

**AN OVERVIEW OF CONSTRUCTION SECTOR IN INDIAN ECONOMY**

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**Abstract**

*Throughout this paper, we tried to discuss the overview of construction sector in Indian economy. Construction starts with planning, design, and financing and continues until the structure is ready for occupancy. The Construction industry of India is an important indicator of the development as it creates investment opportunities across various related sectors. The industry is fragmented, with a handful of major companies involved in the construction activities across all segments; medium sized companies specializing in niche activities; and small and medium contractors who work on the subcontractor basis and carry out the work in the field. In 2011, there were slightly over 500 construction equipment manufacturing companies in all of India. The sector is labor-intensive and, including indirect jobs, provides employment to more than 35 million people. Today Indian sub continent is the second fastest-growing economy in the World. The Indian construction industry has been playing a vital role in overall economic development of the country. The construction sector is also the second largest employer in the country following agriculture, employing 18 million people directly and 14 million indirectly. Employment growth of this sector has almost reached 70% between 2004 and 2009. About 250 ancillary industries such as cement, steel, brick, timber and building material are dependent on the construction industry. A unit increase in expenditure in this sector has a multiplier effect and the capacity to generate income as high as five times. It accounts for about 11.1% of India's GDP.*

**Key words:** *Construction, labour-intensive, employment, ancillary industry*

## Introduction

People have constructed buildings and other structures since prehistory, including bridges, amphitheatres, dams, roads and canals. Building materials in present use have a long history and some of the structures built thousands of years ago are regarded as remarkable. The history of construction overlaps that of structural engineering and many other fields.

## Meaning of Construction

Construction is a very general term meaning the art and science to form material or immaterial objects, systems or organizations, and comes from Latin construction (from com-"together" and struere "to pile up") and Old French construction. Construction is used as a verb: the act of building, and a noun: how a building was built, the nature of its structure.

Building Construction is the process of preparing for and forming buildings and building systems. Construction starts with planning, design, and financing and continues until the structure is ready for occupancy.

Far from being a single activity, large scale construction is a feat of human multitasking. Normally, the job is managed by a project manager, and supervised by a construction manager, design engineer, construction engineer or project architect. For the successful execution of a project, effective planning is essential. Those involved with the design and execution of the infrastructure in question must consider the zoning requirements, the environmental impact of the job, the successful scheduling, budgeting, construction site safety, availability and transportation of building materials, logistics, inconvenience to the public caused by construction delays and bidding, etc.

## Definition

**Russell Sturgis** distinguished between architecture as being artistic structure, where a building is unadorned and can be "...poor...commonplace, ugly, insufficient, or otherwise of small importance;" and the use of the word construction as meaning built using scientific principles in a highly skillful way.

## Current scenario of construction sector

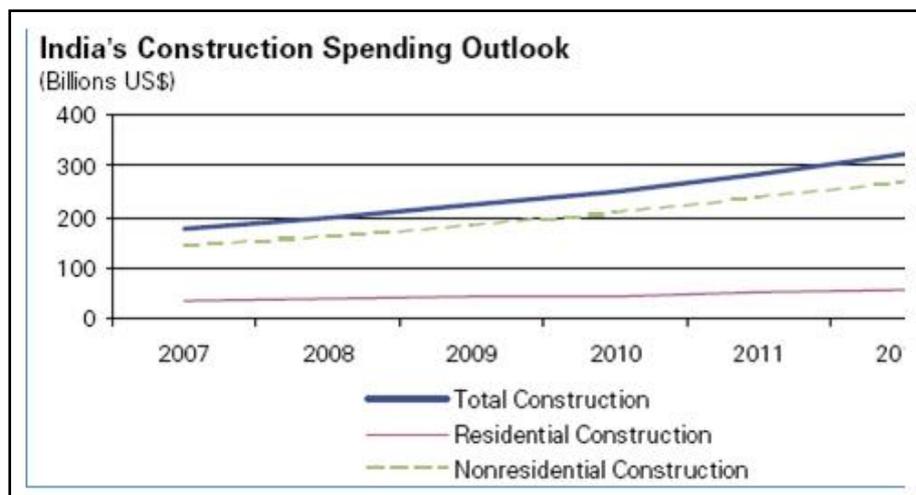
The Indian construction industry forms an integral part of the economy and a conduit for a substantial part of its development investment, is poised for growth on account of industrialization, urbanization, economic development and people's rising expectations for improved quality of living. Construction constitutes 40% to 50% of India's capital expenditure on projects in various sectors such as highways, roads, railways, energy, airports, irrigation, etc.

Today Indian sub continent is the second fastest-growing economy in the World. The Indian construction industry has been playing a vital role in overall economic development of the country. The construction sector is also the second largest employer in the country following agriculture, employing 18 million people directly and 14 million indirectly. Employment growth of this sector has almost reached 70% between 2004 and 2009. As per estimates, the sector further demands infusion of at least six million people each year This is because of the chain of backward and forward linkages that the sector has with other sectors of the economy. About 250 ancillary industries such as cement, steel, brick, and timber and building material are dependent on the construction industry. A

unit increase in expenditure in this sector has a multiplier effect and the capacity to generate income as high as five times. It accounts for about 11.1% of India's GDP.



According to Global Insight, US\$175 billion was spent on construction in India in 2007 after growing 156% since 2005. Out of US\$175 billion, US\$140 billion was spent on nonresidential, and the remaining US\$35 billion was spent on residential construction. Construction spending is expected to increase to US\$370 billion by the end of 2013, with residential totaling US\$63 billion and nonresidential registering US\$307 billion. This represents a compound annual growth rate (CAGR) of 13.3%. The construction sector has increased its share of India's total employment from 2.8% in 1983 to 5.4% in 2003-04. The sector accounts for about 38% of gross investment and about 45% of India's total infrastructure costs.



Construction investment accounts for around 52.4% of the Gross Fixed Capital Formation in India. Investments in Construction have a positive domino effect on supplier industries, thereby contributing immensely to economic development. The Construction sector has strong linkages with various industries such as cement, steel, chemicals, paints, tiles, fixtures and fittings. While in the short term it serves as a demand booster, in the long term it contributes towards boosting the infrastructure capacity

The Indian construction industry is highly fragmented. This is partially due to the fact that, for most projects, there are no long-term relationships between the contractors and clients. For

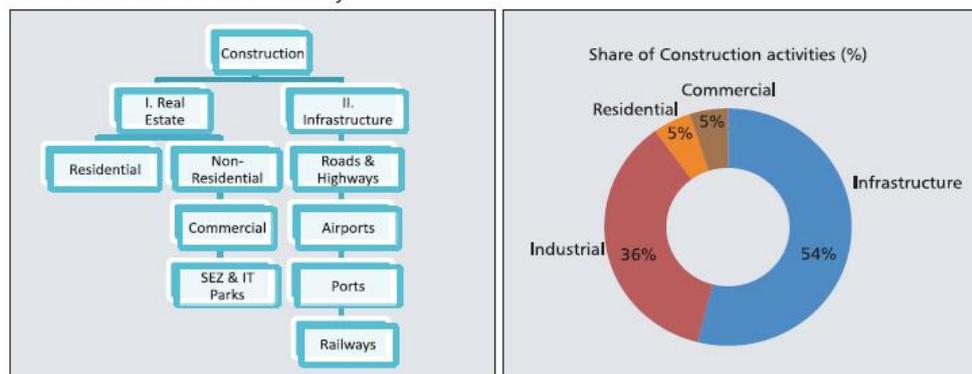
example, government agencies such as the National Highway Authority of India (NHAI) do not provide any benefits to the long-term contractors that have worked with them in the past. Because the sector lacks economies of scale, smaller players may have better cost structures due to lower overhead costs.

The industry can be broadly classified into two segments— organized and unorganized. The organized segment consists of firms and independent contractors who manage their business (design, financing, execution, etc.) on a professional basis. The organized segment operates on small, medium, and large scales. The unorganized segment primarily consists of standalone contractors that operate at a small scale. Construction activities of smaller firms in the organized segment and contractors in the unorganized segment are mainly focused on simple construction projects— building houses for individuals, repair, and maintenance for smaller buildings. Construction activities for larger firms involve complex logistics management of men, machinery, and materials.

### Classification of Construction Sector

The construction sector comprises real estate and infrastructure segments, out of which infrastructure holds a major share and is a key driver of the overall growth in the construction sector. Residential buildings, townships, commercial complexes, and SEZ/IT parks all come under the real estate segment while heavy projects conducted on a massive scale involving roads, railways, ports, airports, and highways come under the infrastructure domain.

Structure of the Construction Industry



Source: Approach Paper to the Twelfth Five Year Plan, Planning Commission Source: D&B Research Commission

During the eleventh five-year plan (2007-2012), the construction sector grew at an average of 7.7%, particularly outpacing the overall GDP growth during 2007-08 and 2010-11. However, with slowing GDP growth, the sector too saw slowdown from 2011-12, recording 4.3% growth in 2012-13. The construction sector contributed about 6% to the overall Gross Fixed Capital Formation (GFCF) in 2011-12. Foreign Direct Investment (FDI) into the construction development activities slowed by almost CAGR of 5% between 2009-13 reaching Rs 72.5 bn. During the same period, scheduled commercial banks (SCBs) remained a major funding source, with gross bank credit to the construction sector growing by CAGR of almost 8%. Share of construction in overall bank lending to industries stood at 2.3% as on Mar 2013. The twelfth five-year plan expects the total market size of the construction sector to reach Rs 52.3 trillion by the end-2017.

Annual Growth Rate at Constant (2004-05) Prices (%)										
	Eleventh Five Year Plan					Twelfth Five Year Plan				
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13#	2013-14	2014-15	2015-16	2016-17
Construction	10.8	5.3	6.7	10.2	5.6	4.3	8	8.5	10	11
GDP	9.3	6.7	8.6	9.3	6.2	5	7.3	8.5	9	9.2
Share in real GDP#	8.1	8	7.8	7.9	7.9	7.8	NA	NA	NA	NA

Source: Twelfth Five Year Plan (2012-17), #: RBI Annual report 2013

Inflows to construction sector(In ₹ Bn.)					
Particulars	2009	2010	2011	2012	2013
Gross Bank credit	385	442	434	486	522
Foreign Direct Investment	87.9	134.7	49.8	152.4	72.5

Source: RBI & Department of Industrial Policy & Promotion

The last decade and a half has seen a major spurt in infrastructure investments with segments including airports, telecommunications, and roads and bridges seeing more than 100% growth in investments. However, as per the planning commission data, infrastructure segments such as ports and railways have underperformed in terms of meeting investment targets during the eleventh five-year plan.

	Five Year Plans				
	Tenth Plan	Eleventh Plan*	Growth	Central Plan Outlay	
				2012-13	2013-14
Units	₹ Bn.	₹ Bn.	%	₹ Bn.	₹ Bn.
Roads and Bridges	1,526.2	3,618.2	137.1	535.7	553.0
Railways	1,034.9	1,953.4	88.7	590.0	622.6
Ports	223.5	355.4	59.0	31.1	47.5
Airports	73.5	292.8	298.2	-	-
Telecommunications	1,446.7	3,092.7	113.8	103.9	63.8

Source: Planning Commission

Note: \* Anticipated Investments

## I. Real Estate

The Indian real estate market comprises both residential and commercial structures. Rapid urbanisation coupled with rising income levels and demand for better lifestyle has collectively led to the growing demand of real estate over the last decade. The contribution of real estate and dwellings to the country's GDP stood at 5.9% in 2011-12. The sector has also recorded growth rate of 7.2% in 2011-12.

As per the 2011 census, about 31.1% of the Indian population lived in urban areas with an increasing trend in the number of urban areas and towns. However, the basic urban amenities including housing have not been proportionate with the growth in urban population. Nearly one-sixth of the urban population was reported as slum households, with the largest contribution from Maharashtra. The government has launched various housing and development programmes for the

economically weaker sections, which have provided the required growth to the residential real estate.

#### All India Status of JNURM & RAY

	Jawaharlal Nehru National Urban Renewal Mission (JNURM) (As on 16th Sep 2013)	Rajiv Awas Yojana (RAY) (As on 1 Aug 2013)
No. of States	63	16
No. Of Cities/Towns	984	48
No. of Projects	1607	55

Source: Ministry of Housing and Urban Poverty Alleviation

The non-residential real estate segment comprising commercial complexes, SEZs, and IT parks have observed moderately higher levels of construction activity across major cities. With no indications of price stabilization, commercial leasing activity is seen largely as a popular strategy. This strategy however, has seen some rent escalations in the recent past.

#### Pan-India status of Real Estate projects

Real Estate Segments	Status of Project	2010-11	2011-12	2012-13
Housing Construction	Outstanding	2143	2442	2679
	Stalled/Shelved	14	22	27
	Completed	177	246	204
	New	651	571	482
	Revived	5	1	2
Commercial complexes	Outstanding	660	745	714
	Stalled/Shelved	7	14	17
	Completed	59	60	38
	New	151	162	65
	Revived	7	2	1

Source: Capex, CMIE

A closer look into the project status reveals some slowdown trends in the 2012-13, with nearly 17% decline in completed projects compared to 39% growth in 2011-12 in the housing construction category. Projects under non-residential category also revealed the same story. Number of new projects continued to de-grow at nearly 25% in 2012-13 compared to 8.6% in the previous year. The commercial complexes category however, showed some signs of improvement with slowing Year to Year growth in revived and stalled projects.

## II. Infrastructure

### 1. Roads and Highways

Indian road network mainly comprises national highways, expressways, state highways, district, and village roads. The road network runs deeply across the length and breadth of the country acting as an intermediary service to railway, airways, and shipping.

According to the Ministry of Road transport and Highways, India has one of the largest road networks of 4.69 mn kms, mainly utilized for carrying nearly 85% of the total passenger traffic and 60% of the total goods traffic<sup>6</sup>. National Highways and expressways account for only 1.7% of the entire Indian road network, out of which only 24% are Four Lane/Six Lane/Eight Lane.

**Financial Review**

	2011-12	2012-13
Actual Expenditure Roads & road transport (In ₹ Bn.)	173.5	120.9

**Proposed Annual Plan Outlay (2013-14) = ₹ 375 Bn**

	Budgetary Support	Internal Extra Budgetary Resources
Roads & road transport	₹ 235 bn	₹ 140 bn

Source: Outcome Budget, 2013-14, Ministry of Road Transport & Highways

The government lined up several key investments to help India's highways meet international standards. These include widening of 20,000 km of less than two-lane National Highways to two-lane standard under the EPC mode and six-lining of four-lined roads, expressways, and port connectivity projects.

**2. Airports**

Authority of India (AAI). It is also responsible for providing air traffic services in the country. During Jan-Nov 2012, domestic passenger traffic handled by Indian airports reached 106 mn; while international passenger traffic touched 37.8 mn. At the same time, international and cargo throughput at Air transport in India comprises 125 airports mainly controlled and managed by the Airport Indian airports stood at 1.30 MMT and 0.73 MMT respectively<sup>7</sup>. With rapid progress across the passenger and cargo segment, the present air transport infrastructure and network of airports is being increasingly enhanced through private participation. Overall investment by private sector on the four metro airports stood at nearly Rs 231.87 billion.

**Air Transport Statistics (Jan-Aug 2013)**

Particulars	Domestic	International
Passenger (In Mn)	40.3	8.7
Cargo (Tonnes)	236809	161145

Source: Directorate General of Civil Aviation (DGCA)

**Developments during eleventh five-year plan through PPP:**

- Development of green field international airports at Hyderabad and Bengaluru
- Redevelopment of the Delhi International airport
- Upgradation of two metro airports by Airport Authority of India (AAI) (Chennai and Kolkata)
- Development of 35 non-metro airports by AAI

The twelfth plan further encourages the use of PPP for expansion and modernization of Indian airport infrastructure. An investment of Rs 65,000 crore has been proposed, of which a contribution of about Rs 50,000 crore is expected from the private sector. The AAI has undertaken development of 35 non-metro airports identified based on regional connectivity, tourist destinations, and potential business development hubs. Moreover, the government identified five green field airport developments at Navi Mumbai, Goa, Kannur, Chandigarh, and Kolkatta.

### 3. Ports

In India, more than 90% of foreign trade is carried through the sea route via 12 major ports and 187 minor/intermediate ports along the 7,517 kms long coastline of the country<sup>9</sup>. Port efficiency analysed with the help of terms of turnaround time (TRT), which is total time spent by a ship at the ports from its entry until its departure, has shown improvement from 8.10 days in 1990-91 to 4.47 days in 2011-12.

#### Key Port Statistics

Parameter	Timeline	
Vessels Handled (In Nos.)	Apr-Aug 2012	8132
	Apr-Aug 2013	7978
Traffic Handled (In Thousand Tonnes)	Apr-Mar 2012	560137
	Apr-Mar 2013	545679

Source: Ministry of Shipping & Indian Ports Association

The eleventh five-year plan envisaged an increase in capacity of major ports to 1,016.5 MT by end-2011-12. However, the actual capacity addition was moderate at 696.53 MT. Like other construction segments, the government has encouraged private participation in ports segment as well. For port development projects, the government permitted FDI to the extent of 100% under the automatic route. The Maritime Agenda 2010-20 of Ministry of Shipping targets 3130 MT of port capacity by 2020, with traffic handling capacity of non-major airports expected to increase to 1280 MT. Up until Jan 2013, 22 projects involving capacity addition of 97.34 MTPA and investment of Rs 5755.72 crore have been awarded.

#### Investment Scenario ( In ₹ Cr.)

	Eleventh Five Year Plan	Twelfth Five Year Plan	Revised Estimates 2012-13	Planned Allocation 2013-14
Ports	6904.56	15764.43	2574.9	4655.3

Source: Ministry of Shipping

### 4. Railways

Indian railways are operated by the Government of India (GoI) under the Ministry of Railways and are considered one of the world's largest network connecting nearly 7,146 stations. As on Mar 31, 2012, its network comprised 9,549 steam, diesel and electric locomotives, 61,899 coaching stocks, 239,321 wagons, and 64,600 route kms. During the same period, its employee base stood at 1,306 employees.

**Key Updated Statistics**

Particulars	Apr-Sep 2012	Apr-Sep 2013
<b>Freight</b>		
Freight Earnings ( In ₹ Bn.)	441.9	402.9
<b>Passenger</b>		
No. of Passenger (In Mn.)	4,270.09	4,257.55
Passenger Earnings ( In ₹ Bn.)	155.8	180.9

Source: Monthly Evaluation Report September 2013, Ministry of Railways

Freight earnings (revenues derived from goods transport) account for a major share in overall revenues of Indian railways. Yet railways loses its share to road transport in terms of freight carrying capacity, connectivity, and safety. Necessary investments are accelerated to enhance this crucial lifeline of Indian transport network. The twelfth five-year plan targets an overall investment of Rs 5.2 trillion in the expansion and modernization of Indian railways. The eastern and western dedicated freight corridor is a mega project undertaken to tackle bottlenecks in railway transport. Other crucial initiatives include re-development of stations, Mumbai Elevated Rail Corridor, and the High Speed Corridor. However, progress of these projects continues to be a challenge with ongoing issues such as availability of resources, land acquisitions and forest clearance, law and order problems, and contract failures among others. In 2013, out of the 124 railways projects, only eight were reported to be on schedule while 41 were delayed. Remaining appeared to be without a date of commissioning. Out of all major central sector projects, railways suffered the highest cost overruns of more than 150% in 2013, accounting for almost 48% of the overall cost overruns.

**Status of delayed railway projects**

Particulars	2008	2009	2010	2011	2012	2013
No. of Projects Delayed	22	44	53	31	34	41
Original Estimated Cost (In ₹ Bn.)	97.58	158.71	193.88	225.32	236.71	279.24
Now Anticipated Cost (In ₹ Bn.)	210.85	400.72	405.23	437.74	560.68	735.37
Cost Over-run ( In ₹ Bn.)	113.27	242.01	211.35	212.42	324	456

Source: Handbook of Statistics 2013, RBI

**Future challenges**

The Indian economy has witnessed considerable progress in the past few decades. Most of the infrastructure development sectors moved forward, but not to the required extent of increasing growth rate up to the tune of 8 to 10 per cent. The Union Government has underlined the requirements of the construction industry.

With the present emphasis on creating physical infrastructure, massive investment is planned in this sector. The Planning Commission has estimated that investment requirement in infrastructure to the tune of about ₹14,500 billion or US\$320 billion during the 11th Five Year Plan period.

This is a requirement of an immense magnitude. Budgetary sources cannot raise this much resources. Public Private Partnerships (PPP) approach is best suited for finding the resources. Better construction management is required for optimizing resources and maximizing productivity and efficiency.

### Conclusion

As we move towards achieving double-digit growth, accelerated focus on the construction sector remains crucial for policymakers. Rapid growth in the construction sector boosts several other linked industries such as cement, chemicals, steel, fittings and fixtures, and paints. The sector also holds importance from an employment point of view. As per the approach paper for the twelfth five-year plan, the sector is expected to employ nearly 92 mn people by 2022. Hence, it is extremely important for the policymakers to closely examine and eliminate all possible bottlenecks including clearances, permissions, time lag in land acquisition, and resource constraints among others. The sector is also presently facing some challenges in availability of skilled labor. Moreover, the fragmented nature of the industry makes growth and presence of smaller units increasingly prominent.

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