

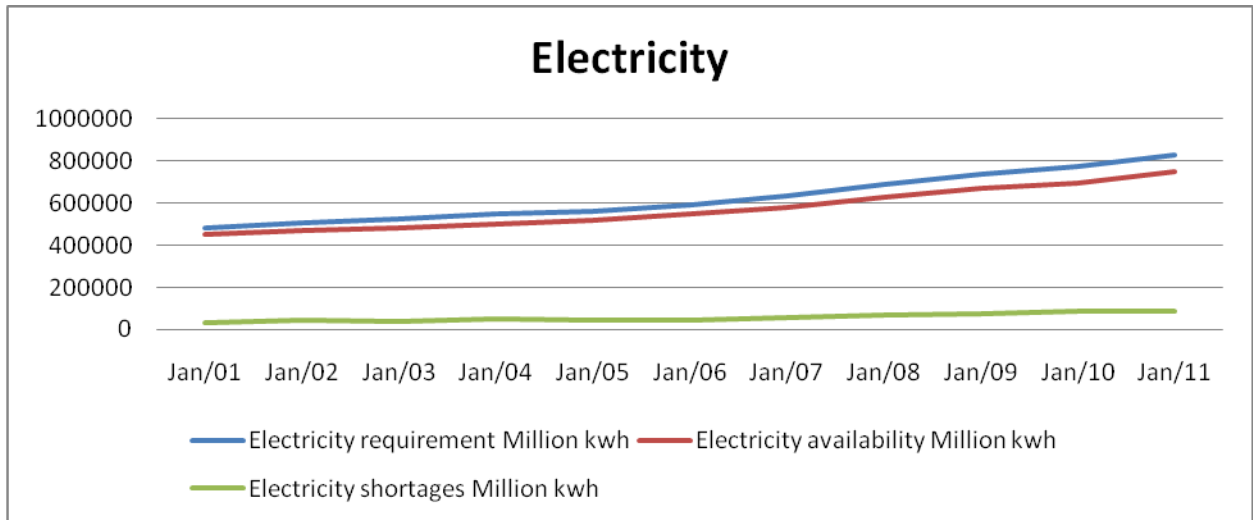


Figure VII: Demand Supply Gap

The figure below shows the shortage of electricity as percentage of requirement.

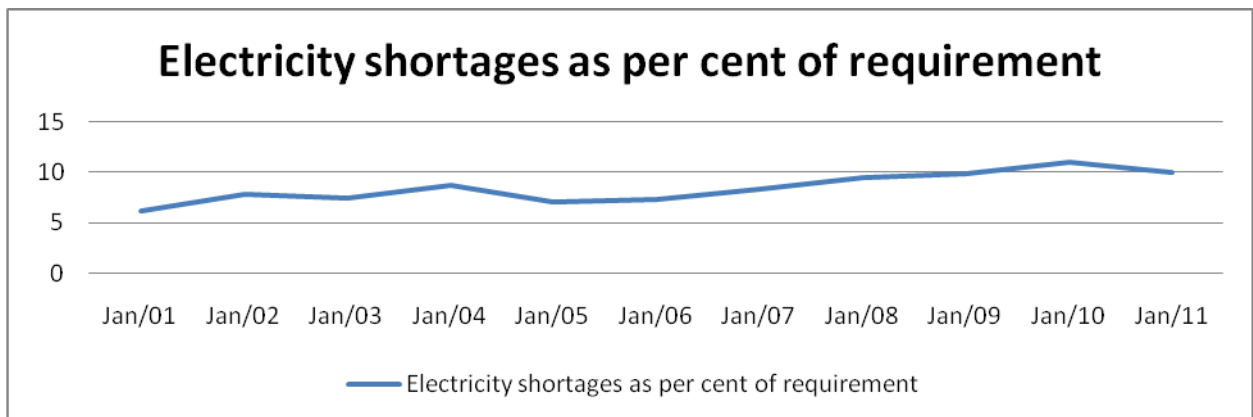


Figure VIII: Electricity Shortage (in Percent)

Some of the problems identified for the shortage of electricity in India are elucidated as under:

- Demand Supply Gap in coal
- Last preference for Gas-based power plants as supply to fertilizer unit, LPG and petrochemical plants tops the list before power unit
- Poor financial condition of the State Electricity Boards
- Operational and technical inefficiencies
- High dependency on thermal production
- Limited dependency on renewable and nuclear sources
- Bureaucracy problem which delays in awarding tenders
- Shortage of investment, equipment and manpower

3.1.Solutions

Following are the solutions to meet the rising demand of electricity while preventing the environment:

- Renovation and maintenance of power system components
- Change in the generation mix with higher emphasis on the nuclear and other renewable sources of energy
- Improving the system of distribution to strengthen and reduce loss in the transmission and distribution system

- Reducing the gestation period for power projects
- Reforms in State Electricity Boards

3.2.Roads and Bridges

India has the 2nd largest road network in the world with about 3.314 million kilometres in length. In the 11th Five-year plan the government embarked upon the massive National Highway Development Project (NHDP) divided in 7 phases.

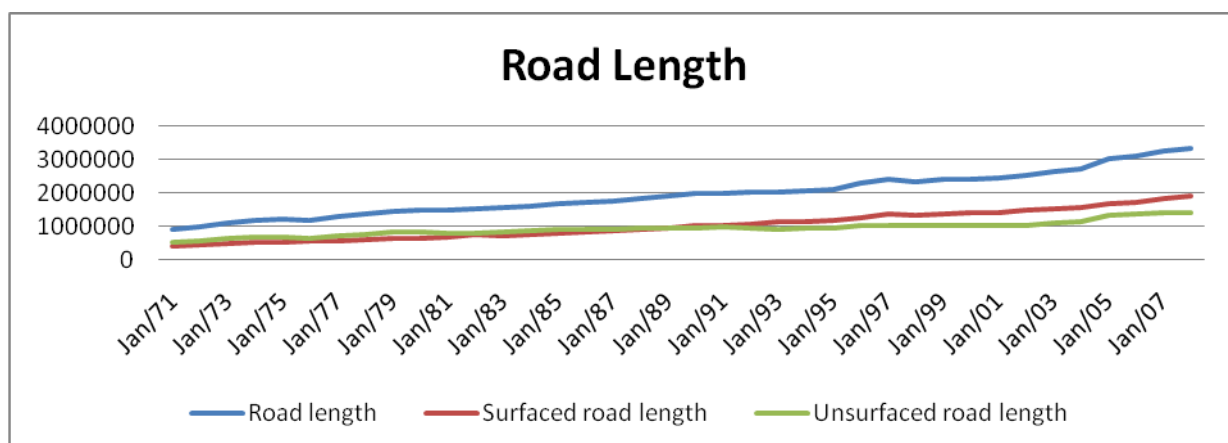


Figure IX: Road Length

Apart from the ambitious NHDP, the government has also planned several other projects for road development. Some of them worth mentioning are:

- Pradhan Mantri Gram Sadak Yojana and Bharat Nirman
- Special Accelerated Road Development Programme for North East (SARDP-NE)
- Special Programme for Development of Roads in the Left Wing Extremism (LWE) Affected Areas
- Development of other non-NHDP National Highways

FDI Policy – 100% FDI under automatic route permitted for all road development projects.

Incentives – 100% income tax waiver for a period of first 5 years and 30% relief for next 5 years. Private parties are also allowed to retain toll in case of BOT models. NHAI/government shall assist the players with investment upto 40% of project cost. Also a import duty waiver for high capacity equipment is allowed.

Private sector investment - Private sector investment for roads in the 11th Five-year plan has been around Rs 18,800 crore (as of 2009) against the planned target of Rs 87000 Crore.

Problems faced by road development projects:

- Low participation of the private sector players
- Limited to low participation of foreign players
- Long gestation periods
- Huge capital requirement
- Problems during bidding. Standard Bidding Documents (SBD) and model Concession Agreement (MCA) are problematic in several cases
- Problem of land acquisition, forest clearance and environment issue
- Labor shortage, unavailability of skilled technicians
- Unavailability of unsecured bank loans and very high interest if available

3.3.Solutions

- Increased participation from government towards fund
- Fastening the process of tendering
- Foreign Players encouragement
- Streamlining the process of land acquisition process by setting up land bank
- Concurrent implementation of projects in all 3 modes of BOT toll, BOT annuity and EPC basis
- Higher involvement of IIFCL helping in financing

IV. TELECOMMUNICATIONS

Telecom sector growth has so far been the most successful story, thanks to the huge participation from the private players. Intense competition was witnessed in this sector due to entry of new players and expansion by existing players, particularly in the wireless segment. Tariff wars by wireless operators to attract customers were one of the key area of customer engagement. Growth of overall telecom subscriber base itself says the story of Indian telecom sector. India has the 2nd largest telecom network in the world in terms of number of subscriptions. It has grown rapidly at around 45%/year since 2006. Actual investment in the sector is expected to exceed manifold in 12th five year plan. This is due to increase in investment by the private sector. The figure below shows the number of telephone connections in India since the year 2000. An exponential growth in the number of mobile connections is seen all these years.

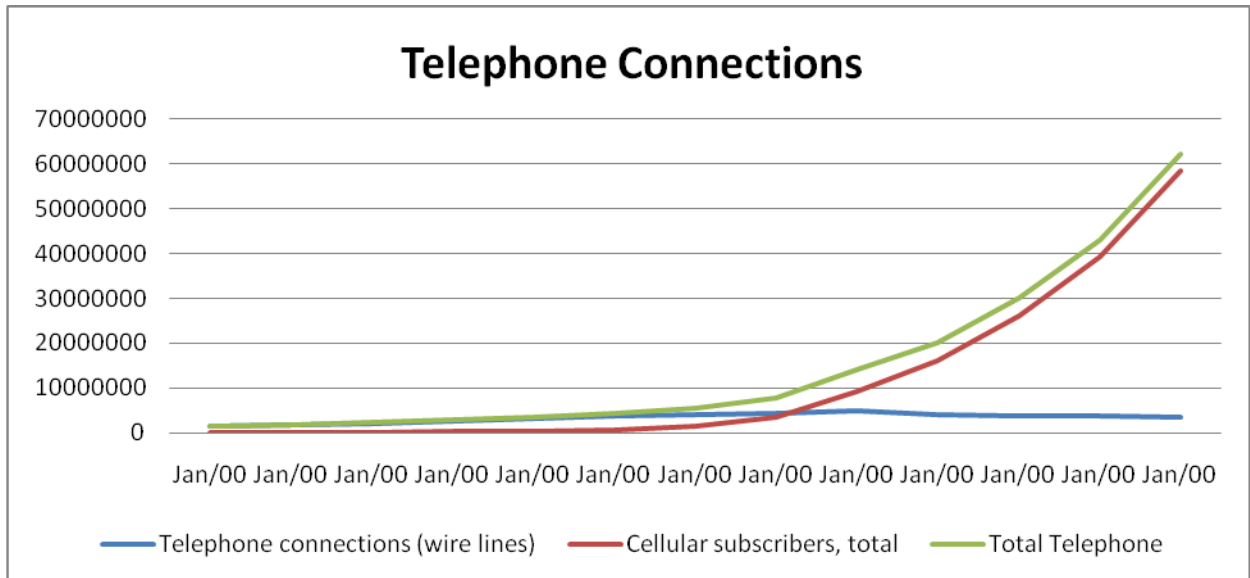


Figure X: Telephone Connections

Looking at the internet, which is a very important means to be connected to the world we can see in the table below the level of penetration in the country, has increased to 8.5 % in the year 2010 as compared to 0.1% in the year 1998.

Year	% Penetration
1998	0.1
1999	0.3
2000	0.3
2001	0.7
2002	1.6
2003	2.1
2004	3.6
2005	4.5
2006	3.6
2007	3.7
2009	7
2010	8.5

Table 7: Percentage penetration of Internet in India

The graph below shows the penetration pattern of internet in the nation.

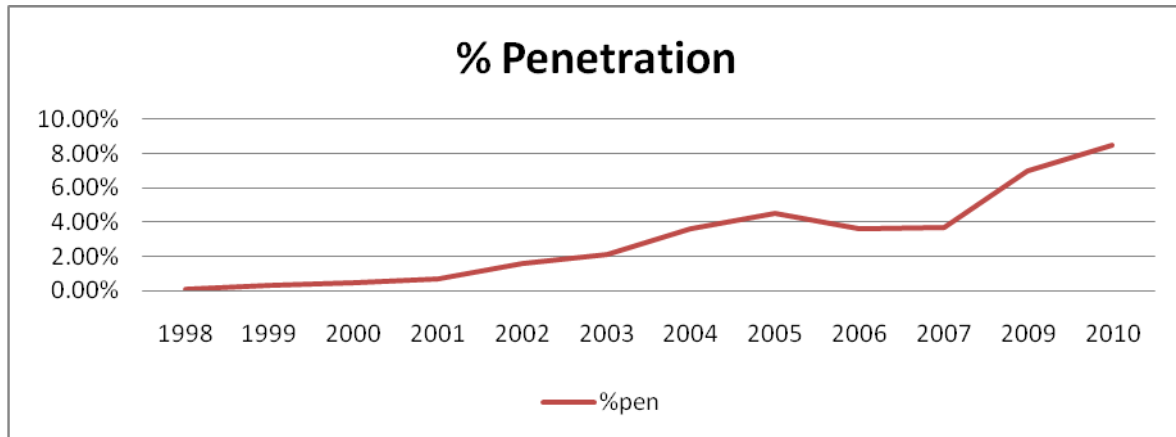


Figure XI: % Penetration of Internet

The graph below shows the number of registered internet users since 2008 which has cross 100 million users by 2009 and is showing a massive growth in the ICT sector as a whole.

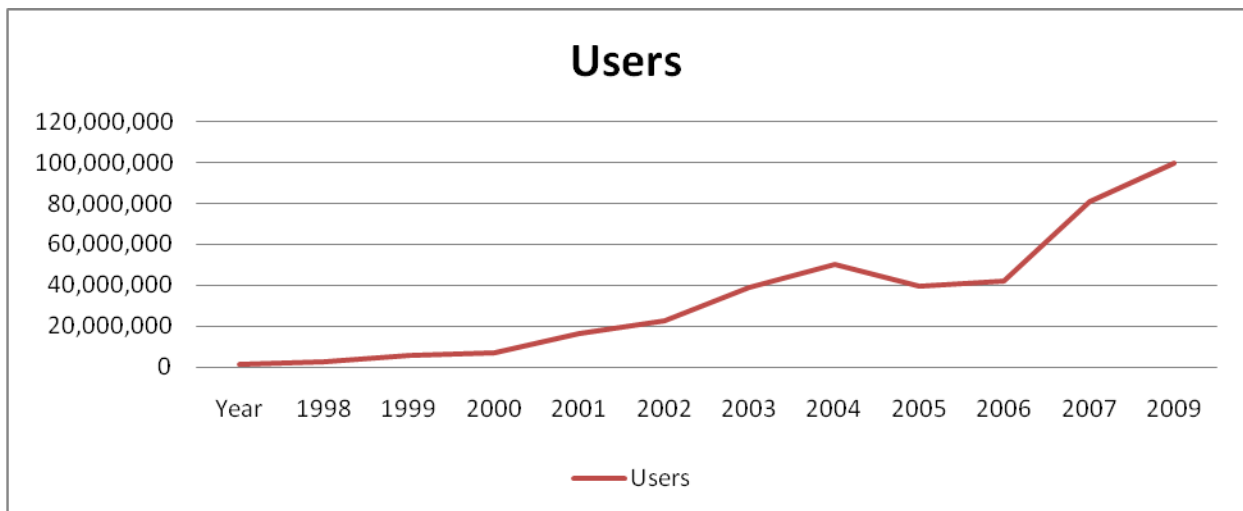


Figure XII: Internet user base in India

4.1. Major concerns

- Declining Average revenue per user due to tariff competition, increasing rural subscribers, and increasing number of pre-paid subscribers
- Low utilization (40%) of the universal service levy collected from telecom operators for increasing penetration of telecom services in rural and remote areas
- Low contribution (9-10%) of VAS (Value Added Services) to the operators' revenue as compared to developed nations
- Delay in implementation of MNP (Mobile Number Portability)
- Lack of efficiency and transparency in the process

But the presence of TRAI as a regulatory body in telecom has limited the problems and attracted private players unlike other sectors, causing telecom to be a success in India so far.

4.2. Railways

India is privileged to have one of the biggest railway networks in the world. The figure below depicts the Railway Route length graph from the year 1951. We can see that the railway route has not only increased but is also getting electrified at a rapid pace. The country will very soon see electrified high performance railway system which will be free from polluting diesel and coal bases locomotives.

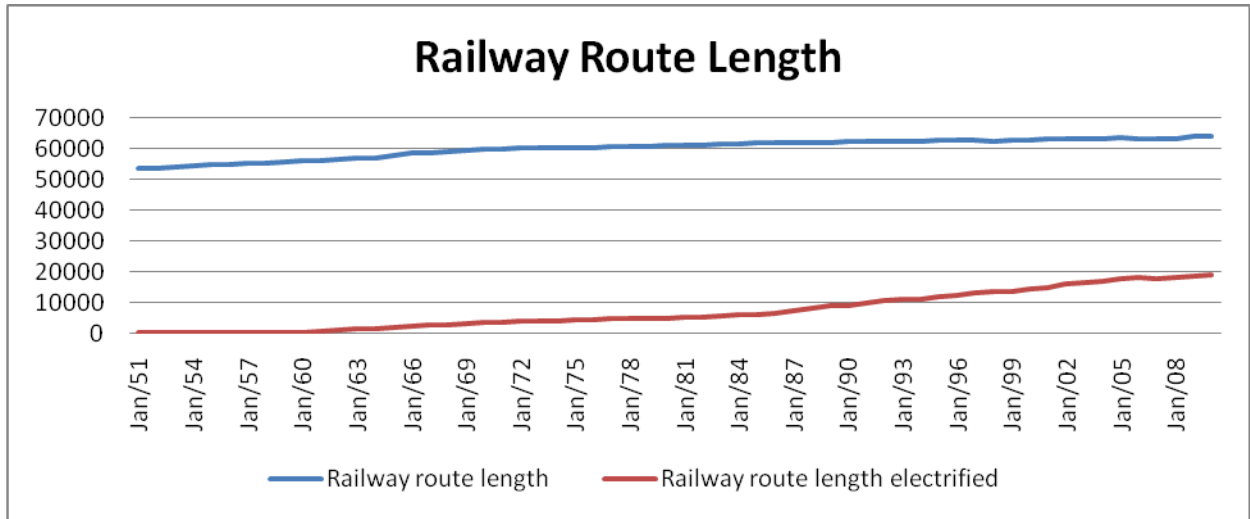


Figure XIII: Railway Route Length in India

It is a known fact that nothing in this world holds interest until and unless a return is generated out of it. Getting benefitted is the bottom line for every business, or work an Individual carries out. The graph below shows nothing else but the revenue earning from railways. We can see a highly steep growth in the earnings. The earnings can be seen plotted from the year 1972 until recently and we can see a net increase in the overall earnings of railways including the increase in both the earnings from Passenger and good carrier.

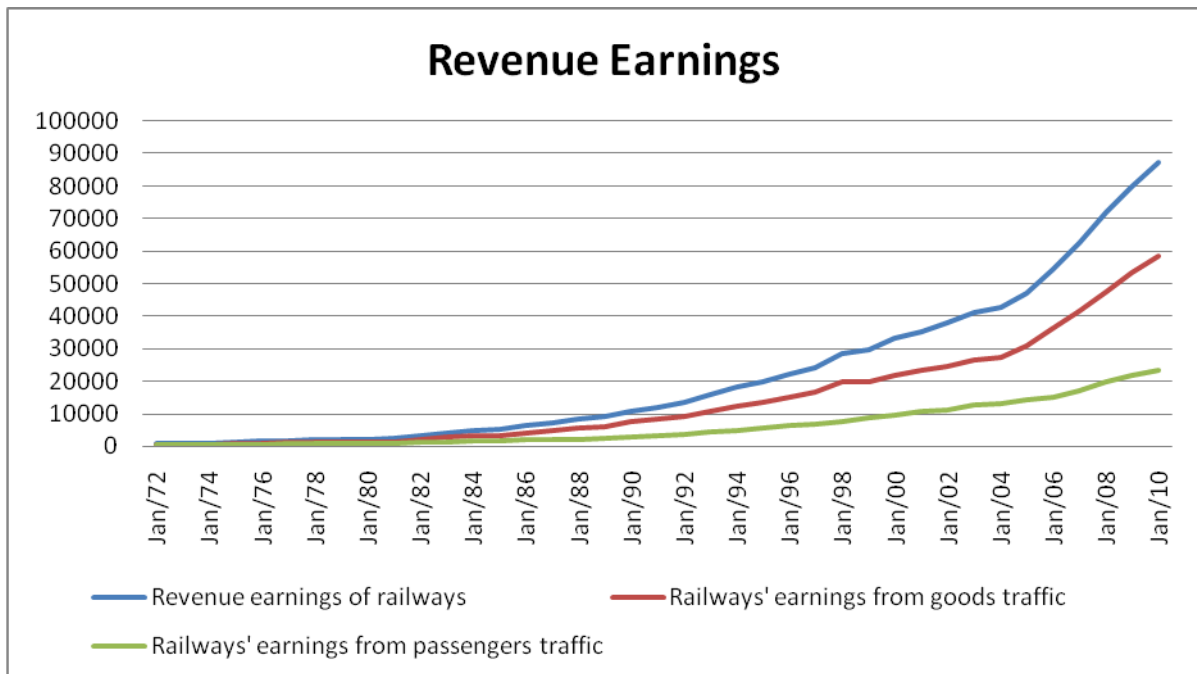


Figure XIV: Revenue Earnings for Railways

Despite being highly connected railways is said to lack in efficiency, safety, security. Massive accidents have frightened the common people. Not only this, hygiene is also a matter of concern for the people.

4.3.Solutions:

- Maintenance of railways including stations, coaches etc should be outsourced to companies dealing in cleaning and maintenance
- Increased security for passengers, goods, etc. Security companies can be hired for the purpose.
- Proper checking before boarding of train this will improve ticketing and decrease corruption

- Security Check for luggage in a planned, efficient manner
- Starting of ultra high speed train between metropolitans and important cities
- Portal for online ticket booking to be improved
- Goods carrier should be increased and tie ups with companies/industries should be encourage
- Intra state connectivity should be improved
- Proper help and alarm system to be installed in Trains

4.4.Shipping

Shipping is another mode of transport which has a importance of its own. It is basically used for the transportation of the goods from one place to another. The graph below shows the shipping industry details. We can see a rising spree in the total number if ships operated in India.

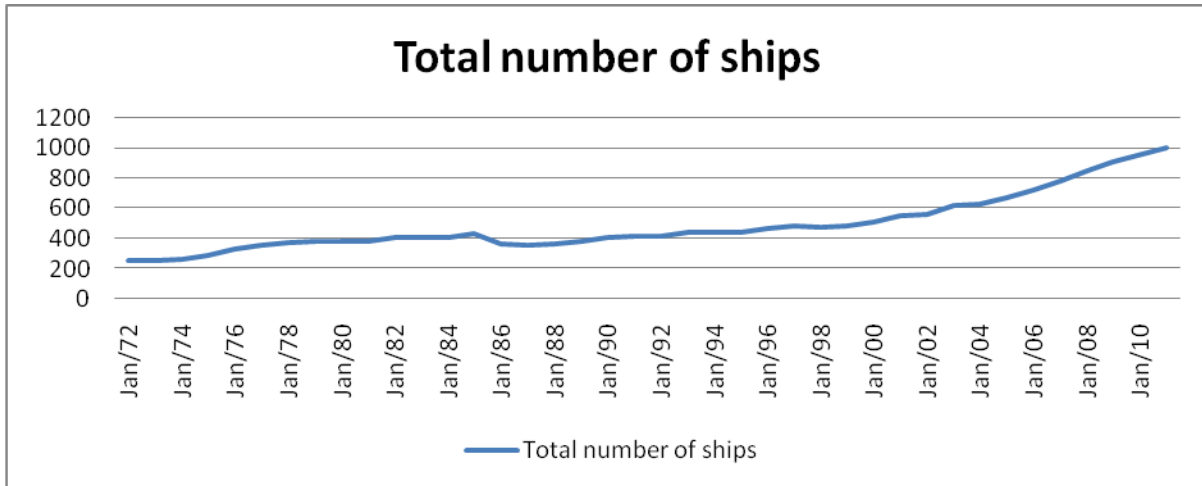


Figure XV: Number of Ship Counts in India

Before getting into the details of Gross Register Tonnage and Deadweight Tonnage let us first see the terms independently. **Gross register tonnage** or GRT as it is known commonly is a ship's total internal volume expressed in "register tons", one of which equals to a volume of 100 cubic feet. **Deadweight tonnage** (also known **DWT**) is a measure of how much weight a ship is carrying or can safely carry. It is the sum total of weights of cargo, fuel, fresh water, ballast water, provisions, and passengers and obviously the crew members. The graph below shows the increasing capacity of GRT and DWT since 1987 which is a good sign for the nation.

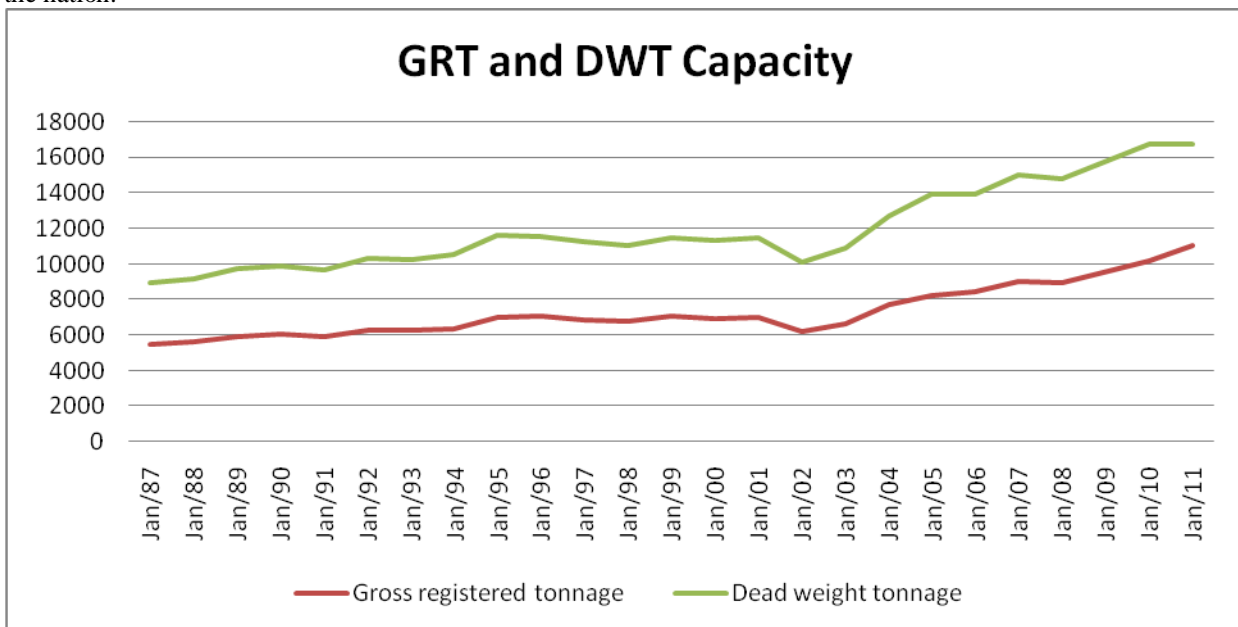


Figure XVI: GRT and DWT Capacity

4.5.Airports

The aviation industry is among one of those industries which have seen constant development at rapid pace not only in India but in the world as a whole. The open sky policy of the government has helped a lot of overseas players entering the aviation market in India. The 9th largest aviation market in the world is India. The Indian aviation industry has also seen the investment from private players and rapid head-to-head competition striving for success. Private players has given the industry a new look, which on the whole is growing at a tremendous rate but lot more needs to be done. The Indian Civil Aviation market grew at a CAGR of 18%, being valued round US\$ 5.6 billion in 2008. Further statistics revealed that the air traffic in August 2009 was a double digit figure.The figures below give a clearer picture on the state of the industry and its affairs. We can see that the no. of hours flown by the aircrafts in the domestic and international operations has increased drastically since 1951.

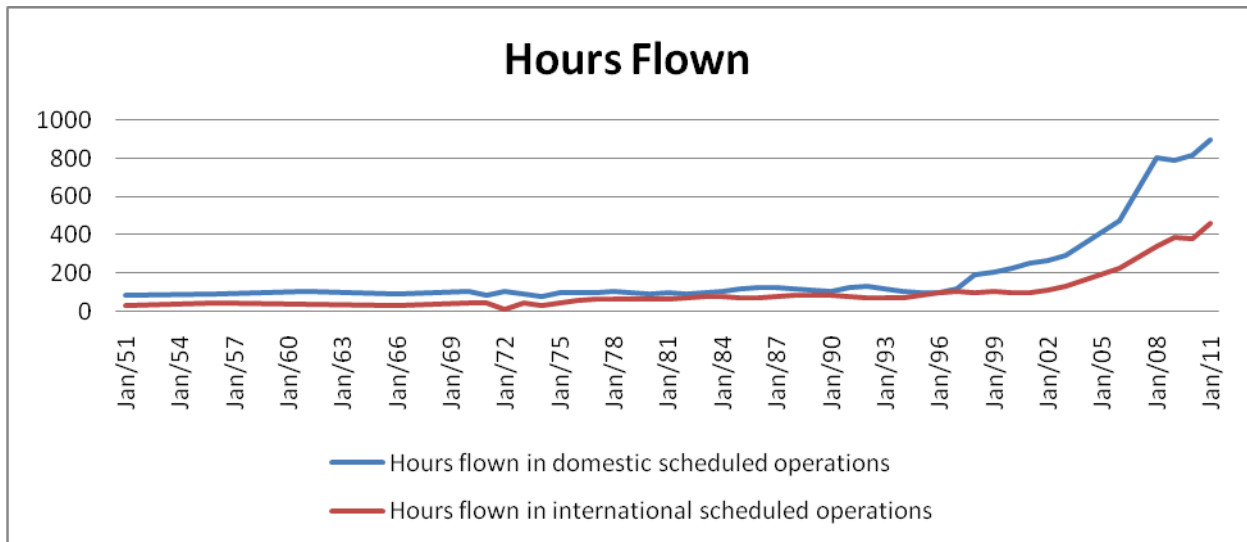


Figure XVII: Hours Flown

Also the figure below depicts the no. of passengers flown since 1951. We can very well see the increasing trend in the passengers flown in domestic operations.

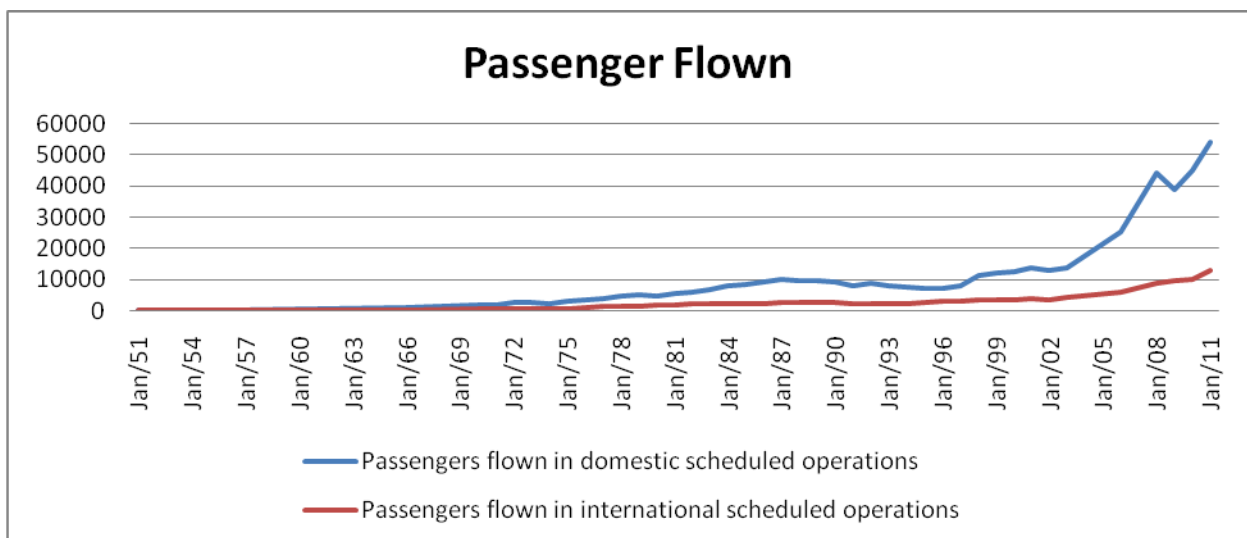


Figure XVIII: Passengers Flown

The figure below is on the same lines as that of the figure above but it gives a clearer picture of the aircrafts operation. The figure shows the number of kilometres flown by aircraft in both domestic and international operation. We can again see the rising trend in the number of kilometres flown.

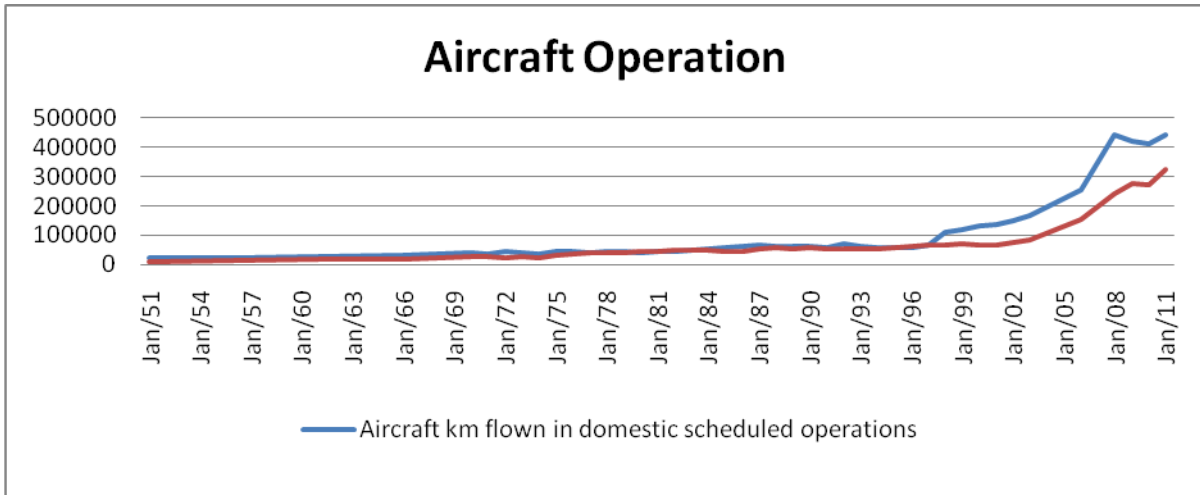


Figure XIX: Aircraft Operation

The figure below shows in detail Passenger, freight, mail tonne km flown case of both domestic and international flights. It can be seen we are growing across the entire sector.

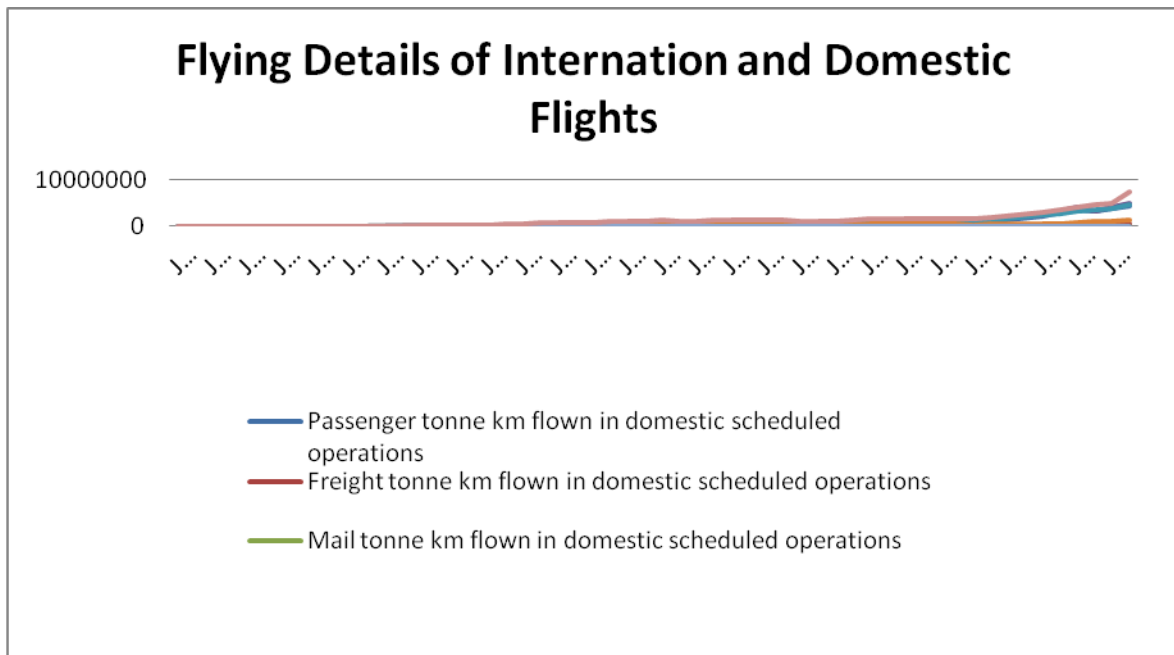


Figure XX: Flying Details of International and Domestic Flights

4.6. Ports

Ports form an important part in carrying out the business activities in a nation. Imports and exports of goods take place at different ports situated in the country. It thus serves the purpose of linking two or more nations and thus facilitates international trade, which again plays a vital role in the economy of nation as exports and imports relates to Balance of Payment (BoP) and BoP helps in determining the performance of the economy. The graph below shows the import traffic, export traffic at major ports. Also it shows the transshipment traffic and total commodity traffic at ports. We can see a rising trend in all the four indicators and mainly in terms of commodity it's the highest.

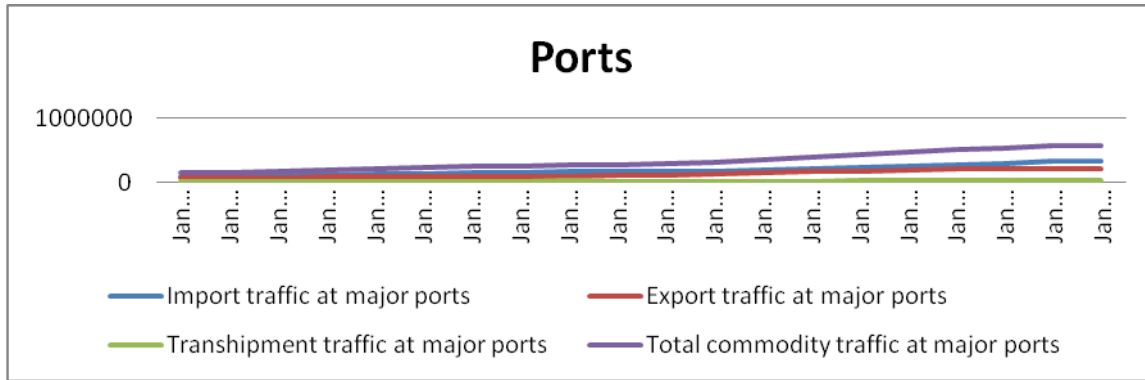


Figure XXI: Ports in India

4.7. Approach to 12th Year Plan

The Indian economy which is now on the verge of releasing the Twelfth Five Year Plan for the period of 2012-2017, can be characterized by strong macro i.e., the overall fundamentals and is also characterized by a successful and good performance over the ongoing Eleventh Plan period. At the same time looking at the other side of the coin the economy can be seen clouded by some slowdown in growth in the current year which can be accounted to the fact of continuously growing concern about inflation and a sudden increase in uncertainty about the global economy.

4.8. Plan of Action:

The twelfth year plan commencing April 1, 2012 projects a total investment of Rs 41 trillion (at 2006-07 prices) in infrastructure. This would account to approximately 10% of India’s GDP during the period and is twice the targeted levels during the eleventh five year plan. The planning commission plans to raise the said fund by a contribution to an extent of 50% investment coming from the private sector (as stated earlier India enjoys the #1 position in the world to have the maximum and largest number of Public Private Partnership Projects). Deputy Chairman of Planning Commission, Dr. Montek Singh Ahluwalia said that financing the infrastructure projects, which is aimed at an investment of 1 trillion USD, is not a constraint but the constraint is we have long gestation period, return on investment is spread over a long period and a huge investment is required. It was pointed out that the environment is attractive for foreign investment and there is a need of pool of capital inflow so that the current a/c deficit of 3% can also be financed. Also the wealth with Indian banks which is more than 1.1 trillion USD as reserve against the need of 1 trillion USD is sufficient enough to finance the projects but in order to avoid the asset liability mismatch the banks are not going in for the financing which in a sense is justified. Also lacking the expertise in infra domain the banks are not very comfortable in taking the risk which would give them RoI on a longer period and not shorter term. Talking of an example we have seen the case of Piramal Health care who despite having a mountain of cash to an extent of 8 billion USD sold its stake as the company failed in finding suitable projects in India to route its cash. So we can see that the funds are not the case but ecosystem, environment and routing of funds appropriately is the problem. Following is the brief intended plan of financing of Infrastructure projects during the Twelfth Five year Plan starting April 1, 2012. The Sources of Financing is categorically divided into two methods:

- Equity Financing, and
- Debt Financing

The total shortfall inclusive of both the Equity and debt financing stands out to be at `365000 Crore which is nearly 15% of the total estimated financing of `2500000 Crore.

Table 8: Source of Equity Financing

Sources of Equity Finance	
Corporates' internal accruals	329
IPOs	93
Private Equities	65
FDI	74
QIP	17
Shortfall	135
Total available sources	578
Total requirement	713

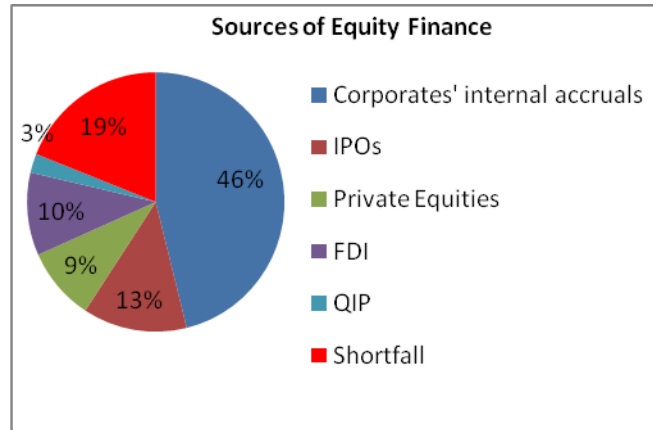


Figure XXII: Sources of Equity Financing

The equity financing includes IPO's, private equities, Foreign Direct Investment or the QIP (Qualified Institutional Placement). The equity finance, as per the Planning Commission projection, is expected to raise around 29% of the total amount projected for financing inclusive of both debt and equity.

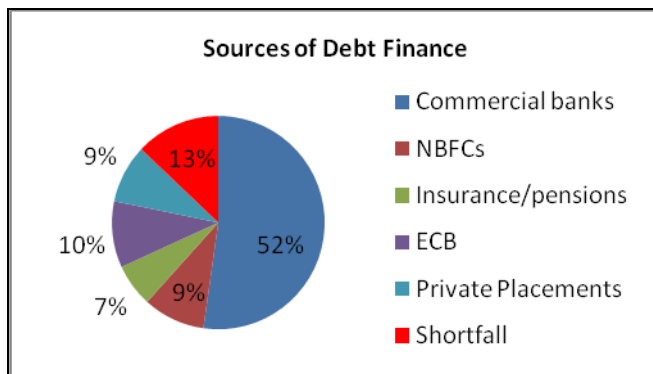


Figure XXIII: Sources of Debt Financing

Sources of Debt Finance	
Commercial banks	931
NBFCs	168
Insurance/pensions	116
ECB	179
Private Placements	158
Shortfall	230
Total available resources	1552
Total requirements	1782

Table 9: Sources of Debt Financing

4.9. Equity Financing

For equity financing Reverse-merger can be an option which the government should allow. Better predictability of RoI can bring in more investors. Two years ago the road projects were financed by banks at 10% and now the same is done at 14%, if the predictability of RoI is improved, a pool of untapped investors can be brought in. Foreign investors should be encouraged so that they can provide with the funds which are required immediately. Foreign investors are reluctant due to Political and Country Risk, in such a case Insurance companies should come into picture to build their confidence and get the inflow of money. Also debt market in India is not strong enough to support the long term financing and infrastructure projects require long term financing as the RoI is spread over a long term and cannot be generated immediately at hand.

4.10. Key Challenges:

There are several other external challenges arising from the fact that the current stature of the global economic environment is less favorable than it was at the start of the Eleventh Plan. The global slowdown and the European Crisis along with the fear of the double dip recession have added fuel to the fire. Apart from this, the downgrading of US economy from it's ever since AAA to AA+ by the Standard & Poor's have done the remaining icing. These global challenges call for renewed efforts on multiple fronts, learning from the experience gained, and keeping in mind global developments.

4.11. Performance and Key areas:

As far as the Indian economy performance is considered it has not outperformed though have performed well on the growth front which can be accounted due to the fact that the growth rate averaging 8.2 percent was seen in the first four years where as the growth in the final year of the Eleventh Plan saw a growth of 8.5 percent in contrast to the projected 9 percent.

This slight underperformance can be owed to the strong rebound from the crisis thus the actual growth in 2011-12 is likely to be around 8.0 percent which would lead to achieve an average GDP growth of around 8.2 percent over the Eleventh Plan period, lower than the targeted 9.0 percent, but better than the 7.8 percent growth as seen in the Tenth Plan. This increase accounted for an increase of nearly 35 percent in per-capita GDP. The slowdown in 2011-12 is a matter of concern, but can be reversed if the investment climate is turned around and if fiscal policy is strengthened alongside. One of the major shortcomings of 11th Plan was inadequate infrastructure which resulted as a major constraint on rapid growth of the economy. The Plan had, therefore, emphasized the need for a massive expansion in investment in infrastructure based on a combination of public and private investment, the latter through various forms of public-private-partnerships. Substantial progress has been made in this respect. The total investment in infrastructure which includes **roads, railways, ports, airports, electricity, telecommunications, oil gas pipelines and irrigation** is estimated to have increased from 5.7 percent of GDP in the base year of the Eleventh Plan to around 8.0 percent in the last year of the Plan. The pace of investment has been particularly buoyant in some sectors, notably telecommunications, oil & gas pipelines, while falling short of targets in electricity, railways, roads and ports. Efforts to attract private investment into infrastructure through the PPP route have met with considerable success, not only at the level of the Central Government, but also at the level of the individual States. A large number of PPP projects have taken off, and many of them are currently operational in both the Centre and the States.

As far as Urbanization is concerned as compared to other developing countries, India has been slow to urbanize, but the pace of urbanization is expected to accelerate over the next two decades. According to the 2011 Census an increase was seen in the urban population from 27.8 percent in 2001 to 31.2 percent in 2011, and is likely to exceed 40 percent by 2030. This would generate a heavy demand for better quality infrastructure in urban areas, especially water, sewerage, public transport and low cost housing. Since it takes time to create urban infrastructure, we must introduce a sufficiently long term focus on urban planning in the Twelfth Plan.

4.12. Public Private Partnerships (PPP) in Infrastructure

With the government spending or investment becoming a constraint, the Public Private Partnerships (PPPs) are increasingly becoming the preferred mode for construction and operation of infrastructure projects, both in developed and developing countries. PPPs are expected to augment resource availability as well as improve efficiency of infrastructure service delivery. Time and cost overrun in construction of PPP projects are also expected to be lower compared to traditional public procurement. The adoption of standardized documents such as model concession agreements and bidding documents for award of PPP projects have streamlined and accelerated decision-making by agencies in a manner that is fair, transparent and competitive.

4.13. How PPP has affected?

India currently has **1,017 PPP projects** accounting for an investment of **Rs. 486,603 Crore**. According to the **Private Participation in Infrastructure (PPI)** database of the World Bank, *India is second only to China in terms of number of PPP projects and in terms of investments, it is second to Brazil*. Transport is the dominant PPP sector in India both by number of projects and investments, mainly due to the large number of road sector projects. Efforts are needed to mainstream PPPs in areas such as **power transmission and distribution, water supply and sewerage and railways** and in social sectors, especially **health and education**.

4.14. Few PPP Projects:

Major PPP projects undertaken thus far are: Delhi, Mumbai, Hyderabad and Bangalore airports; 4 ultra-mega power projects at Sasan (Madhya Pradesh), Mundra (Gujarat), Krishnapatnam (Andhra Pradesh) and Tilaiya (Jharkhand); container terminals at Mumbai, Chennai and Tuticorin ports; 15 concessions for operation of container trains; Jhajjar power transmission project in Haryana and 298 national and state highway projects. As far as current status of projects is concerned, as per our database, there have been 758 PPP projects in our main sectors of focus where a contract has been awarded and projects are underway – in the sense that they are either operational, have reached construction stage, or at least construction/implementation is imminent. The total project cost is estimated to be about Rs. 383,332.06 Crore.

SECTOR WISE FIGURES						
Sector	Total Number of Projects	Based on 100 Crore	Between 100 to 250 Crore	Between 251 to 500 Crore	More than 500 Crore	Value of Contracts
Airports	5	-	-	303.0	18,808.0	19,111.0
Education	17	424.2	365.5	460.0	600.0	1,849.7
Energy	56	337.6	934.0	3,083.0	62,890.0	67,244.0

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Health Care	8	315.0	343.0	275.0	900.0	1,833.0
Ports	61	86.0	1,745.3	4,304.8	74,902.1	81,038.2
Railways	4	-	102.2	873.0	594.3	1,569.6
Roads	405	4,364.6	11,696.5	38,520.5	122,143.3	176,724.9
Tourism	50	1,132.6	1,503.5	800.0	1,050.0	4,486.1
Urban Development	152	2,812.0	3,136.9	6,688.2	16,838.0	29,475.0
Total	758	9,471.9	19,826.9	55,307.5	298,725.8	383,332.1

Table 10: PPP Projects

V. CONCLUSION

Thus we can see that there is a drastic change in the Indian Economy since Independence and a lot has been done towards the development of the Nations' Infrastructure but still a lot more needs to be done so that India can get a stature globally and can move on the path of development. According to the report published by the standards and poor's, it is said that lack of infrastructure on the face of Transport and lack of funding is a hindrance to the growth of Indian Economy. The report clearly says that the inadequate infrastructure is a major roadblock for the country's economic development and if the same condition prevails the forecasted economic growth for the coming twelfth five-year plan would be impossible to achieve. Thus we can say that India's Infrastructure is definitely not a boon for the economy though is not also a bane as it has the potential to be changed and if changed it can change the face of the economy as a whole.

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