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Infrastructure

Time to speed up

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Contents

Time to speed up 3

Infographics 5

Programs entailing INR7t investment already in place 7

State infrastructure: Abundant opportunities 13

Policy amendments key to revival of sector 14

Sunny days ahead 17

Funding in place 23

Applying 3-S scale to pick potential winners 25

- Companies 27
- Ashoka Buildcon 28
- KNR Construction 40
- Sadbhav Engineering 51
- IRB Infrastructure 63

Roads

Time to speed up

Enablers in place; opportunity sizeable

- **For the last three years, the government has been ironing out issues hampering the Roads sector. It has cleared bottlenecks through suitable policy changes.**
- **Predefined programs are now in place, entailing an investment of INR7t. Early signs of revival in the sector have been evident for some time now.**
- **Players with strong balance sheet, execution track record, and robust asset portfolio would be the key beneficiaries. Our top picks are Sadbhav Engineering, Ashoka Buildcon and KNR Construction.**

Multiple steps taken by government to revive sector

The Roads sector has been identified as one of the top-3 capex themes by the current NDA government. The Ministry of Road Transport and Highways (MORTH) has taken multiple steps to revive the ailing sector over the last three years. We believe the framework required for the speedy award and execution of projects is in place. We expect activity to pick up, with the government addressing issues like:

- Execution hurdles – awarding projects after 80% land acquisition under BoT and 90% land acquisition under EPC
- Funding arrangement – cess trebled from INR2/liter to INR6/liter; market borrowing plans in place
- Faster forest and environmental clearances
- Change in project model to ease funding burden of cash-strapped developers
- Exit policy for developers to help unlock equity from completed projects, making it potentially available for investment in new projects
- Premium deferment scheme to ease cash flow issues faced by developers

Activity showing early signs of pick-up

For the last three years, the government has been ironing out issues hampering growth of the Roads sector. In FY17, early signs of revival in the sector became evident, with project awards at 16,270km (up 56%) and construction at 8,230km (up 37%). The government has set steep targets for FY18 to award 25,000km and construct 15,000km. Moving ahead, the trend looks promising, with industry reports indicating that NHAI would award over 31,000km of road projects executable over FY17-21E, entailing an estimated investment of INR3.6t (civil construction works). We expect awarding activity to stabilize at 15,000km per year, and execution activity to pick up – 9,300km in FY19 and 10,000km in FY20.

Focus on operating and financial parameters: We have evaluated road infrastructure companies on operating and financial parameters. We have looked at (a) size and scalability, (b) strength of financials, and (c) strategic and other issues. Sadbhav Engineering and KNR Construction appear most attractive.

Roads

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Please click here for Video Link

Exhibit 1: Rating Scale

	Ashoka Buildcon	IRB	KNR	Sadbhav Eng
Size and Scalability				
Existing Project portfolio Quality	3	2	2	3
Incremental growth potential	4	4	4	3
Execution capability	3	3	4	3
Strategic and other issues				
Business diversification	2	4	3	3
Management/strategic issues	3	2	4	4
Strength of Financials				
Earnings (PBT) Growth	3	3	3	4
Debt:Equity*	4	3	4	4
RoCE	2	2	3	2
Total S-score	**24**	**23**	**27**	**26**

Picking potential winners

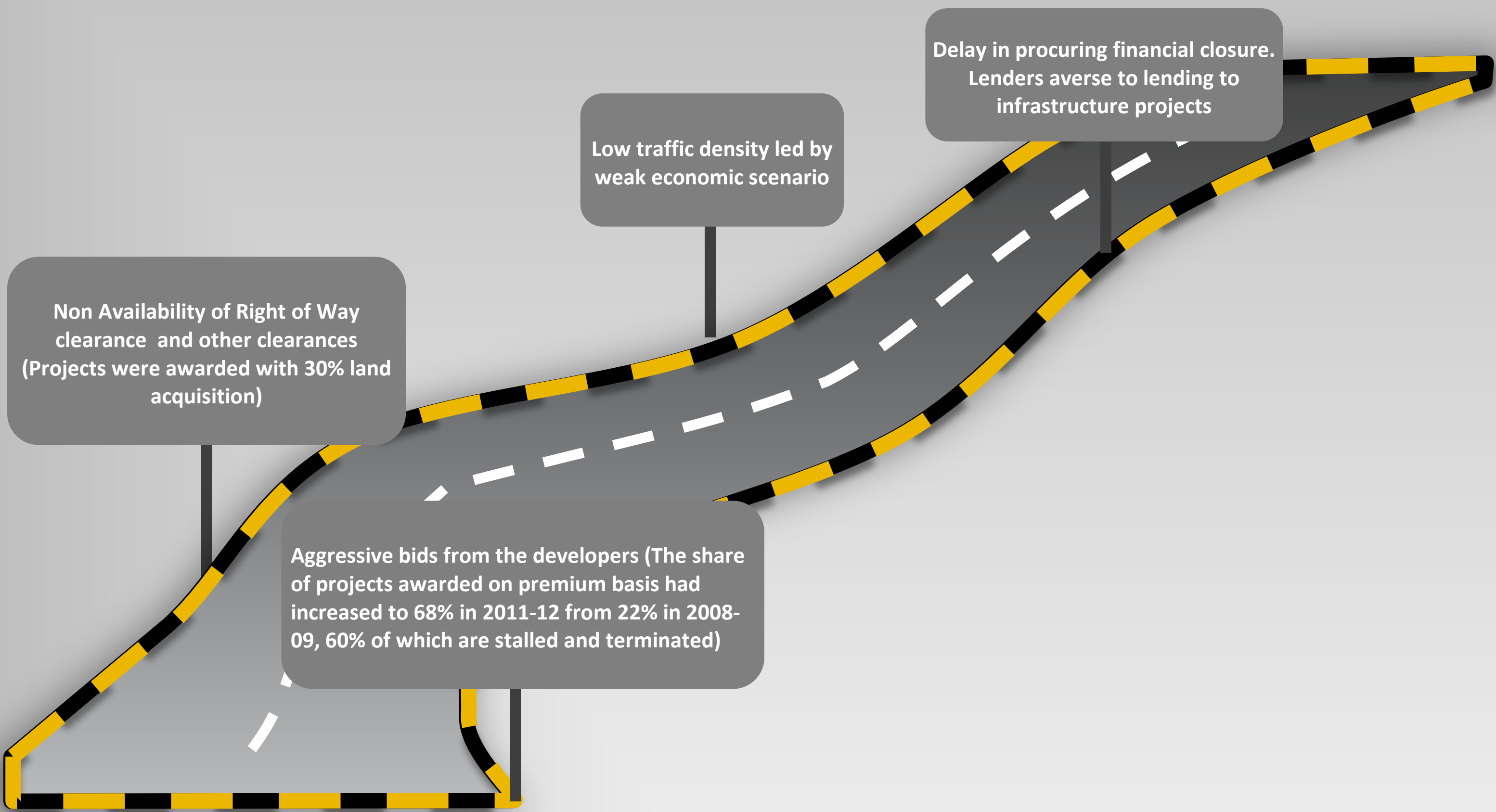
While Roads sector revival and improvement in business opportunities will benefit majority of the players in the sector, we believe the preferred way to play the sector at the current juncture is through asset-light E&C firms and select asset-owners with good balance sheets and strong operational BoT assets. We initiate coverage on Ashoka Buildcon, Sadbhav Engineering, KNR Construction and IRB Infrastructure. Our top picks are Sadbhav Engineering (Buy; TP: INR385), Ashoka buildcon (INR260) and KNR Construction (Buy; TP: INR295), given their strong execution track record, healthy balance sheet, and stable operating margins.

Exhibit 2: Valuation metrics and framework

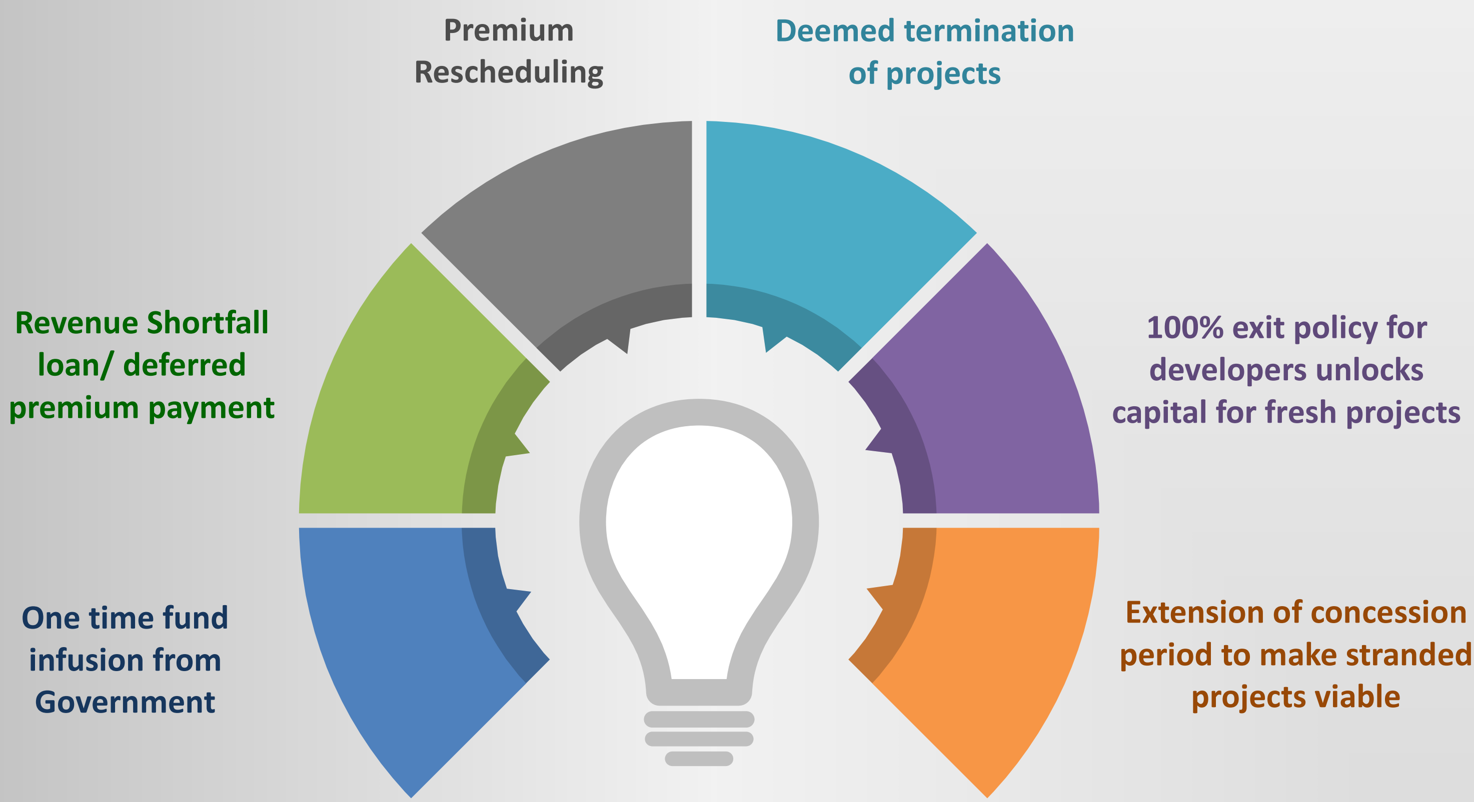
	Consolidated		Standalone		Consolidated		Standalone	
	Ashoka Buildcon		KNR construction		IRB infrastructure		Sadbhav Engineering	
	FY18E	FY19E	FY18E	FY19E	FY18E	FY19E	FY18E	FY19E
Financial Snapshot								
Revenue	33,736	38,666	18,006	20,214	58,562	65,670	38,365	44,976
EBIDTA	9,723	10,799	2,629	2,951	29,377	33,051	4,286	5,122
PAT	339	1,321	1,792	1,917	7,958	8,390	2,449	2,493
Growth YoY (%)								
Revenue	13	15	16.8	12.3	0.2	12.1	15.5	17.2
EBIDTA	9	11	14.5	12.3	(3.6)	12.5	20.5	19.5
PAT	NM	290	6.6	7.0	11.4	5.4	30.4	1.8
Margins								
EBIDTA	28.8	27.9	14.6	14.6	50.2	50.3	11.2	11.4
PAT	1.0	3.4	10.0	10.0	13.6	12.8	6.4	5.5
Cashflow								
Operating Cashflow	6,709	7,172	2,155	1,559	-15,556	25,332	10,503	3,137
Free cashflow to Firm	3,625	4,021	1,155	559	78,852	-17,150	9,003	1,637
Valuation Ratios								
P/E	119	30.5	19.6	18.3	14.1	13.4	18.9	18.6
P/B	2.2	2.1	3.3	2.8	1.9	1.7	2.5	2.2
Ev/EBIDTA	9.0	8.4	13.5	12.0	7.2	7.4	12.5	10.3
Return Ratios								
RoE	1.9	7.1	18.4	16.7	14	13	13.8	12.5
RoCe	9.8	10.2	16.3	15.7	9.9	11.2	9.0	10.2
Valuation Methodology								
EPC	16x:Sep19 P/E	180	18x:Sep19 P/E	256	8x: Sep19 P/E	114	16x:Sep19 P/E	252
BoT	DCF	67	1x P/BV	39	DCF	100	15% disc to mkt cap	133
Total		**260**		**295**		**240**		**385**

Source: Company, MOSL

Issues that hampered the growth in the sector

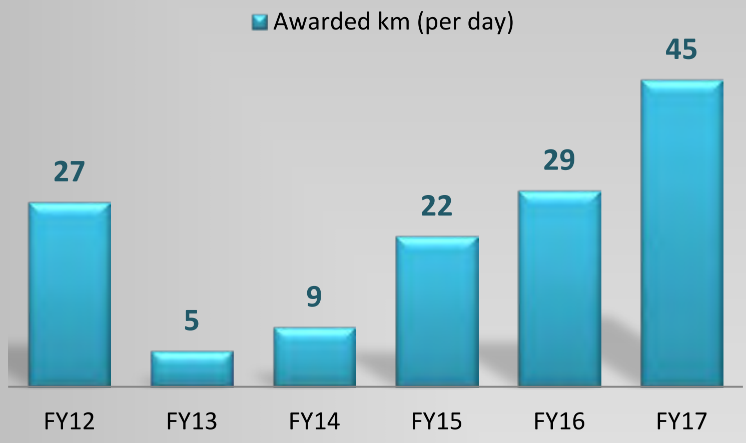


Steps taken to revive the sector

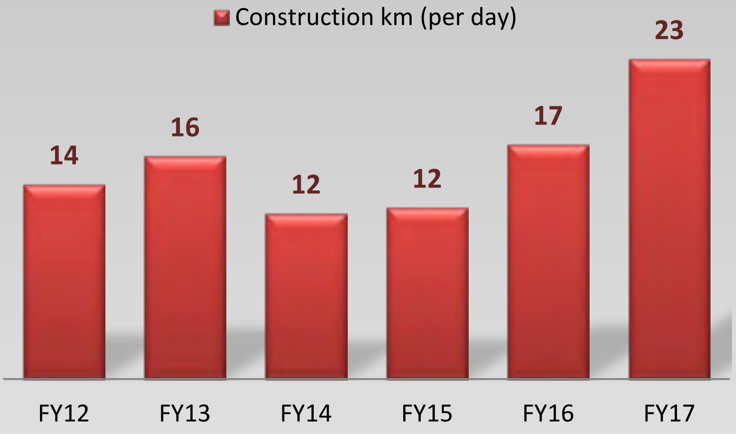


Activity in the sector has shown initial signs of pick up in FY17

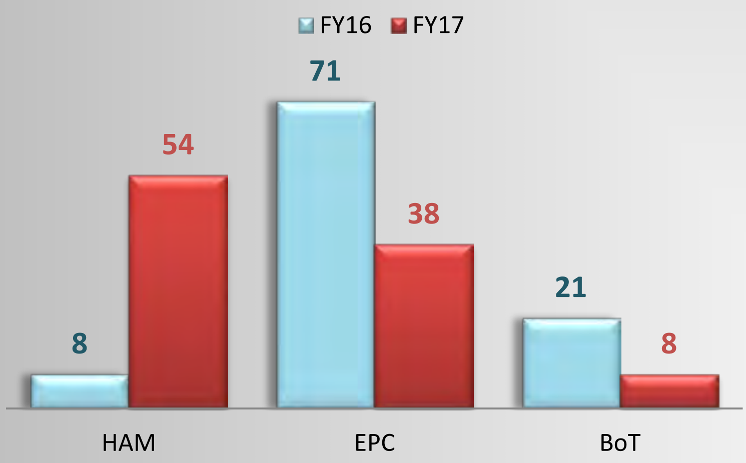
Awarding activity has registered 55% growth YoY



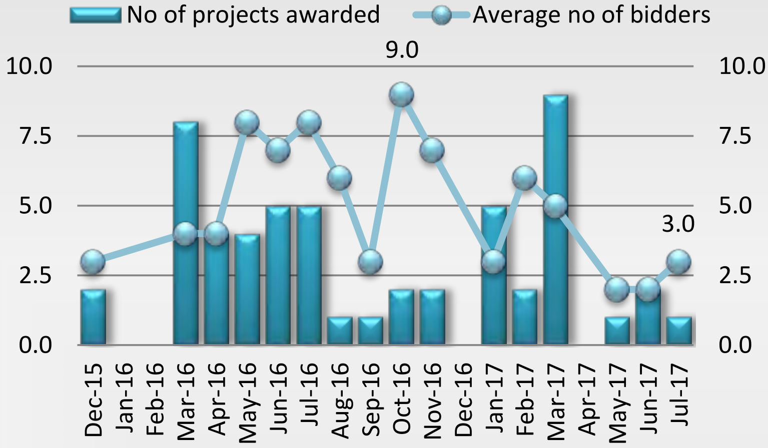
Construction activity has registered 35% growth YoY



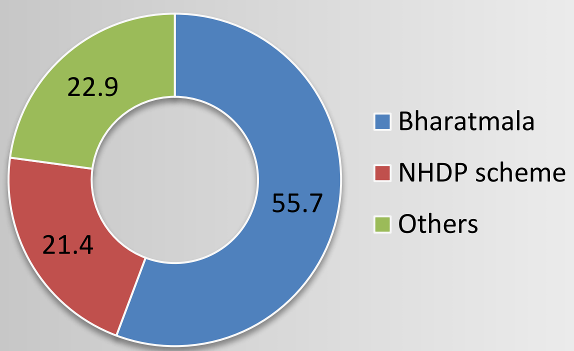
HAM to be preferred way of awarding projects



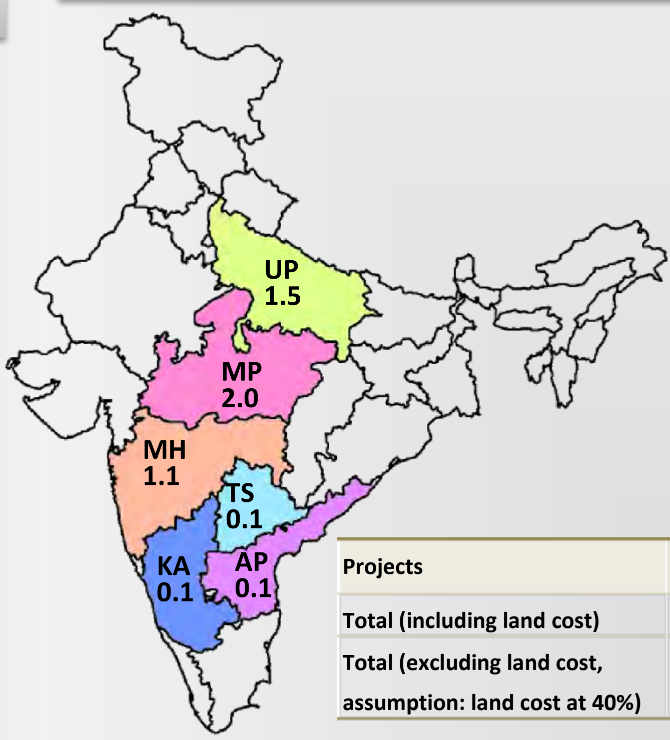
Competitive intensity has come down in the HAM category



Bharatmala project to have dominant share in Centre's ordering activity



State wise opportunities in Road Sector (INRt)



Projects	Cost (INR t)
Total (including land cost)	5.7
Total (excluding land cost, assumption: land cost at 40%)	3.4

Programs entailing INR7t investment already in place

Sizable opportunity for all the players

- **Investment programs worth INR7t have been identified, ensuring a strong pipeline of projects. Bharatmala to constitute 56% of the ordering.**
- **Total projects of 9,304km could come up for award under the NHDP scheme.**
- **Given that 50% of the highways in India are two-laned, four-laning itself promises to be a big opportunity.**

The outlook for the Roads sector has improved considerably over the last two years, with roads being a key focus area for the new government to revive capex activity in India. In its previous tenure as well, the NDA government had chosen the Roads sector to accelerate the capex cycle and had awarded 23,000km over its five-year tenure. In its current tenure, it has set an ambitious target to ramp up road construction activity from 23km per day to 40km per day and has prepared a strong pipeline of road projects, which entails an investment of INR7t (center and state put together). Multiple states like Maharashtra, UP, Telangana, and Karnataka have a strong pipeline of projects. Between the center and the states put together, there exists an opportunity of over INR7t (center: INR4.0t; states: INR3.4t).

Exhibit 3: Immense business opportunity available in the sector from Centre

Component	Length (km)	INR t
Components under Phase-I of Bharatmala		
Economic Corridor Development	9,000	1.2
Inter-corridors and Feeder Roads	6,000	0.8
National Corridor Efficiency Improvement	5,000	1.0
Border & International Connectivity Roads	2,000	0.3
Coastal & Port Connectivity Roads	2,000	0.2
Expressways	800	0.4
Sub-total (A)	**24,800**	**3.9**
Balance Road works under NHDP	**10,000**	**1.5**
Sub-total (A+B)	**34,800**	**5.4**
Roads under other existing schemes (E.g., LWE, SARDP-NE, NHIIP, Setubharatam, Char Dham)	48,877	1.6
Total	**83,677**	**7.0**
Total (excluding land cost, R&R assumption: land cost and R&R at 40%)		**4.0**

Source: MoRTH, Media articles, MOSL

Exhibit 4: Immense business opportunity available in the sector from States

Projects	Cost (INR t)
Maharashtra	1.1
Karnataka	0.1
Telangana	0.4
Andhra Pradesh	0.6
Madhya Pradesh	2.0
Uttar Pradesh	1.5
Total (including land cost)	**5.7**
Total (excluding land cost, R&R assumption: land cost and R&R at 40%)	**3.4**

NHDP

NHDP scheme being implemented in seven phases

The National Highway Development Program (NHDP) is the government's flagship program. It encompasses building, up gradation, rehabilitation and broadening of existing national highways. The program is executed by the National Highways Authority of India (NHAI) in coordination with the Public Works Departments (PWDs) of various states. NHDP is being implemented in seven phases. As at the end of FY17, NHDP has completed 58% of the projects, 22% are under construction, and 20% are yet to be awarded.

Exhibit 5: Road projects status under NHDP scheme

	Total Length (Km.)	Already 4/6Laned (Km.)	Under Implementation (Km.)	Contracts Under Implementation (No.)	Balance length for award (Km.)	Details of the project
GQ	5,846	5,846	0	0	-	Golden Quadrilateral is a highway network connecting many of the major industrial, agricultural and cultural centers of India. It connects cities like Chennai, Kolkata, Delhi and Mumbai
NS - EW Ph. I & II	7,142	6,568	300	28	274	consists of building 7300 kilometers of four/six lane expressways connecting Srinagar, Kanyakumari, Porbandar and Silchar
Port Connectivity	435	383	52	7	-	
NHDP Phase III	11,809	7,621	2,161	71	2,027	upgrade 12,109 km of national highways on a BOT basis, connectivity of state capitals via NHDP Phase I and II, and connectivity to Centre's of economic importance
NHDP Phase IV	13,203	4,058	6,050	105	3,095	Phase IV will convert existing single-lane highways into two lanes with paved shoulders
NHDP Phase V	6,500	2,564	1,428	33	2,508	As road traffic increases over time, a number of four-lane highways will need to be upgraded/expanded to six lanes.
NHDP Phase VI	1,000	-	184	9	816	Connect major commercial and industrial townships.
NHDP Phase VII	700	22	94	4	584	Improvements to city road networks by adding ring roads to enable easier connectivity with national highways to important cities.
NHDP Total	**46,635**	**27,062**	**10,269**	**257**	**9,304**	
Others (Ph.-I, Ph.-II & Misc.)	2,048	1,743	305	18	-	
SARDP -NE	110	107	0	1	-	
Total by NHAI	**48,793**	**28,915**	**10,574**	**276**	**9,304**	

Source: NHAI, MOSL

Major awarding now would happen from phase-IV projects, which involve up gradation of two-lane highways – construction of paved shoulders on two-lane national highways and four-laning of some stretches. Most projects under this phase are likely to be awarded on EPC and HAM basis, as traffic volumes are lower, and are thus, less attractive than phase-III and phase-V projects. Implementation of this phase is expected to require an investment of around INR730b.

Rebidding for terminated contracts likely to be at more favorable terms

NHDP had terminated ~4,500km of the 9,297km of road projects awarded in FY11 and FY12. During FY11-12, most projects were awarded at premium, as the economy was growing at 7-8% and the demand-supply equation favored road developers. However, for a number of these projects, construction activity could not pick up, as NHAI failed to arrange encumbrance-free land and obtain forest &

environment clearances. These projects are now coming up for rebidding after obtaining adequate encumbrance-free land and clearances. Given that the demand-supply equation is now unfavorable for road developers, the rebidding is likely to be at more favorable terms, leading to improved business economics.

Exhibit 6: List of projects terminated by NHAI

Stretch	Funded by	NH no	Length (km)	When terminated	NHDP Phase
Harangajo to Maibang (AS-21)	NHAI	54	26		II
Kannur - Kuttipuram (Package -II)	BOT	17	82	Nov-13	III
Kannur - Kuttipuram (Package -I)	BOT	17	83	Sep-13	III
Jetpur - Somnath	BOT	8D	123		III
Pimpalgaon – Nasik - Gonde	BOT	3	60		III
4-Laning of Solapur - Bijapur	BOT	13	111	Dec-13	III
Rohtak - Jind	BOT	71	49		III
Bhuneshwar - Puri	BOT	203	67		III
Talchar – Dubari- Chandikhole	NHAI	23&20C	132		III
Raiganj - Dalkola	BOT	34	50		III
Aligarh - Kanpur	BOT	91	283	Sep-14	IV
Anandapuram-Visakapatnam-Anakapalli	BOT	5	58	Dec-13	V
Six-Laning of Gundugolanu Rajamundry	BOT	5	121	Dec-13	V
Six Laning of Greenfield Udaipur Bypass	HAM	8	24		V

Source: NHAI, MOSL

Exhibit 7: List of projects foreclosed by NHAI

Stretch	Funded by	NH no	Length (km)	When terminated	NHDP Phase
Bijni – Assam/WB Border (AS-12)	NHAI	31C	30		II
Goa/KNT Border - Panaji	BOT	4A	69		III
Maharashtra/Goa border – Panaji-Goa/KNT Border	BOT	17	139		III
Chethalai - Ochira	BOT	47	84		III
4 Laning of Coimbatore-Mettupalayam	BOT	67	54	Aug-13	III
Kota – Jhalawar	BOT	12	88	Sep-13	III
Karnataka /Kerala Border - Kannur	BOT	17	127	Jan-14	III
KaraiKudi - Ramanathapuram	BOT	210	80	Jul-16	III
Belgaum - Kanpur	BOT	4A	82		III
Rimoli-Roxy-Rajmunda	BOT	215	96	Feb-17	III
Bimitrapur - -Barkate	BOT	113	86	Mar-14	IV
Muhulia – Baharagora- Kharagpur	BOT	6&33	127	Sep-14	IV
2 laning of Raipur – Jessa - Khera	NHAI	458	32	Nov-14	IV
Fagne – Chilki PKG -2	BOT	6	150	Sep-14	IV
Aurangabad-Barwa Adda	BOT	5	220	Nov-13	V
Chennai - Tada	BOT	5	43	Jun-16	V
Walajapet - Poonamalee	BOT	46	93	Jul-16	V
New 4 – Lane Elevated Road from Chennai port – Maduravoyal	BOT	4	19		VII

Source: NHAI, MOSL

Bharatmala Project

Bharatmala project has been launched as an umbrella program with primary focus on optimizing the efficiency of the movement of goods and people across the country. This program envisages a corridor approach in place of the existing package-based approach which has resulted in skewed development. It is an umbrella project, with estimated project cost of INR5.4t to build 34,800km of roads of which phase I includes projects worth INR3.5t (24,800km). Government intends to award the projects under phase I over the next two years and complete the projects over the next five years. DPR preparation for projects with 9,000km is already undertaken. Key Schemes envisaged under Bharatmala project include

- **Economic corridor:** Bharatmala project intends to develop corridors of economic importance which are expected to carry 25% of the freight over the coming years. Government has identified 50 corridors in a scientific manner by a) survey of freight movement across 600 districts b) Automated traffic surveys across 1500 points c) identifying shortest route for all origin-destination movement d) Satellite mapping of corridors for identifying up-gradation requirement. Once the network of Economic corridor (along with its feeder and inter corridor routes), and national corridor is developed it is expected to carry 70-80% of the freight traffic. Around 26,200 km of Economic corridors have been identified to be developed as Economic corridors out of which 9,000 kms are being taken up in Phase-I of Bharatmala.
- **National Corridors Efficiency Improvement:** The existing Golden-Quadrilateral and NS-EW corridors carry 35% of India's freight and these would be declared as National corridors. The National Corridors have developed choke points impacting logistics efficiency and thus there is a requirement to build Ring Road and bypasses/ elevated corridors in addition to lane expansion to decongest these National Corridors.
- **Development of multimodal logistics parks:** To improve the efficiency of freight traffic movement across the country, 24 logistic parks have been identified which will cater to production and consumption centers accounting for 45% of India's road freight. Logistic parks intends to develop hub and spoke model which will facilitate consolidated movement of freight by deploying larger carrying capacity truck between the two hub points. Once developed, these routes are expected to bring efficiency of freight movement on existing corridors and reduce logistic cost by 25%. Around 5,000 kms are being taken up under this category in Phase-I of Bharatmala.
- **Border and International connectivity roads:** - 3,300 km of border roads have been identified to be built along the international border for their strategic importance. Around 2,000 km of roads are required for connecting India's major highway corridor to International trade points so as to facilitate Export-Import (EXIM) trade with our neighbors: Nepal, Bhutan, Bangladesh and Myanmar. 2,000 kms are being taken up under this category in Phase-I of Bharatmala.
- **Coastal and Port connectivity roads:** - 2,100 km of coastal roads have been identified to be built along the coast of India. These roads would boost both tourism and industrial development of the coastal region. Of the 2,100km of

coastal roads 2,000 km of port connectivity roads have been identified to facilitate EXIM trade with an emphasis to improve connectivity to non-major ports. The roads identified have been synergized with the Sagarmala program and are being taken up under this category in Phase-I of Bharatmala.

- **Green-field expressways-** Certain sections of National and economic corridors have traffic exceeding 50,000 PCUs and have also developed several choke points. About 1,900 km of these stretches have been identified for development of green-field expressways. Around 800 kms are being taken up under this category in Phase-I of Bharatmala.

Setubharatam Pariyojana:

The Setubharatam Pariyojana project aims at elimination of railway crossings in India by constructing 1,500 major bridges and 200 railway over-bridges (ROBs) or railway under-bridges (RUBs), with an investment of INR508b. It aims to make all national highways free of railway level crossings by 2019 to prevent the frequent accidents and loss of lives at level crossings. 208 ROBs/RUBs will be built at the level crossings at a cost of INR208b as part of the program. In addition to this, about 1,500 old and worn-down bridges will also be improved by replacement/widening/strengthening at a cost of about INR300b. Detailed project reports (DPRs) have already been received for 73 ROBs.

Exhibit 8: Rail over-bridges identified to be built under Setubharatam Pariyojana

States	Rail over bridges (number of units)
Andhra Pradesh	33
Assam	12
Bihar	20
Chatiishgarh	5
Gujarat	8
Haryana	10
Himachal Pradesh	5
Jharkhand	11
Karnataka	17
Kerala	4
Madhya Pradesh	6
Maharashtra	12
Odhisa	4
Punjab	10
Rajasthan	9
Tamil Nadu	9
Uttarakhand	2
Uttar Pradesh	9
West Bengal	22
Total	**208**

Source: MoRTH, MOSL

Chardham Project:

The project envisages connecting Kedarnath, Badrinath, Gangotri and Yamunotri through 888km of disaster-proof two-lane roads in Uttarakhand at a cost of INR120b. The Finance Ministry has approved an extra budgetary support of INR20.7b for the project. The project will be executed in seven packages. The government has approved two packages – Rishikesh-Rudraprayag (Package-I) and Rudraprayag-Mana village (Package-II) – on EPC mode.

Exhibit 9: Details of packages to be awarded under Chardham Connectivity Program

Package	Project name	NH No	Road length (Km)
Package-I	Rishikesh-Rudraprayag	NH-58	140
Package-II	Rudraprayag-Mana village	NH-58	160
Package-III	Rishikesh-Dharasu	NH-94	144
Package-IV	Dharasu-Gangotri	NH-108	124
Package-V	Dharasu-Yamunotri	NH-94	95
Package-VI	Rudraprayag-Gaurikund	NH-109	76
Package-VII	Pithoragarh-Tanakpur	NH-125	150

Source: MoRTH, MOSL

North East Connectivity Project

Ministry of Road Transport and Highway (MoRTH) has assigned special emphasis to the development of highways in the North East region and has incorporated a company called National Highways & Infrastructure Development Corporation (NHIDCL) in 2014 to address the concerns of sluggish pace of implementation of infrastructure projects in the North East Region and Strategic Areas of the country that share international boundaries. NHIDCL is currently handling 134 national highway and other infrastructure development projects covering about 8,000km to be executed at a cost of about INR1t. These include important projects such as Chandkhera-Kurti Bridge, Rhenok-Pekyong (26km), four-laning of Dimapur-Kohima section of NH-39, Imphal-Moreh section of NH-39 alternative alignment, etc.

Exhibit 10: North East Connectivity Program details

State	Road length (Km)	Estimated Cost (INR b)
Andaman & Nicobar Islands	275	40
Arunachal Pradesh	1,668	22
Assam	19	1
Himachal Pradesh	320	32
Jammu & Kashmir	436	163
Manipur	1,563	124
Meghalaya	331	18
Mizoram	472	71
Nagaland	327	70
Sikkim	578	53
Tripura	571	55
Uttarakhand	661	67
West Bengal	433	63
Total	**7,653**	**778**

Source: MoRTH, MOSL

State infrastructure: Abundant opportunities

Ambitious plans by states to revamp road infrastructure

With the support from the center, several states have planned mega road projects. States like Maharashtra, Uttar Pradesh, Karnataka, Andhra Pradesh and Telangana have a robust pipeline of projects to be awarded over the next few years. Plans of INR5.7t have been finalized and these should be executed over the next few years.

Exhibit 11: Planned capex by key states (Key projects)

Key Projects	Cost (INR b)	Kms
Maharashtra		
Mumbai Nagpur Samruddhi Corridor	460	710
Maharashtra Road improvement Program	300	10,000
Mumbai Transharbour link	178	22
Mumbai Coastal Road	150	30
Karnataka		
Bangalore- Mysuru	40	117
KSHIP III	27	419
Telangana		
Two Expressway connecting Hyderabad with Bengaluru and Vijaywada	160	400
Elevated corridor	14	16.4
State and National Highways	250	
Madhya Pradesh		
Narmada Expressway	310	1,265
Chambal Expressway and Road upgradation project	1190	300
Andhra Pradesh		
State Highways up gradation to National Highways	50	1,000
National highway improvement	23	500
Amravathi Anadapur Expressway	280	690
Outer Ring Road	200	186
Uttar Pradesh		
Purvanchal Expressway	190	
Ring roads, up gradation of roads etc	1300	
Total	**5,122**	**15,355**

Source: Industry article, MoSL

Maharashtra

Maharashtra has strong infrastructure development plans, with multiple large projects in the pipeline – Mumbai-Nagpur (INR240b),, MRIP projects on HAM basis (10,000km; INR300b), and Mumbai Coastal Road project (INR150b). Maharashtra plans to award road projects worth INR1.1t over the next few years.

Uttar Pradesh

Uttar Pradesh offers strong business opportunity for road developers post change in state government. The center has approved road projects of INR100b for the construction and upgradation of various roads in Uttar Pradesh. Projects include upgradation of 73 state highways into national highways, with a total length of 6,260km. The government also plans to award Purvanchal Expressway (INR190b).

Andhra Pradesh

Andhra Pradesh has planned road project capex of INR553b. Key projects include Outer Ring Road (INR200b) and Amravathi-Anadapur Expressway (INR280b).

Policy amendments key to revival of sector

Focus on ironing out prevailing issues

- **The model concession agreement has been modified with the intent to make the agreement more practical and developer-friendly.**
- **The improved model concession agreement builds in issues like exit policy and revival of stranded projects to ease the prevailing distress in the sector.**

To achieve its ambitious target and revive the Roads sector, the government has adopted a multi-pronged strategy. We believe key initiatives like (a) amendment to the model concession agreement (premium rescheduling, deemed termination of project), (b) bidding of tenders only after 80% procurement of land, and (c) exit option available to developer after two years of project operation will go a long way in improving the business dynamics and transparency in the sector and revive the interest of the stakeholders.

Exhibit 12: Key announcements by the Ministry over the last few years

Key changes to various policies related to the Roads sector over the last few years	
Mar-13	De-linking of forest and environmental clearances
Mar-14	Premium rescheduling for stressed projects
Jul-14	Bidding of tenders only after 80% land has been acquired
Aug-14	Waiver of charges for mutual usage of land between the railways and roads ministries
Aug-14	Fast track clearances: i)States to clear projects with up to 40 acres of forest land, ii) Increased limit for sand mining, iii) Online filing and clearing of ROBs and RUBs
Dec-14	5:25 scheme which allowed banks to refinance or sell their long-term project loans every 5 years
Feb-15	Govt budgetary support to NHs raised by 178% to INR856b in Union Budget 2015-16
May-15	100% exit for developer after two years of project completion both for pre-2009 and post- 2009 projects
May-15	NHAI funding for projects that are stuck in advanced stages of completion
Aug-15	Removal of clause related to investment of money earned on exits in other NHAI projects
Sep-15	Amendments to MCA
Nov-15	34 Stalled projects given an extension in the construction period
Jan-16	Cabinet approves hybrid annuity model for construction of highways
Aug-16	Government's decision to pay 75% of arbitration amount to construction companies which have won arbitration awards against PSU

Source: Media articles, MOSL

Amendment to model concession agreement a game changer

The Roads sector received strong impetus post the amendment of the model concession agreement (MCA) by the Ministry of Roads and Highways for awarding projects on BOT basis. Changes like rescheduling premium payments and deemed termination of project will help revive the confidence of key stakeholders. The amendment to the model concession agreement addresses the following issues:

Premium rescheduling: Under the amended MCA, premium payment will start from the fourth year after the completion date as against the first year, previously. This will significantly reduce the cash flow mismatch during the initial phase of the project and will also give comfort to bankers, as debt servicing gets priority.

Deemed termination of projects: Under the amended MCA, if the condition precedents in the concession agreement are not fulfilled within one year of signing the concession agreement, the project would be eligible for deemed termination. This step is a huge positive for the sector, as this will significantly reduce the projects getting stuck/stalled on account of non-fulfillment of the conditions in the agreement. This will also reduce the risk of cost overrun of a particular project.

Revenue shortfall loan / deferred premium payment: Under the amended MCA, revenue shortfall loan / deferred premium payment has been allowed not only for an indirect political event or an authority default impacting the cash flow of the project, but also for any judicial pronouncement impacting the cash flow of the project. Thus, concessionaires have been allowed to defer premium payment for projects that are not able to meet the premium obligation post servicing debt and necessary expenses. To qualify for the premium deferment scheme, there has to be a clear case of revenue shortfall and the concessionaire would be required to pay interest on the deferred premium amount. The deferred premium would be to the extent of the shortfall in payment of premium and would be capitalized. The deferred amount would be recovered in future with interest of 2% over the bank rate. The concessionaire would not be allowed to declare any dividend till the premium is made good. In May 2014, NHAI approved deferment of premiums for nine projects worth INR60b spread over next 12 years.

Exhibit 13: Projects where premium deferment has been approved by NHAI

Projects	Developers	Premium postponed in 2014 (INR m)
Godhra- Gujarat/ Madhya Pradesh border	BSCPL	82
Beawar-Pali- Pindwara	L&T	1,704
Rohtak-Panipat	Sadbhav	473
Hyderabad-Yadgiri	Sadbhav	129
Samakhiyali-Gandhdham	L&T	244
Ahmedabad-Vadodara	IRB	2,367
Tumkur-Chitradurga	IRB	815
Indore-Dewas	Gayatri-DLF	293
Hosur Krishnagiri	Reliance Infra	407

Source: Company, MOSL

100% exit policy for developers unlocks capital for fresh projects

The Cabinet Committee Economic Affairs has approved a comprehensive Exit Policy that permits concessionaires/developers to divest 100% equity two years after completion of construction. This would help unlock equity from completed projects, making it potentially available for investment in new projects. The policy is more relevant and applicable for the pre-2009 built projects, where divestment of promoter equity to the tune of 74% was allowed; for post-2009 projects, this exit policy is available. The exit policy would be beneficial to 80 build, operate and transfer (BOT) projects awarded prior to 2009 that have been completed with equity-locked-in worth INR45b. Once unlocked, this could support incremental 1,500km of new highways on PPP mode, thus helping to revive the response to BOT (T) projects.

The government has proposed a one-time fund infusion to revive and complete languishing national highway projects under public-private partnership (PPP) mode that have achieved at least 50% physical completion. NHAI will provide loan support for a short tenure at ‘bank rate + 2%’ and will have first charge on the toll receivables. The government has identified 15 stalled projects, where INR13.5b is required to be infused to complete the projects. However, lenders are not agreeable to NHAI’s first charge on receivables.

Extension of concession period to make stranded projects viable

Delays in land acquisition and in obtaining environmental clearances have often led to revenue loss resulting from extended construction period, which lowers the tolling period. The government has cleared a proposal that will extend the construction period of toll projects without reducing the original tolling (revenue collection) period, subject to delays not being attributable to the concessionaire. For annuity projects, concession tenure would remain unchanged, with compensatory annuities being given for the duration of such delays.

Issues resolved for languishing projects

73 national highway projects with aggregate length of around 8,310km were languishing after award around two and half years back. Issues like non availability of land, Environmental clearances and lack of availability of funds had hampered the progress of these projects. Estimated capital investment of around INR1t was involved in these projects. Interventions by the Ministry, which took policy measures after interacting with concessionaires and bankers, have resulted in most such projects coming back on track. Of the 73 languishing projects as mentioned above, issues remain to be resolved for only 10 projects.

Sunny days ahead

FY17 target missed, but award activity has gathered steam

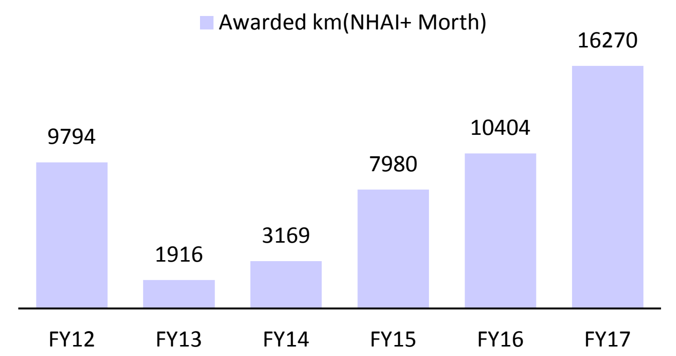
- **Aggressive targets to award 25,000km and construct 15,000km in FY17 have been missed; however, policy initiatives have gathered steam.**
- **FY18 could see strong growth on the construction side, as key issues of land acquisition and funding arrangement have been addressed.**
- **New project model (Hybrid Annuity Model; HAM) has been introduced to alleviate the funding concerns of the sector.**

FY17 target missed

The Ministry had set an ambitious target of 2.5x increase in award and construction of national highways for the year 2016-17. It had targeted award of 25,000km of national highways in 2016-17 against the award of 10,000km in 2015-16. The construction target was set at 15,000km against the 6,000km constructed in 2015-16. Of the total length of national highways targeted for award, 15,000km would fall under the target of NHAI and 10,000km would fall under the target of the Ministry and National Highways and Infrastructure Development Corporation (NHIDCL).

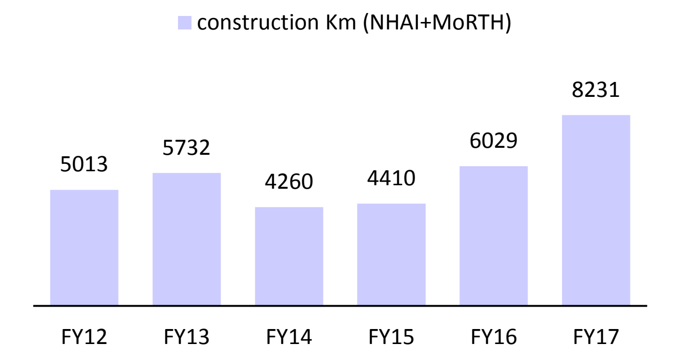
NHAI's target for construction was fixed at 8,000km while the Ministry and NHIDCL's target was 7,000km. Of this, NHAI and MORTH have been able to award 16,270km and construct 8,230km of highways. For FY18, we expect ordering activity to stabilize around the FY17 level however we expect construction activity to show traction as most of the new projects have been awarded post 80% land acquisition which will ensure timely execution of projects.

Exhibit 14: Projects award have started to pick up pace with land acquisition issues getting addressed



Source: NHAI, MOSL

Exhibit 15: Construction activity has shown strong pick up with construction activity at 23km per day



Source: NHAI, MOSL

However, activity has picked up

Industry reports indicate that NHAI would award over 31,000km of road projects from 2016-17 to 2020-21, with an estimated investment of INR3.6t. With build, operate and transfer (BOT) projects losing flavor among developers in the last two years, NHAI has been awarding more projects through the EPC and HAM route. We expect EPC and HAM projects to attract greater player interest, as they require limited upfront capital and involve lower risk than BOT projects. In the near term, about 50% of the projects would continue to be awarded on an HAM basis, and the balance 45% on the EPC basis. Current NHAI project pipeline indicates project worth

INR600b to be bidded out by December 2017 of which INR269b would be on HAM basis, INR269b on EPC basis and balance INR63b on ToT basis
HAM projects would hasten the pace of award and construction of national highways apart from de-risking developers and lenders from inherent shortcomings associated with conventional toll and annuity-based design, build, finance, operate and transfer (DBFOT) model.

HAM introduced with intention to reduce risk for developers

Given the distress in the sector on account of high leverage and stretched balance sheets of major players, the government has introduced the hybrid annuity model (HAM). In HAM-based road projects, the government would fund 40% of the construction cost and the balance 60% would be paid as annuity to the developers. HAM has completely taken away the traffic risk from the developers. Even their equity contribution has halved from 30% to ~15%. The Ministry has prepared a strong pipeline to be awarded on HAM basis. In FY17, 54% of the projects were awarded on HAM basis, 38% on EPC basis, and only 8% on BOT basis.

About HAM

HAM is a mix of engineering, procurement and construction (EPC) and build-operate-transfer (BOT) formats, with the government and private companies sharing the total project cost in the ratio of 40:60. NHAI will collect toll and refund the amount over 10 years in 20 equated installments. This new model will reduce financial burden on the concessionaire during the project implementation phase. Compared to EPC projects, the shift to HAM would also ease cash flow pressure on the NHAI. Till now, 40 national highway projects with aggregate length of around 2,549km and involving a cost of around INR405.5b have been awarded under the model. Many more are in mature stages of bidding.

Exhibit 16: List of projects awarded under HAM

Project	NH No	Length	Cost (INR b)	State	Award Date	NHDP Phase	Developer
Construction of 4 Lane Laddowal bypass linking NH-95 with NH-1		17	392	Punjab	May-16	NHDP Phase VII	Eagle Infra India Ltd
Four laning of Bhavnagar - Talaja	8E	48	998	Gujarat	May-16	NHDP Phase IV	Sadbhav Engineering Ltd
Four laning of Talaja - Mahuva	8E	45	835	Gujarat	May-16	NHDP Phase IV	MEP Infrastructure Developers Ltd
Four laning of Una - Kodinar	8E	41	763	Gujarat	May-16	NHDP Phase IV	Sadbhav Engineering Ltd
Four laning of Kagavadar - Una	8E	41	724	Gujarat	May-16	NHDP Phase IV	Agroh Infrastructure & Developers Pvt Ltd
six laning of greenfield proposed Udaipur Bypass	8	24	726	Rajasthan	Jun-16	NHDP Phase V	MBL Infrastructure s Ltd
Four laning of Mahuva to Kagavadar section of PKG-III	8E	40	763	Gujarat	Jun-16	NHDP Phase IV	MEP Infrastructure Developers Ltd
Salasar - Nagaur section of NH-65	65	120	637	Rajasthan	Jun-16	NHDP Phase IV	Dinesh Chandra R. Agarwal Infracon Pvt.Ltd
4 laning of Kodinar to Veraval section of NH-8E	8E	42	830	Gujarat	Jul-16	NHDP Phase IV	Agroh Infrastructure & Developers Pvt Ltd
Four laning / Two Laning with PS of Dausa - Lalsot - Kauthun section of NH-11A	11A Extn	83	689	Rajasthan	Jul-16	NHDP Phase IV	PNC Construction Co.
Two laning with formation of Four Lane of proposed Shimla Bypass (Kaithlighat to Shimla Section)	22	27	1,583	Himachal Pradesh	Aug-16	NHDP Phase III	Chetak Enterprises Ltd
4/ 6 Laning of Kharar to Ludhiana section NH-95	95	76	1,388	Punjab	Aug-16	NHDP Phase V	Ashoka Concessions Ltd
4 Laning from Phagwara to Rupnagar	344A	81	1,170	Punjab	Aug-16	Others	GR Infra Projects Limited
Two/Four laning of BRT Tiger Reserve Boundary to Bangalore section of NH-209	209	171	951	Karnataka	Sep-16	NHDP Phase IV	Sadbhav Engineering Ltd
Four Laning of Binjhabahal - Telebani	6	78	1,009	Odisha	Oct-16	NHDP Phase IV	Oriental Structural Engineers Pvt. Ltd.
Four Laning of Tarsod - Fagne section of NH-6	6	87	1,065	Maharashtra	Nov-16	NHDP Phase IV	MBL Infrstructure Ltd - Agroh Infrastructure Developers Ltd
Four laning of Chikhali - Tarsod section of NH-6	6	63	1,072	Maharashtra	Nov-16	NHDP Phase IV	Viswaraj Environmental Pvt Ltd
2 Laning with PS of Gadu - Porbander	8E	92	417	Gujarat	Dec-16	NHDP Phase IV	Kalthia Engineering & Construction Ltd
Four laning of Tuljapur Ausa (including Tuljapur Bypass)	361	67	904.16	Maharashtra	Feb-17	NHDP Phase IV	Dilip Buildcon Ltd
Six laning from 401.200 to Km.494.410 of NH-8 (PKG-6)	8	93	1,251	Gujarat	Jan-17	NHDP phase V	Atlanta Ltd
Four lanning of Bodhare - Dhule	211	67	745	Maharashtra	Mar-17	NHDP phase IV	Sunil Hi tech Engineers Ltd-Varaha Infra Ltd
Six Laning of Ranastalam to Anandapuram	4	47	1,042	Andhra Pradesh	Mar-17	NHDP phase IV	Ashoka Concessions Ltd
Six laning of Hubli - Haveri	4	63	985	Karnataka	Mar-17	NHDP phase V	Montecarlo Ltd
Delhi Meerut Expressway	24	19	1,377		Mar-17	NHDP phase VI	APCO Infratech Pvt Ltd - Chetak Enterprise Ltd
Four lanning of Mahagaon - Yavatmal	361	80	1,098	Maharashtra	Mar-17	NHDP phase IV	Dilip Buildcon Ltd
Four lanning of Waranga - Mahagaon	361	67	1,060	Maharashtra	Mar-17	NHDP Phase IV	Sadbhav Engineering Ltd
Four lanning of Wardha - Butibori	361	59	1,030	Maharashtra	Mar-17	NHDP Phase IV	Dilip Buildcon Ltd
Four lanning of Yavatmal -Wardha	361	65	988	Maharashtra	Mar-17	NHDP Phase IV	Dilip Buildcon Ltd
Six laning of Davanagere -Haveri	4	79	832	Karnataka	Mar-17	NHDP Phase V	IRCON International Ltd
Four Laning of Singhara - Binjhabahal	6	104	1,288	Odisha	Mar-17	NHDP Phase IV	Montecarlo Ltd
Four laning of Jhansi - Khajuraho(PKG-II)	75&76	85	1,185	Madhya Pradesh [84.70]/ Uttar Pradesh[.70]	Mar-17	NHDP Phase III	PNC Infratech Ltd
Six laning of Handia - Varanasi	2	72	2,511	Uttar Pradesh	Mar-17	NHDP Phase V	G.R.Infraprojects Ltd
Four laning of Jhansi - Khajuraho(PKG-I)	75&76	77	1,373	Madhya Pradesh[19]/Uttar Pradesh[57]	Mar-17	NHDP Phase III	PNC Infratech Ltd
Six laning of Chitradurga -Davanagere	4	73	993	Karnataka	Mar-17	NHDP Phase V	PNC Infratech Ltd

Source: NHAI, MOSL

EPC and HAM to drive NHAI's ordering activity

With build, operate and transfer (BOT) projects losing flavor among developers in the last two years, given (a) their weak financial position, and (b) weak economic activity impacting traffic growth, EPC and HAM would be the preferred routes for NHAI to award road projects. We believe EPC and HAM projects would attract higher interest, as they require limited upfront capital and involve less risk than BOT projects. Maximum ordering will be for NHDP phase-4, which is a two-lane program, with low traffic density. It is expected that about 45% of projects will be awarded on an HAM/annuity basis in the near term, constituting INR269b of market potential for HAM players in the national highways segment.

Exhibit 17: HAM model to be preferred way of awarding projects going ahead

Development mode	Cost (INR b)	Length (Km)
EPC	269	1,204
HAM	269	1,110
ToT	63	681
Grand Total	**600**	**2,995**

Source: NHAI, MOSL

Exhibit 18: Project pipeline to be awarded under EPC and HAM Model

Projects	Amount in m	Km	Type	Region
Sethiyahopu – Cholopuram	10,171	50.5	HAM	Tamilnadu
Narasannapeta - Ranastalam	13,232	54	HAM	AP
Ichapuram to Narasannapeta	4,414	111	EPC	AP
Jaipur Ring Road between Agra Road and Ajmer Road	9,595	46	EPC	Rajasthan
Bhadrak – Baleshwar	8,259	63	HAM	Odhisa
Strengthening of NH-248A	6,956	9	HAM	Haryana
Ring Road/ Bypass around Jammu City	14,718	58	EPC	Jammu
Bangalore-Nidagatta Section	19,840	56	HAM	Karnataka
Nidagatta-Mysore Section	21,693	61	HAM	Karnataka
Bihar-Jharkhand Border (Chordaha) to Gorhar Section	9,876	71	EPC	Jharkhand
Chandikhole-Bhadrak Section	12,119	75	HAM	Odhisa
delinked stretch of Seoni – MP/MH Border of NH-7 in the state of Madhya Pradesh	8,198	30	EPC	MP
Construction of Road Tunnel, viaduct and Churhat Bypass of Rewa Sidhi Section of NH 75E	7,420	15	HAM	MP
Vadodara Kim Expressway-Phase I	17,295	24	EPC	Gujarat
Vadodara Kim Expressway-Phase II	13,544	32	EPC	Gujarat
Vadodara Kim Expressway-Phase III	11,322	31	EPC	Gujarat
Vadodara Kim Expressway-Phase IV	12,962	13	EPC	Gujarat
Vadodara Kim Expressway-Phase V	11,558	25	EPC	Gujarat
Gorhar to Khairatunda Section	7,049	40	HAM	Jharkhand
Khairatunda to Barwa Adda Section	7,930	40	HAM	Jharkhand
Cuttack – Angul Section	7,299	60	EPC	Odhisa
New 4-Lane Bridge over River Ganga	5,160	5	EPC	WB
Cuttack-Angul Section of NH-42 (New NH-55)	6,867	52	EPC	Odhisa
Puruliya – Balrampur - Chandil section	5,929	73	EPC	WB &Jharkhand
Widening of Pipli–Bhavnagar section	7,396	33	EPC	Gujarat
Varanasi Ring Road	4,861	17	HAM	UP
Construction of 4-Lane NH-29 Bypass connecting NH-29 (with NH-2)	10,573	27	HAM	UP
Dangiywas to Jajiwal	10,676	75	HAM	Rajasthan
Delhi-Meerut Expressway from Dasna to Meerut	12,253	32	EPC	UP
Dwarka Expressway	17,803	10	EPC	Haryana
Hybrid ETC and Toll Management Systems at Eastern Peripheral Expressway (EPE)				
Chakur – Loha Section	7,791	62	HAM	Maharashtra
Aurangabad to Karodi	5,212	30	EPC	Maharashtra
Karodi to Telwadi Road section	5,219	56	EPC	Maharashtra
Kozhikode Bypass	12,886	28	HAM	Kerala
Loha –Waranga section of NH-361	11,940	68	HAM	Maharashtra
Gandhigram (Godda) to Hansdiha section	6,107	45	EPC	Jharkhand
6-Laning Of Existing 2-Lane Nandigama Bypass And Kanchikacherla Bypass	3,287	14	EPC	AP
Repallewada to Telangana/ Maharashtra Border	6,773	53	EPC	Telangana
Four laning Ghoshpukur- Salsalabari Section in the State of West Bengal	10,786	42	EPC	WB
Solan Kaithlighat Section of NH-22	4,787	23	EPC	HP
Aurangabad to Bihar – Jharkhand Border (Chordaha) Section of NH-2	8,942	70	EPC	Bihar
4-laning Section from Km. 1.700 (Pirpaiti of NH-80) in the State of Bihar	5,134	49	EPC	Jharkhand
Six laning and Strengthening of new NH-248A in the State of Haryana Package-2	6,668	13	HAM	Haryana
Four Laning of NH-363 From Mancherial to Repallewada	9,702	42	EPC	Telangana
Maheshkhunt – Saharsa - Purnea section	5,737	64	EPC	Bihar
Construction of Dwarka Expressway	14,529	4	EPC	Haryana-Delhi
Anandauram–Pendurthi-Anakapalli section of NH-5	23,924	64	HAM	AP
Thalapady to Chengala section of NH-17 in the State of Kerala	16,733	39	HAM	Kerala
Khambataki Ghat Section of NH-4	6,184	6	EPC	Maharashtra
Sangli-Solaopur Section of NH-166	10,093	41	HAM	Maharashtra
Sangli-Solapur (Package –II: Borgaon to Watambare) section	9,824	52	HAM	Maharashtra
Sangli – Solapur (Package – III: Watambare to Mangalwedha of length 45.600 km.)	9,121	46	HAM	Maharashtra
Sangli-Solapur (Package-IV: Mangalwedha to Solapur)	11,019	57	HAM	Maharashtra
Ausa-Chakur Section of NH-361	8,361	59	HAM	Maharashtra
9 Projects on Toll Operate Transfer Mode	62,580	681	ToT	AP and Gujarat

Source: NHAI, MOSL

InvIT: Vehicle to deleverage balance sheet and enable capital recycling

Introduction of the infrastructure investment trust (InvIT) has helped infrastructure asset owners to free up invested capital by divesting stake in operational assets and to recycle the capital for creating new assets. Asset divestment through InvIT also helps the asset owner to deleverage the balance sheet.

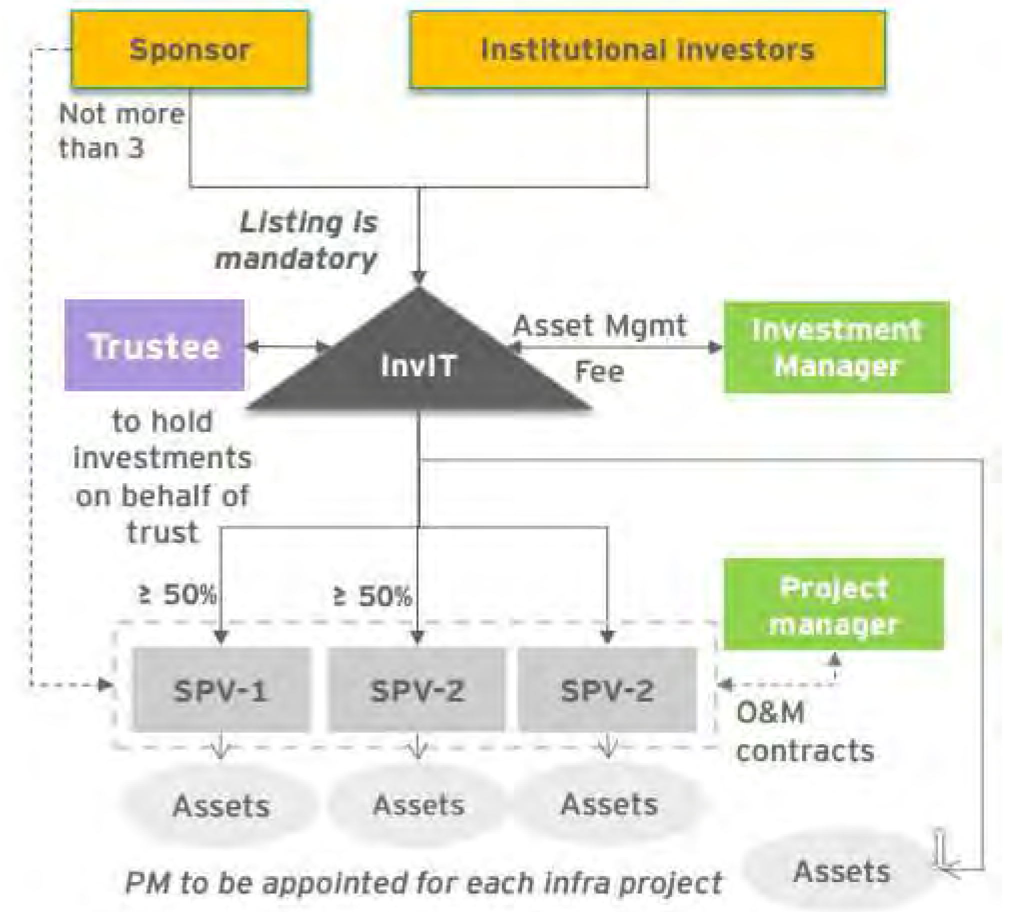
InvIT has been made attractive for investors, as it offers (a) lower taxes, (b) mandate for high payout, (c) cap on leverage, and (d) lower execution risk.

About InvIT: InvIT is an investment vehicle with underlying investments in infrastructure assets. These assets are revenue generating/operational projects that provide a steady source of income to the unit holders. In turn, an InvIT distributes this income to its investors in the form of dividends and interest.

Key requirements

- InvITs have to ensure that they distribute 90% of their net cash flows to the unit investors.
- There is a leverage cap of 49% on the net asset value.
- There is cap on exposure to under-construction assets (for publicly-placed InvITs).
- The sponsor shall hold minimum 15% of the units issued by the InvIT with a lock-in period of three years from the date of issuance of units.
- 80% of investments in completed and revenue-generating assets.

Exhibit 19: Structure of infrastructure investment trust



Source: Industry, MOSL

Funding in place

Market borrowing to be the key source

To meet the capex requirement of constructing 83,677km of roads, Government has laid out clear cut plan of funding the same. Of the total anticipated cost of INR6.9t, major source of the funding (65%) would be met from raising money from market borrowing (INR2.1t) and central road fund (INR2.4t).
Central road fund was introduced by the government (cess on petrol and diesel sales) to meet the funding requirement for the development and maintenance of national and state highways. The road cess on petrol and diesel has been one of the major sources of funding for NHAI projects over the years (from INR60b in FY13 to INR96b in FY15). It was tripled in the FY16 budget to INR6/liter from INR2/liter on petrol and high-speed diesel. However, NHAI's share of the road cess was reduced in 2016-17. While it was given INR150b in 2015-16 from the Central Road Fund, the budgeted amount for 2016-17 is only INR121b. Government allocation of INR2.4t fund to CRF will bring in stability and certainty of funds available for road development in the long run

Exhibit 20: NHAI's sources of funds

	Cess funds	Ploughing back of funds deposited by NHAI	Borrowings 54-EC Bonds+tax free	budgetary support
2010-11	84	16	22	8
2011-12	62	27	125	12
2012-13	60	18	17	6
2013-14	69	48	79	
2014-15	95	55	33	
2015-16	150	65	190	

Source: MoRTH, MOSL

Exhibit 21: Source of Funding to meet the road capex requirement

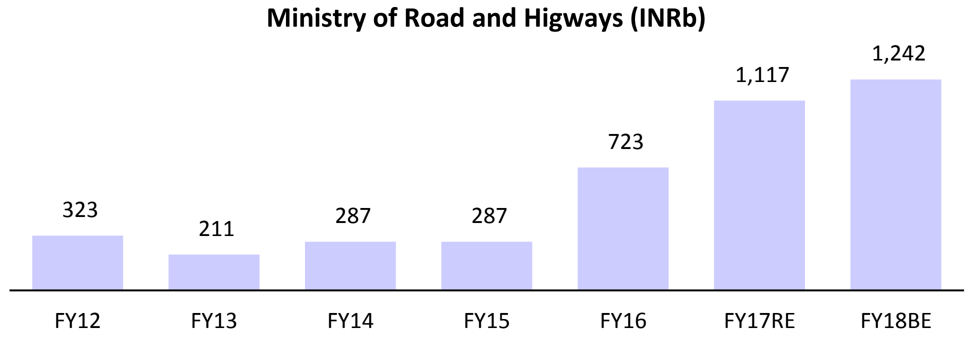
Source	Bharatmala-I (INR b)	Other Schemes (INR b)	Total (INR b)
CRF earmarked for NH	1.4	1.0	2.4
GBS –SARDP-NE, EAP, Counterpart Funds, etc.	-	0.6	0
Expected monetization of NH	0.3		1
PBF –Toll Collections of NHAI	0.5		1
Market Borrowings	2.1		2.1
Private Investment (PPP)	1.1		1.1
Total	5.4	1.6	6.9

Source: Industry, MOSL

Budgetary allocation for road development increased substantially

Budgetary allocation for the Roads sector has been increasing over the last three years. For FY18, budgetary allocation has been increased to INR1,242b 44% CAGR growth over FY14-18. This reflects the government's seriousness to develop road infrastructure in India. The increase in allocation is also on account of increased ordering on EPC basis in FY16/17, which will require higher government spending as against BOT basis in previous years.

Exhibit 22: Budgetary allocation has been increased meaningfully over the last three years emphasizing governments focus on infrastructure development



Source: MoRTH, Company

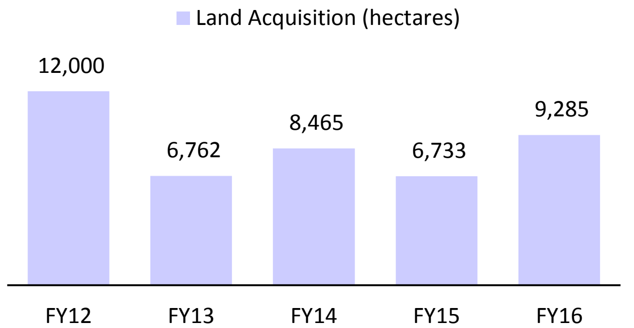
Funding requirement to be partially met by recycling of operational highway assets using toll-operate-transfer (TOT) model

MORTH has developed the toll-operate-transfer (TOT) model to free up capital, which will help to fund the equity requirement of upcoming projects. Under the TOT model, the right of toll collection for operational public-funded national highway projects will be assigned for a pre-determined concession period (30 years) to concessionaires against upfront payment of a lump-sum amount. Initially, 75 public-funded national highway projects with aggregate length of around 4,500km and annual toll revenue collection of around INR27b have been identified for the TOT model. The model concession agreement (MCA) has been developed and the first round of bidding for projects is expected to be taken up in 2HFY18.

Steps taken to streamline land acquisition

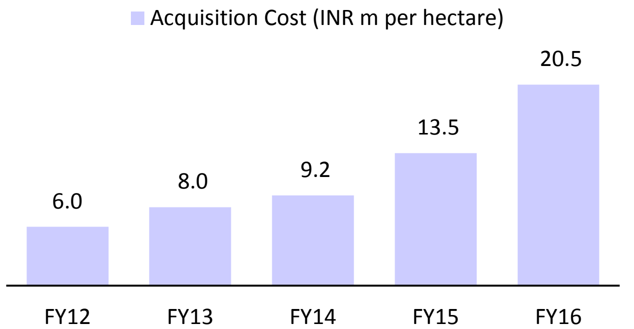
Land acquisition remains the key for successful ramp-up of the road award and construction activity. The Ministry has taken multiple steps to expedite the land acquisition process. The Land Acquisition Cell has been constituted in the Ministry by engagement of a retired Revenue Officer as Consultant. Besides, a policy decision on acquisition under the National Highways Act, 1956 has been taken to ensure availability of requisite land for national highways through bulk purchase in accordance with the policies of the concerned state governments. So far, instructions have been issued for bulk acquisition/purchase of land through consent of land owners in the states of Himachal Pradesh, Goa, Odisha, Bihar, Rajasthan, Chhattisgarh, Kerala, Telangana, West Bengal, Punjab, Maharashtra, Uttar Pradesh and Karnataka.

Exhibit 23: Focus to improve land acquisition



Source: MOSL, Industry reports

Exhibit 24: Compensation increased multifold to get land acquisition in place



Source: MOSL, Industry reports

Applying 3-S scale to pick potential winners

Sadbhav and KNR are the most attractive

- **We have applied a 3-S scale to objectively evaluate Road sector companies on 1) size & scalability, (2) strategic & other issues, and (3) strength of financials.**
- **While the 3-S score ranks these companies on their relative attractiveness on operating parameters, we weigh the 3-S score against the valuation score to pick potential winners.**
- **Based on the 3-S / valuation score analysis, Sadbhav and KNR are the most attractive.**

Focus on operating and financial parameters

We have evaluated road infrastructure companies on operating and financial parameters. We have looked at (a) scale and scalability, (b) strength of financials, and (c) strategic and other issues. KNR Construction and Sadbhav Engineering appear most attractive.

Exhibit 25: Size and Scalability (15)

	Existing Project portfolio Quality	Growth Potential	Execution capability	Total	Remarks
Ashoka buildcon	3	4	3	10	❖ Existing project portfolio highly linked to economic activity and thus traffic growth to remain volatile. ❖ Balance sheet quality strong and thus incremental growth potential by bagging new projects remain high. ❖ Execution capability and historic track record gives comfort of completing newly bagged projects on time
IRB	2	4	3	9	❖ Near term earnings highly dependent on Mumbai Pune Highway. ❖ Recent InvIT issue offers bandwidth for growth earnings. ❖ Historic track record provides comfort on timely execution
KNR	2	4	4	10	❖ Weak project portfolio with traffic growth below estimates. ❖ Extremely healthy balance sheet provides ample room for growth potential. ❖ Excellent execution capability with multiple project completed ahead of schedule
Sadbhav Eng	3	3	3	9	❖ Projects based in High NSDP area thus providing comfort on the earnings potential. ❖ Consol balance sheet strained for new business opportunity. ❖ Historic track record provides comfort on the execution capability of the management

Rated based on existing project portfolio and balance sheet quality to take new projects. Also looked into historic execution track record

Exhibit 26: Strategic and other issues (10)

	Business diversification	Management/ strategic issues	Total	Remarks
Ashoka buildcon	2	3	5	❖ Have diversified into multiple areas (CGD, commercial Real estate, power T&D). ❖ Capital allocation of 13% to commercial real estate segment
IRB	4	2	6	❖ Fully focused on the road sector. ❖ Upfront booking of profit by charging higher than industry standard profit in the EPC segment
KNR	3	4	7	❖ Diversified into Irrigation segment to counter slowdown in the Road infrastructure segment. ❖ Conservative Management with focus on execution and profitability
Sadbhav Eng	3	4	7	❖ Diversified into irrigation and mining sector to counter slowdown in the road infrastructure segment. ❖ Strong management bandwidth to execute multiple large projects on time

Assigning higher score for companies with pure play on Roads. Also, evaluating any management/ strategic issues influencing companies

Exhibit 27: Strength of Financials (15)

	Earnings (PBT) Growth	Debt: Equity*	RoCE	Total	Remarks
Ashoka buildcon	3	4	2	9	❖ Earnings growth to pick up with pick up in economic activity. ❖ Leanest balance sheet in the industry at the consolidated level.
IRB	3	3	2	8	❖ Near term earnings growth totally dependent on Mumbai Pune Highway. ❖ Recent InvIT issue has helped to raise capital for the growth opportunity.
KNR	3	4	3	10	❖ Earnings growth to be moderate given conservative management strategy to bag orders with 14% threshold EBIDTA margin. ❖ Best Return Ratio profile in the industry
Sadbhav Eng	4	4	2	10	❖ Strong earnings growth with pick up in execution of HAM projects. ❖ Standalone Debt: Equity well within comfort zone.

Exhibit 28: Final Rating Scale

	Ashoka Buildcon	IRB	KNR	Sadbhav Eng
Size and Scalability				
Existing Project portfolio Quality	3	2	2	3
Incremental growth potential	4	4	4	3
Execution capability	3	3	4	3
Strategic and other issues				
Business diversification	2	4	3	3
Management/strategic issues	3	2	4	4
Strength of Financials				
Earnings (PBT) Growth	3	3	3	4
Debt:Equity*	4	3	4	4
RoCE	2	2	3	2
Total S-score	**24**	**23**	**27**	**26**

Companies

BSE Sensex: 33,266 | **S&P CNX: 10,364** | **October 2017**

Ashoka Buildcon

BSE SENSEX	S&P CNX
33,266	10,364

Ashoka Buildcon Limited

Stock Info

Bloomberg	ASBL IN
Equity Shares (m)	187.1
52-Week Range (INR)	232 / 134
1, 6, 12 Rel. Per (%)	13/0/17
M.Cap. (INR b)	40.2
M.Cap. (USD b)	0.6
Avg Val, INRm	69
Free float (%)	43.4

Financials Snapshot (INR b)

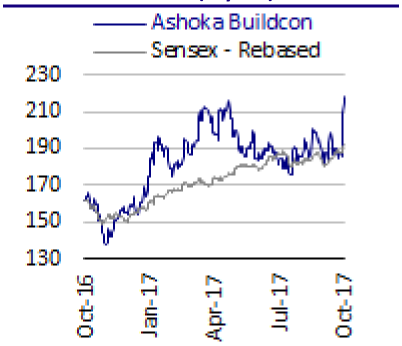
Y/E MARCH	FY17	FY18E	FY19E
Net Sales	29.8	33.7	38.7
EBITDA (Rs b)	8.9	9.7	10.8
NP	-0.1	0.3	1.3
EPS	-0.5	1.8	7.1
EPS Gr (%)	NM	NM	289.9
BV/Share (Rs)	89.3	96.5	101.2
P/E (x)	NM	118.7	30.5
P/BV (x)	2.4	2.2	2.1
RoE (%)	NM	1.9	7.1
RoCE (%)	9.5	9.8	10.2

Shareholding pattern (%)

As On	Sep-17	Jun-17	Sep-16
Promoter	56.6	56.6	56.7
DII	26.7	24.5	22.7
FII	5.9	7.8	8.4
Others	10.8	11.1	12.1

FII Includes depository receipts

Stock Performance (1-year)



CMP: INR 215 TP: INR 260(+ 21%) Buy

Integrated road infrastructure player

Clear dominance on NH-6 an advantage

- **A dominant player on NH-6, ASBL would be a key beneficiary of any pick-up in industrial activity.**
- **Balance sheet quality provides room for equity commitment for additional projects.**
- **We initiate coverage with a Buy rating and target price of INR260.**

Robust operational BOT portfolio, with domination of NH-6

ASBL has a strong BOT road project portfolio of 4,216 lane km, spread across Maharashtra, Chhattisgarh, Karnataka, Madhya Pradesh, Orissa, West Bengal and Tamil Nadu. Of the 4,216 lane km portfolio, 1,739 lane km is on NH-6. The 1,949km NH-6 connects East and West India, stretching from Kolkata in the East to Surat in the West. Eastern states like Chhattisgarh, Orissa and Jharkhand are mineral-rich while Gujarat and Maharashtra in the West are industrial states. We believe ASBL's portfolio will benefit in a major way with pick-up in mining and industrial activity.

Strong balance sheet to support equity commitments for upcoming projects

ASBL has a consolidated debt of INR43b; its debt-equity of 2.3x is lower than other developers. It sold 39% stake in Ashoka Concession (ACL) to SBI-Macquarie for INR8b in 2013 and also did a QIP of INR5b to part finance the BOT projects it had bagged. Timely divestment has helped the company to maintain debt at reasonable levels. This will also help ASBL to bid for incremental projects on BOT basis.

Strong EPC order book of INR64b provides visibility of 3.2x FY17 revenue

ASBL has a robust EPC order book of INR64b executable over the next two years. Of this, the road portfolio is worth INR46.5b and the power T&D portfolio is worth INR17.8b. Order inflow in FY17 was INR39.3b. Barring the Islampur order of INR2.8b, all other orders are progressing as per schedule. Currently, road projects constitute 72% (BOT: 38%; EPC: 34%) of the order backlog and power T&D projects constitute 28%. The management intends to maintain order book bifurcation at 70:30 for roads and power T&D.

SBI-Macquarie's investment of INR8b due for exit in FY18

SBI-Macquarie had invested INR8b in ACL for a 39% stake in 2013, with exit option after five years. The investment had been assured 12% equity IRR and the current value of the investment stands at INR14b. With the lock-in period ending in January 2018, SBI-Macquarie might look to sell the stake to another investor. Equity infusion from SBI-Macquarie had considerably eased ACL's financing requirement.

Valuation and view

ASBL is well placed to benefit from upcoming opportunities in the roads sector, given its well-funded balance sheet; its healthy order book lends confidence to EPC revenue CAGR of 19% over FY17-19E. However, the SBI-Macquarie investment is due for exit in FY18; this along with the income tax investigation case would remain an overhang on valuations. We value the company on SoTP basis with a target price of INR260 and initiate coverage on the stock with BUY rating. We value ASBL's EPC business at 16x Sept19E EPS of INR11.2 at INR180, value BOT business on DCF valuation of INR65 and land parcel at 1x its book value at INR15 per share.

BoT assets: Focussed on NH-6

Play on pickup in economic activity

Robust operational BOT portfolio, with domination of NH-6

ASBL has a strong BOT road project portfolio of 4,216 lane km spread across Maharashtra, Chhattisgarh, Karnataka, Madhya Pradesh, Orissa, West Bengal and Tamil Nadu. Of the total portfolio of 17 BOT assets, Ashoka Concessions Limited (ACL), a subsidiary of ASBL holds seven projects. Of the seven projects with ACL, six are operational and one is expected to be operational in 2HFY18. ABL holds 10 projects directly. Of these, the recently bagged three projects are under construction. For the balance seven projects, the concession period would expire by the end of FY18. Thus, from the valuation perspective, ACL is key.

Of the 4,216 lane km portfolio, 1,739 lane km is on NH-6. The 1,949km NH-6 connects East and West India, stretching from Kolkata in the East to Surat in the West. Eastern states like Chattisgarh, Orissa and Jharkhand are mineral-rich while Gujarat and Maharashtra in the West are industrial states. Traffic along NH-6 has been muted due to sluggish mining and industrial activity. As mining and industrial activity picks up, ASBL's portfolio would benefit.

Exhibit 29: Ashoka Concession's project portfolio, with high concentration on NH-6

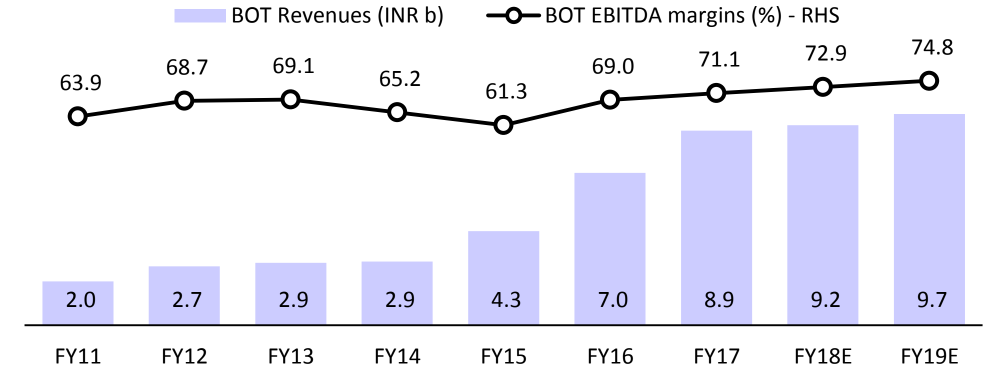
Project	Awarding agency	Project type	Length (Lane km)	Total cost (INR m)	Debt (INR m)	Equity (INR m)	Signing date	Expiring in	Toll hike formulae	Concession period	Premium/(Grant) INR m
Ashoka Concession Limited											
Jaora-Nayagaon	MPRDC	Toll	319	8,651	5,545	3,106	20-Jan-08	15-Feb-33	7% every year	25 yrs	INR153.9 m for 1st year after COD, incremental 5% p.a.
Durg Chattisgarh	NHAI	Toll	332	6,305	4,100	2,205	21-Jul-08	17-Jul-28	WPI	20 yrs	INR10 m payable in 13th yr of concession period
Bhandara Road	NHAI	Toll	377	5,280	3,545	1,635	16-Mar-08	29-Feb-28	WPI	20 yrs	(INR100 m)
Belgaum Dharwad	NHAI	Toll	454	6,941	4,790	1,850	4-May-11	3-May-41	3%+40% of WPI	30 yrs	INR310 m for 1st year after COD, incremental 5% p.a.
Sambalpur Baragarh	NHAI	Toll	408	11,422	8,100	3,322	29-Dec-11	13-May-41	3%+40% of WPI	30 yrs	INR13.3 mn for 1st year after COD, incremental 5% p.a.
Dhankuni Kharagpur	NHAI	Toll	841	22,050	17,460	4,590	1-Apr-12	31-Mar-37	3%+40% of WPI	25 yrs	INR1260.6 mn for 1st year after COD, incremental 5% p.a.
Chennai ORR	TNRDC	Annuity	183	14,400	10,800	1,630	10-Mar-14	18-Mar-34	-	20 yrs	Grant of INR1970 m
Ashoka Buildcon Limited											
KSHIP - II	PWD, Karnataka	Annuity	216	4,560	2,650	550	12-Dec-14	11-Dec-24		10 yrs	Grant of INR1360 m
Bagewadi Saundatti	KRDCL	Annuity	127	3,300	1,980	570	10-Dec-15	9-Dec-25		10 yrs	Grant of INR755m
Hungud Talikot	KRDCL	Annuity	116	3,090	1,990	440	10-Dec-15	9-Dec-25		10 yrs	Grant of INR656m

Source: Company, MOSL

Toll revenue for ACL to grow at a CAGR of 14% over FY17-19

In FY17, toll revenue growth (excluding revenue from Nashik-Pimpalgaon and Dewas Bypass in FY16) stood muted on account of demonetization, however for FY17-19E we factor in toll revenue CAGR of 14% for the ACL projects given toll revenue pick up expected from Dhankuni and Sambalpur driven by pick-up in mining and industrial activity. Consolidated toll revenue growth would be muted, given that seven assets would lose toll collection rights in 2018.

Exhibit 30: Consolidated Toll revenue to register muted growth over FY17-19, given that seven assets would lose toll collection rights



Source: MOSL, Company

Project refinancing to help reduce cost of borrowing

Over the last three years, ASBL has refinanced four projects – Jaora-Nayagaon, Durg Bypass, Bhandara, and Sambhalpur-Baragarh – with savings of 140-330bp in interest cost. Refinancing of these four projects would help save INR260m. Refinancing of other projects, as and when it materializes, would be incrementally value-accretive. With the interest rate regime becoming benign, there could be further reduction in cost of borrowing. We are assuming an interest rate of 10.5% for projects except for the four projects mentioned above, but expect upside, as refinancing announcements happen.

Exhibit 31: Refinancing of projects to help reduce interest cost

Projects	Current borrowing Cost (%)	Reduction (bps)
Jaora-Nayagaon	8.50%	286
Durg Bypass	9.30%	331
Bhandara	9.90%	303
Belgaum	9.00%	210
Sambhalpur	10.30%	141

Source: MOSL, Company

Premium deferment for two projects to help reduce cash burn

ASBL has been able to defer premium payment to NHAI for two BOT projects – Dhankuni-Kharagpur and Belgaum Dharwad – on account of lower than expected traffic. Premium rescheduling would help the company to reduce its cash burn by INR3.1b over FY17-19. This would ensure that debt servicing and project viability stays on track.

Exhibit 32: Deferment of premium to help reduce cash burn

Projects	Original Premium to be paid			Deferred Premium to be paid			Deferment granted		
	FY17	FY18	FY19	FY17	FY18	FY19	FY17	FY18	FY19
Dhankuni Kharagpur	1,532	1,609	1,689	389	645	937	1,143	964	753
Belgaum Dharmwad	40	42	44	38	20	38	2	22	5
Total	**1,572**	**1,650**	**1,733**	**427**	**665**	**975**	**1,145**	**985**	**758**

Source: MOSL, Company

SBI-Macquarie's investment of INR8b due for exit in FY18

SBI-Macquarie had invested INR8b in ACL for a 39% stake in 2013 with exit option after five years. The equity infusion had considerably eased out ACL's financing requirement. The lock-in period ends in January 2018, post which SBI-Macquarie might consider selling its stake. The investment was assured 12% equity IRR; the current value of the investment is INR14b.

Key projects in road BOT portfolio

Dhankuni-Kharagpur: Dhankuni-Kharagpur is ASBL's biggest BOT project (project cost of INR20b). Daily toll collection is INR8.7m which is currently 12% less than the estimated traffic. ASBL expects traffic growth over the next few years to be in the range of 8-9%. NHAI has approved premium deferment for the project, taking into consideration lower than expected collection. Original premium of INR1.5b for FY17 has been scaled down to INR389m, leading to a deferment of INR1.1b. This would ease the cash flow burn for the company and ensure smooth interest servicing. ASBL is in the process of refinancing the project, which would bring down the cost of borrowing to 9.4% from the current 11.25%.

Sambalpur-Baragarh: Sambalpur-Baragarh is a toll-based project based in Odhisa and caters to the mining requirement of industries based in the south of Sambalpur. Mining ban as well as weak demand from industries has led to weaker than anticipated traffic growth. Current traffic of INR1.6m per day is 15% less than estimated. ASBL expects traffic growth of 9-10% over the next few years, led by improvement in mining activity. The project would require cash infusion of INR950m over the next two years, which would be met by positive cash flow generated from the Jaora-Nayagaon project.

Exhibit 33: Value of BOT assets

Project Name	Ownership (%)	Project Value (INR m)	Value for ABL (INR m)	Per share value
ABL-Anagar-Abad	100	242	242	1
ABL-Nashirabad	100	120	120	1
VHPL-Indore	100	851	851	5
JAIPL-Wainganga	50	707	353	2
SH-31-JN	36.2	12,356	4,473	24
ABL - Total (A)		**14,277**	**6,040**	**32**

Project Name	Ownership (%)	Project Value (INR m)	Value for ABL (INRm) @ 61% stake	Per share value
NH-4-Belgaum	100	1,678	1,023	5
NH-6-Sambalpur	100	(1,162)	(709)	(4)
NH-6-Dhankuni Kharagpur	100	3,183	1,942	10
NH-6-Durg	51	686	418	2
NH-6-Bhandara	51	145	89	0
SH-31-JN	38	4,663	2,844	15
NH-3-PNG	26	-	-	-
Chennai ORR	50	905	552	3
ACL - Total (B)		**10,098**	**6,159**	**33**
Total BoT value (A+B)		**24,374**	**12,200**	**65**

Source: MOSL, Company

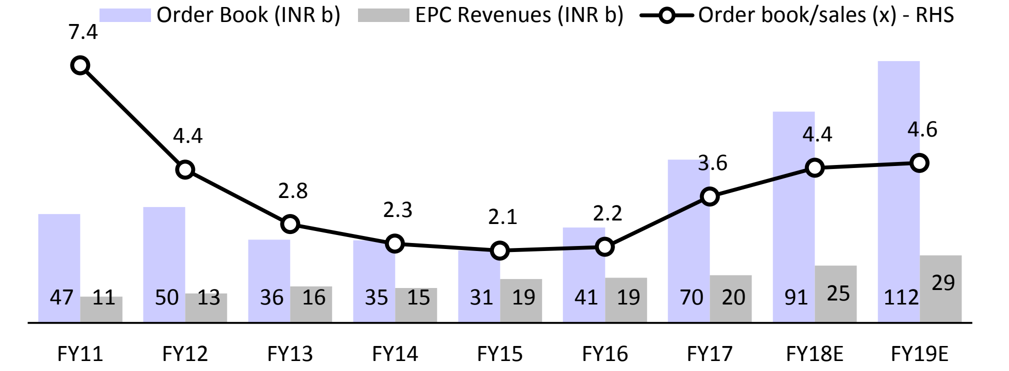
Ventures into city gas distribution business: ASBL recently won a 25-year exclusive license for gas distribution (piped LNG and LPG) in Ratnagiri. The project requires investment (project cost) of INR1.5b in the next five years and incremental investment of INR3.5b over the license period. The company expects equity IRR of 20%. ASBL would carry out the EPC portion of the project. Post the initial learning curve based on the Ratnagiri project's profitability, ASBL would decide whether to participate in upcoming CGD projects. ASBL expects revenue contribution from CGD to begin from 4QFY18.

Ventures into commercial real estate business: ABL has ventured into real estate business by bagging a letter of award (LoA) from Mumbai International Airport Pvt Ltd (MIAL) to develop land parcels located at near Chhatrapati Shivaji International Airport for development of commercial/office space of potential built-up area of 1.17 m sq ft (msf) and saleable area of ~1.5 msf for an aggregate lease period of 49 years. ABL envisages total investment of INR8-9b (INR2.5b equity and balance debt) over the next three years with initial payment of refundable security deposit of INR3.3b & annual lease rental of INR150m to MIAL with an escalation of 15% every three years. ABL anticipates 20% equity IRR from this project

Strong EPC order book of INR64b providing revenue visibility of 3.2x FY17 revenue

ASBL has a robust EPC order book of INR64b executable over the next two years. Of this, the road portfolio is worth INR46.5b and the power T&D portfolio is worth INR17.8b. Order inflow in FY17 was INR39.3b. Barring the Islampur order of INR2.8b, all other orders are progressing as per schedule. Currently, road projects constitute 72% (BOT: 38%; EPC: 34%) of the order backlog and power T&D projects constitute 28%. The management intends to maintain order book bifurcation at 70:30 for roads and power T&D.

Exhibit 34: Robust order book provides strong medium-term revenue visibility

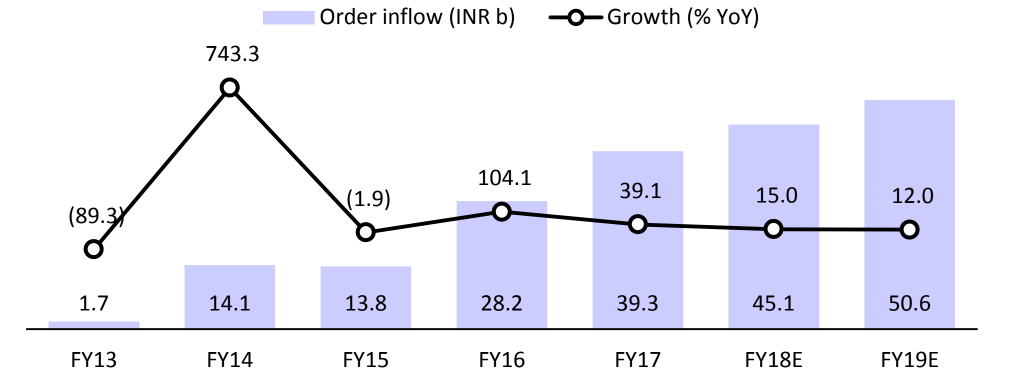


Source: MOSL, Company

Order inflow to remain robust, led by pick-up in award activity

Order inflow for FY17 stood robust at INR39.3b as against INR28.2b in FY16 (up 39% YoY). Management expects the order inflow to remain robust in FY18, given strong pipeline of orders in the Road and power T&D segment. Management has provided guidance of order inflow of INR50b for FY18. We have built in order inflow of INR45b; (up 15% YoY) for FY18.

Exhibit 35: Order inflow to remain robust, supported by pick-up in ordering activity in the roads and T&D segment

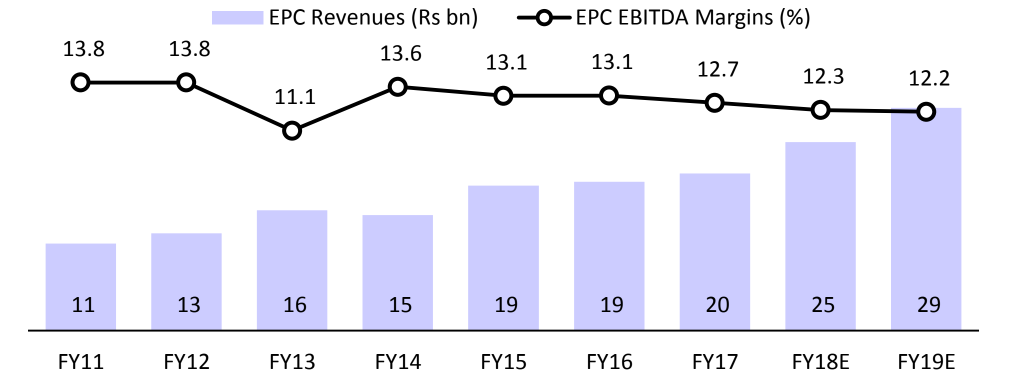


Source: MOSL, Company

EPC revenue to grow at a CAGR of 19% over 2017-19

Given the strong order backlog, we expect ASBL's EPC revenue to grow at a CAGR of 19% over FY17-19. Orders like eastern peripheral highway and Mumbai JNPT Port would be the key contributors to revenue in FY18. We also expect the two BOT projects and one HAM project to start contributing to revenue from FY18.

Exhibit 36: EPC revenue to register 19% CAGR over FY17-19

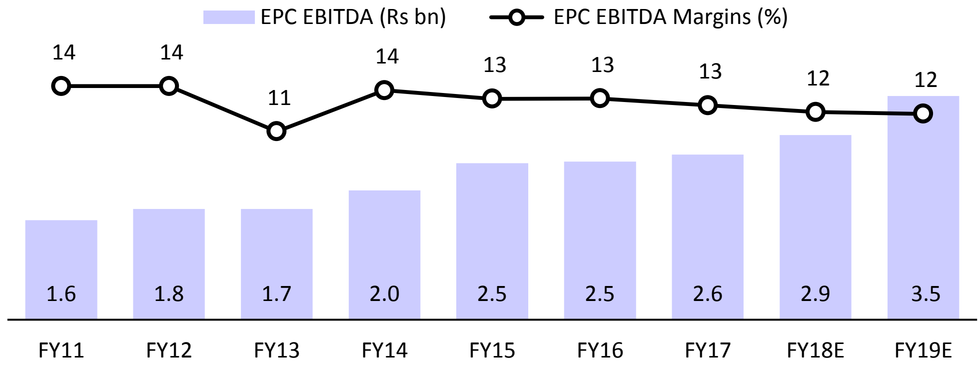


Source: MOSL, Company

Margins to remain stable at 12-13%

EPC operating margins are expected to remain stable at 12-13% over the next few years, as the revenue mix tilts towards execution of captive road sector projects where margins are 100bps better than third party EPC projects. Road sector EPC margins are in the range of 12-13%, whereas margins in the power T&D business are in the range of 11-12%.

Exhibit 37: Operating margin to remain stable in the EPC segment given Road segment to drive execution

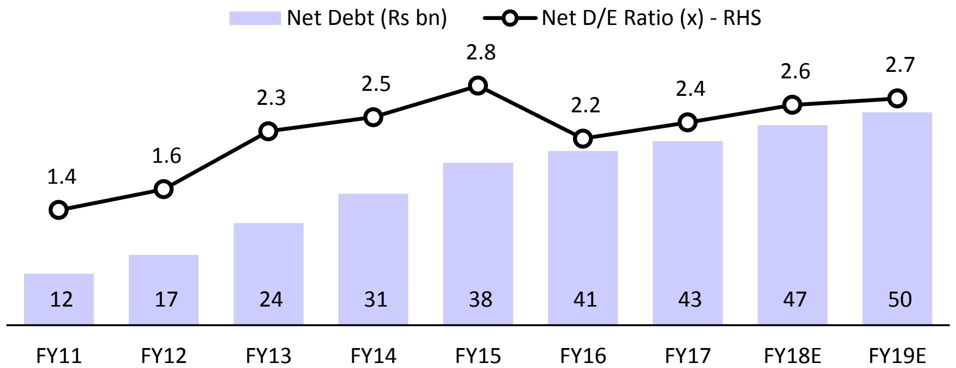


Source: MOSL, Company

Strong balance sheet to support equity commitments for upcoming projects

ASBL has a consolidated debt of INR43b and its debt-equity ratio of 2.3x is much lower than other developers. ASBL sold 39% stake in its subsidiary, ACL to SBI-Macquarie for INR8b in 2013 and also did a QIP of INR5b to part-finance the BOT projects it had bagged. Timely divestment of stake has helped the company to maintain debt at reasonable levels. Its strong balance sheet would help the company to bid for incremental BOT projects.

Exhibit 38: Decent balance sheet quality to support equity commitments of the upcoming projects

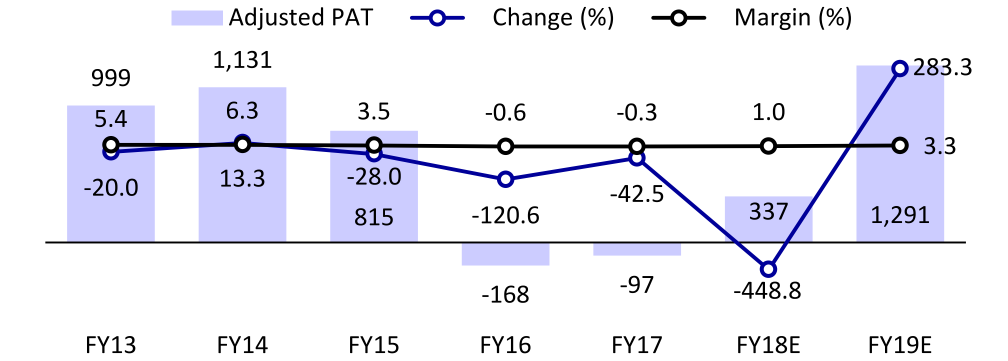


Source: MOSL, Company

Earnings to pick up given strong execution of order book in hand and improvement in performance of BOT projects

We expect earnings performance to improve given pick up in execution of orders in hand and led by improvement in toll collection from Sambalpur-Baragarh and Dhankuni-Kharagpur. We have factored in toll collection CAGR of 14% over FY17-19 for ACL projects. Improvement in toll collection would be led by pick-up in traffic volumes in Dhankuni-Kharagpur and Sambalpur-Baragarh projects. Pick-up in mining and industrial activity hold key for ASBL's projects.

Exhibit 39: Earnings to pickup, supported by improvement in toll collection from Sambalpur-Baragrah and Dhankuni-Kharaghpur projects



Source: MOSL, Company

Valuation and view

BoT portfolio Valuation:

We have valued BoT portfolio at INR65 per share. Key Assets contributing to the BoT assets fair value are Jaora Nayagaon (INR40 per share) and Dhankuni Kharakpur (INR17 per share). For the BoT portfolio we have assumed average traffic growth of 5% for the entire portfolio through the lifecycle of the project. We have also considered toll hike in line with the concession agreement that each SPV has entered into with the concerned authority. We have used 14% as the cost of equity for valuing the assets.

EPC business

We have valued Ashoka's EPC business on P/E basis assigning 15x P/E multiple on FY19E basis given a) strong and diversified order book of INR64b providing 3.1x its FY17 revenue visibility, b) healthy balance sheet with net debt: Equity ratio of 0.1x:1 providing enough room to provide equity support if required to bid for the BoT projects, c) Self-sufficient BoT portfolio of ACL, thus limiting the capital infusion requirement d) Robust revenue CAGR of 19% over FY17-19E and earnings CAGR of 3% given higher tax rate (29% vs 21% in FY17) and lower other income.

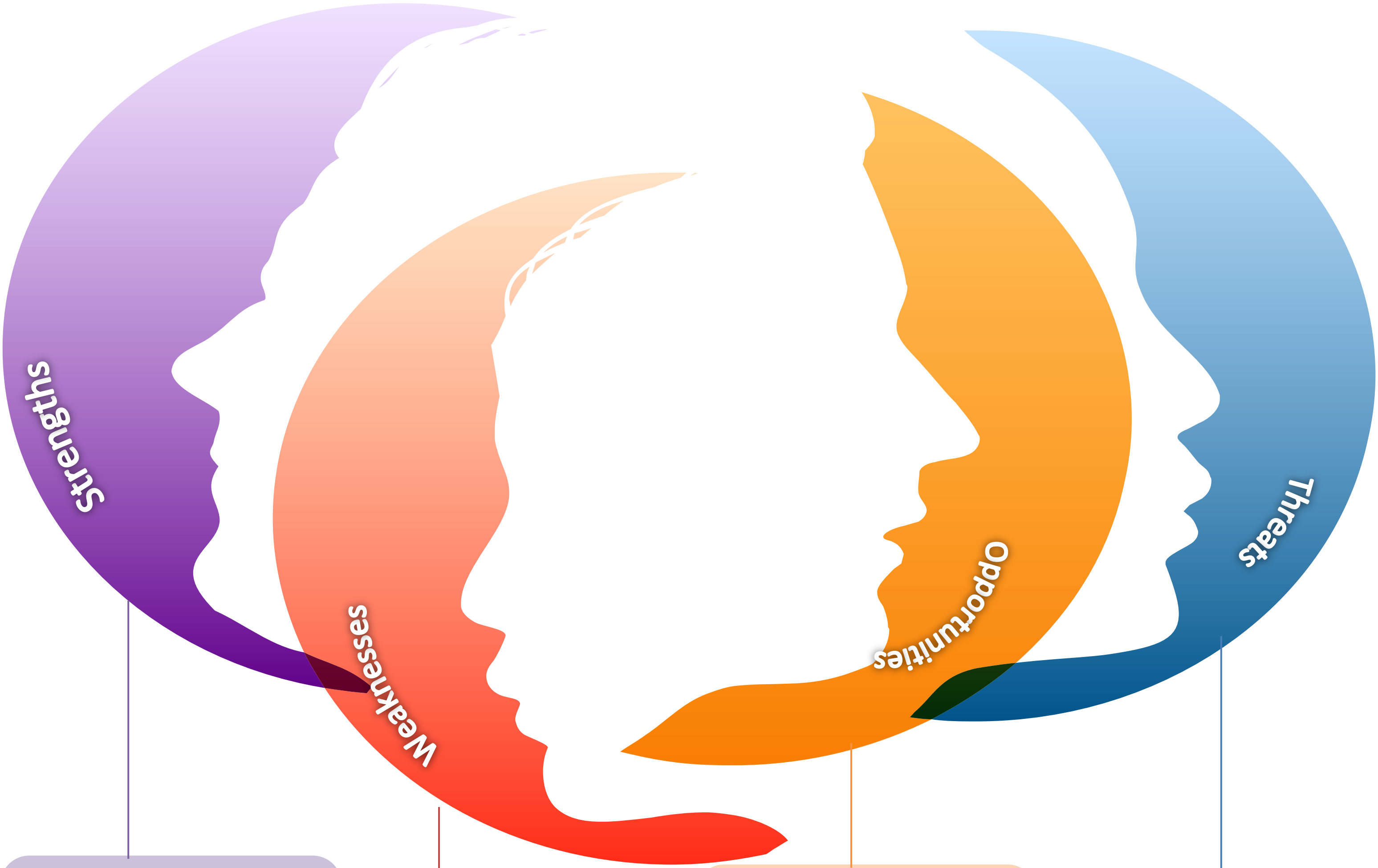
ASBL is well placed to benefit from upcoming opportunities in the roads sector, given its well-funded balance sheet. Its healthy order book lends confidence for EPC revenue CAGR of 19% over FY17-19E. However, SBI-Macquire's investment is due for exit in FY18. This along with the income tax investigation case would remain an overhang on the stock. We value the company on SoTP basis with a target price of INR260 and initiate coverage on the stock with BUY rating. We value ASBL's EPC business at 16x Sept19E EPS of INR11.2 at INR180, value BOT business on DCF valuation of INR65 and land parcel at 1x its book value at INR15 per share.

Exhibit 40: Valuation Metodology

INR m	Valuation Methodology	Multiple	@ 61%	Per Share Value
BOT Projects	DCF		12,200	65
EPC	P/E	16	33,640	180
Land	1x Book Value		2,782	15
Total			**49,406**	**260**

Source: MOSL, Company

SWOT Analysis



Strengths

- Robust execution track record
- Lean balance sheet
- Strong operational asset portfolio
- Experienced management

Weaknesses

- Project portfolio concentrated on NH-6 (industrial corridor); thus, traffic growth cyclical.

Opportunities

- Road capex of INR7t to be incurred over the next few years; being one of the leading players, ASBL would be a key beneficiary.
- Power T&D capex of INR2.6t to be incurred over the next few years

Threats

- Competitive intensity in the sector remains high, with multiple local players vying for orders.
- Sector highly dependent on government policies. Any adverse change in the government policies can severely impact the business.

Bull & Bear case

Bull Case

- ☑ In our bull case, we assume higher growth than the base case in all segments.
- ☑ We assume 16% revenue CAGR over FY17-19, driven by execution improvement in the EPC segment and better traffic growth. We assume operating margin to be higher than in the base case, driven by operating leverage.
- ☑ Assuming the same target multiple as in the base case, we get a bull case target price of INR310 as against base case target price of INR260.

Bear Case

- ☑ In our bear case, we assume EBITDA margins to be lower than in the base case over FY17-19. We assume EBITDA margin at 27.5% for FY19 and sales CAGR of 10% over FY17-19, against 14% sales CAGR in the base case scenario.
- ☑ We assume muted execution and sluggish traffic growth as compared to the base case scenario.
- ☑ Assuming the same target multiple as in the base case, we get a bear case target price of INR225 as against base case target price of INR260.

Exhibit 41: Scenario Analysis – Bull Case

	FY17	FY18E	FY19E
Sales	29,794	34,384	40,192
Growth YoY (%)	5.5	15.4	16.9
EBIDTA	8,930	10,065	11,333
EBIDTA Margin (%)	30.0	29.3	28.2
Growth YoY (%)	(4.1)	12.7	12.6
PAT	-97	755	1,961
PAT Margin (%)	-0.3	2.2	4.9
PAT Growth (%)	NM	NM	159.8

Source: Company, MOSL

Exhibit 42: Scenario Analysis – Bear Case

	FY17	FY18E	FY19E
Sales	29,794	32,448	36,133
Growth YoY (%)	5.5	8.9	11.4
EBIDTA	8,930	9,310	9,950
EBIDTA Margin (%)	30.0	28.7	27.5
Growth YoY (%)	(4.1)	4.3	6.9
PAT	-97	-66	548
PAT Margin (%)	-0.3	-0.2	1.5
PAT Growth (%)	NM	NM	136.6

Source: Company, MOSL

Financials and Valuations

Consolidated - Income Statement

(INR m)

Y/E March	FY13	FY14	FY15	FY16	FY17	FY18E	FY19E	FY20E
Total Income from Operations	**18,527**	**17,949**	**23,197**	**28,253**	**29,753**	**33,736**	**38,666**	**43,379**
Change (%)	23.5	-3.1	29.2	21.8	5.3	13.4	14.6	12.2
Raw Materials	13,824	12,988	16,712	16,922	18,563	21,640	25,343	29,779
Employees Cost	502	583	754	958	1,182	1,300	1,430	1,573
Other Expenses	482	556	1,001	1,060	1,061	1,073	1,094	1,138
Total Expenditure	**14,808**	**14,127**	**18,467**	**18,941**	**20,806**	**24,013**	**27,867**	**32,490**
% of Sales	79.9	78.7	79.6	67.0	69.9	71.2	72.1	74.9
EBITDA	**3,719**	**3,822**	**4,730**	**9,312**	**8,946**	**9,723**	**10,799**	**10,889**
Margin (%)	20.1	21.3	20.4	33.0	30.1	28.8	27.9	25.1
Depreciation	1,324	1,389	1,517	2,688	2,735	2,475	2,804	3,735
EBIT	**2,395**	**2,432**	**3,213**	**6,624**	**6,211**	**7,248**	**7,995**	**7,154**
Int. and Finance Charges	1,395	1,335	2,721	7,930	7,899	7,895	7,324	4,810
Other Income	294	297	290	783	1,224	862	948	957
PBT bef. EO Exp.	**1,294**	**1,394**	**782**	**-522**	**-464**	**214**	**1,619**	**3,301**
EO Items	-157	-157	0	-570	0	0	0	0
PBT after EO Exp.	**1,138**	**1,237**	**782**	**-1,092**	**-464**	**214**	**1,619**	**3,301**
Total Tax	685	688	796	976	790	961	1,048	1,223
Tax Rate (%)	60.2	55.6	101.7	-89.4	-170.2	449.1	64.7	37.1
Minority Interest	-389	-425	-828	-1,331	-1,155	-1,086	-750	-916
Reported PAT	**842**	**974**	**815**	**-738**	**-99**	**339**	**1,321**	**2,994**
Adjusted PAT	**999**	**1,131**	**815**	**-168**	**-99**	**339**	**1,321**	**2,994**
Change (%)	-20.0	13.3	-28.0	-120.6	-41.0	-442.5	289.9	126.6
Margin (%)	5.4	6.3	3.5	-0.6	-0.3	1.0	3.4	6.9

Consolidated - Balance Sheet

(INR m)

Y/E March	FY13	FY14	FY15	FY16	FY17	FY18E	FY19E	FY20E
Equity Share Capital	527	790	793	936	936	936	936	936
Eq. Share Warrants & App. Money	149	149	0	0	0	0	0	0
Total Reserves	9,832	11,690	12,776	17,752	15,781	17,116	17,999	20,555
Net Worth	**10,507**	**12,628**	**13,569**	**18,688**	**16,717**	**18,052**	**18,935**	**21,491**
Minority Interest	2,787	4,645	5,047	4,995	4,490	3,846	3,615	3,366
Total Loans	24,535	31,926	38,726	42,777	47,173	50,173	53,173	56,173
Deferred Tax Liabilities	-7	-21	-99	-221	-203	-203	-203	-203
Capital Employed	**37,822**	**49,179**	**57,244**	**66,238**	**68,177**	**71,868**	**75,520**	**80,826**
Gross Block	20,275	46,718	132,023	134,483	137,483	140,483	143,483	146,483
Less: Accum. Deprn.	5,264	6,467	6,311	8,652	11,387	13,863	16,666	20,401
Net Fixed Assets	**15,010**	**40,250**	**125,712**	**125,831**	**126,096**	**126,620**	**126,817**	**126,082**
Capital WIP	96,047	79,621	1,505	3,455	3,437	3,521	3,606	3,693
Total Investments	**2,824**	**2,847**	**2,345**	**3,377**	**3,377**	**3,377**	**3,377**	**3,377**
Curr. Assets, Loans&Adv.	**10,457**	**12,443**	**16,947**	**21,020**	**24,210**	**27,012**	**30,589**	**36,866**
Inventory	5,399	6,272	7,286	10,890	9,932	10,871	12,398	14,049
Account Receivables	862	1,305	3,644	3,660	3,973	4,349	4,959	4,496
Cash and Bank Balance	517	945	410	1,679	3,787	2,940	3,148	6,944
Loans and Advances	3,679	3,921	5,607	4,791	6,517	8,852	10,085	11,377
Curr. Liability & Prov.	**86,516**	**85,982**	**89,265**	**87,445**	**88,942**	**88,662**	**88,869**	**89,191**
Account Payables	5,070	5,701	6,332	4,054	7,946	8,697	9,918	11,239
Other Current Liabilities	80,118	78,773	80,956	81,270	78,375	77,295	76,230	75,181
Provisions	1,328	1,508	1,978	2,121	2,621	2,671	2,721	2,771
Net Current Assets	**-76,059**	**-73,539**	**-72,319**	**-66,425**	**-64,733**	**-61,650**	**-58,280**	**-52,325**
Appl. of Funds	**37,822**	**49,179**	**57,244**	**66,238**	**68,177**	**71,868**	**75,520**	**80,826**

Financials and Valuations

Ratios

Y/E March	FY13	FY14	FY15	FY16	FY17	FY18E	FY19E	FY20E
Basic (INR)								
EPS	**5.3**	**6.0**	**4.4**	**-0.9**	**-0.5**	**1.8**	**7.1**	**16.0**
Cash EPS	12.4	13.5	12.5	13.5	14.1	15.0	22.0	36.0
BV/Share	56.1	67.5	72.5	99.9	89.3	96.5	101.2	114.8
DPS	2.0	1.5	1.5	1.8	2.0	2.0	2.0	2.0
Payout (%)	52.0	33.7	40.3	-51.9	NM	129.2	33.1	14.6
Valuation (x)								
P/E			49.4	NM	NM	118.7	30.5	13.4
Cash P/E			17.3	16.0	15.3	14.3	9.8	6.0
P/BV			3.0	2.2	2.4	2.2	2.1	1.9
EV/Sales			3.4	2.9	2.8	2.6	2.3	2.1
EV/EBITDA			16.6	8.7	9.3	9.0	8.4	8.2
Dividend Yield (%)	0.9	0.7	0.7	0.8	0.9	0.9	0.9	0.9
FCF per share	-25.1	-37.1	-26.6	4.0	25.8	19.4	21.5	27.2
Return Ratios (%)								
RoE	9.6	9.8	6.2	-1.0	-0.6	1.9	7.1	14.8
RoCE	6.9	5.5	5.8	10.4	9.5	9.8	10.2	8.7
RoIC	-6.1	-4.1	27.4	9.6	8.6	9.7	10.0	8.7
Working Capital Ratios								
Fixed Asset Turnover (x)	0.9	0.4	0.2	0.2	0.2	0.2	0.3	0.3
Asset Turnover (x)	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5
Inventory (Days)	106	128	115	141	122	118	117	118
Debtor (Days)	17	27	57	47	49	47	47	38
Creditor (Days)	100	116	100	52	97	94	94	95
Leverage Ratio (x)								
Current Ratio	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4
Interest Cover Ratio	1.7	1.8	1.2	0.8	0.8	0.9	1.1	1.5
Net Debt/Equity	2.0	2.2	2.7	2.0	2.4	2.4	2.5	2.1

Consolidated - Cash Flow Statement **(INR m)**

Y/E March	FY13	FY14	FY15	FY16	FY17	FY18E	FY19E	FY20E
OP/(Loss) before Tax	1,294	1,394	782	563	-464	214	1,619	3,301
Depreciation	1,324	1,389	1,517	2,491	2,735	2,475	2,804	3,735
Interest & Finance Charges	1,395	1,335	2,721	7,930	7,899	7,895	7,324	4,810
Direct Taxes Paid	-702	-702	-874	-1,095	-790	-961	-1,048	-1,223
(Inc)/Dec in WC	61,230	-38	-1,317	-1,949	-350	-2,495	-3,097	-2,094
CF from Operations	**64,541**	**3,379**	**2,829**	**7,941**	**9,030**	**7,129**	**7,601**	**8,529**
Others	458	479	1,069	806	-1,224	-420	-429	-291
CF from Operating incl EO	**64,999**	**3,858**	**3,898**	**8,747**	**7,806**	**6,709**	**7,172**	**8,239**
(Inc)/Dec in FA	-69,694	-10,802	-8,872	-7,998	-2,982	-3,084	-3,151	-3,151
Free Cash Flow	**-4,695**	**-6,944**	**-4,973**	**749**	**4,825**	**3,625**	**4,021**	**5,088**
(Pur)/Sale of Investments	-686	-90	231	-1,667	1,224	862	948	957
Others	-360	1,672	514	812	0	0	0	0
CF from Investments	**-70,740**	**-9,220**	**-8,127**	**-8,853**	**-1,758**	**-2,222**	**-2,203**	**-2,194**
Issue of Shares	-64	0	-106	4,916	0	0	0	0
Inc/(Dec) in Debt	7,466	7,391	6,811	1,276	4,396	3,000	3,000	3,000
Interest Paid	-1,395	-1,335	-2,721	-4,478	-7,899	-7,895	-7,324	-4,810
Dividend Paid	-250	-266	-290	-338	-438	-438	-438	-438
Others	0	0	0	0	0	0	0	0
CF from Fin. Activity	5,758	5,790	3,694	1,375	-3,941	-5,333	-4,762	-2,248
Inc/Dec of Cash	**17**	**428**	**-535**	**1,269**	**2,108**	**-846**	**207**	**3,797**
Opening Balance	500	517	945	410	1,679	3,787	2,941	3,148
Closing Balance	**517**	**945**	**410**	**1,679**	**3,787**	**2,941**	**3,148**	**6,944**

KNR Construction

BSE SENSEX	S&P CNX
33,266	10,364

CMP: INR 249 | **TP: INR 295(+19%)** | **Buy**

Well positioned for sustainable growth

Execution capabilities par excellence

- **Strong order book coupled with strong execution capabilities should facilitate 15% revenue CAGR over FY17-19.**
- **Earnings could remain muted, given expiry of 80IA benefits. However, adjusting for tax benefits, we expect 14% earnings CAGR over FY17-19.**
- **We initiate coverage with a Buy rating and a target price of INR295.**

Best-in-class EPC player with excellent execution capabilities

KNRC is a strong EPC player in the road sector with an excellent track record. It has a history of completing multiple road projects ahead of schedule, thereby enabling it to earn early completion bonus. Its execution track record is supported by its large in-house construction equipment fleet and its close monitoring of projects under execution. KNRC has completed over 6,000km across 12 states in India.

Order book provides strong medium-term revenue visibility

KNRC's current order book stands at INR33.4b, of which 85% comes from the roads sector and the balance 15% from the irrigation sector. Projects in South India account for 89% of its order book. FY16 saw strong order inflow on lower base and finalization of big orders like Hospet-Hubli, Madurai-Ramanathpuram, and Thiruvanantpuram Bypass. FY17 has been a muted year given KNR's conservative approach to bid orders with threshold margin profile of 14%. Expect FY18 order inflow to remain stable at INR25b

Timely project completion enables superior EBITDA margins

KNRC enjoys one of the highest EBITDA margins in the EPC space, led by multiple initiatives taken by the management. KNR's policy to bids for the project with threshold margin of 14.5%, along with its model of backward integration, especially for its road projects, where it sources material for its road projects from captive quarrying mines and employs crusher units and batch plants. In-house raw material and construction equipment also ensures that that there is no delay in executing the projects for the lack of material and equipment.

Strong balance sheet

KNRC has a strong balance sheet, with net debt-equity of 0.1:1. This is mainly on account of the company's lean working capital cycle. Its working capital cycle is 40 days, one of the lowest in the construction space. Unlike other construction companies, KNRC has limited exposure to the BOT business. Of its four BOT projects, KNRC has recently sold off its stake in two, and now has two BOT projects left, which it intends to sell over the next three years.

Valuation and view

We initiate coverage on KNR with a **Buy** rating and an SOTP-based target price of INR295. We like the company for its robust execution track record, driven by backward integration, strong balance sheet with net debt-equity of 0.1x, and consistent operating margins of 14.5-15%. We value the company on SOTP basis with INR256 for standalone EPC business (18x P/E on Sept19EPS of INR14.2 and 1x P/B of investments of INR37/share (BOT projects and land parcels).

Stock Info

Bloomberg	KNRC IN
Equity Shares (m)	140.6
52-Week Range (INR)	262 / 125
1, 6, 12 Rel. Per (%)	17/17/47
M.Cap. (INR b)	35.0
M.Cap. (USD b)	0.5
Avg Val, INRm	28
Free float (%)	42.6

Financials Snapshot (INR b)

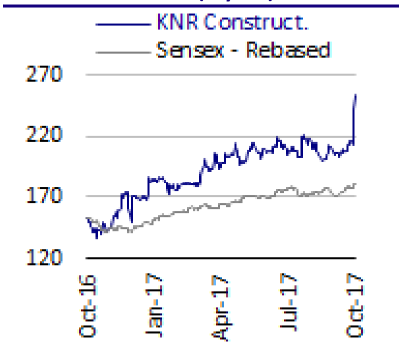
Y/E MARCH	FY17	FY18E	FY19E
Net Sales	15.4	18.0	20.2
EBITDA (Rs b)	2.3	2.6	3.0
NP	1.7	1.8	1.9
EPS	12.0	12.7	13.6
EPS Gr (%)	4.3	6.6	7.0
BV/Share (Rs)	63.7	75.2	88.6
P/E (x)	20.8	19.6	18.3
P/BV (x)	3.9	3.3	2.8
RoE (%)	20.7	18.4	16.7
RoCE (%)	16.8	16.3	15.7

Shareholding pattern (%)

As On	Sep-17	Jun-17	Sep-16
Promoter	57.4	57.4	58.1
DII	28.5	28.4	26.4
FII	3.3	3.9	5.0
Others	10.8	10.3	10.5

FII Includes depository receipts

Stock Performance (1-year)



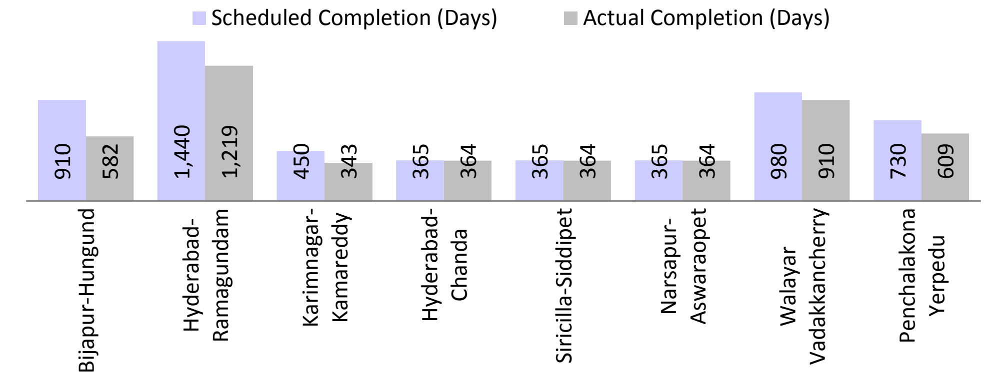
Prepped for upcoming opportunities

Expect revenue CAGR of 15%, with consistent margins

Best-in-class EPC player with excellent execution capabilities

KNRC is a strong EPC player in the road sector with an excellent track record. It has a history of completing multiple road projects ahead of schedule, thereby enabling it to earn early completion bonus. Its execution track record is supported by its large in-house construction equipment fleet and its close monitoring of projects under execution. KNRC has completed over 6,000km across 12 states in India.

Exhibit 43: Strong execution capabilities – has completed multiple projects ahead of time



Source: MOSL, Company

Exhibit 44: In-house equipment helps to execute projects on time

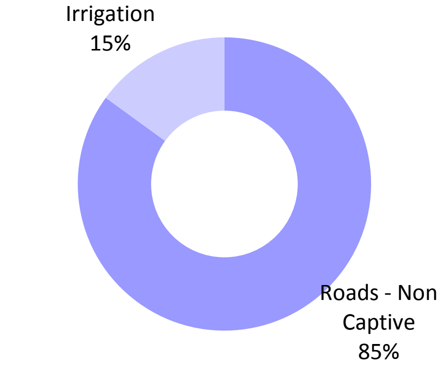
Equipment	Qty
Tippers	664
Excavators	171
Compactors	79
Concrete Mixers And Pumps	94
Loaders	43
Pavers	34
Crushers	14
Graders	36
Tractors	31
Cranes	34
Trailers	14
Rollers	20
Batching & Mixing	29
Hot Mix Plant	8
Drillers	44
Dozers	13
Wet Mix Plant	14
Spayers and Sweeping machines	11
Weigh bridges	21
Curblaying machine	5
Compressors	11
Transformers and Lidht sources	22
Generators & Others	122
Gross Block of Plant & Machinery	**INR5.9b**

Source: MOSL, Company

Robust order book provides strong medium-term revenue visibility

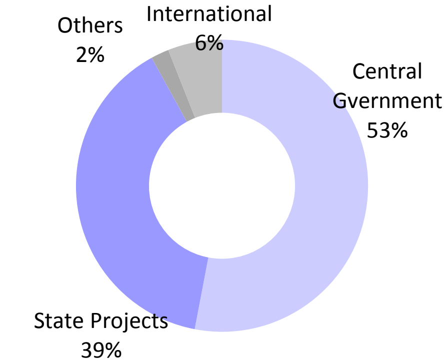
KNRC's current order book stands at INR37.7b, of which 85% comes from the roads sector and the balance 15% from the irrigation sector. Projects in South India account for 89% of its order book. FY16 saw strong order inflow, led by finalization of big orders like Hospet-Hubli, Madurai-Ramanathpuram, and Thiruvanantpuram Bypass.

Exhibit 45: Order backlog dominated by roads sector



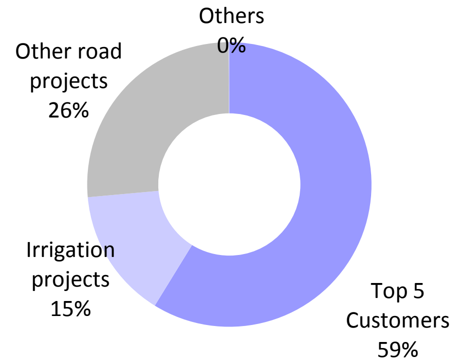
Source: MOSL, Company

Exhibit 46: Client-wise order book bifurcation



Source: MOSL, Company

Exhibit 47: Top-5 customers account for 59% of order book



Source: MOSL, Company

Irrigation segment offers interesting opportunity

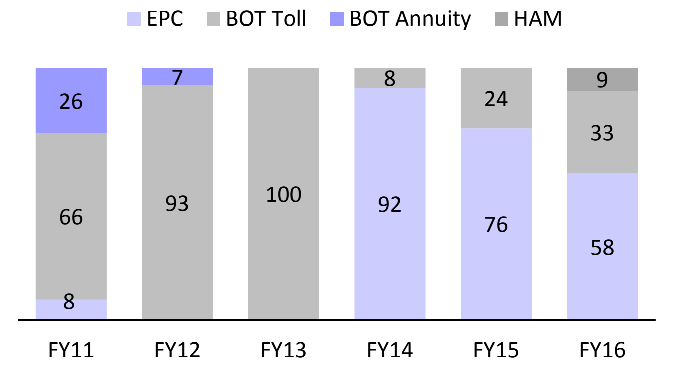
Of the current order book of INR33.4b, the irrigation segment accounts for 15%. KNRC recently bagged INR6.8b of orders from the Telangana government; this should improve its pre-qualification to bid for higher value projects. KNRC now intends to participate in tenders funded by international agencies or by the central government. It expects projects worth INR70b to be ordered out under the Accelerated Irrigation Benefit program.

The union government launched the Accelerated Irrigation Benefit Program (AIBP) to (1) provide financial assistance, and (2) expedite the completion of ongoing (a) major/medium irrigation (MMI) projects including extension, renovation and modernization (ERM), (b) surface minor irrigation schemes, as well as (c) lift irrigation schemes (LIS). The Cabinet Committee has identified 99 ongoing AIBP projects to be completed by March 2020. Of these, 23 projects are targeted to be completed by 2016-17, 31 projects by 2018, and 45 projects by 2019-20. The balance cost of these projects is indicated to be INR819.2b, including command area development works.

NHAI/states' focus on EPC and HAM mode for road projects over FY17-18 to benefit KNRC

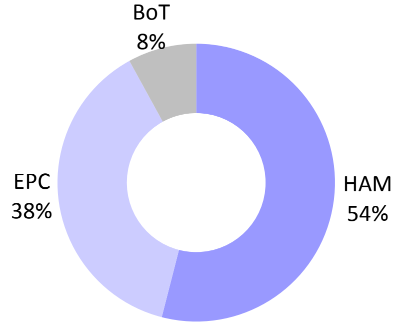
We believe KNRC would be a key beneficiary of the ordering activity in the road sector, as the government intends to order projects on EPC/HAM basis, given the stressed financials of a majority of infra companies and weak response to the road project tenders on BOT basis over FY13-14. NHAI's ordering pipeline seems to be robust, with 6500km of projects expected to be awarded by FY18. KNRC has currently participated in tenders worth INR40b, and we expect order inflow of INR25b in 2HFY18 and order backlog of INR45b by FY18-end.

Exhibit 48: EPC share in NHAI ordering picks up post FY13



Source: MOSL, Company

Exhibit 49: 38% of the orders awarded by NHAI in FY17 are on EPC basis

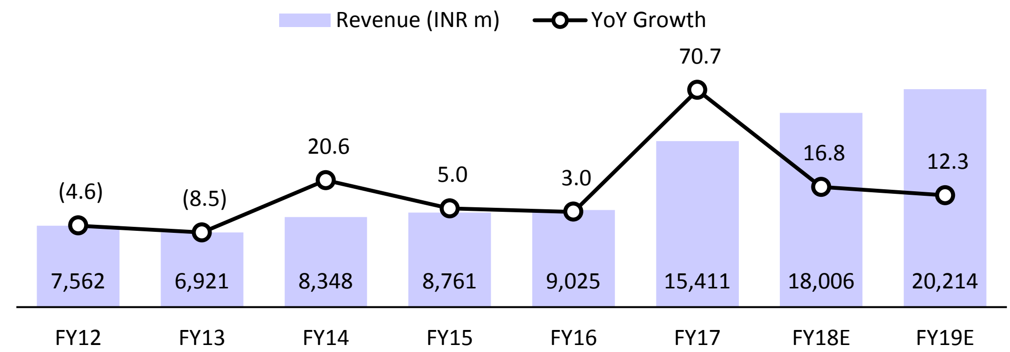


Source: MOSL, Company

Expect revenue CAGR of 15% over FY17-19

We expect 15% CAGR in KNRC's revenue over FY17-19, led by execution of orders in hand. KNRC has a strong order backlog of INR33.4b, which is executable over the next 2-2.5 years. Given its strong execution track record, we believe KNRC would deliver 15% revenue CAGR over FY17-19.

Exhibit 50: Expect 16% revenue CAGR over FY17-19, led by timely order execution

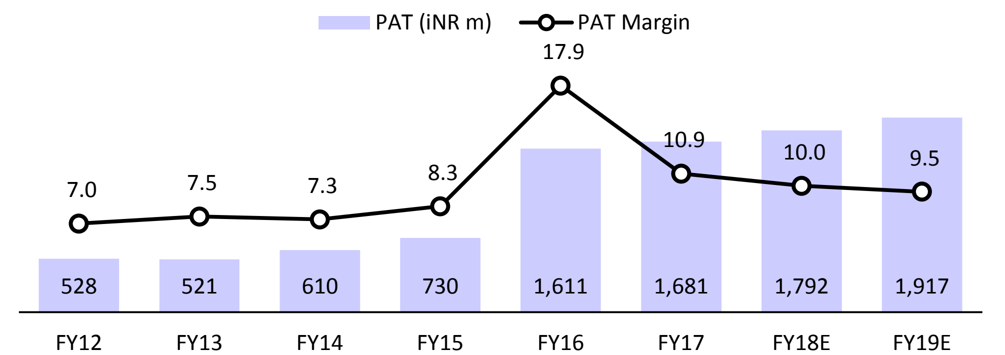


Source: MOSL, Company

Earnings to remain flat on expiry of section-80IA benefit

KNRC currently avails tax benefits under section-80IA available for creating infrastructure assets. With the government announcing sunset clause for section-80IA benefit by March 2017, KNRC's tax rate would increase from the current 3% to 15% in FY19 given MAT credit availability that KNR intends to utilize it over next two years. This would lead to muted earnings growth, however if we adjust for the tax benefit, earnings CAGR over FY17-19E would be 14%.

Exhibit 51: PAT growth to be impacted by KNRC's migration to full tax rate

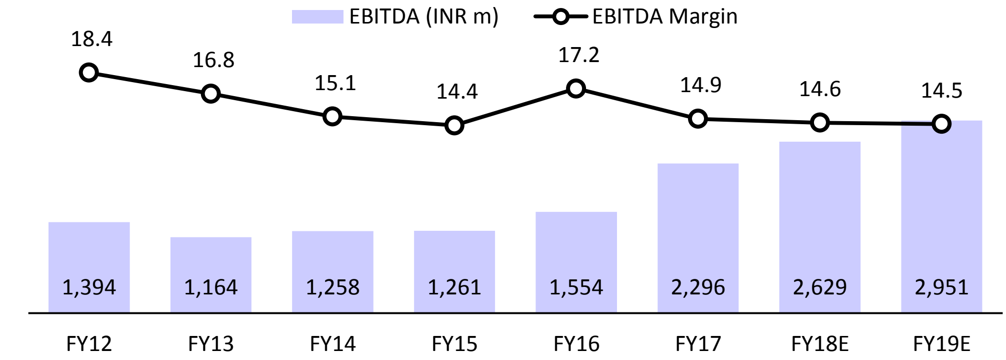


Source: MOSL, Company

Superior EBITDA margin led by timely project completion

KNRC enjoys one of the best EBITDA margins in the EPC space, led by multiple initiatives taken by the management. It bids for projects with threshold margin of 14.5%. Its backward integration also helps – it sources material for its road projects from captive quarrying mines, and employs crusher units and batch plants. In-house raw material and construction equipment ensures that that there is no delay in executing projects for lack of material and equipment.

Exhibit 52: EBITDA margin consistency led by timely execution and backward integrated business model

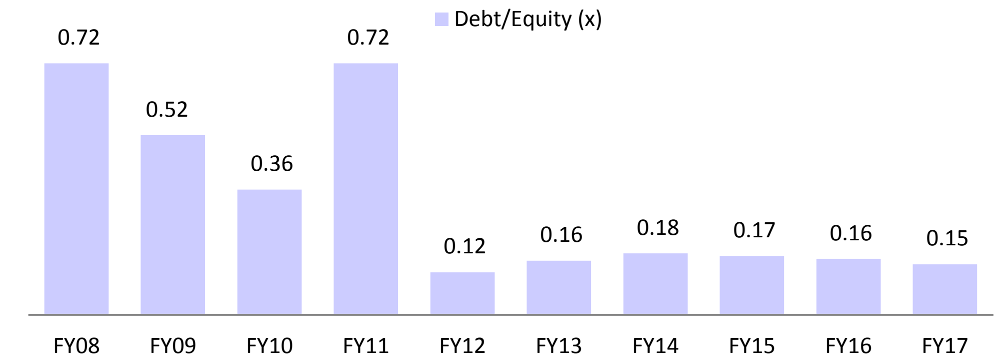


Source: MOSL, Company

Strong balance sheet

KNRC has a strong balance sheet, with net debt-equity of 0.1:1. This is mainly on account of the company's lean working capital cycle. Its working capital cycle is 40days, one of the lowest in the construction space. Unlike other construction companies, KNRC has limited exposure to the BOT business. Of its four BOT projects, KNRC has recently sold off its stake in two, and now has two BOT projects left, which it intends to sell over the next three years.

Exhibit 53: Extremely well managed balance sheet with debt well within comfort zone



Source: MOSL, Company

Monetization of two BOT assets

KNRC has signed a share purchase agreement for two (KNRC's stake: 40%; Patel Engineering's stake: 60%) of its four BOT projects with the Essel Group. It is selling its entire stake to the Essel Group for an EV of INR8.5b. The deal is expected to be completed by 2HFY18. As KNRC had already securitized the receivables, project divestment is value-neutral for the company. However, it has INR3.2b claims pending with NHAI for these projects, which it will receive when settled by NHAI. KNRC Intends to sell the balance two operational toll-based BOT projects (Walayar and Muzzafarpur-Barauni) over the next three years. The intention is to exit the BOT business, focus on the EPC business, and remain asset light.

Valuation and view

KNR is one of the leading Road EPC player with 89% of the order backlog coming from southern region. KNR's strength lies in a) top management deeply involved in the operations of the business (Involvement from evaluating the tender to completion of project), b) Backward integration to ensure timely availability of raw material c) huge repertoire of in house equipment so as to ensure timely execution of projects in hand and d) stringent internal threshold operating margins of 14% e) one of the leanest working capita profile in the industry

Ownership of quarries (key raw material), in house equipment and low dependence on the sub-contractor ensures that projects are completed on or before time thereby enabling KNR to claim early completion bonus. This has enabled KNR to register strong 17% revenue CAGR and 20% earnings CAGR over FY07-17. Moving ahead we expect revenue CAGR of 15% over FY17-19E and earnings CAGR of 20% over FY17-19E.

Despite registering strong earnings CAGR of 21% (FY07-17), KNR's balance sheet quality remain superior with net debt to Equity ratio at 0.2:1 and Core net working capital cycle of 20 days.

KNR has one of the highest operating margins in the business of 14%. KNR has internal criteria to bid for projects with threshold margin of 14%.

KNR's return profile in a sector which is saddled with execution delays, highly debt laden speaks about the quality growth that the company has achieved over the last 10 years (21% RoE in FY17), adjusting for the equity investment and loans provided to its subsidiary Return ratio profile looks extremely robust. Adjusting for the loans of INR4b, KNR's RoE stands at 42% in FY17.

We initiate coverage on KNR with a **Buy** rating and target price of INR295. We value the company on SOTP basis with INR256 for standalone EPC business (18x P/E on FY19EPS of INR14.2 and 1x P/B of investments of INR37/share (BOT projects and land parcels).

Exhibit 54: Valuation Matrix

Particulars	Segments	Value (INRm)	Value per share (INRm)	Rationale
KNR Standalone	Core construction business	36,043	256	At 18x Sept 19E EPS
Kerala BOT Project	Roads Toll	3,970	28	1x P/BV of equity invested as on date
Muzaffarpur Barauni BOT	Roads Toll	520	4.6	1x P/BV of equity invested as on date
Land Cost		649	5	
		41,182	**295**	

Source: MOSL, Company

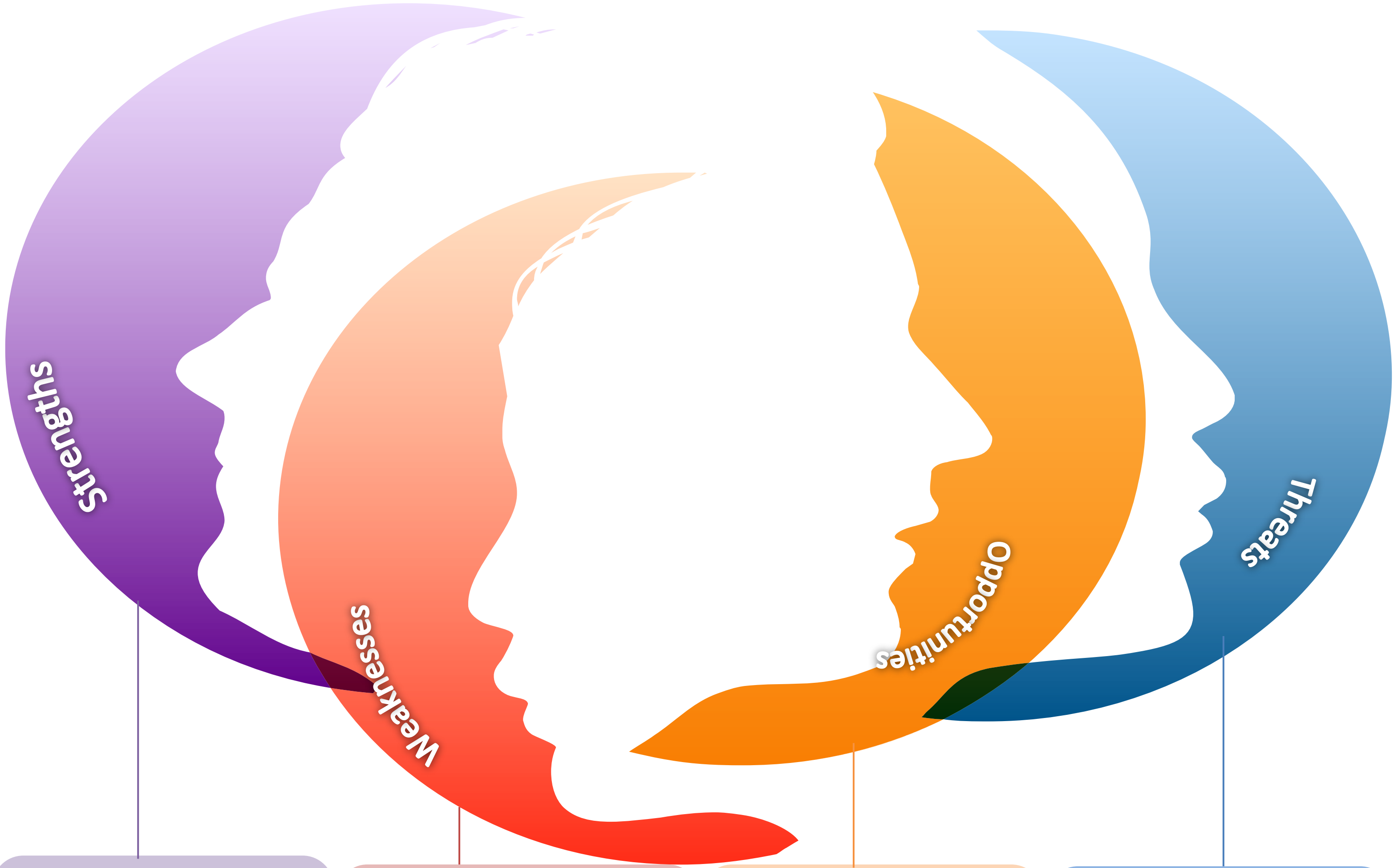
Risks and concerns

Slowdown in road sector capex: Capex in the road sector has witnessed some revival over the last two years. Any slowdown in project awarding would impact the company's growth and our estimates.

Delay in execution of projects in hand: Delay in execution of projects in hand due to delays in land acquisition or other regulatory bottlenecks could adversely affect KNRC's revenue.

Aggressive bidding for projects: Owing to stressed financial condition of road sector companies, majority of the upcoming orders are on EPC and HAM basis. This entails higher competition from players in the EPC segment, where KNRC intends to participate. An aggressive bidding environment may negatively impact our margin estimates.

SWOT Analysis



Strengths

- Excellent execution capability, with multiple projects being completed ahead of schedule
- Focused management, with hands-on approach
- Focus on profitability and timely execution of projects on hand
- Strong balance sheet to support upcoming opportunities in the Road sector

Weaknesses

- The southern region accounts for most of the order book. Any slowdown in the region could impact the company's financials.
- KNR has been averse to the asset ownership model of business, given its experience with BoT assets that it bagged. Going forward, majority of the projects are likely to be awarded on HAM. Inability to adapt to a new model could impact the company's financials.
- Two BoT projects the company owns have been receiving lower than estimated traffic, resulting in losses. The promoters have had to infuse equity and repay debt to make the projects self-sufficient.

Opportunities

- The Roads sector is likely to have investments of INR7t over the next couple of years, which provides a strong opportunity to players in the sector.
- The Irrigation sector also offers sizable opportunity, with various state governments having strong capex plans to develop irrigation facilities within the states.
- Metro rail development also provides strong business opportunities for which the company is prequalified.

Threats

- Competition in the sector remains extremely high, with multiple local players vying for orders.
- The sector is highly dependent on government policies. Any adverse policy change can severely impact the business.

Bull & Bear case

Bull Case

- ☑ In our bull case, we assume higher growth than the base case in all segments.
- ☑ We assume 22% revenue CAGR and operating margin expansion of 30bp to 15.1% over FY17-19, driven by operating leverage. This leads to EPS CAGR of 18% to INR16.7.
- ☑ Assuming the same target multiple as in the base case, we get a bull case target price of INR340 against the base case target price of INR295.

Bear Case

- ☑ In our bear case, we assume 100bp EBITDA margin decline to 13.9% and sales CAGR of 12.5% (against 15% in base case scenario) over FY17-19.
- ☑ In our bear case, we assume weak ordering activity and subdued execution. This will lead to 1% CAGR in adjusted PAT over FY17-19 against 7% CAGR in the base case scenario.
- ☑ Assuming the same target multiple as in the base case, we get a bull case target price of INR221.

Exhibit 55: Scenario Analysis – Bull Case

	FY17	FY18E	FY19E
Sales	15,411	20,440	22,866
Growth YoY (%)	70.7	32.6	11.9
EBIDTA	2,296	3,086	3,453
EBIDTA Margin (%)	14.9	15.1	15.1
Growth YoY (%)	47.7	34.4	11.9
PAT	1,681	2,204	2,343
PAT Margin (%)	10.9	10.8	10.2
PAT Growth (%)	4.3	31.1	6.3

Source: Company, MOSL

Exhibit 56: Scenario Analysis – Bear Case

	FY17	FY18E	FY19E
Sales	15,411	17,346	19,520
Growth YoY (%)	70.7	12.6	12.5
EBIDTA	2,296	2,446	2,713
EBIDTA Margin (%)	14.9	14.1	13.9
Growth YoY (%)	47.7	6.5	10.9
PAT	1,681	1,627	1,714
PAT Margin (%)	10.9	9.4	8.8
PAT Growth (%)	4.3	(3.2)	5.4

Source: Company, MOSL

Financials and Valuations

Standalone - Income Statement								(INR m)
Y/E March	FY13	FY14	FY15	FY16	FY17	FY18E	FY19E	FY20E
Total Income from Operations	**6,921**	**8,348**	**8,761**	**9,025**	**15,411**	**18,006**	**20,214**	**23,751**
Change (%)	-8.5	20.6	5.0	3.0	70.7	16.8	12.3	17.5
Materials & Subcontracting Cost	5,291	6,510	6,696	6,805	8,756	14,045	15,767	18,573
Employees Cost	295	349	381	435	552	792	889	1,045
Other Expenses	171	230	423	231	3,806	540	606	713
Total Expenditure	**5,757**	**7,090**	**7,500**	**7,471**	**13,115**	**15,377**	**17,263**	**20,331**
% of Sales	83.2	84.9	85.6	82.8	85.1	85.4	85.4	85.6
EBITDA	**1,164**	**1,258**	**1,261**	**1,554**	**2,296**	**2,629**	**2,951**	**3,420**
Margin (%)	16.8	15.1	14.4	17.2	14.9	14.6	14.6	14.4
Depreciation	557	572	541	431	639	696	786	876
EBIT	**608**	**686**	**721**	**1,123**	**1,657**	**1,933**	**2,165**	**2,544**
Int. and Finance Charges	113	172	122	126	219	244	213	169
Other Income	175	155	125	305	303	303	303	303
PBT bef. EO Exp.	**670**	**669**	**723**	**1,301**	**1,741**	**1,991**	**2,255**	**2,677**
EO Items	0	0	0	0	0	0	0	0
PBT after EO Exp.	**670**	**669**	**723**	**1,301**	**1,741**	**1,991**	**2,255**	**2,677**
Total Tax	149	59	-7	-310	60	199	338	589
Tax Rate (%)	22.2	8.8	-1.0	-23.8	3.4	10.0	15.0	22.0
Minority Interest	0	0	0	0	0	0	0	0
Reported PAT	**521**	**610**	**730**	**1,611**	**1,681**	**1,792**	**1,917**	**2,088**
Adjusted PAT	**521**	**610**	**730**	**1,611**	**1,681**	**1,792**	**1,917**	**2,088**
Change (%)	-1.2	17.0	19.7	120.7	4.3	6.6	7.0	9.0
Margin (%)	7.5	7.3	8.3	17.9	10.9	10.0	9.5	8.8

Standalone - Balance Sheet								(INR m)
Y/E March	FY13	FY14	FY15	FY16	FY17	FY18E	FY19E	FY20E
Equity Share Capital	281	281	281	281	281	281	281	281
Total Reserves	4,275	4,852	5,411	6,988	8,674	10,287	12,171	14,227
Net Worth	**4,557**	**5,133**	**5,692**	**7,270**	**8,955**	**10,569**	**12,453**	**14,508**
Total Loans	710	908	964	1,168	1,303	1,136	936	736
Deferred Tax Liabilities	-36	-118	-239	-276	-432	-432	-432	-432
Capital Employed	**5,231**	**5,923**	**6,417**	**8,162**	**9,827**	**11,273**	**12,957**	**14,812**
Gross Block	5,083	5,252	5,482	5,784	7,236	8,236	9,236	10,236
Less: Accum. Deprn.	2,181	2,615	3,239	3,375	4,014	4,710	5,496	6,372
Net Fixed Assets	**2,901**	**2,637**	**2,243**	**2,409**	**3,222**	**3,526**	**3,739**	**3,863**
Capital WIP	39	3	26	59	15	15	15	15
Total Investments	**483**	**400**	**315**	**434**	**5,351**	**5,601**	**5,851**	**6,101**
Curr. Assets, Loans&Adv.	**6,081**	**6,386**	**7,211**	**9,603**	**7,158**	**9,231**	**11,009**	**13,396**
Inventory	297	341	359	353	574	880	994	1,178
Account Receivables	1,213	1,171	1,765	1,294	1,640	2,960	3,600	4,295
Cash and Bank Balance	72	112	157	161	246	707	570	1,370
Loans and Advances	4,499	4,763	4,930	7,794	4,698	4,684	5,846	6,553
Curr. Liability & Prov.	**4,274**	**3,505**	**3,379**	**4,343**	**5,920**	**7,100**	**7,659**	**8,563**
Account Payables	1,063	786	705	1,121	1,427	1,480	1,661	1,952
Other Current Liabilities	2,118	2,282	2,365	2,690	2,127	3,075	3,453	4,066
Provisions	1,093	437	309	532	2,366	2,545	2,545	2,545
Net Current Assets	**1,808**	**2,881**	**3,832**	**5,259**	**1,238**	**2,131**	**3,351**	**4,833**
Misc Expenditure	0	0	0	0	0	0	0	0
Appl. of Funds	**5,231**	**5,922**	**6,417**	**8,162**	**9,827**	**11,273**	**12,957**	**14,813**

Financials and Valuations

Ratios								
Y/E March	**FY13**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18E**	**FY19E**	**FY20E**
Basic (INR)								
EPS	**3.7**	**4.3**	**5.2**	**11.5**	**12.0**	**12.7**	**13.6**	**14.9**
Cash EPS	7.7	8.4	9.0	14.5	16.5	17.7	19.2	21.1
BV/Share	32.4	36.5	40.5	51.7	63.7	75.2	88.6	103.2
DPS	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Payout (%)	6.3	5.4	4.5	2.0	1.9	1.8	1.7	1.6
Valuation (x)								
P/E			48.0	21.7	20.8	19.6	18.3	16.8
Cash P/E			27.6	17.2	15.1	14.1	13.0	11.8
P/BV			6.2	4.8	3.9	3.3	2.8	2.4
EV/Sales			4.1	4.0	2.3	2.0	1.8	1.4
EV/EBITDA			28.4	23.2	15.7	13.5	12.0	10.1
Dividend Yield (%)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
FCF per share	-8.2	7.7	2.8	0.6	36.5	8.2	4.0	10.3
Return Ratios (%)								
RoE	12.1	12.6	13.5	24.9	20.7	18.4	16.7	15.5
RoCE	12.7	11.9	10.7	15.1	16.8	16.3	15.7	15.5
RoIC	11.3	10.9	10.2	13.4	22.6	33.7	30.2	28.7
Working Capital Ratios								
Fixed Asset Turnover (x)	1.4	1.6	1.6	1.6	2.1	2.2	2.2	2.3
Asset Turnover (x)	1.3	1.4	1.4	1.1	1.6	1.6	1.6	1.6
Inventory (Days)	16	15	15	14	14	18	18	18
Debtor (Days)	64	51	74	52	39	60	65	66
Creditor (Days)	56	34	29	45	34	30	30	30
Leverage Ratio (x)								
Current Ratio	1.4	1.8	2.1	2.2	1.2	1.3	1.4	1.6
Interest Cover Ratio	5.4	4.0	5.9	8.9	7.6	7.9	10.2	15.0
Net Debt/Equity	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0

Standalone - Cash Flow Statement								(INR m)
Y/E March	**FY13**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18E**	**FY19E**	**FY20E**
OP/(Loss) before Tax	670	669	723	1,301	1,632	1,991	2,255	2,677
Depreciation	557	572	541	431	639	696	786	876
Interest & Finance Charges	112	175	128	126	219	244	213	169
Direct Taxes Paid	-266	-235	-251	-22	-60	-199	-338	-589
(Inc)/Dec in WC	-1,838	165	-516	-1,423	4,108	-578	-1,357	-682
CF from Operations	**-764**	**1,345**	**624**	**414**	**6,538**	**2,155**	**1,559**	**2,452**
Others	-6	-13	47	0	0	0	0	0
CF from Operating incl EO	**-770**	**1,332**	**671**	**414**	**6,538**	**2,155**	**1,559**	**2,452**
(Inc)/Dec in FA	-383	-252	-272	-334	-1,408	-1,000	-1,000	-1,000
Free Cash Flow	**-1,153**	**1,081**	**400**	**80**	**5,130**	**1,155**	**559**	**1,452**
(Pur)/Sale of Investments	71	52	52	-119	-4,917	-250	-250	-250
Others	-269	-599	-30	-2	64	0	0	0
CF from Investments	**-581**	**-799**	**-250**	**-455**	**-6,261**	**-1,250**	**-1,250**	**-1,250**
Issue of Shares	0	0	0	0	0	0	0	0
Inc/(Dec) in Debt	155	197	56	204	136	-167	-200	-200
Interest Paid	-112	-172	-130	-126	-219	-244	-213	-169
Dividend Paid	-33	-33	-33	-33	0	-33	-33	-33
Others	556	-517	-302	0	0	0	0	0
CF from Fin. Activity	566	-524	-409	45	-83	-444	-446	-402
Inc/Dec of Cash	**-12**	**40**	**45**	**4**	**85**	**461**	**-137**	**800**
Opening Balance	85	72	112	157	161	246	707	570
Closing Balance	**72**	**112**	**157**	**161**	**246**	**707**	**570**	**1,370**

31 October 2017

Update | Sector: Infrastructure

Sadbhav Engineering

BSE SENSEX	S&P CNX
33,266	10,364

Sadbhav TODAY FOR TOMORROW

Stock Info

Bloomberg	SADE IN
Equity Shares (m)	171.5
52-Week Range (INR)	351 / 220
1, 6, 12 Rel. Per (%)	6/-16/-13
M.Cap. (INR b)	54.4
M.Cap. (USD b)	0.84
Avg Val, INRm	37
Free float (%)	53.2

Financials Snapshot (INR b)

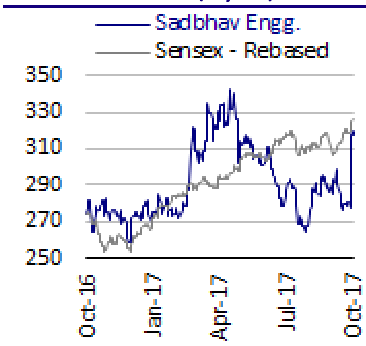
Y/E MARCH	FY17	FY18E	FY19E
Net Sales	33.2	38.4	45.0
EBITDA (Rs b)	3.6	4.3	5.1
NP	1.9	2.4	2.5
EPS	11.0	14.3	14.5
EPS Gr (%)	42.3	30.4	1.8
BV/Share (Rs)	96.8	109.7	122.8
P/E (x)	28.9	22.2	21.8
P/BV (x)	3.3	2.9	2.6
RoE (%)	12.0	13.8	12.5
RoCE (%)	7.9	9.0	10.2

Shareholding pattern (%)

As On	Sep-17	Jun-17	Sep-16
Promoter	46.8	46.8	46.8
DII	25.5	25.3	25.3
FII	16.6	18.2	17.6
Others	11.1	9.7	10.4

FII Includes depository receipts

Stock Performance (1-year)



CMP: INR 317 TP: INR385 (+22%) Buy

On strong footing

Multiple catalysts at play

- **SADE has a robust operational portfolio, with average toll collection life of 15 years, which should ensure sustained cash flow and growth.**
- **Order backlog of INR84b gives strong EPC revenue visibility.**
- **We initiate coverage with a Buy rating and target price of INR385.**

Strong operational BOT project portfolio, with presence in high-NSDP states

SADE through its subsidiary SIPL has a strong BOT project portfolio, with sizeable operational assets. Its current project portfolio consists of 18 road projects, of which 10 are fully operational, one is partially operational, and the remaining seven are in various stages of development. Average toll collection life of 17 years remains, ensuring sustained future cash flows and growth. SADE's BOT projects are located in the states of Maharashtra, Gujarat, Rajasthan, Karnataka, Haryana and Telangana, where NSDP and per capita income are higher than the national average. Further, its BOT projects are also located along the main freight corridors of India, with high industrial traffic growth. We believe that the location of projects in states with high economic growth strengthens the stability of SADE's revenue.

EPC business in a sweet spot

SADE provides EPC services in the roads, mining and irrigation segments. Roads currently form the major portion of its revenue as well as order backlog. Given the precarious financial position of road-building contractors, the Roads Ministry intends to award most projects on EPC or HAM basis. SADE expects EPC orders of INR129b and HAM orders of INR146b to be tendered over the next couple of months. We expect annual order inflow of INR60b for SADE for the next two years.

Healthy and diversified order book of INR84b for construction business

SADE has a healthy and diversified order book for the construction business. Its construction order book stands at INR84b, of which 69% comes from transportation projects (BOT assets: 55%; EPC contracts: 14%), 20% from mining projects, and 11% from irrigation projects. SADE's order book provides decent medium-term revenue visibility. SADE's diverse order book includes contracts from state governments as well as NHAI, in-house as well as third-party construction activities, and fixed-priced as well as contracts with price escalation.

Strong balance sheet, execution track record provide comfort

SADE has not only grown but has also maintained the quality of its balance sheet in a fiercely-competitive and debt-laden sector. It has periodically infused capital through stake sale and has maintained its net debt-equity ratio at below 1x.

Valuation and rating

Given SADE's strong execution track record, healthy balance sheet, robust order backlog and strong operational BOT portfolio, we initiate coverage with a **Buy** rating and SoTP target price of INR385. INR252 for the core EPC business (16x its Sept19EPS of INR15.8) and INR133 for the BoT projects based its current market capitalization (adjusting for Sadbhav's stake and providing 15% holding company discount).

Strong operational BOT project portfolio

- **Portfolio of 18 road projects:** SADE has a strong BOT project portfolio, with sizeable operational assets. Its current project portfolio consists of 18 road projects, of which 10 are fully operational, one is partially operational, and the remaining seven are in various stages of development. Average toll collection life of 17 years remains, ensuring sustained future cash flows and growth. In FY18, we expect toll revenue to grow 46%, led by (a) commissioning of the MBCEL and MBL projects, and (b) pick-up in revenue from other operational projects.

Exhibit 57: Strong BOT portfolio with presence in high growth states

Project	Type	Status	Lane kms	Total Project Cost	COD	End of Concession
Ahmedabad Ring Road	State Toll	Operational	304	5,214	May-08	Jan-27
Aurangabad Jalna Tollway	State Toll	Operational	276	2,754	Jul-09	Jul-30
Nagpur Seoni Expressway	NHAI Annuity	Operational	111	2,780	May-10	Nov-27
Maharashtra Border Check Post Network	State Border Check Post	Partly Operational	422	14,600	May-13	Oct-35
Dhule Palasner Tollway	NHAI Toll	Operational	392	14,200	Feb-12	Dec-27
Hyderabad Yadgiri Tollway	NHAI Toll	Operational	143	5,131	Dec-12	Feb-38
Rohtak Panipat Tollway	NHAI Toll	Operational	323	12,134	Jan-14	Apr-41
Bijapur Hungund Tollway	NHAI Toll	Operational	389	13,227	May-12	Sep-34
Shrinathji Tollways	NHAI Toll	Operational	332	11,515	Dec-15	Apr-40
Rohtak Hissar	NHAI Toll	Operational	395	12,716	Jul-16	Dec-35
Rajsamamd Bhilwara	NHAI Toll	Operational	344	6,761	Jun-16	Oct-43
Mysore Bellary	NHAI Annuity	Under Construction	387	7,893	Mar-17	Dec-24
Rampur Kathgodam Package 1	Hybrid Annuity	Under Construction	174	7,380	Oct-18	Oct-33
Rampur Kathgodam Package 2	Hybrid Annuity	Under Development	199	6,570	Oct-18	Oct-33
Bhavnagar Talaja	Hybrid Annuity	Under Construction	96	8,190	Dec-18	Dec-33
Una Kodinar	Hybrid Annuity	Under Construction	164	6,230	Dec-18	Dec-33
BRT Reserve to Bangalore	Hybrid Annuity	Under Development	684	10,080	Feb-19	Feb-34
Waranga Mahagaon	Hybrid Annuity	Under Development	67	8,300		
Udaipur bypass	Hybrid Annuity	Under Development	24	7,450		

Source: MOSL, Company

- **BOT assets present in states with high NSDP:** SADE's BOT projects are located in the states of Maharashtra, Gujarat, Rajasthan, Karnataka, Haryana and Telangana, where NSDP and per capita income are higher than the national average. For the period 1993-94 to 2012-13, Maharashtra and Gujarat had NSDP of 7.52% and 8.40%, respectively, and per capita income of 5.89% and 6.70%, respectively as compared to the country's NSDP of 6.81% and per capita income of 5.12%. Further, its BOT projects are also located along the main freight corridors of India, with high industrial traffic growth. We believe that the location of projects in states with high economic growth strengthens the stability of SADE's revenue.

Exhibit 58: Toll collection revenue to be driven by key projects like MBCP, Dhule-Palesnar, Shreenathji-Udaipur and Bijapur-Hungud

Name of SPV (Rs. Mn)	2013	2014	2015	2016	2017E	2018E	2019E
Mumbai Nasik	1,306	1,313	978	-	-	-	-
Ahmedabad Ring Road	738	738	854	932	858	850	946
Aurangabad Jalna	277	280	353	420	369	354	382
Dhule Palasner	-	-	-	626	1,544	1,535	1,734
Hyderabad Yadgiri	112	383	449	543	514	511	572
Bijapur Hungund	862	950	1,044	1,148	1,121	1,137	1,285
Rohtak Panipat	-	191	852	805	786	798	910
Maharashtra Border CP	-	302	917	1,542	1,700	2,491	3,225
Nagpur Seoni	614	384	384	384	380	380	380
Shreenathji Udaipur	-	-	-	288.6	940	1,003	1,154
Bhilwara Rajsamand	-	-	-	-	354	467	528
Rohtak Hissar	-	-	-	-	472	710	809
Mysore Bellary	-	-	-	-	0	1,422	1,422
Total Toll Collections	**2,603**	**3,227**	**4,852**	**6,688**	**9,038**	**11,658**	**13,346**

Source: MOSL,Company

- **Premium deferment to help reduce cash burn:** SADE has been able to defer its premium payment for two projects, Hyderabad-Yadgiri and Rohak-Panipat, which will help the company to reduce cash burn in both the projects. We expect cash burn reduction of INR2b.

- **Refinancing of projects to help generate better IRR for operational projects:** SADE has recently refinanced its operational projects, leading to a 120-150bp reduction in borrowing cost over the last two years. The recent fall in major banks' lending rates augurs well for SADE, as this would help to bring its borrowing cost down further. SADE is in process to refinance for 4 more projects, which is expected to be completed by 2QFY18 and expect MBCPNL refinancing to be completed by end FY18.

Exhibit 59: Refinancing of projects to help reduce interest outgo over the next few years

Refinancing of loans- SPV wise	Post Refinance cost of borrowing (%)	FY16
Dhule Palesnar Tollway Limited	9.7	11.7
Nagpur Seoni Express Limited	8.8	8.9
Bijapur Hungud Tollway Private Limited	9.7	11.3
Hyderabad Yadgiri Tollway Private Limited	9.8	11.4
Aurangabad Jalna Tollway Limited	10.3	11.0

Source: MOSL, Company

- **Monetization of assets to fund equity requirement of recently-won projects:** SADE intends to monetize a few of its toll-based operational road assets to unlock value and use the proceeds to build new highways. SIPL has recently bagged five HAM projects, with total project cost of INR38.5b. Its equity commitment towards these projects would be INR4.2b and proceeds from monetization of the assets would be used to fund the equity requirement.

SADE's key BOT projects

- **MBCPNL**: MBCPNL is a first-of-its-kind project in India. It envisages 22 border check posts located around Maharashtra to facilitate RTO checks, sales tax and excise clearances, and weighing of vehicles, with IT support to ensure no delays or tax leakages. Of the 22 check posts, 12 are on national highways (NH-3, NH-4, NH-6, NH-7, NH-8, NH-9, NH-13, NH-17, NH-69) and 10 are on state highways, attracting large share of interstate movement. MBPCNL would provide connectivity to adjoining states like Gujarat, Madhya Pradesh, Chhattisgarh, Andhra Pradesh, Karnataka and Goa.

  SADE's main revenue stream from the project would be service income for providing services like road works (design & development of entry and exit points & lanes, development of parking, service roads, etc), providing electrical & electronic equipment (development of lighting systems, power systems & back-up power systems, installation and maintenance of electronic weighbridges, etc), computer works (installation and maintenance of computer hardware/software/networking equipment), support infrastructure (development of infrastructure for administration, development of water supply systems, development of facility center), miscellaneous works (landscaping and beautification, development of facility centers, setting up of signboards for advertisement). In addition to service fee, MBCPNL may also lease commercial space available, earn revenue from advertising along the project site, and charge for loading/unloading and parking.

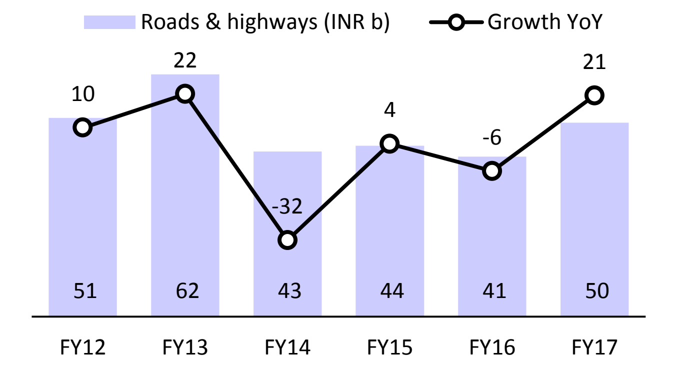
  Currently, MBPCNL generates revenue of INR1.7b, with 19 posts operational. We expect the entire project to be operational by FY18 and expect cash flow generation of INR1.2b. We expect the project to generate equity IRR of 28%.

- **Bijapur-Hungud:** The project is located along NH-13 in the state of Karnataka. It caters to North-South traffic, originating from Bengaluru to Delhi. It connects Chitradurga, the industrial area of Karnataka, to Solapur in Maharashtra. Bijapur-Hungud caters to commercial traffic originating from various industrial areas like Bellary, Hospet and Sandur (BHS) mines, located close to the project. We expect the project to generate equity IRR of 12%

EPC business in a sweet spot

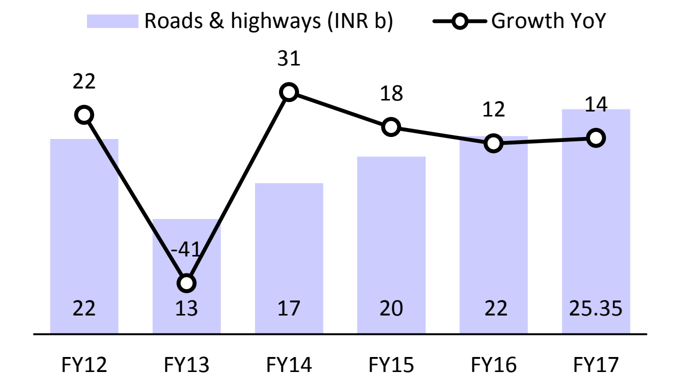
SADE provides EPC services in the roads, mining and irrigation segments. Roads currently form the major portion of its revenue as well as order backlog. Given the precarious financial position of road-building contractors, the Roads Ministry intends to award most projects on EPC or HAM basis. Given the government's emphasis to ramp up activity in the road sector and existing order pipeline, we believe the Road segment will continue to drive revenue growth and order backlog. SADE expects EPC orders of INR129b and HAM orders of INR146b to be tendered over the next couple of months. We expect annual order inflow of INR50b-60b for SADE for the next two years.

Exhibit 60: Weak ordering in the road segment has impacted the order book in the segment



Source: MOSL, Company

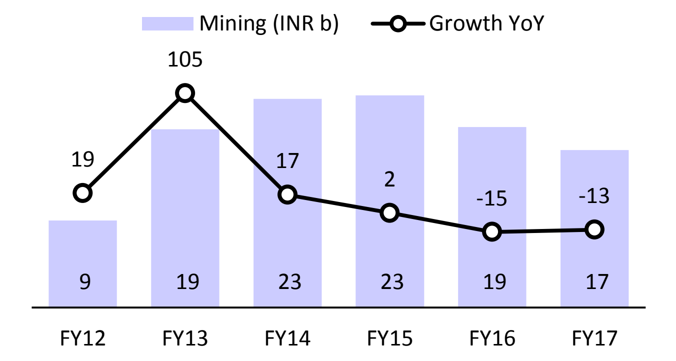
Exhibit 61: However, execution of the order book in hand remains robust



Source: MOSL, Company

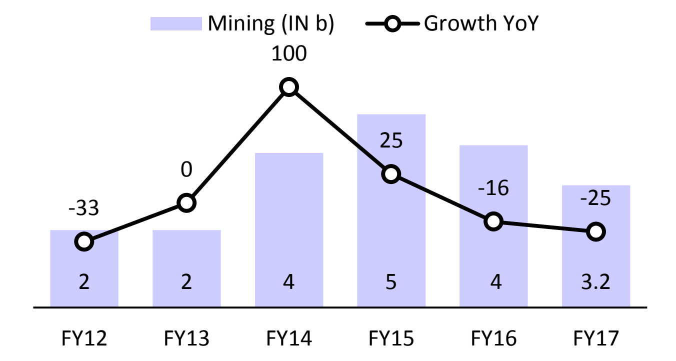
- **Mining sector:** In the mining segment, SADE is currently engaged in the overburden removal activity for PSUs. In mining, nine projects are at the verge of being tendered out, of which five would be under MDO model, with 4-7-year contracts. SADE has 11 projects with activities ranging from removal of overburden, hiring HEMM for removal, excavation and transportation, to extraction of ores like coal, lignite and uranium. It also focuses on hiring earthmoving equipment and trained manpower for the same.

Exhibit 62: Mining segment contribution to the order book stands at 26%



Source: MOSL, Company

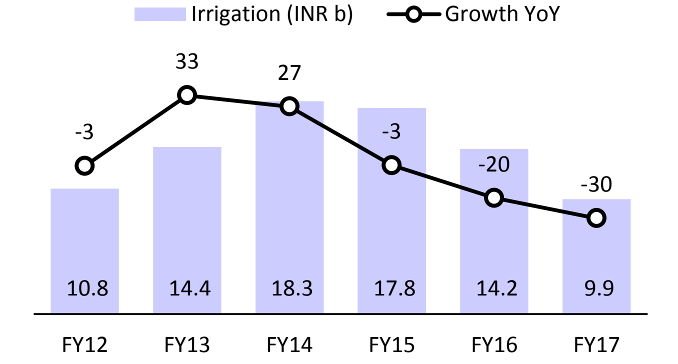
Exhibit 63: Revenue growth in the segment impacted in FY16/17 on account of the service tax issue with BCCL



Source: MOSL, Company

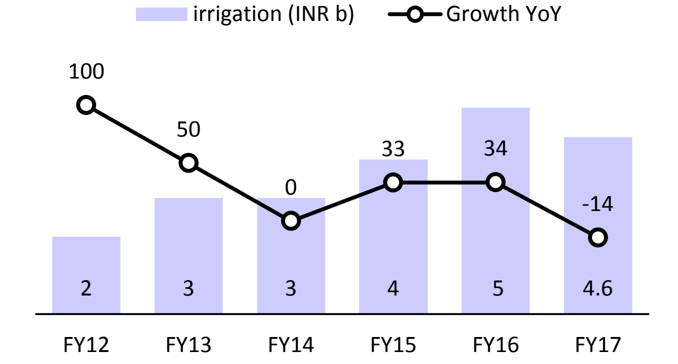
- **Irrigation sector:** In the irrigation segment, SADE is involved in the construction of earthen dams, canals, and siphons, and in remodeling and improving canals. Current tender pipeline stands at INR41b for the irrigation projects in Madhya Pradesh, Gujarat and Rajasthan, for which SADE has already submitted bids. Margins in the irrigation segment are 10%. SADE has prequalification to participate in projects worth INR13b.

Exhibit 64: Irrigation order backlog contribution stands at 19% of the total order book



Source: MOSL, Company

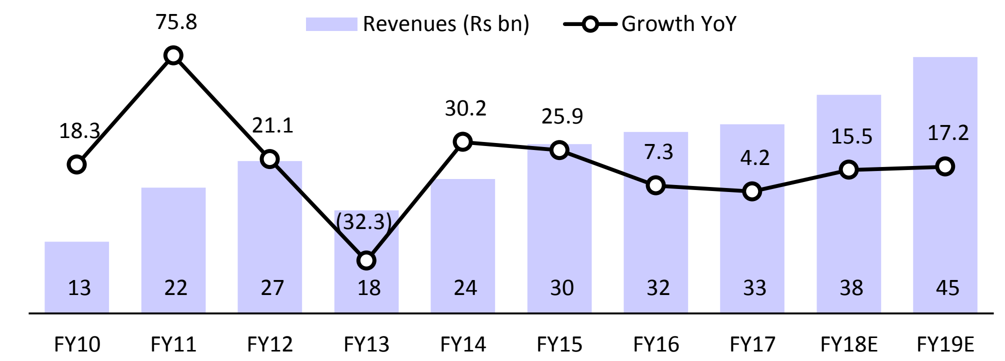
Exhibit 65: Revenue growth strong given low base



Source: MOSL, Company

- **EPC revenue to grow at a CAGR of 16% over FY17-19:** We expect SADE to register 16% revenue CAGR over FY17-19, given strong order book position of INR84b, executable over the next 2-2.5 years. SADE's order inflow for FY17 was INR32b, with order wins of five HAM projects. Strong order inflow as well as healthy ordering pipeline provides comfort of achieving 16% revenue CAGR over FY17-19. For FY17, 70% of the revenue contribution came from transport, 17% from mining, and the balance 13% from irrigation. We expect the revenue mix to remain in favor of roads, given the strong traction the sector has seen.

Exhibit 66: Revenue to grow at a CAGR of 16%, with execution of the strong order book

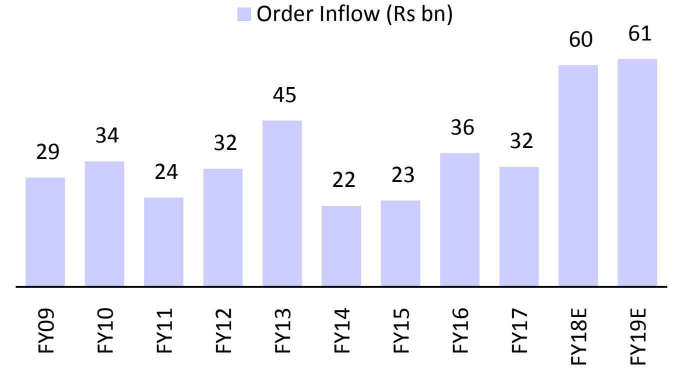


Source: MOSL, Company

Order backlog provides strong medium-term revenue visibility

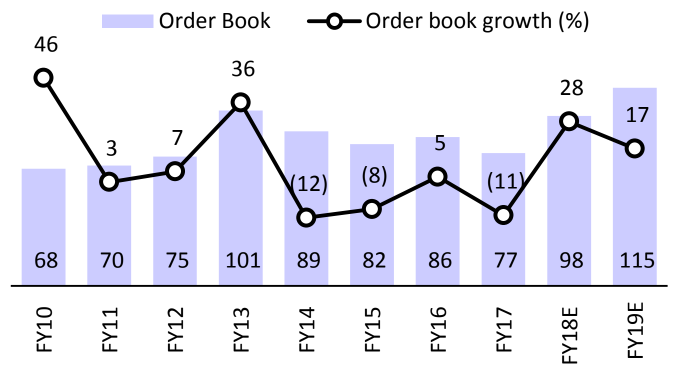
SADE has a healthy and diversified order book for the construction business. Its construction order book stands at INR84b, of which 69% comes from transportation projects (BOT assets: 55%; EPC contracts: 14%), 20% from mining projects, and 11% from irrigation projects. SADE's order book provides decent medium-term revenue visibility. SADE's diverse order book includes contracts from state governments as well as NHAI, in-house as well as third-party construction activities, and fixed-priced as well as contracts with price escalation.

Exhibit 67: Order inflow to pick up, with activity in road segment picking up



Source: MOSL, Company

Exhibit 68: Order backlog to remain stable, given strong execution of orders in hand

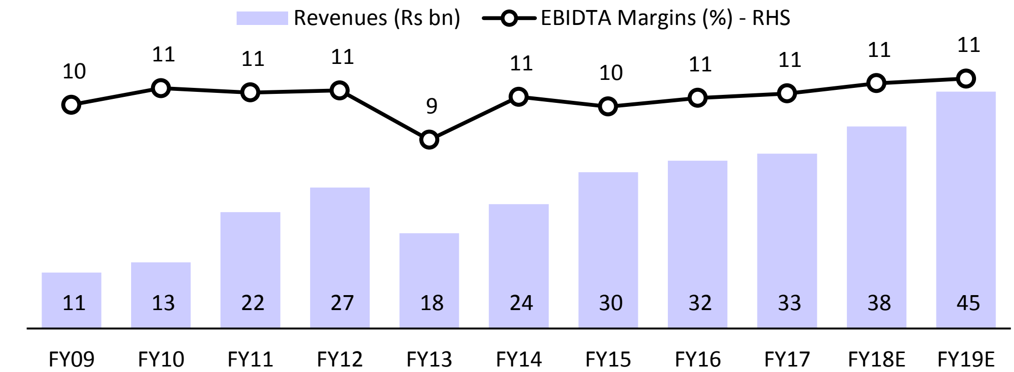


Source: MOSL, Company

Consistent margins

SADE has maintained its margins at 10-11%, historically. It provides EPC services for in-house BOT projects as well as third-party projects/EPC contracts. Margins are 11-12% in the road EPC segment, 18-20% in the mining segment, and 6-7% in the irrigation segment. We expect margins to remain stable, as recently-won seven HAM projects start contributing to revenue from FY18. We expect the revenue contribution to remain in favor of the transportation segment over FY17-19.

Exhibit 69: Margins to remain stable, with increasing contribution from road sector order book



Source: MOSL, Company

Valuation and view

Sadbhav historically has demonstrated strong execution track record to successfully execute the projects on time. Its demonstrated track record to grow revenue from INR5b in FY07 to INR33b in FY17 (21% CAGR) without diluting the margin profile and registering earnings CAGR of 21% over the same period lends confidence on the company's ability to consistently deliver on the revenue and earnings front going ahead.

To reduce its dependence on Road sector and mitigate the slowdown in the road sector, Sadbhav over the years have diversified irrigation, mining and metro segment. New business verticals now forms 35% of the order book. Business prospects going ahead looks promising for Sadbhav as key states in which Sadbhav has very strong presence has strong pipeline of projects to be awarded over the next couple of years. We expect Sadbhav to register 16% revenue CAGR over FY17-19 and earnings CAGR of 15% over the same period. Current order book of INR84b and Sadbhav's execution track record lends us the confidence on Sadbhav delivering on the earnings front over FY17-19.

Despite registering strong earnings CAGR of 21% (FY07-17), Sadbhav's balance sheet quality remains superior with net debt to Equity ratio at 0.6:1. Sadbhav has been able to maintain the balance sheet quality in rather fiercely competitive and debt laden sector by regularly raising equity to meet the growth demand of the company.

Although on reported basis Sadbhav's return profile seems mediocre (12% RoE in FY17), adjusting for the equity investment and loans provided to its subsidiary Sadbhav infrastructure limited Return ratio profile looks extremely robust. Adjusting for the equity investment of INR4b and loans of INR4b, Sadbav's RoE stands at 25%. With SIPL's road asset portfolio now becoming self-sufficient, we expect SIPL to return the loan support of INR4b provided by the Sadbhav over the next 2 years.

This will provide growth capital to Sadbhav to meet its future growth capital requirement ensuring that the balance sheet quality if the company remain robust.

Given Sadbhav's strong execution track record, healthy balance sheet, and strong order backlog in hand we initiate coverage on the stock with BUY rating and SoTP target price of INR385. INR252 for the core EPC business (16x its sept19EPS of INR15.8) and INR117 for the BoT projects based its current market capitalization (adjusting for Sadbhav's stake and providing 15% holding company discount).

Exhibit 70: Valuation Table

Particulars	Segments	Value (Rs m)	Value per share (Rs)	Rationale
Sadbhav Standalone	Core construction business	43,305	252	At 16x Sept19E Earnings
SIPL stake	Subsidiary	22,919	133	Valued SADE's 68.3% stake in SIPL by giving a 15% holding company discount to current market capitalization
SOTP Value		66,224	385	

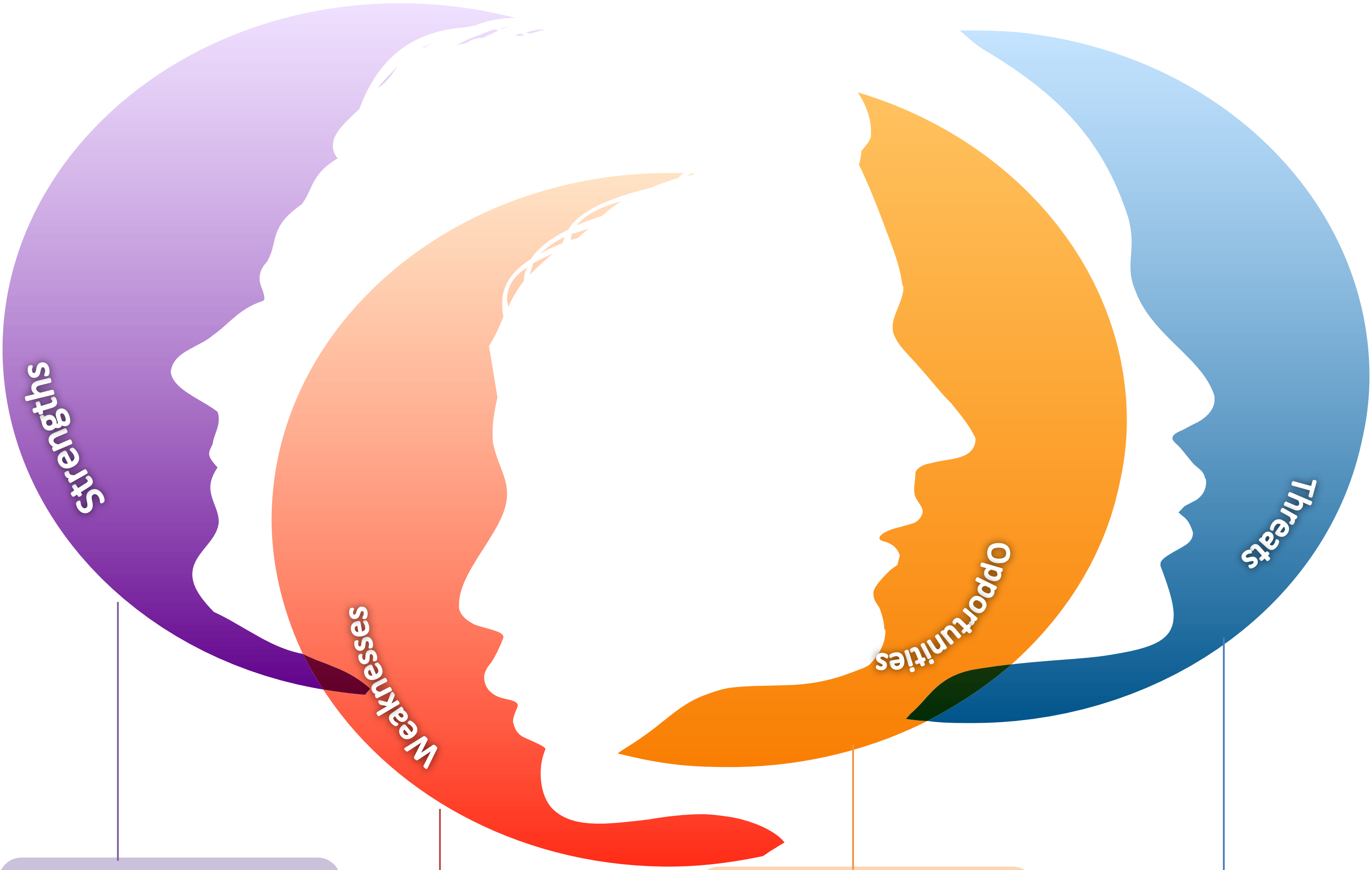
Source: MOSL, Company

Risks and concerns

Any slowdown in ordering activity from NHAI and MoRTH: SADE relies heavily on NHAI and MoRTH ordering for its EPC business revenue. Any slowdown in order awards from NHAI and MoRTH might hurt the financials of the company.

Lower than estimated toll collection: Weaker than estimated traffic growth could severely impact the toll collection of BOT projects, in turn impacting their valuation.

SWOT Analysis



- Capability to execute large projects on timely basis
- Rich experience of working on multiple projects and executing them on time
- Diversified order book, which will help if there is a slowdown in any one sector
- Strong operating portfolio of projects to ensure steady cash flow
- Projects in high NSDP states

- Lower than estimated traffic has led to two projects opting for premium deferment. If traffic does not pick up to levels expected by the company, the projects could become unviable.

- The Roads sector is likely to have investments of INR7t over the next couple of years, which provides a strong opportunity to players in the sector.
- The Irrigation sector also offers sizable opportunity, with various state governments having strong capex plans to develop irrigation facilities within the states.
- Metro rail development also provides strong business opportunities for which the company is prequalified.

- Competition in the sector remains extremely high, with multiple local players vying for orders.
- The sector is highly dependent on government policies. Any adverse policy change can severely impact the business.

Bull & Bear case

Bull Case

- In our bull case, we assume higher growth than the base case in all segments.
- We assume 22% revenue CAGR and operating margin expansion of 70bp to 11.4% over FY17-19. This leads to EPS CAGR of 23% to INR16.6.
- Assuming the same target multiple as in the base case, we get a bull case target price of INR435 against the base case target price of INR385.

Bear Case

- In our bear case, we assume flattish EBITDA margin at 10.8% and sales CAGR of 11% (against 16% in the base case scenario) over FY17-19.
- We assume weak ordering activity and muted execution. This will lead to 2% CAGR in adjusted PAT over FY17-18 against 15% CAGR in the base case scenario.
- Assuming the same target multiple as for the base case, we get a target price of INR300.

Exhibit 71: Scenario Analysis – Bull Case

	FY17	FY18E	FY19E
Sales	33,203	41,909	49,219
Growth YoY (%)	4.2	26.2	17.4
EBIDTA	3,556	4,682	5,605
EBIDTA Margin (%)	10.7	11.2	11.4
Growth YoY (%)	4.0	25.6	17.2
PAT	1,878	2,825	2,855
PAT Margin (%)	5.7	6.7	5.8
PAT Growth (%)	42.3	50.4	1.1

Source: Company, MOSL

Exhibit 72: Scenario Analysis – Bear Case

	FY17	FY18E	FY19E
Sales	33,203	39,784	40,583
Growth YoY (%)	4.2	19.8	2.0
EBIDTA	3,556	4,246	4,378
EBIDTA Margin (%)	10.7	10.7	10.8
Growth YoY (%)	6.2	19.4	3.1
PAT	1,878	2,411	1,935
PAT Margin (%)	5.7	6.1	4.8
PAT Growth (%)	42.3	28.3	-19.7

Source: Company, MOSL

Financials and Valuations

Standalone - Income Statement (INR m)

Y/E March	FY13	FY14	FY15	FY16	FY17	FY18E	FY19E	FY20E
Total Income from Operations	**18,110**	**23,581**	**29,698**	**31,863**	**33,203**	**38,365**	**44,976**	**53,568**
Change (%)	-32.3	30.2	25.9	7.3	4.2	15.5	17.2	19.1
Raw Materials & Construction Exp.	15,197	19,450	24,362	25,805	26,552	31,393	36,841	43,883
Employees Cost	428	602	974	1,228	1,366	1,343	1,439	1,553
Other Expenses	928	1,040	1,360	1,482	1,729	1,343	1,574	2,036
Total Expenditure	**16,553**	**21,092**	**26,696**	**28,515**	**29,647**	**34,078**	**39,855**	**47,472**
% of Sales	91.4	89.4	89.9	89.5	89.3	88.8	88.6	88.6
EBITDA	**1,557**	**2,489**	**3,002**	**3,348**	**3,556**	**4,286**	**5,122**	**6,096**
Margin (%)	8.6	10.6	10.1	10.5	10.7	11.2	11.4	11.4
Depreciation	318	474	817	971	1,000	1,005	1,289	1,439
EBIT	**1,239**	**2,015**	**2,185**	**2,377**	**2,556**	**3,282**	**3,833**	**4,657**
Int. and Finance Charges	844	1,181	1,382	855	992	1,054	903	764
Other Income	1,342	-188	775	512	333	350	394	0
PBT bef. EO Exp.	**1,737**	**646**	**1,578**	**2,035**	**1,897**	**2,578**	**3,324**	**3,893**
EO Items	-629	174	-119	-194	0	0	0	0
PBT after EO Exp.	**1,108**	**820**	**1,459**	**1,840**	**1,897**	**2,578**	**3,324**	**3,893**
Total Tax	185	-242	321	325	18	129	831	973
Tax Rate (%)	16.7	-29.5	22.0	17.7	1.0	5.0	25.0	25.0
Reported PAT	**924**	**1,062**	**1,137**	**1,515**	**1,878**	**2,449**	**2,493**	**2,920**
Adjusted PAT	**295**	**1,235**	**1,018**	**1,320**	**1,878**	**2,449**	**2,493**	**2,920**
Change (%)	-78.6	319.3	-17.6	29.7	42.3	30.4	1.8	17.1
Margin (%)	1.6	5.2	3.4	4.1	5.7	6.4	5.5	5.5

Standalone - Balance Sheet (INR m)

Y/E March	FY13	FY14	FY15	FY16	FY17	FY18E	FY19E	FY20E
Equity Share Capital	151	152	172	172	172	172	172	172
Eq. Share Warrants & App. Money	0	232	0	0	0	0	0	0
Total Reserves	8,174	9,189	13,349	14,543	16,437	18,646	20,898	23,576
Net Worth	**8,325**	**9,572**	**13,521**	**14,715**	**16,609**	**18,817**	**21,069**	**23,748**
Total Loans	7,630	10,257	10,964	12,167	15,183	13,683	12,883	11,383
Deferred Tax Liabilities	317	357	244	232	-477	-477	-477	-477
Capital Employed	**16,272**	**20,186**	**24,728**	**27,113**	**31,316**	**32,024**	**33,476**	**34,655**
Gross Block	5,148	7,264	8,512	9,388	10,638	12,138	13,638	15,138
Less: Accum. Deprn.	1,845	2,282	3,155	3,838	4,838	5,843	7,132	8,571
Net Fixed Assets	**3,303**	**4,982**	**5,357**	**5,550**	**5,229**	**6,295**	**6,506**	**6,567**
Capital WIP	0	0	0	0	0	0	0	0
Total Investments	**5,385**	**5,210**	**5,313**	**5,278**	**5,694**	**5,394**	**5,394**	**5,394**
Curr. Assets, Loans&Adv.	**16,221**	**20,088**	**24,580**	**25,358**	**28,804**	**32,338**	**35,644**	**39,444**
Inventory	1,022	1,638	2,134	1,406	1,234	1,286	1,510	1,798
Account Receivables	7,365	7,319	9,067	9,994	17,010	12,613	13,555	16,144
Cash and Bank Balance	218	762	351	366	230	6,518	6,604	4,858
Loans and Advances	7,617	10,369	13,028	13,591	10,331	11,921	13,975	16,644
Curr. Liability & Prov.	**8,636**	**10,093**	**10,522**	**9,073**	**8,411**	**12,002**	**14,067**	**16,751**
Account Payables	6,474	8,879	8,902	7,814	8,391	10,406	12,199	14,529
Provisions	2,162	1,215	1,620	1,259	20	1,597	1,868	2,221
Net Current Assets	**7,585**	**9,994**	**14,058**	**16,285**	**20,393**	**20,335**	**21,576**	**22,694**
Appl. of Funds	**16,272**	**20,186**	**24,728**	**27,113**	**31,316**	**32,024**	**33,476**	**34,655**

Financials and Valuations

Ratios

Y/E March	FY13	FY14	FY15	FY16	FY17	FY18E	FY19E	FY20E
Basic (INR)								
EPS	**1.7**	**7.2**	**5.9**	**7.7**	**11.0**	**14.3**	**14.5**	**17.0**
Cash EPS	3.6	10.0	10.7	13.4	16.8	20.1	22.0	25.4
BV/Share	48.5	55.8	78.8	85.8	96.8	109.7	122.8	138.4
DPS	0.5	0.6	0.7	0.9	1.1	1.2	1.2	1.2
Payout (%)	11.5	11.7	12.4	11.9	11.8	9.8	9.7	8.3
Valuation (x)								
P/E			53.4	41.2	28.9	22.2	21.8	18.6
Cash P/E			29.6	23.7	18.9	15.7	14.4	12.5
P/BV			4.0	3.7	3.3	2.9	2.6	2.3
EV/Sales			2.2	2.1	2.1	1.6	1.3	1.1
EV/EBITDA			21.6	19.8	19.5	14.4	11.8	10.0
Dividend Yield (%)	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4
FCF per share	-0.2	14.2	-10.8	4.5	-50.9	52.5	9.5	4.4
Return Ratios (%)								
RoE	3.7	13.8	8.8	9.4	12.0	13.8	12.5	13.0
RoCE	14.7	8.2	10.7	9.0	7.9	9.0	10.2	10.8
RoIC	10.4	13.0	10.5	9.4	8.7	11.5	14.7	16.2
Working Capital Ratios								
Fixed Asset Turnover (x)	3.5	3.2	3.5	3.4	3.1	3.2	3.3	3.5
Asset Turnover (x)	1.1	1.2	1.2	1.2	1.1	1.2	1.3	1.5
Inventory (Days)	21	25	26	16	14	12	12	12
Debtor (Days)	148	113	111	114	187	120	110	110
Creditor (Days)	130	137	109	90	92	99	99	99
Leverage Ratio (x)								
Current Ratio	1.9	2.0	2.3	2.8	3.4	2.7	2.5	2.4
Interest Cover Ratio	1.5	1.7	1.6	2.8	2.6	3.1	4.2	6.1
Net Debt/Equity	0.2	0.4	0.4	0.4	0.6	0.1	0.0	0.0

Standalone - Cash Flow Statement **(INR m)**

Y/E March	FY13	FY14	FY15	FY16	FY17	FY18E	FY19E	FY20E
OP/(Loss) before Tax	741	1,062	1,137	1,337	1,897	2,578	3,324	3,893
Depreciation	318	474	817	849	1,000	1,005	1,289	1,439
Interest & Finance Charges	756	1,178	1,381	1,506	992	1,054	903	764
Direct Taxes Paid	-495	-486	-589	-659	-18	-129	-831	-973
(Inc)/Dec in WC	-1,069	2,507	-2,963	-1,105	-11,025	6,345	-1,154	-2,864
CF from Operations	**252**	**4,734**	**-217**	**1,928**	**-7,154**	**10,853**	**3,531**	**2,259**
Others	407	-112	-148	-289	-333	-350	-394	0
CF from Operating incl EO	**658**	**4,623**	**-365**	**1,639**	**-7,487**	**10,503**	**3,137**	**2,259**
(Inc)/Dec in FA	-695	-2,183	-1,489	-860	-1,250	-1,500	-1,500	-1,500
Free Cash Flow	**-37**	**2,440**	**-1,854**	**779**	**-8,737**	**9,003**	**1,637**	**759**
(Pur)/Sale of Investments	-2,160	-100	-390	-237	6,474	-271	0	0
Others	-329	-3,364	-531	-8	333	350	394	0
CF from Investments	**-3,184**	**-5,647**	**-2,411**	**-1,104**	**5,557**	**-1,421**	**-1,106**	**-1,500**
Issue of Shares	29	36	3,153	2	0	0	0	0
Inc/(Dec) in Debt	3,096	2,815	662	1,119	3,005	-1,500	-800	-1,500
Interest Paid	-840	-1,177	-1,325	-1,495	-992	-1,054	-903	-764
Dividend Paid	-105	-106	-124	-145	-221	-241	-241	-241
CF from Fin. Activity	2,180	1,568	2,366	-519	1,792	-2,795	-1,944	-2,505
Inc/Dec of Cash	**-345**	**543**	**-410**	**16**	**-137**	**6,288**	**87**	**-1,746**
Opening Balance	563	218	761	351	367	230	6,518	6,604
Closing Balance	**218**	**761**	**351**	**367**	**230**	**6,518**	**6,604**	**4,858**

IRB Infrastructure

BSE SENSEX	S&P CNX
33,266	10,364

Stock Info

Bloomberg	IRB IN
Equity Shares (m)	351.5
52-Week Range (INR)	272 / 178
1, 6, 12 Rel. Per (%)	5/-22/-18
M.Cap. (INR b)	112.3
M.Cap. (USD b)	1.73
Avg Val, INRm	532
Free float (%)	42.6

Financials Snapshot (INR b)

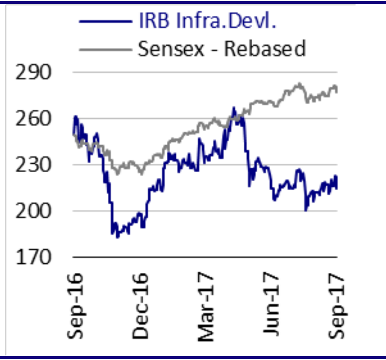
Y/E MARCH	FY17	FY18E	FY19E
Net Sales	58.5	58.6	65.7
EBITDA (Rs b)	30.5	29.4	33.1
NP	7.1	8.0	8.4
EPS	20.3	22.6	23.9
EPS Gr (%)	11.8	11.4	5.4
BV/Share (Rs)	152.9	170.8	189.8
P/E (x)	15.7	14.1	13.4
P/BV (x)	2.1	1.9	1.7
RoE (%)	14.0	14.0	13.2
RoCE (%)	8.9	9.9	11.3

Shareholding pattern (%)

As On	Sep-17	Jun-17	Sep-16
Promoter	57.4	57.4	57.4
DII	8.3	8.2	6.9
FII	26.0	27.0	29.3
Others	8.4	7.5	6.4

FII Includes depository receipts

Stock Performance (1-year)



CMP: INR 237 TP: INR 240(+1%) Neutral

On the road to growth

New project contribution to pick up post FY19

- **Mature road projects provide strong comfort on near-term earnings and cash flows. Recently-commissioned and under-construction projects provide long-term visibility.**
- **Focus on the roads sector, robust in-house execution track record, experience of operating/maintaining large projects, and strong financial position offer growth comfort for IRB in its NH program.**
- **We expect consolidated earnings CAGR of 8% over FY17-19, driven by EPC division and state BOT projects.**

Dominant BOT asset player: IRB has been one of the largest BOT assets player in India, with a total portfolio of 8,087 lane km. Of this, operational assets are 2,794 lane km and 5,293 lane km are under construction. IRB has market share 11.6% on the Golden Quadrilateral. It has gradually moved from executing mid-size projects to large projects of INR15b and above. 44% of its BOT projects are in high growth states of Gujarat and Maharashtra, where GDP growth is 70-150bp higher than India's GDP growth of 6.8%. Higher industrial growth in these states should ensure sustained traffic growth for IRB.

Expect 26% CAGR in toll revenue over FY17-19: Toll collection is likely to grow at a CAGR of 26% over FY17-19, led by commissioning of new projects like Solapur-Yedeshi, Yedeshi-Aurangabad, Kaithal, and Agra-Etawah. As these projects are commissioned, contribution from Mumbai-Pune should decline. We expect Mumbai-Pune to contribute 34% and the new projects to contribute 24% to IRB's overall revenue in FY19.

Monetization of assets and deleveraging of balance sheet through InvIT: Recent successful InvIT IPO has helped IRB to monetize assets and deleverage the balance sheet. While the valuation at which the assets were transferred is a dampener, this will help IRB to free its capital investment of INR26b (INR11b equity and INR15b sub debt) – it will get INR17b cash and units worth INR8.9b (15% mandatory holding of sponsor in the InvIT). InvIT has also helped IRB to deleverage the balance sheet, as the external debt in project SPV (INR34b) gets transferred from IRB's balance sheet and moves to InvIT. Overall gearing at company level will decline from 3:1 to 2:1.

Valuation and view

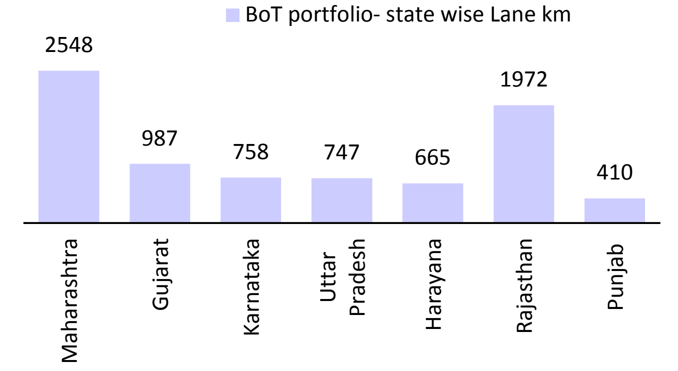
We value IRB at INR240/share based on SOTP – state projects at INR24/share, NH projects at INR70/share, and the EPC division at INR114/share. The discount rate for new projects is high and should reduce as the projects near completion. Thus, upside possibilities exist. IRB offers a quasi-play on economic upturn – NH project earnings and valuations are highly levered to traffic growth, while state projects offer near-term comfort on earnings and cash flow. The stock trades at FY19E EPS of 9.0x and at 1.1x FY19E BV (RoE of 14%). We initiate coverage on the stock with a **Neutral** rating.

State projects provide high earnings visibility

NH projects yet to show traction

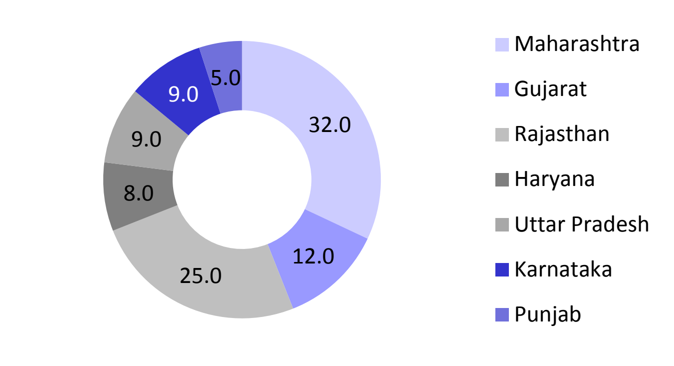
BOT portfolio spread across high-growth states; traffic growth to sustain
IRB's BOT portfolio is spread across high growth states, with 17% market share in the Golden Quadrilateral corridor. 44% of the BOT projects are in the high growth states of Gujarat and Maharashtra, where GDP growth is 70-150bp higher than the national average of 6.8%. This should ensure that the company sees long-term sustainable traffic growth, led by higher industrial growth in these states.

Exhibit 73: Portfolio bifurcation across high growth states



Source: MOSL, Company

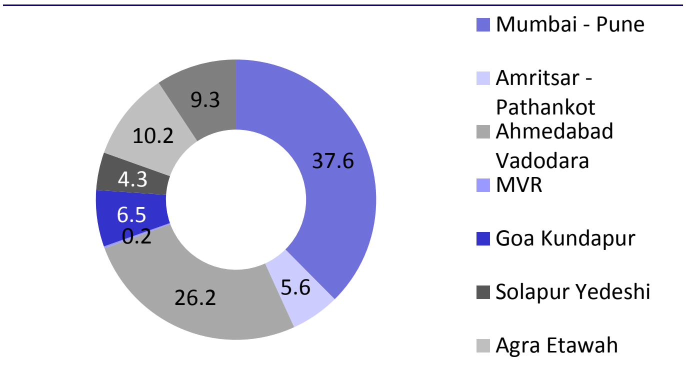
Exhibit 74: Portfolio dominated by high growing state of Maharashtra and Rajasthan (% share)



Source: MOSL, Company

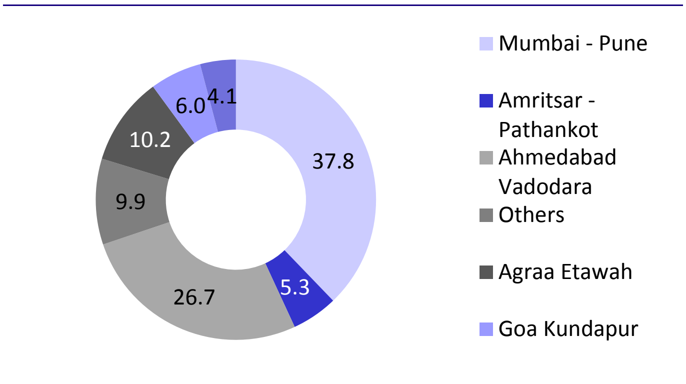
38% of BOT revenue and operating profit from single projects: Post InvIT, IRB is left with eight operational projects and five under-construction projects, with estimated annual toll revenue of INR21.7b. Mumbai-Pune accounts for 38% of its toll revenue and operating profit. Contribution of this project to consolidated PAT is higher (58% for FY18E), as national highway (NH) projects report losses in initial years. However, toll rights for this project are expiring in 2021.

Exhibit 75: Revenue contribution to be dominated by Mumbai Pune expressway (% share)



Source: MOSL, Company

Exhibit 76: EBIDTA contribution to be dominated by Mumbai Pune expressway (% share)

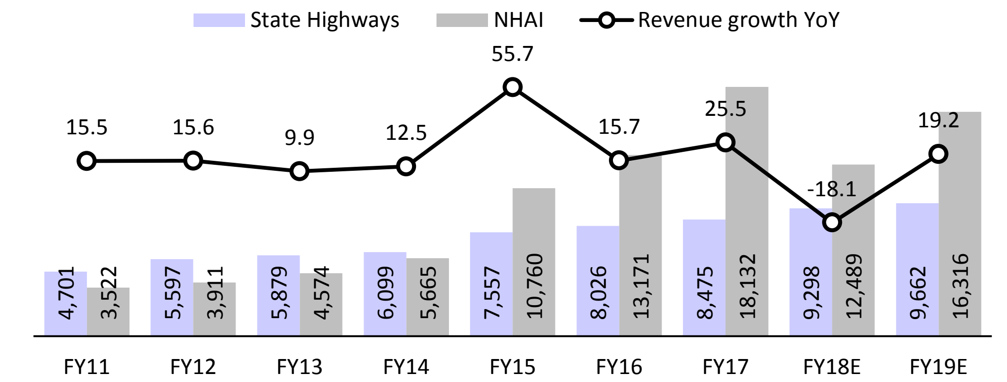


Source: MOSL, Company

- **Mumbai-Pune:** The Mumbai-Pune project covers 206km – 111km on NH-4 and 95km on Mumbai-Pune Expressway. This is one of IRB's most profitable projects and generates ~38% of its gross toll revenue and operating profit. It receives 18% tariff hike every three years. We expect the contribution from this project to revenue as well as operating profit to remain robust, given that new projects take time to stabilize.

Expect 26% CAGR in toll revenue (excluding InvIT portfolio projects) over FY17-19: Toll collection is likely to grow at a CAGR of 26% over FY17-19, led by commissioning of new projects like Solapur-Yedeshi, Yedeshi-Aurangabad, Kaithal, and Agra-Etawah. As these projects are commissioned, contribution from Mumbai-Pune should decline. We expect Mumbai-Pune to contribute 34% and the new projects to contribute 24% to IRB's overall toll revenue in FY19.

Exhibit 77: Toll revenue to be supported by NHAI



Source: MOSL, Company

Three new projects added in FY17: IRB has recently won three projects in Rajasthan on DBFOT basis from NHAI along the Kishengarh-Udaipur-Ahmedabad stretch. NHAI had re-invited bids for the projects, which were earlier awarded to GMR in 2010. GMR had walked out in 2012, citing non-compliance of the preconditions NHAI had set. IRB won the projects at a premium of INR5.8b for the 329km stretch. Total project cost is INR56.9b. IRB would have toll collection rights for 20 years including 910 days of construction.

Exhibit 78: New project addition in the portfolio

Project Name	Concession period	Premium/ (Grant)	Length (km)	Construction period
Kishangarh Udapur	20.0	2.3	124.9	910 days
Kishangarh Gulabpura	20.0	1.9	90.0	910 days
Udaipur-Gujarat border	21.0	1.6	113.8	910 days

Source: MOSL, Company

Successful InvIT IPO provides IRB growth funding to bid for upcoming projects, without diluting equity

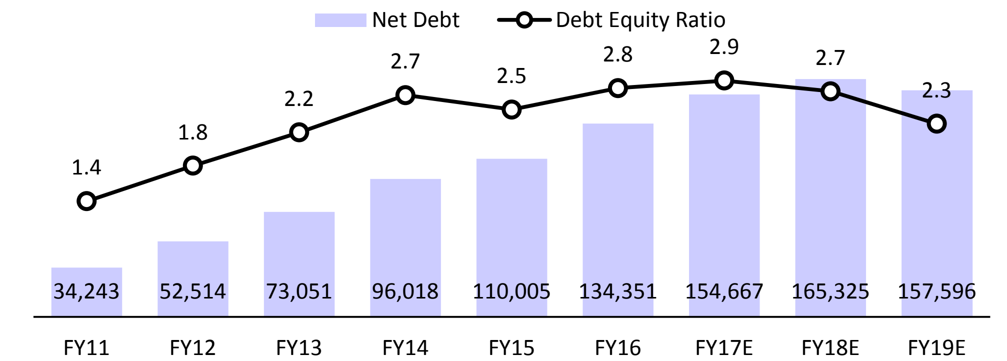
Projects transferred at 1x book value (below IRB's initial expectation of 3x): IRB will transfer six projects to the InvIT at 1x book value of INR11b (equity investment) as against 3x suggested in DRHP filed by the company. Valuations are much below the company's initial estimate of 3x book value.

Monetization of assets through InvIT: Though valuations at which projects are transferred to InvIT are a dampener, this will help IRB to free its capital investment of INR26b (INR11b equity and INR15b sub debt). It will get INR17b cash and units worth INR8.9b (15% mandatory holding of sponsor in the InvIT).

Deleveraging of balance sheet: As the external debt in the project SPV (INR34b) gets transferred from IRB's balance sheet to the InvIT, overall gearing at the company level will decline from 3:1 to 2:1. This will also help IRB to upgrade its rating at the company level (current rating of A-) and bring down cost of debt, thus improving profitability.

Availability of funds to bid for incremental new projects: With inflow of INR17b cash, IRB can bid for new projects without diluting equity. Also, with the establishment of InvIT, IRB can develop and transfer new projects to InvIT after two years of commercial operations (IRB has entered into ROFO/ROFR with InvIT for its under construction/future projects), thus unlocking equity and making it available for future growth. IRB intends to scale up its construction capability to 500-600km annually from the current 350-400km.

Exhibit 79: Debt-equity ratio has eased out post InVIT issue (INR m)



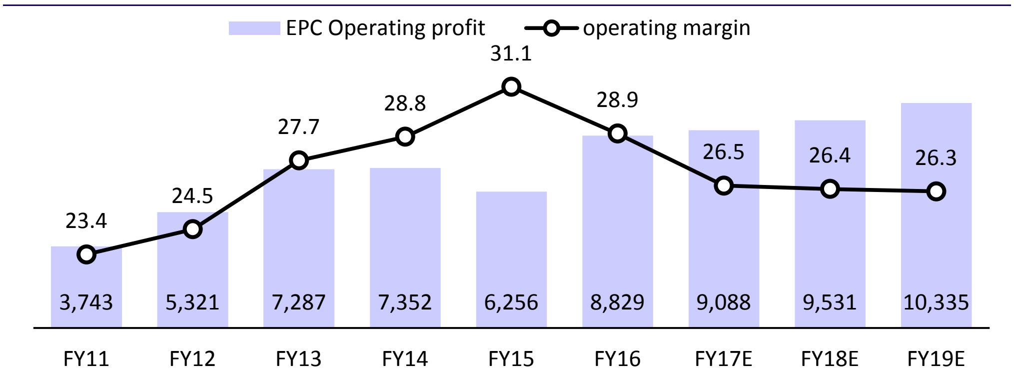
Source:

EPC business model dependent on in-house projects

IRB's EPC business is completely dependent on the BOT projects won by the company. It does not take any third-party EPC order. EPC business revenues can turn volatile if IRB's BOT arm is not able to successfully win orders. The BOT arm would have to win orders regularly irrespective of competitive intensity in the segment so that the EPC arm gets a regular flow of business.

Highest EBITDA margin in the industry, as order book derived purely from in-house projects: IRB's EPC business earns much higher EBITDA margin than competitors in the segment. The company cites usage of in-house construction equipment v/s usage of leased equipment by other players and higher other income as the reasons for this. We believe 25%+ margins for the EPC business would sustain, as it derives its order book purely from in-house projects. As the BOT projects are in-house, charging higher margins helps the company to up-front profits and meet the equity requirement of the projects.

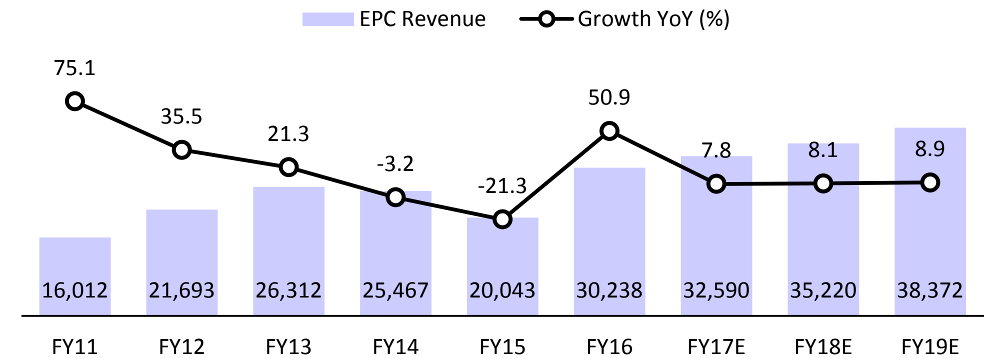
Exhibit 80: EBIDTA margin supported by in-house project execution



Source: MOSL, Company

EPC revenue to grow at a CAGR of 9% over FY17-19: Despite dependence on in-house BOT arm for the EPC business, IRB's construction revenue has reached a sizable level, with annual revenue of INR30b. As a project normally takes 2-2.5 years to complete, IRB would require to bag orders of 400-500km annually for sustainable revenue growth of 8-10%. Recent order wins of INR5.6b would ensure 8% CAGR in EPC revenue over FY16-19.

Exhibit 81: EPC revenue to register single-digit revenue growth (INR m)

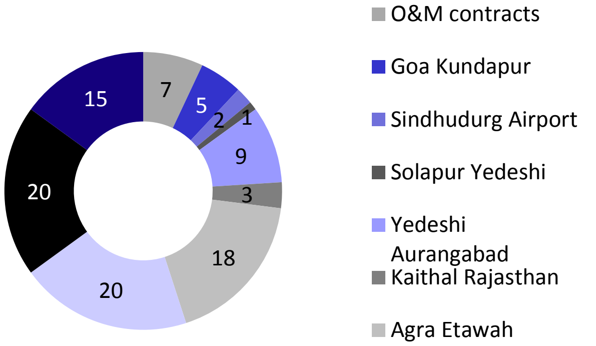


Source: MOSL, Company

Order backlog provides revenue visibility of 3.3x its FY17 revenue

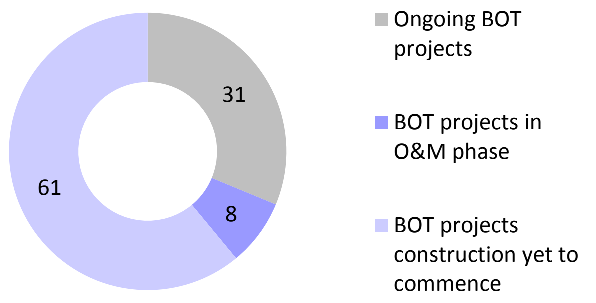
Recent order wins of INR5.6b have helped IRB to ramp up its order book to INR100b, which provides strong revenue visibility of 3.3x its FY17 revenue of INR33b. However, the recent order wins of three projects are yet to achieve financial closure and would start contributing to revenue meaningfully only from FY18. IRB intends to bag BOT orders of 300-400km every year, which would help it to bag EPC contracts of INR30b-40b annually.

Exhibit 82: Project wise order backlog bifurcation (%)



Source: MOSL, Company

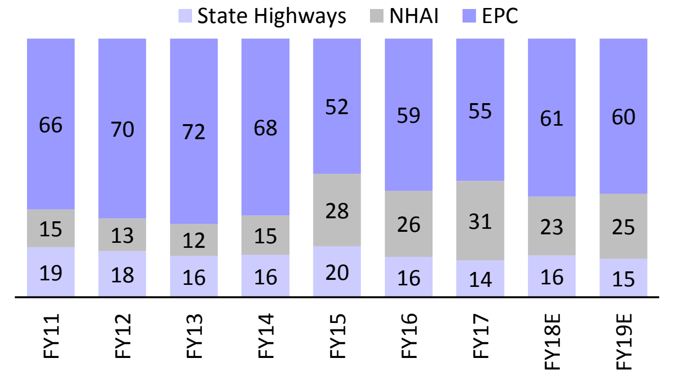
Exhibit 83: BoT portfolio bifurcation (%)



Source: MOSL, Company

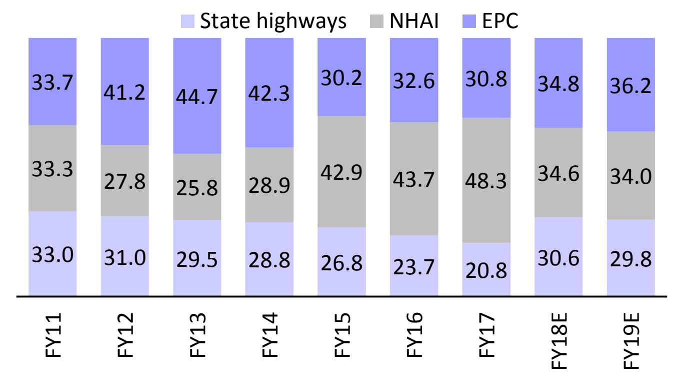
Consolidated earnings to register 8% CAGR over FY17-19E given transfer of assets to InvIT; new project contribution back-ended: We expect IRB's consolidated revenue to grow at a CAGR of 6% over FY17-19, driven largely by EPC revenue; we expect EPC revenue to register 9% CAGR over FY17-19. BOT revenue is expected to decline at 1% over FY17-19, as six projects are transferred to InvIT. Excluding these six projects, BOT revenue is expected to register 30% CAGR, aided by commissioning of new projects as well as linear growth from mature assets. We expect revenue from the BOT division to remain flat – from INR26.6b in FY17 to INR26.0b in FY19.

Exhibit 84: Revenue contribution (%) dominated by EPC segment



Source: MOSL, Company

Exhibit 85: NHAI projects to drive EBIDTA growth (% contribution)

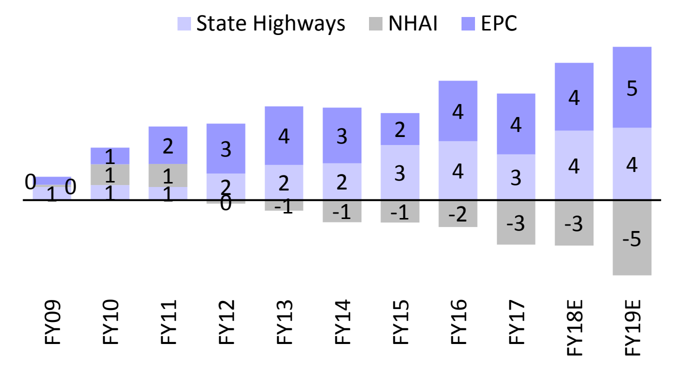


Source: MOSL, Company

Consolidated EBITDA would grow at a CAGR of 5% over FY17-19, led by higher revenue contribution from the BOT division, given relatively lower operating costs. We expect consolidated EBITDA to increase from INR30.5b in FY17 to INR33b in FY19. Consolidated PAT should grow at CAGR of 8% over FY17-19, given higher other income from the cash received on transferring assets to InvIT fund and interest yield from 15% investment in the InvIT fund.

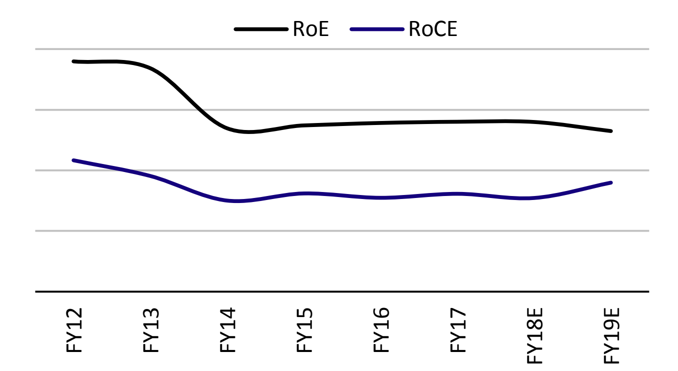
We estimate that BOT division PAT to remain flat despite transfer of asset to InvIT driven by improved profitability of projects commissioned in the past. While the contribution from the EPC division to PAT growth is limited, it accounts for 57% of consolidated PAT. On a consolidated basis, return ratios would remain muted due to limited/negative return on equity invested/capital employed in new projects.

Exhibit 86: Earnings to be driven by state highways and EPC segment



Source: MOSL, Company

Exhibit 87: Consolidated return ratio to remain muted given limited contribution from new projects



Source: MOSL, Company

Valuation and view

IRB is at a juncture where existing state projects having strong track record are nearing their project lifecycle while NH projects are either in the midst of project lifecycle or are expected to be commissioned over the next 2-3 years. Given the long gestation of infrastructure projects, their contribution in the initial years is expected to be negative; but, this is not a true reflection of project profitability.

BoT Asset Valuation

We value IRB's state highway portfolio at ~INR8.4b (INR24/share). This portfolio which provides linear growth in earnings/cash flow is now dominated by Mumbai-Pune highway, which has outstanding concession period of less than three years. Most importantly, PAT for the state highway portfolio would grow at a CAGR of 26% over the next two years. We expect state highway projects to report PAT of INR4.1b in FY18 and INR4.3b in FY19.

For new projects, we model our discount rate based on milestone of project, and thus, assume higher cost of equity (CoE) for recent projects. The operational portfolio is discounted at the base rate; higher risk premium captures the project execution risk. We value IRB's NH portfolio at INR24.5b (INR70/share). These projects are in the initial stages of commissioning. As they are yet to reach critical traffic levels, we expect negative contribution in the initial years.

EPC asset Valuation

We value IRB's EPC business at 8x its Sept19E EPS of INR14, discount to prevailing peer EPC business valuation of 15x as IRB's EPC business earns much higher EBITDA margin than competitors in the segment which helps the company to up-front profits and meet the equity requirement of the projects.

Exhibit 88: Valuation of BOT portfolio

Project		Project cost (Rs mn)	IRB's stake (%)	Equity value (Rs mn)	Per share value (Rs)
Mumbai Pune	state	13,016	100	8,383	24
Thane Bhiwandi Bypass	state	1,040	100	188	1
Kharpada Bridge	state	320	100	(183)	(1)
Nagar- Karmala- Tembhurni	state	368	100	(208)	(1)
Mohol-Kurul-Mandrup	state	180	100	(40)	(0)
Pune- Solapur	state	630	100	(94)	(0)
Pune - Nashik	state	737	100	37	0
Thane Ghodbunder	state	2,462	100	406	1
Amritsar Pathankot	NHAI	14,453	100	3,718	11
Ahmedabad Vadodara	NHAI	48,800	100	(2,388)	(7)
MVR	NHAI	2,032	74	1,504	4
Goa-Kundapur	NHAI	26,390	100	3,250	9
Solapur Yedeshi	NHAI	4,837	100	4,837	14
Kaithal	NHAI	5,634	100	5,634	16
Yedeshi Aurangabad	NHAI	5,131	100	5,131	15
Agra Etawah		4,401	100	4,401	13
Total		128,399		33,074	94

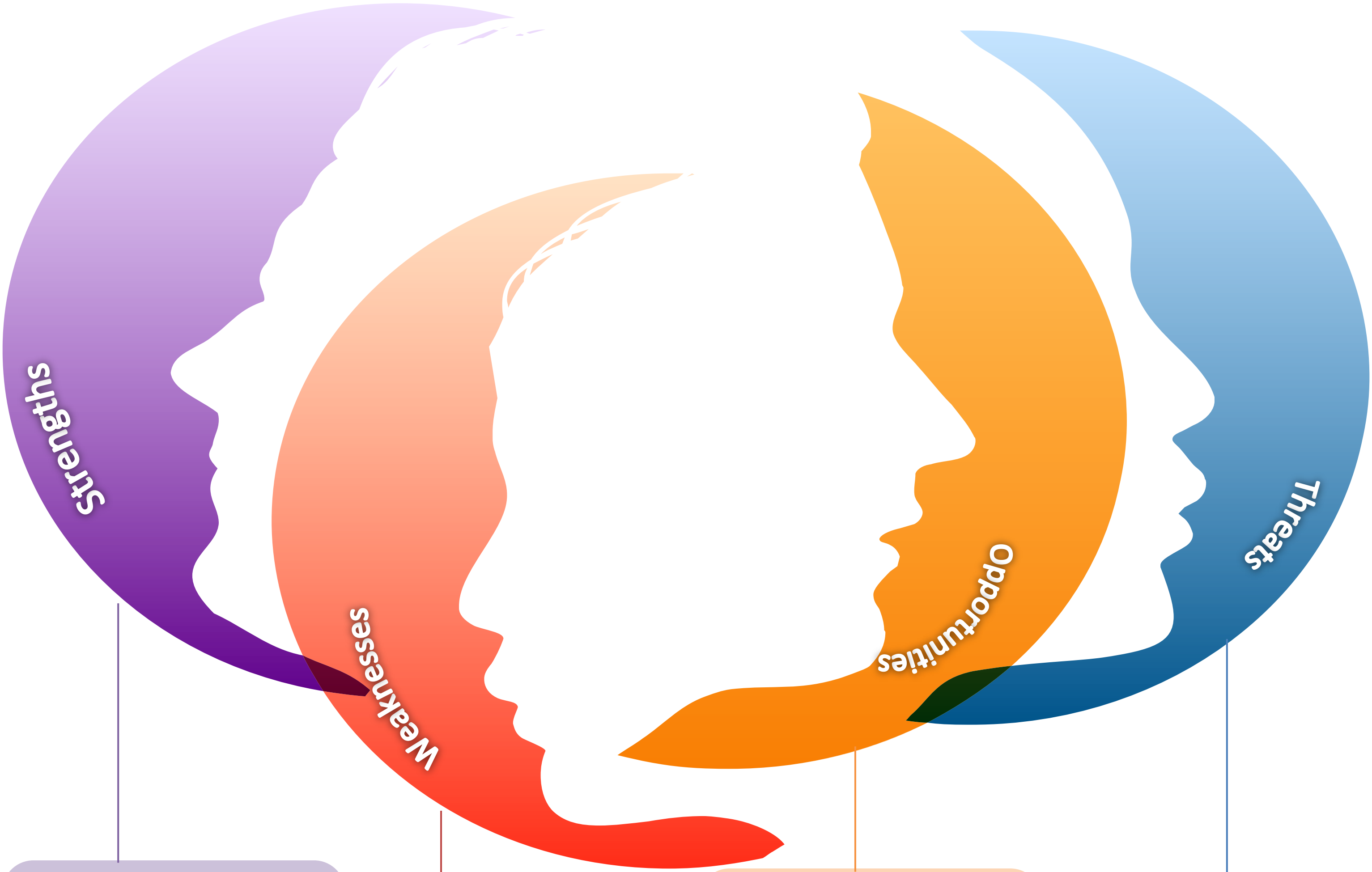
Source: Company, MOSL

Exhibit 89: Valuation methodology

Particulars	Segments	Value (Rs m)	Value per share (Rs)	Rationale
EPC business	Core construction business	4,978	114	At 8x FY19E Earnings
BoT Assets	Subsidiary	34024	94	DCF
InvIT Equity Stake			25	At market price
SOTP Value			**240**	

Source: Company, MOSL

SWOT Analysis



- Capability to execute large projects on timely basis
- Rich experience of simultaneously working on multiple projects and executing them on time

- The company does not work on third-party EPC projects. This could impact business, as most projects going ahead are likely to be awarded on EPC and HAM basis.
- It is solely dependent on the roads sector for business.
- It is focused on Maharashtra and Gujarat. Any slowdown in these states could impact the business significantly.

- The Roads sector is likely to have investments of INR7t over the next couple of years, which provides strong opportunity to players in the sector.

- Competition in the sector remains extremely high, with multiple local players vying for orders.
- The sector is highly dependent on government policies. Any adverse policy change can severely impact the business.

Bull & Bear case

Bull Case

- ☑ In our bull case, we assume higher growth than the base case in all segments.
- ☑ We assume 6% revenue CAGR over FY17-19, driven by execution improvement in the EPC segment and better traffic growth. We assume higher operating margin than in the base case, driven by operating leverage.
- ☑ Assuming the same target multiple as in the base case, we get a bull case target price of INR310 against a base case target price of INR240.

Bear Case

- ☑ In our bear case, we assume lower EBITDA margins than in the base case. We assume EBIDTA margin at 49.9% in FY19 and sales CAGR of 3% (against 6% in base case scenario) over FY17-19.
- ☑ We assume muted execution and sluggish traffic growth as compared to the base case scenario.
- ☑ Assuming the same target multiple as for the base case, we get a bear case target price of INR185.

Exhibit 90: Scenario Analysis – Bull Case

	FY17	FY18E	FY19E
Sales	58,459	58,368	65,791
Growth YoY (%)	14	(0)	13
EBIDTA	30,483	29,077	33,645
EBIDTA Margin (%)	52.1	49.8	51.1
Growth YoY (%)	14.6	(4.6)	15.7
PAT	7,146	8,965	9,042
PAT Margin (%)	12.2	15.4	13.7
PAT Growth (%)	11.8	25.5	0.9

Source: Company, MOSL

Exhibit 91: Scenario Analysis – Bear Case

	FY17	FY18E	FY19E
Sales	58,459	54,463	62,105
Growth YoY (%)	14.0	-6.8	14.0
EBIDTA	30,483	26,745	30,984
EBIDTA Margin (%)	52.1	49.1	49.9
Growth YoY (%)	14.6	(12.3)	15.8
PAT	7,146	6,722	6,331
PAT Margin (%)	12.2	12.3	10.2
PAT Growth (%)	11.8	-5.9	-5.8

Source: Company, MOSL

Financials and Valuations

Consolidated - Income Statement								(INR m)
Y/E March	FY13	FY14	FY15	FY16	FY17	FY18E	FY19E	FY20E
Total Income from Operations	**36,872**	**37,319**	**38,489**	**51,279**	**58,459**	**58,562**	**65,670**	**64,626**
Change (%)	17.7	1.2	3.1	33.2	14.0	0.2	12.1	-1.6
Material costs	4,697	5,027	4,345	3,713	2,683	10,171	11,639	11,211
Employees Cost	1,557	1,799	1,898	2,465	2,726	2,168	2,387	2,486
Manufacturing costs	13,063	11,630	8,715	16,825	20,184	15,438	17,041	17,762
Admin & Other Expenses	1,158	1,327	1,414	1,673	2,384	1,409	1,553	1,626
Total Expenditure	**20,475**	**19,782**	**16,372**	**24,677**	**27,976**	**29,185**	**32,619**	**33,084**
% of Sales	55.5	53.0	42.5	48.1	47.9	49.8	49.7	51.2
EBITDA	**16,397**	**17,537**	**22,117**	**26,603**	**30,483**	**29,377**	**33,051**	**31,542**
Margin (%)	44.5	47.0	57.5	51.9	52.1	50.2	50.3	48.8
Depreciation	4,415	4,771	7,071	8,533	8,548	4,864	5,331	5,864
EBIT	**11,982**	**12,766**	**15,046**	**18,069**	**21,935**	**24,513**	**27,720**	**25,677**
Int. and Finance Charges	6,200	7,562	9,312	10,639	13,327	13,321	16,171	17,717
Other Income	1,348	1,214	1,130	1,272	1,232	1,544	1,638	1,645
PBT bef. EO Exp.	**7,130**	**6,419**	**6,864**	**8,702**	**9,839**	**12,737**	**13,187**	**9,606**
EO Items	0	0	0	0	0	0	0	0
PBT after EO Exp.	**7,130**	**6,419**	**6,864**	**8,702**	**9,839**	**12,737**	**13,187**	**9,606**
Total Tax	1,530	1,823	1,441	2,306	2,685	4,773	4,789	2,515
Tax Rate (%)	21.5	28.4	21.0	26.5	27.3	37.5	36.3	26.2
Minority Interest	-31	5	-6	4	8	6	8	0
Reported PAT	**5,631**	**4,591**	**5,429**	**6,391**	**7,146**	**7,958**	**8,390**	**7,091**
Adjusted PAT	**5,631**	**4,591**	**5,429**	**6,391**	**7,146**	**7,958**	**8,390**	**7,091**
Change (%)	12.1	-18.5	18.2	17.7	11.8	11.4	5.4	-15.5
Margin (%)	15.3	12.3	14.1	12.5	12.2	13.6	12.8	11.0

Consolidated - Balance Sheet								(INR m)
Y/E March	FY13	FY14	FY15	FY16	FY17	FY18E	FY19E	FY20E
Equity Share Capital	3,324	3,324	3,515	3,515	3,515	3,515	3,515	3,515
Total Reserves	29,232	32,283	40,094	44,758	50,226	56,496	63,199	69,477
Net Worth	**32,556**	**35,607**	**43,609**	**48,272**	**53,740**	**60,011**	**66,714**	**72,991**
Minority Interest	1,092	356	351	355	354	360	368	368
Total Loans	87,761	110,841	125,762	149,937	165,770	142,531	146,975	148,552
Deferred Tax Liabilities	259	143	170	148	148	148	148	148
Liabilities classified as held for sale								
Capital Employed	**121,667**	**146,947**	**169,890**	**198,713**	**220,013**	**203,050**	**214,205**	**222,059**
Gross Block	70,712	105,855	344,227	385,926	419,914	296,696	297,311	298,020
Less: Accum. Deprn.	15,624	20,311	26,589	34,438	44,970	49,834	55,165	60,155
Net Fixed Assets	**55,088**	**85,544**	**317,638**	**351,488**	**374,944**	**246,863**	**242,146**	**237,864**
Capital WIP	49,160	44,867	48,353	40,198	77,494	106,304	148,172	185,005
Total Investments	**620**	**145**	**88**	**68**	**68**	**9,888**	**9,888**	**9,888**
Curr. Assets, Loans&Adv.	**25,793**	**26,480**	**27,827**	**30,049**	**26,140**	**59,061**	**31,193**	**3,533**
Inventory	2,488	2,683	2,598	3,088	4,004	4,011	4,498	4,426
Account Receivables	80	55	49	1,037	80	80	90	89
Cash and Bank Balance	14,710	14,823	15,757	15,587	10,964	43,294	14,367	-13,791
Loans and Advances and CA	8,515	8,919	9,422	10,337	11,092	11,676	12,238	12,810
Curr. Liability & Prov.	**8,994**	**10,090**	**224,015**	**223,090**	**258,632**	**219,064**	**217,194**	**214,232**
Account Payables	3,135	4,078	2,339	3,052	3,949	3,956	4,436	4,366
Other Current Liabilities	2,749	3,125	219,487	218,351	252,199	212,652	210,288	207,389
Provisions	3,110	2,888	2,189	1,687	2,483	2,456	2,469	2,477
Net Current Assets	**16,799**	**16,390**	**-196,188**	**-193,041**	**-232,492**	**-160,003**	**-186,001**	**-210,698**
Asset classified s held for sale								
Appl. of Funds	**121,667**	**146,947**	**169,891**	**198,713**	**220,014**	**203,051**	**214,205**	**222,059**

Financials and Valuations

Ratios								
Y/E March	**FY13**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18E**	**FY19E**	**FY20E**
Basic (INR)								
EPS	**16.0**	**13.1**	**15.4**	**18.2**	**20.3**	**22.6**	**23.9**	**20.2**
Cash EPS	28.6	26.6	35.6	42.5	44.7	36.5	39.0	36.9
BV/Share	92.6	101.3	124.1	137.4	152.9	170.8	189.8	207.7
DPS	3.8	3.8	3.9	4.0	4.0	4.0	4.0	2.0
Payout (%)	28.0	33.9	29.9	26.5	23.6	21.2	20.1	9.9
Valuation (x)								
P/E			20.7	17.6	15.7	14.1	13.4	15.8
Cash P/E			9.0	7.5	7.2	8.8	8.2	8.7
P/BV			2.6	2.3	2.1	1.9	1.7	1.5
EV/Sales			5.8	4.8	4.6	3.6	3.7	4.2
EV/EBITDA			10.1	9.3	8.8	7.2	7.4	8.7
Dividend Yield (%)	1.2	1.2	1.2	1.3	1.3	1.3	1.3	0.6
FCF per share	-29.3	-28.3	-13.8	-23.2	-24.6	224.4	-48.8	-34.1
Return Ratios (%)								
RoE	18.4	13.5	13.7	13.9	14.0	14.0	13.2	10.2
RoCE	9.5	8.4	8.2	8.4	8.9	9.9	11.3	10.0
RoIC	16.4	12.7	12.3	10.7	11.6	17.5	41.4	45.8
Working Capital Ratios								
Fixed Asset Turnover (x)	0.5	0.4	0.1	0.1	0.1	0.2	0.2	0.2
Asset Turnover (x)	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3
Inventory (Days)	25	26	25	22	25	25	25	25
Debtor (Days)	1	1	0	7	1	1	1	1
Creditor (Days)	31	40	22	22	25	25	25	25
Leverage Ratio (x)								
Interest Cover Ratio	1.9	1.7	1.6	1.7	1.6	1.8	1.7	1.4
Net Debt/Equity	2.2	2.7	2.5	2.8	2.9	1.5	1.8	2.1

Consolidated - Cash Flow Statement								(INR m)
Y/E March	**FY13**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18E**	**FY19E**	**FY20E**
OP/(Loss) before Tax	7,066	6,419	6,864	8,679	9,839	12,737	13,187	9,606
Depreciation	4,415	4,771	7,071	8,533	8,548	4,864	5,331	5,864
Interest & Finance Charges	4,874	6,362	8,276	9,547	12,096	11,777	14,533	16,071
Direct Taxes Paid	-2,422	-2,325	-2,163	-3,117	-2,685	-4,773	-4,789	-2,515
(Inc)/Dec in WC	519	1,389	-1,766	-648	34,828	-40,159	-2,930	-3,461
CF from Operations	**14,451**	**16,616**	**18,282**	**22,995**	**62,626**	**-15,556**	**25,332**	**25,566**
Others	2	-61	-47	429	0	0	0	0
CF from Operating incl EO	**14,453**	**16,555**	**18,235**	**23,424**	**62,626**	**-15,556**	**25,332**	**25,566**
(Inc)/Dec in FA	-24,766	-26,516	-23,091	-31,595	-71,284	94,408	-42,482	-37,543
Free Cash Flow	**-10,312**	**-9,962**	**-4,856**	**-8,171**	**-8,658**	**78,852**	**-17,150**	**-11,976**
(Pur)/Sale of Investments	-482	479	75	41	0	-9,820	0	0
Others	304	342	964	1,289	1,151	1,545	1,638	1,645
CF from Investments	**-24,944**	**-25,696**	**-22,052**	**-30,265**	**-70,133**	**86,133**	**-40,844**	**-35,897**
Issue of Shares	0	0	4,216	0	0	0	0	0
Inc/(Dec) in Debt	14,171	21,802	14,372	23,126	17,899	-23,239	4,444	1,577
Interest Paid	-6,180	-10,887	-13,173	-14,349	-13,327	-13,321	-16,171	-18,701
Dividend Paid	-997	-1,661	-665	-2,107	-1,687	-1,687	-1,687	-703
Others	0	0	0	0	0	0	0	0
CF from Fin. Activity	**6,994**	**9,254**	**4,751**	**6,670**	**2,885**	**-38,247**	**-13,414**	**-17,827**
Inc/Dec of Cash	**-3,497**	**113**	**934**	**-171**	**-4,622**	**32,331**	**-28,927**	**-28,158**
Opening Balance	18,207	14,710	14,823	15,757	15,586	10,964	43,294	14,367
Closing Balance	**14,710**	**14,823**	**15,757**	**15,586**	**10,964**	**43,295**	**14,367**	**-13,791**

Annexure

Exhibit 92: Projects to be awarded for FY17-18

State Name	Project Name	Length (Kms)
Karnataka	4-laning of Belgaum-Khanapur Section and 2 laning with paved shoulders of Khanapur-Knt/Goa Border	82
	Bangalore – Nidagatta (6 laning) – NH-275 (Package –I)	56
	Nidagatta – Mysore (6 laning) – NH -275 (Package II)	61
	4 lane of Tumkur - Shimoga section of NH-206 from km 12+310 to km 66+540 (Package - I)	53
	4 lane of Tumkur - Shimoga section of NH-206 from km 66+540 to km 119+790 (Package - II)	57
	4 lane of Tumkur - Shimoga section of NH-206 from km 119+790 tokm 166+100 (Package - III)	48
	Total	**356**
Madhya Pradesh	Bhopal-Biaora	106
	Obedullaganj-Betul Section	121
	Bameetha to Khajuraho	10
	Four laning of Gwalior-Jhansi section of NH-75 from Km. 16 to Km. 96.127 in the state of M.P/U.P.	82
	Mohgaon-Khawasa section	29
	Total	**348**
Odisha	Chandikole-Baleshwar of NH-5	137
	Chandikole-Dubri-Talcher	133
	Biramitrapur-Brahmni	29
	Brahmni - Rajamunda	47
	Rajamunda-Barkote	50
	Rimoli-Roxy-Rajamunda	96
	Sambalpur - Telamabni	23
	Cuttack-Angul of NH-42	112
	Total	**627**
Punjab and Haryana	Sonipat Jhajhar	73
	Rohtak-Jind	49
	Total	**122**
Tamil Nadu	Chennai - Tada	33
	Oddanchatram bypass	10
	Villupuram - Nagapattinam Section of NH-45A	67
	Karaikudi - Ramanathapuram	80
	Walajahpet - Poonamallee section	69
	4 Laning of Vikravandi – Kumbakonam – Thanjavur (P III)	48
	4 Laning of Vikravandi – Kumbakonam – Thanjavur (P - II)	50
	Total	**357**
Delhi	6 lane Greenfield Delhi-Meerut Expressway (Pkg-IV)	32
	Dwarka Expressway	28
	Total	**60**
Gujarat	Dwarka (NH-51) – Khambalia – Devalia and Dhrol – Amram – Maliya, Gujarat	136
	Porbandar-Dwarka	118
	Total	**254**
Telangana	Sangareddy-Nanded-Akola (2 Packages)	90
	Mancherial (Junction of NH-63) to Chandrapur	90
	Total	**180**
Rajashthan	Jaipur Ring Road (Agra - NH8 By pass)	48
	Jodhpur Ring Road	103
	Udaipur bypass (6 laning, V)	24

State Name	Project Name	Length (Kms)
	Total	**175**
Jammu and Kashmir	Ring Road in Jammu City	57
	Stand alone Ring Road/ Bypass around Srinagar City	61
	Total	**118**
West Bengal	JHR/WB Border-Purulia-Balarampur	78
	Ghoshpukur – Salsalabari (2)	43
	Jangipur (NH-12)/Omarpur-Chunakhali – Jalangi - Krishnanagar – Hanskhali – Duttaphulia – Helencha – Bangaon – Panchpota - Berigopalpur Ghat – Ichamati – Taranipur Ghat – Swarupnagar - Bashirhat, West Bengal	180
	4 lane bridge over River Ganga at downstream of Farakka Barrage	5
	Dalkola Bypass	5
	Total	**311**
Uttar Pradesh (East)	CHAKERI ALLAHABAD	131
	Lucknow Ring Road (Pkg-3A) Construction of Sitapur Road to kurshi Road (Chainage Km. 64.40 to 79.256) (4L,VII,15 km ,EPC)	15
	Lucknow Ring Road (Pkg-1) (Construction of NH-56, 4-Lane bypass connecting NH-56 and Behta Road) (4L,VII,32 km ,Hybrid Annuity)	32
	Lucknow Ring Road (Pkg-2) (Construction of NH-24 4-Lane bypass connecting Behta Road terminating at Sitapur Road Chainage Km. 31.745 to Km. 64.640) (4L,VII,33 km ,Hybrid Annuity)	33
	Varanasi-Hanumanha section of NH-7	125
	Varanasi Ring Road Phase-II(4L,VII,42 km ,Other)	42
	Total	**378**
Uttar Pradesh (West)	Aligarh to Kanpur Section Package-1 (Aligarh to Bhadwas)	46
	Hapur Muradabad	100
	Aligarh-Kanpur Section Package -2 (Bhadwas to Kalyanpur)	43
	Aligarh-Kanpur Section Package -3 (Kalyanpur to Naviganj)	60
	Total	**249**
Maharashtra (Mumbai)	Sinnar Shirdi Section	60
	Construction of new tunnel at Khambatki Ghat	4
	Four Laning of Satara-Kagal stretch of NH-4	133
	6 laning of Pimpalgaon - Dhule - NH3	118
	6 laning of Vadape - Gonde - NH3	97
	Nashik Phata to Khed Km 12+190 to Km 42+000 of NH-50	30
	6/8 laning from Ch.539.200 (Vadape) to Ch.563.000 (Thane) NH-3	24
	Wadkhal – Alibagh section of NH-166A	22
	Sangli-Solapur (Package I)	65
	Sangli-Solapur (Package II)	67
	Sangli-Solapur (Package III)	56
	Solapur-Vijayapur	110
	Akkalkot - Solapur section of NH-150E	40
	Ratnagiri–Kolhapur section of NH-166 from Km. 0/000 to Km. 137/285	126
	Total	**952**

Maharashtra (Nagpur)	4-Laning of Aurangabad -Telwadi Section of NH211	87
	Ahmednagar Bypass	42
	4-Laning of Nagpur -Umred Section	47
	4-Lane of Warora -Wani Section	18
	4-Lane of Gondkhari -Dhapewada-Saoner ection	29
	4-Laning of Nagpur -Kotal Section	60
	6-laning of Nagpur-Wainganga Bridge Section of NH-53	59
	Ausa to Chakur section	59
	4-Laning of Chakur -Loha Section	62

State Name	Project Name	Length (Kms)
	4-Laning of Loha -Waranga Phata Section	68
	4-Lane Nanded -Hingoli -Washim Akola	172
	Total	**702**
Bihar	Munger to Mirzachowki (1 Package)	
	Maheshkunt Purnia NH 107 (Package 1)	89
	4-lane Up-gradation of Narenpur-Purnea Section	49
	Aunta Semaria	8
	Bakhtiarpur Rajouli NH 31	102
	Majhouli - Churhut	63
	Total	**311**
Jharkhand	Aurangabad - Bihar – Jharkhand Border (Chordaha)	70
	Bihar- Jharkhand Border (Chordaha)-Gorhar	71
	Gorhar-Barwa Adda	81
	Barhi-Rajauli Package I	27
	Piska Mor to Gumla	72
	NH 98 connecting NH 2 & NH 33	48
	Ganga Bridge at Sahibganj	22
	Total	**391**
Himachal Pradesh	Pandoh Takoli	18
	Solan Kaithlighat	23
	Total	**41**
Kerala	Calicut Bypass	28
	Thalipady - Chengala from km 17.2 to km 57.2 of NH-17	40
	Chingala to Kakkaduvu fro km 57.2 to km 104.00 of NH-17	47
	Thalessery-Mahe bypass	19
	Total	**134**
Andhra Pradesh	Anantpur-Giddlur-Guntur of NH-544D (2 Packages)	220
	4 laning of Gundugolanu to Kovvuru section of NH-16 (Erstwhile SH-107) under V on HAM	70
	4 laning of Nandigama and Kanchikacherla Bypasses	13
	Extension of Benz Circle Flyover by 820m on EPC mode	1
	6 laning of Anandapuram-Pendurthi-Anakapalli section of NH-5 (New NH-16) (Erstwhile SH-38/MDR) along with four lane connectivity to Visakhapatnam Port Road under V on HAM	64
	6 laning of Narasannapeta to Ranastalam section of NH-5 under V on HAM	54
	Additional structures with service road (capacity augmentation) of Ichhapuram-Narsannapeta section of NH-5 (New NH-16) under V on EPC mode	13
	Total	**436**
	Grand Total	**6,503**

Details of Bharatmala project

Exhibit 93: Components of Bharat Mala

Category	Description	Total Length Identified (km)	Upgrade proposed in Phase I (km)
National Corridors Efficiency Improvement	Lane expansion, de-congestion of existing National Corridors	13,100	5,000
Economic Corridors development	Connection of economically important production & consumption centers	26,200	9,000
Inter-corridor and Feeder routes development	Inter-connection between economic corridors, first mile & last mile connectivity	15,500	6,000
Border and International Connectivity Roads	Connectivity to border areas and boosting trade with neighboring countries	5,300	2,000
Coastal and Port Connectivity Roads	Connectivity to coastal areas to enable port-led economic development	4,100	2,000
Expressways	Greenfield expressways	1,900	800
TOTAL		**66,100**	**24,800**

Source: Industry report, MOSL

Exhibit 94: List of Economic corridor planned under Bharatmala project

EC-1	Mumbai-Kolkata	EC-23	Hyderabad -Aurangabad
EC-2	Mumbai-Kanyakumari	EC-24	Delhi -Kanpur
EC-3	Amritsar-Jamnagar	EC-25	Tharad-Phalodi
EC-4	Kandla-Sagar	EC-26	Nagaur -Mandi Dabawli
EC-5	Agra-Mumbai	EC-27	Sagar-Lucknow
EC-6	Pune-Vijayawada	EC-28	Sambalpur-Paradeep
EC-7	Raipur-Dhanbad	EC-29	Amreli -Vadodra
EC-8	Ludhiana-Ajmer	EC-30	Godhra -Khargone
EC-9	Surat-Nagpur	EC-31	Sambalpur-Ranchi
EC-10	Hyderabad-Panaji	EC-32	Bangalore -Mallapuram
EC-11	Jaipur-Indore	EC-33	Raisen-Pathariya
EC-12	Solapur -Nagpur	EC-34	Bangalore-Mangalore
EC-13	Sagar-Varanasi	EC-35	Chittaurgarh -Indore
EC-14	Kharagpur -Siliguri	EC-36	Bilaspur -New Delhi
EC-15	Raipur -Vishakapatnam	EC-37	Solapur -Mahabubnagar
EC-16	Delhi -Lucknow	EC-38	Bangalore -Nellore
EC-17	Chennai -Kurnool	EC-39	Ajmer -Udaipur
EC-18	Indore-Nagpur	EC-40	Sirsa -Delhi
EC-19	Chennai -Madurai	EC-41	Sirohi -Beawar
EC-20	Mangalore-Raichur	EC-42	Jaipur -Agra
EC-21	Tuticorin -Cochin	EC-43	Pune -Aurangabad
EC-22	Solapur -Bellary -Gooty	EC-44	North East Corridor

Source: Industry report, MOSL

Exhibit 95: Details of 28 ring roads planned under Bharatmala project

Bengaluru	Surat
Pune	Lucknow
Nagpur	Patna
Indore	Ranchi
Agra	Vijayawada
Madurai	Belgaum
Sambalpur	Udaipur
Delhi	Chitradurga
Jaipur	Dhanbad
Varanasi	Bhubaneswar
Raipur	Gurugram
Kota	Noida
Dhule	Srinagar
Shivpuri	Amravati (AP)

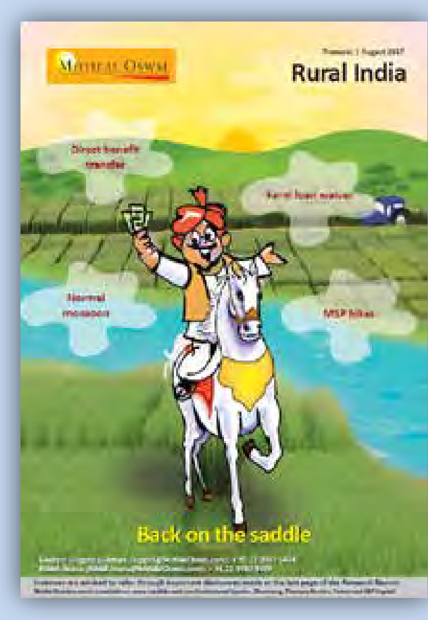
Source: Industry report, MOSL

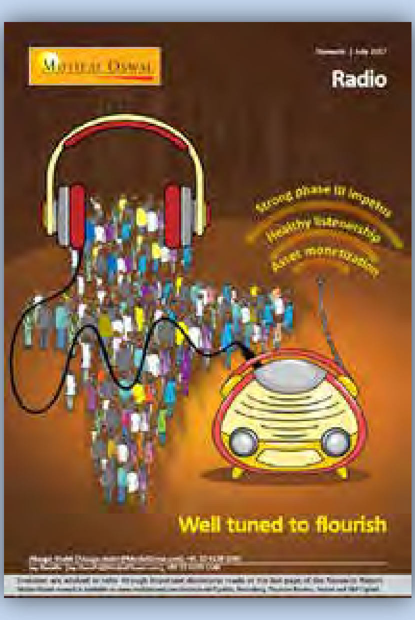
Exhibit 96: Implementing agencies given more power to expedite decision making process

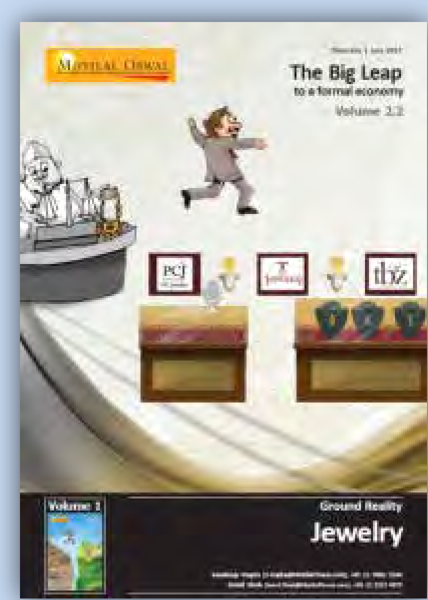
Project Mode	Project Value	Approval Mechanism
EPC Projects	No limit	NHAI Board
PPP Projects	BOT (Toll)	NHAI Board if No VGF required
	BOT (Toll) - VGF Required	As per DEA Guidelines
	BOT (Annuity/ HAM) Upto INR 20b	Appraised by SFC chaired by Secretary, RTH
		Approved by Hon’ble Minister RTH
	BOT (Annuity/ HAM) > INR 20b	Appraised by PPPAC
		Approved by CCEA

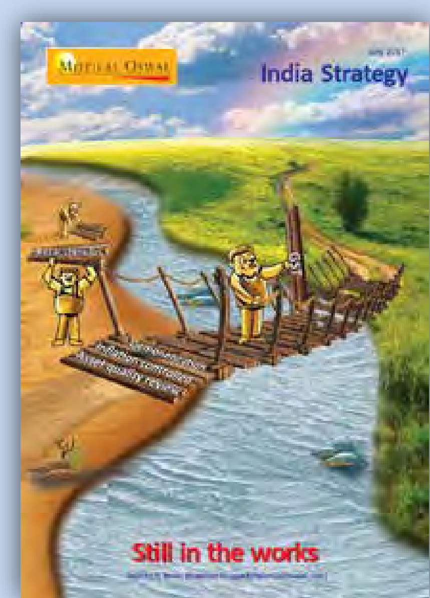
Source: MOSL

THEMATIC/STRATEGY RESEARCH GALLERY









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