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How to play the investment boom

- **Capex cycle is strong and should be sustainable**

We believe the Indian investment cycle is firing on all cylinders. The government targets US$320bn infrastructure capex in the 11th Five-Year Plan, industrial capex could be US$250-300bn over the next 3-4 years, and we estimate average annual real estate construction during FY08-11 to be c40% higher than during FY01-07.

- **Financing capex easier than in the past**

The budget deficit has declined significantly over the past few years, and the government has made serious attempts to facilitate private participation in infrastructure. Moreover, bank financing of infrastructure and industrial capex is rising rapidly, and private equity funds are increasingly interested in infrastructure.

- **Significant positive impact on domestic demand**

We estimate strong positive impact of the capex cycle on cement demand growth (11-12%), on steel demand growth (9-10%), and on employment generation (0.6m additional engineers, 3.9m skilled workers, and 9.5m unskilled workers over the next 5-6 years). The subsequent positive rub-off on consumption could be significant.

- **Key beneficiaries: Engineering, construction, cement, and finance**

We highlight Bharat Heavy Electricals, Larsen & Toubro, IVRCL, Maharashtra Seamless, Grasim Industries, Tata Steel, and Infrastructure Development Finance Company as the key beneficiaries of the investment cycle. Tata Motors and HDFC Bank are also leveraged to the capex cycle.

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Overview

The Indian capex cycle started about two years ago with an acceleration in infrastructure investment, and eventually matured with corporate capacity expansion plans being finalised across all industrial sectors. In the early days, the sustainability of the capex cycle was questioned by several market participants, and we also felt the need to do a reality check on the capex cycle from time to time (see for example our 28 April 2005 report, *Re-examining the capex cycle*).

We think the strength of the Indian capex cycle is obvious

Currently the situation seems significantly different. Not only do we think the acceleration of the capex cycle to be a "settled fact" in the minds of investors, the different legs of capex—infrastructure, corporate capex, and real estate development—seem to be strengthening simultaneously. We believe today's questions should be more on the sustainability and implications of capex:

(1) Are the funding plans in different areas of capex achievable?

(2) Apart from the obvious beneficiaries (engineering, capital goods, construction), what other sectors and stocks benefit from the capex cycle?

(3) What is the implication of an accelerating capex cycle for the broader economy, and for consumption?

These are the questions that we try to answer in this report. We also look at the implications of the current capex cycle for building material demand, steel demand, demand for manpower, etc.

We believe infrastructure investment targets are achievable if several issues concerning encouragement to private investment are sorted out. Financing of industrial capex is easier with companies having healthy balance sheets and many more avenues of raising finances than in the past

Our key conclusions are:

(1) **The government's target of US$320-330bn investment in infrastructure is feasible**, provided private participation is made easier by streamlining issues such as clarity on the magnitude of toll increases in model concessions agreements (MCA) for toll roads, and problems regarding fuel linkages for private power projects.

(2) **Financing of infrastructure and industrial capex is currently easier** than in the past because budget deficits are lower than earlier; bank finances to infrastructure, though low, are rising rapidly, and interest from private equity (PE) funds in infrastructure is rising rapidly.

(3) **Key beneficiaries of the capex cycle** are likely to be: (1) service providers such as engineering, capital goods and construction companies; (2) material providers such as cement companies, steel and steel pipe manufacturers, construction equipment manufacturers etc.; (3) finance providers—banks and financial institutions, especially those having larger focus on corporate loans or infrastructure loans; and (4) the takers of infrastructure project risk, that is dedicated infrastructure holding companies.

(4) **The investment cycle would positively impact the economy**. The increase in the investment-to-GDP ratio from 22-26% earlier to the current 32% has lifted real GDP growth from 4-6% earlier to 8-10%. The capex cycle could also help employment generation and wage levels, thus having a positive rub-off on consumption.

We highlight the following stocks as key plays on the capex cycle theme: Bharat Heavy Electricals (BHEL), Larsen & Toubro (L&T), IVRCL, Maharashtra Seamless, Grasim Industries, Tata Steel, and Infrastructure Development Finance Co (IDFC). HDFC Bank and Tata Motors are also significantly leveraged to the capex cycle. Infrastructure asset holding companies like GMR Infrastructure (GMR) are also positively impacted by the boost to infrastructure investments.

Key picks: L&T, BHEL, IVRCL, Maharashtra Seamless, Grasim, Tata Steel and IDFC

Table 1: Top investment cycle plays—Industrials

	Price (Rs)	Market cap	PE (x)				EV/EBITDA (x)			
	3 Jul-07	US$ m	FY06	FY07	FY08E	FY09E	FY06	FY07	FY08E	FY09E
L&T	2259.0	15,636	62.4	35.0	28.2	22.6	38.0	22.0	18.1	14.0
BHEL	1546.8	18,696	45.5	29.1	24.2	19.2	27.5	18.5	15.3	12.1
IVRCL	394.9	1,316	45.4	37.7	26.9	19.7	40.6	23.7	16.6	12.5
ACC	938.3	4,286	74.8	16.3	12.3	11.6	33.2	10.8	8.7	8.2
Grasim Industries	2702.6	6,118	24.1	12.9	10.7	9.8	13.8	7.5	6.4	5.9
Tata Motors	688.0	6,880	15.7	12.9	10.6	9.1	8.3	6.8	5.8	5.0
Maharashtra Seamless	653.6	1,077	27.0	19.6	14.1	10.5	20.5	12.5	8.8	6.6
Tata Steel	600.7	8,613	9.5	8.3	6.5	6.2	7.2	5.5	2.7	2.5

Source: UBS estimates

Table 2: Top investment cycle plays—Banking and finance

	Price (Rs)	Market cap	PE (x)				P/BV (x)				ROE		
	3 Jul-07	US$ m	FY06	FY07	FY08E	FY09E	FY06	FY07	FY08E	FY09E	FY07	FY08E	FY09E
IDFC	131.7	3,650	36.5	28.9	25.0	20.8	5.8	5.0	4.4	3.7	18.6%	18.7%	19.3%
HDFC Bank	1150.55	8,090	41.6	32.2	27.1	20.0	6.8	5.7	3.5	3.1	19.3%	16.1%	16.5%

Source: UBS estimates

Standing on solid legs

In this section we look at the expected activity in each of the areas of capital investments in infrastructure, industrial capex and real estate. Over the next five years, we believe investment in each of these areas is likely to accelerate strongly.

Infrastructure

Government targets US$320-330bn infrastructure investment in the 11th Plan. Sharp rise in power, railways, irrigation, roads, ports and airports

The Planning Commission's Approach paper to the 11th Five-Year Plan (FY07-12) targets 8.5% average real GDP growth during the five-year period. To achieve this target, the Planning Commission has recommended increasing investment in infrastructure from 4.6% of GDP in the 10th Plan to 7-8% in the 11th Plan.

Table 3: Government's infrastructure investment targets in the 11th Plan

(Rs bn)	9th Plan (FY97-02)	10th plan (FY02-07)	11th Plan (FY07-12)
Airports	66	99	400
Irrigation	574	972	1,258
Ports	50	47	500
Power	866	1,581	4,200
Railways (including freight corridor)	464	694	3,220
Roads	546	1,329	2,140
Telecom	801	579	870
Tourism	6	25	29
Urban infrastructure + Housing	586	991	2,100
Total	3,959	6,317	14,717

Source: Plan documents, CIDC draft paper for construction sector in 11th Plan, UBS

In its draft paper on the construction sector against the back drop of the 11th Plan, the Construction Industry Development Council (CIDC) discusses the government's plan and the requirements of the construction industry to implement those plans. The construction industry's requirements have important implications for demand in various sectors, and we discuss them in detail later. The government's detailed programme for each sector is presented in Table 5.

Table 4: 11th five-year plan targets in each area of infrastructure

(Rs bn)	Targets in the 11th Five-Year Plan
Airports	Restructuring and modernisation of Delhi and Mumbai airports likely to be completed by FY10. Greenfield airports in Bangalore and Hyderabad are on their way to commissioning. Modernisation of Chennai and Kolkata airports, and greenfield airports in other selected cities are next in line. In addition, 35 non-metro airports would be taken up for development by AAI.
Irrigation	Bharat Nirman programme envisages creation of additional irrigation facility over 10m hectare cultivable land over FY05-09. This would necessitate the pace of creation of 2.5m ha/year. If the rate of capacity creation is beyond the time horizon of the Bharat Nirman programme, 11m ha of new potential could be created in the 11th Plan.
Ports	Planning Commission estimates that Indian ports would have to handle cargo traffic of 800MT by FY12, compared to 504MT in FY05. In addition, development of a deep sea port and deepening of drafts of existing ports is on the agenda. Bulk of capacity addition is likely to be through Public-Private-Partnership (PPP) and captive users.
Power	11th Plan target is to set up additional 78,000MW generation capacity (compared to less than 30,000MW in 10th Plan). Target capacity creation in thermal segment is 58,000MW, while those in hydel and nuclear segments are 16,500MW and 3,300MW, respectively.
Railways (including freight corridor)	Rs220bn investment on 2,700km freight corridors, Rs180bn public investment, Rs120bn private investment.
Roads	Rs1,800bn investment (out of Rs2,200 total for NHDP Phase 1 to Phase 7) by NHAI and Rs340bn additional private investment.
Telecom	Expanding tele-density, especially in rural areas, and to enhance internet connectivity for data in both urban and rural areas. The objective of connecting the remaining (66,822) villages with public telephones is part of the Bharat Nirman objectives.
Tourism	Improvement in tourism infrastructure such star-rated and budget hotels, and improved road connectivity to tourist destinations.
Urban infrastructure and Housing	The Jawaharlal Nehru National Urban Renewal Mission (JNNURM) launched in December 2005 envisages allocation of Rs500bn in the form of Additional Central Assistance (ACA) grants to states/UTs for integrated development of infrastructural services in 63 selected cities.

Source: Plan documents, CIDC draft paper for the construction sector in 11th Plan,

Industrial capex

Total industrial capex could be about US$300bn over the next five years

Given the high capacity utilization (more than 90% according to NCAER survey) in most sectors, industrial capex appears to be an imperative for the Indian corporate sector. NCAER estimates that 96% of Indian companies are operating at near full capacity. We expect a strong pickup in industrial capex over the next 3-5 years. Our estimate suggests more than US$140bn investments over the next 4-5 years by six leading capital intensive sectors.

Table 5: Capex in key industries

(Rs bn)	Target expenditure (FY08-12)	Remarks
Steel	1,400	About 25-30MT capacity expected from Tata Steel, SAIL, Posco, Essar and RINL.
Oil & gas	1,637	About 110-120MT refining capacity under implementation / announced by RIL (27MT), IOC (20MT), MRPL (35MT), HPCL (19MT) and others.
Aluminium	475	Investments primarily from Vedanta (1.4MTPA alumina refinery in Orissa, expansion in copper and zinc), Hindalco (Alumina expansion by 3MT at 4 different locations) and Nalco (expansion of Aluminium capacity and Bauxite mining capacity at Vizag plant).
Cement	400	Over 100MT of new capacity announced, to be commissioned over 4-5 years. Equipment manufacturers have 50MT clinker capacity in their order backlog.
Auto	420	Large investments from Tata Motors (Rs120bn), M&M (Rs60bn), Ashok Leyland (Rs40-50bn), Maruti (Rsc50bn) and multinationals.
Telecom	1,271	Total capex by Bharti, Reliance Communication and BSNL.
Total	5,603	

Source: CRIS INFAC, UBS estimates

However, we point out that some of the projects mentioned in Table 5 are in the preliminary stage. For example, several refineries of MRPL, HPCL and IOC have been only "announced", and are not near to reaching financial closure. Previously, several large projects of these PSU companies (eg, HPCL's Bhatinda refinery) were significantly delayed for various reasons.

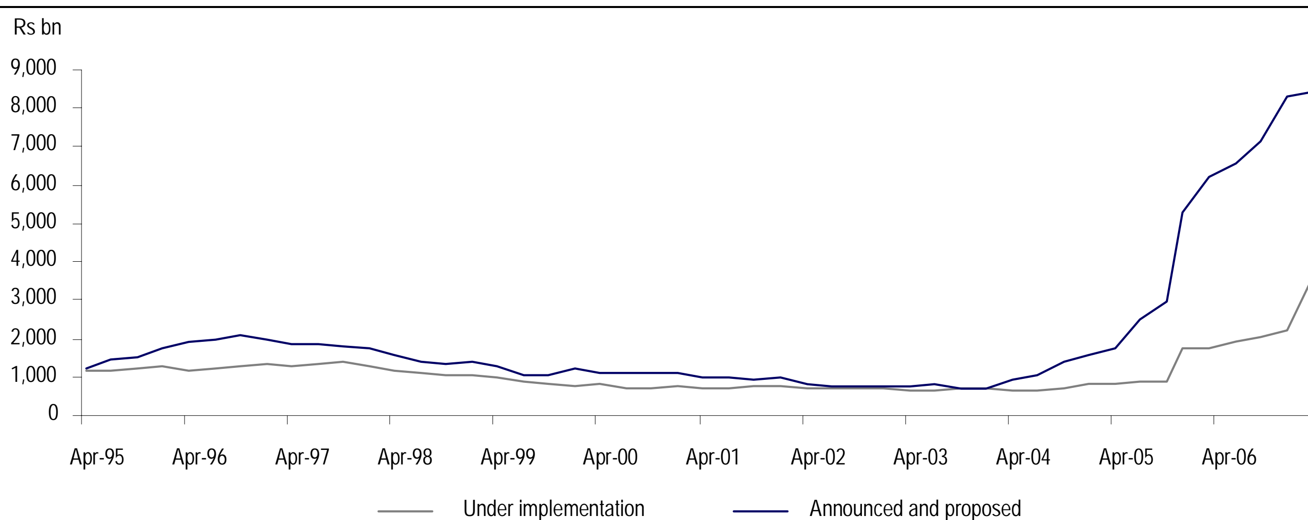
The sectors and projects mentioned in Table 5 present only part of the picture. CRIS INFAC estimates that at the end of FY07, the total value of investment in "announced", "proposed" and "under implementation" projects of a broad universe of c5000 companies add up to almost Rs12,000bn (US$300bn), out of which, announced and proposed projects contribute c70%, or Rs8,400bn (US$210bn). Given that the typical gestation period of industrial projects is 18-36 months, we would expect this US$300bn capex to come over FY08-11.

Chart 1 has two key takeaways:

(1) Project announcements started picking up from end-FY04, and predictably, led to a sharp increase in project implementation from mid FY06, that is, about 18 months later. This broadly implies that the next surge of project announcements, which started in mid-FY06, should result in further pick-up in project implementation from late FY07 or early FY08. We believe signs of such pick-up are already visible.

(2) The current capex cycle seems to be far stronger than the previous (FY95-97) cycle. In terms of announced projects, total capex appears to be almost 4x that in the previous cycle. However, that is unlikely to put significant stress on corporate balance sheets as the aggregate corporate topline today is more 3.8x that in FY95. Moreover, unlike in 1995-97, Indian corporates are by and large de-leveraged. Compared to the average D/E (debt/equity) level of c1.5 in FY95-96, the average D/E of the top 100 companies in FY07 was 0.25.

Chart 1: Industrial capex—Under implementation and proposed



Source: CRIS INFAC

Mining capex

Large capacity additions planned in power, steel, aluminium and cement implies large demand for coal, iron ore and bauxite. Consequently, we believe mining capex is likely to rise sharply – primarily in coal and iron ore. India's coal consumption was 460MT in FY07, while domestic production was only 432.5MT. Remaining 27.5MT of demand was met through imports. Ministry of Coal has estimated domestic coal demand to touch 731.1MT by FY2012 – implying CAGR of 9.7% in domestic demand. In contrast, CAGR in coal production was 2.53% during the 9th plan (FY1997-2002) and 5.7% during the 10th plan (2002-07). Coal Ministry targets CAGR of 9.47% in coal production during the 11th plan – i.e. from 432.5MT in FY07 to 680MT in FY2012. The bottleneck in coal production is not availability of coal reserves (which is estimated to be 216 BT), but availability of mining capacity.

Table 6: Likely expansion in coal mining

	Production target	Action plan to achieve target
Coal India (CIL)	Annual production target 75MT from underground mines by FY12 compared to 45MT in FY07.	CIL, Singareni Colieries and Neyveli Lignite have together drawn up mining augmentation plans at capex of Rs235.9bn in the 11th Plan.
Eastern coalfields	Increase existing production from 30.5MT per year to 46MT per year by FY12.	Rs23bn to be spent to set up two greenfield projects and expand underground mines.
Ministry of Coal	Target 9.47% CAGR in coal production during FY07-2012	Increase productivity in both open cast and underground mines; allot 123 coal blocks to various private and public sector companies.

Source: Ministry of Coal, Coal India Limited, Press Information Bureau

We believe just the coal mining sector could see capex of more than US$7-9bn over the next five years. In addition to increasing the productivity of existing mines and setting up new mines, new coal blocks are likely to be awarded to private and public sector companies in power, steel and aluminium.

Real estate

In an earlier report (*India's Property Boom*, dated 28 September 2006), we discussed India's property sector and real estate market growth opportunities in detail. Over the next five years, we expect India's real estate market to grow at 20% CAGR, driven by 18-19% growth in residential real estate, 55-60% CAGR in retail real estate (shopping malls, etc.) and 20-22% CAGR in commercial real estate (primarily office space). The demand drivers are likely to be: (1) shortages in urban housing; (2) improving demographic pattern of the population, and increasing affluence; and (3) increasing penetration of retail financing.

Table 7: Real estate market size estimate

(US$ bn)	FY05	FY10E	CAGR
Residential	38	88	18.3%
Commercial	1.5	3.8	20.5%
Retail	0.6	6.0	56.2%
Total	40	98	19.5%
Real estate market as proportion of GDP	5.6%	7.8%	

Source: CRIS INFAC, UBS estimates

In terms of area of construction (that is, housing space in million square feet constructed per year), estimates are more difficult to arrive at because of the wide variation in real estate prices across the country and lack of reliable data in terms of average size of residential units in urban and rural areas.

Average annual real estate construction could be 3.42bn square foot during FY08-11E, compared to 2.38bn square feet during FY01-07

Our estimates (Table 10) suggest that average housing construction per year during the period 1991-2001 was c1.5bn square feet, and it increased to c2.38bn sq ft during 2001-07. During 2007-11, we expect housing construction to accelerate to 3.42bn sq ft per year.

Our estimates on housing stock in the rural and urban sectors are based on data from 3i Infrastructure and National Housing Bank (NHB), respectively. Regarding rural housing construction, our key assumptions are: (1) number of housing units built per year shall remain same (2.65-2.7m units) during 2007-11E, as in 2001-07; and (2) the share of p*ucca* (ie, permanent) houses will increase from 35.4% in FY01 to 40% in FY11E.

Table 8: Addition to rural housing stock

(Million units, at period end)	1991	2001	2007	2011E
Housing stock	108.47	135.1	151.6	162.6
Addition to rural house stock during period	26.6	26.6	16.5	11.0
Pucca houses among rural housing stock	30.0%	35.4%	38.2%	40%
Stock of pucca houses	32.5	47.8	57.9	65.0
Addition to pucca house stock during period	12.5	15.3	10.1	7.1

Source: 3i Infrastructure, UBS estimates

Regarding urban housing, our key assumptions are: (1) the pace of construction of housing units shall increase from 2.4m units per year during 2001-07 to 3.7m units per year during 2007-11E; and (2) proportion of pucca houses to increase uniformly—from 80% in FY07 to 83% in FY11E.

Table 9: Addition to urban housing stock

(Million units, at period end)	1991	2001	2007	2011E
Urban housing stock	39.5	51.9	66.4	81.4
Addition to urban housing stock during period		12.4	14.5	15.0
Pucca houses among urban housing stock	75%	77%	80%	83%
Pucca urban house stock	29.6	40.0	53.1	67.6
Addition to pucca house stock during period		10.3	13.2	14.4

Source: Data from NHB, 3i Infrastructure, UBS estimates

The combination of our estimates for urban and rural housing construction tells us that the average annual housing construction during 2001-07 was 2.38bn sq ft, and during 2007-11 we estimate it will be 3.4bn sq ft per year.

Table 10: Housing construction estimates during different periods

(During period)	1991 - 2001	2001 - 2007	2007-2011E
Rural Pucca houses built per year during period (mn units)	1.53	1.68	1.78
Average size of rural pucca house (sq ft)	500	500	500
Rural pucca housing construction per year (m sq ft)	764	842	895
Urban pucca houses built per year during period (mn units)	1.03	2.19	3.61
Average size of urban pucca house (sq ft)	700	700	700
Urban pucca housing construction per year (m sq ft)	722	1535	2527
Total average housing construction per year during period (m sq ft)	**1486**	**2377**	**3422**

Source: Data from NHB, 3i Infrastructure, UBS estimates

Growth in construction of commercial properties and retail space could be faster than in residential properties

In addition to residential real estate, we expect significant construction in retail space, hotels and commercial real estate (office space). Retail space is likely to be the biggest incremental driver of real estate construction. We estimate that total modern retail space was c100m sq ft at the end of FY07, and that's likely to increase to c300m sq ft by FY09E and further to c600m sq ft by FY11E. Today residential real estate forms c98% of total real estate construction, but we expect the residential portion to fall to c94% by FY11.

Table 11: Total real estate construction estimates

(million sq ft)	FY06	FY07	FY08E	FY09E	FY10E	FY11E
Residential	2,644.1	2,869	3,052	3,266	3,534	3,824
Commercial—IT/ITES	17.3	21	25	30	36	42
Commercial—Others	5.8	6.6	7.5	8.5	9.5	10.7
Retail	20	40	90	110	140	160
Hotels		2.6	3.8	8.1	9.6	4.5
Total	**2,687**	**2,939**	**3,179**	**3,422**	**3,729**	**4,041**

Source: UBS estimates

Funding not a major issue

Investors have significant concerns about the eventual implementation of the investment plans, particularly in those areas where the government is planning to make the investment directly or trying to attract investment from private sector or from multilateral agencies.

The government's record in implementing targets set in past Five-Year Plans has been good

Table 12: Outlay and expenditure in various Five-Year Plans

	Railways			Roads			Civil aviation			Power		
(Rs bn)	Outlay	Expenditure	% of outlay spent	Outlay	Expenditure	% of outlay spent	Outlay	Expenditure	% of outlay spent	Outlay	Expenditure	% of outlay spent
First plan (1951-56)	2.7	2.2	81%	1.35	1.47	109%	0.29	0.23	79%	3.93	2.6	66%
Second plan (1956-61)	9.0	7.2	80%	2.63	2.42	92%	0.43	0.49	114%	4.27	4.45	104%
Third plan (1961-66)	8.9	13.3	149%	2.97	4.4	148%	0.55	0.49	89%	10.2	12.52	123%
Fourth plan (1969-74)	10.5	9.3	89%	8.71	8.62	99%	2.03	1.77	87%	24.48	29.32	120%
Fifth plan (1974-79)	22.0	20.6	94%	13.53	17.01	126%	3.37	2.94	87%	72.94	74	101%
Sixth plan (1980-85)	51.0	65.9	129%	34.39	38.87	113%	8.59	9.57	111%	192.65	182.99	95%
Seventh plan (1985-90)	123.3	165.5	134%	52	63.35	122%	7.58	19.48	257%	342.73	378.95	111%
Eighth plan (1992-97)	272.0	323.0	119%	128.33	160.95	125%	40.83	72.49	178%	795.89	766.77	96%
Ninth plan (1997-2002)	495.9	464.1	94%	386.48	504.97	131%	111.12	66	59%	1245.26	-	-
Tenth plan (2002-07)	606.0	-	-	1098.11	-	-	129.28	-	-	2702.76	-	

Source: Planning Commission

However, as Table 12 illustrates, the government's record in implementing Five-Year Plan targets is quite satisfactory. Over the first 9 Five-Year Plans, the government on average spent 108% of its planned target in railways, 118% in roads and civil aviation, and 102% in power. Another takeaway from Table 12 is that the CAGR in plan outlays in each of the sectors over past 56 years has been higher than nominal GDP growth at 10.2% in railways, 12.7% in roads, 11.5% in civil aviation, and 12.4% in power.

Concerns on infrastructure project funding are lower today than in the past

However, growth in the plan outlay really only accelerated from the Eighth Plan (1992-97), that is, post liberalization. Historically the biggest obstacle to India's infrastructure plans was the lack of funding arising primarily from India's large fiscal deficit (10-12% of GDP including Centre and States, till the early 2000s). Besides, till the early 2000s alternative financing structures (eg, private participation in infrastructure projects through Public-Private Partnership) were non-existent. However, we believe that in the present instance, concerns on funding are not as severe as in the past because:

(1) Government's fiscal deficit has declined over the past few years and alternative funding plans (primarily attracting private sector funds) are emerging.

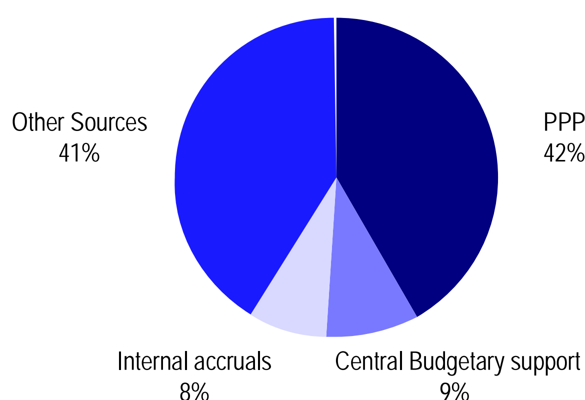
(2) Bank loans to infrastructure are growing rapidly, and given the risks to retail lending (due to the rise in interest rates and increase in risk weights), growing corporate and infrastructure loans seems to be a relatively less risky alternative for banks to achieve topline growth.

(3) Pension funds and private equity funds are increasingly getting interested in infrastructure projects, given the projects' predictable cash flows and income streams, which are relatively uncorrelated with public equity markets.

Government has concrete funding plans

The government appears to have firmer funding plans for infrastructure investments in 11th Plan.

Chart 2: Funding plans for infrastructure projects—11th Plan



Source: CRIS INFAC, UBS estimates

It is notable that for the 11th Plan, the government is targeting more than 40% of total funding to come from private and Public-Private-Partnership schemes. In Chart 2, "other sources" refer to a combination of funding from Multilateral Agencies (World Bank, Asian Development Bank, etc.), State Government budgets, and public debt (eg, loans raised from public by Central and State Government agencies, loans to projects from banks, and Financial Institutions, etc.). The bulk of private funds is likely to come in roads, ports, airports and power generation.

Table 13: Funding pattern in different areas of infrastructure

Sectors (Rs bn)	Airports	Roads*	Railways	Power generation	Ports
Total investment	400	2,218	2,300	4,200	558
Share of PPPs	310	1,197	-	2,180	345
Budgetary support	9	298	-	218	36
Other sources	81	723	2,300	1,802	39

Source: CRIS INFAC, UBS estimates

We believe the magnitude of private participation targeted by the government, though slightly optimistic, could broadly come through. The large magnitude of private investments are targeted in roads and power generation, where revenue models of private investors (in the form of Model Concession Agreements (MCA) and Power Purchase Agreements (PPA)) are already in place. However, in both roads and power, profitability could be an issue for private developers. As Suhas Harinarayanan points out (in *GMR Infrastructure: Building India,* dated 29 May 2007):

Revenue models for private investors in roads and power projects are broadly in place, though some issues are yet to be sorted out

- New road BOT projects based on tolls could find it difficult to earn the high levels of return estimated for old projects, due to significantly higher competition for new projects.
- Power projects under PPA have been guaranteed post tax ROE of 14% at certain capacity utilization rates. IRRs for merchant power plants could exceed 18%. However, private projects have run into problems regarding fuel linkage issues.

Because of these issues, Suhas estimates slightly lower share (28%) of private sector investment in infrastructure in the 11th Plan, and consequently, Suhas's estimate of infrastructure spend is only Rs10,296bn (US$257bn), or c20% lower than the government's target.

New financing initiatives by the government

The government has evolved several mechanisms for PPP, the most notable of which is the method of "negative grant" or "Viability Gap Funding (VGF)". The government has also set up India Infrastructure Finance Company Limited (IIFCL) to increase the availability of long-term debt to infrastructure projects, and is exploring more options to enhance financing availability for PPP projects.

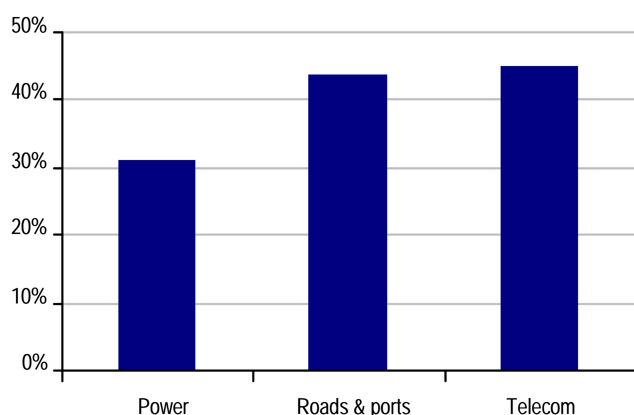
- **The VGF mechanism**: For all PPP projects where the developer is chosen through competitive bidding and the main promoter has more than 51% equity stake, the government is willing to fund a shortfall up to 20% of project cost as VGF. The developer who bids (ie, asks for) the lowest VGF would win the project development rights. In case the grant is not sufficient, the government (or implementing authority) could issue an additional grant of up to 20% of project cost.
- **IIFCL**: This institution (set up in December 2005) looks primarily at debt finance (longer than 10 years) for infrastructure projects, with preference to PPP projects. IIFCL's debt shall be limited to a maximum of 20% of capital cost and disbursed along with debt from other lenders.

Bank finances to infrastructure rising sharply

New sources of financing are banks and private equity

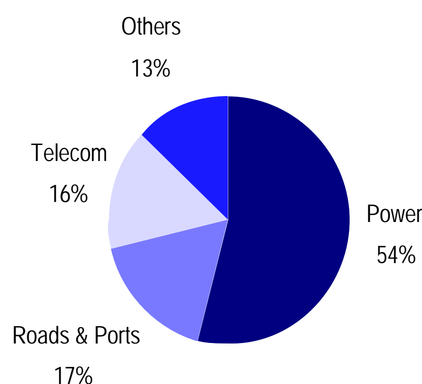
However, a silver lining for infrastructure financing is the sharp rise in bank credit towards infrastructure. As Sonal Gupta (*IDFC: Financing a major opportunity,* dated 20 April 2007) points out, in FY06 infrastructure loans from banks and FIs grew 38% YoY. However, the share of infrastructure loans in bank credit still remains low. In FY06, infrastructure loans comprised only 20% of industrial credit and 7.5% of total bank credit—leaving significant room for upside, in our opinion. In FY08 and beyond, Sonal expects infrastructure loans to grow in excess of 30%.

Chart 3: Two-year CAGR in bank lending to infrastructure



Source: Reserve Bank of India

Chart 4: Sector split of infrastructure lending by banks



Source: Reserve Bank of India

Private equity participation rising steadily

Private equity is increasingly becoming an important source of funding for Indian corporates. From US$1.65bn investment in 2004, private equity investment into India rose to US$7.5bn in 2006, though the average deal size remained around US$25m throughout this period.

Table 14: Private equity investment into India

(US$ m)	Total investment in India	No. of deals
2004	1,648	71
2005	2,225	168
2006	7,474	302

Source: www.ventureintelligence.in

In 2007 YTD, total PE/VC investment into India has been more than US$5bn. While the bulk of private equity investment (c70%) into India has come in the IT and ITES sectors, of late the infrastructure-related sector is appearing attractive to private equity investors. This is apparent from the spate of private equity funds being raised for infrastructure. A brief look at fund raising plans by private equity funds for Indian infrastructure and real estate reveals a strong pipeline of potential fund flow. A look at some of the notable private equity investments planned in India (Table 15) tells us that over next 12-18 months, more than US$14-15bn could be invested in Indian infrastructure.

Table 15: Some examples of private equity funds being raised for Indian infrastructure

Institution	Details of plan
Citigroup	Citigroup Venture Capital International (CVCI) shall deploy US$1.5bn in India over the next 3 years in sectors related to cross-border outsourcing, consumer-focused businesses and infrastructure.
Blackstone	Committed investments in consortium with IDFC and Citigroup.
IDFC	Owns 98.8% of IDFC PE (US$630m in two funds), which focuses on private equity opportunities in infrastructure. IDFC is now raising a third fund, along with Citigroup and Blackstone, whose asset size is likely to be US$750m by September 2007, US$2bn by March 2008, and US$3bn by March 2009.
GE	GE's CEO recently announced the intention to set up an infrastructure fund (US$300-500m) for India.
L&T	Plans to float a US$1bn infrastructure fund to invest both in proprietary and external projects.
Ascendas	Recently launched S$500m development fund to invest in integrated property projects like business and IT parks. Plans to raise asset size to S$1bn later.
Barings Private equity	Planning US$175bn private equity fund to invest in alternative energy, KPO, etc.

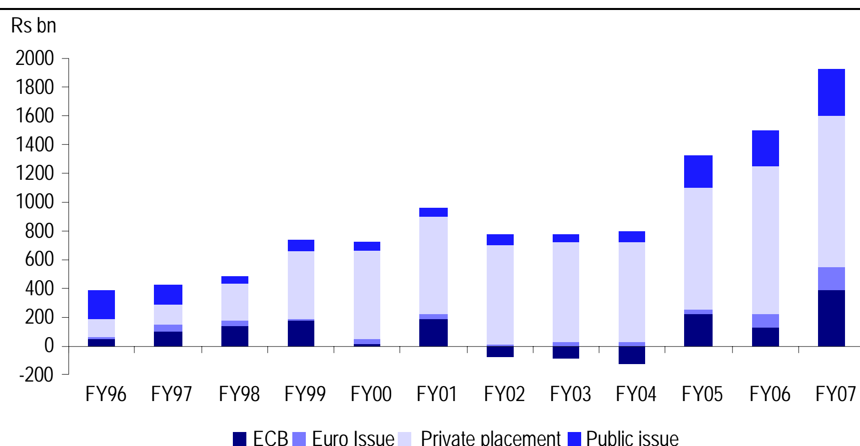
Source: www.ventureintelligence.in, Company data

Financing industrial capex and real estate

Financing of private sector industrial capex is likely to be easier than financing infrastructure projects, as the corporates incurring capex have strong balance sheet positions. Resources raised by Indian corporates rose sharply from FY05. The pattern of fund raising has changed significantly over past 10 years with private placements and External Commercial Borrowings (ECB) growing sharply, as these instruments are cost effective and less time-consuming. In FY07, Indian companies raised total resources of cUS$66bn, with half coming from private placements and one-third coming from ECBs.

Industrial capex is easier to finance, given the strong balance sheets of companies. Private placement and ECBs are the current dominant financing sources

Chart 5: Resources raised by Indian corporates from domestic and international capital markets



Note: FY07 data is for the period April 2006 – December 2006. Source: Reserve Bank of India

The ECB window has recently been restricted by the government through several measures:

(1) Reserve Bank of India (RBI) approval would be needed before the draw down of the permitted ECB amount. In contrast, FDI information is sent to the RBI post investment.

(2) ECBs can be raised only from internationally recognized lenders. It is not known whether RBI would recognize overseas funds (such as private equity funds and venture capital funds).

(3) Ceiling on interest rate on ECBs were imposed at LIBOR plus 200/350 bp. This could mean that corporates trying to raise financing from the ECB market may need to have credit rating higher than the sovereign rating. That's a criteria difficult to satisfy.

(4) End-use restrictions are not permitted for real estate, capital markets or on-lending (hence debarring financial intermediaries). ECBs are also not permitted for working capital / general corporate purposes, but only for capital goods imports, new projects and expansion.

However, we do not expect the restrictions on ECBs to reduce fund raising opportunities for Indian corporates significantly, because several other sources of financing, for example, bank financing, domestic bond issuances, etc., remain largely untapped by corporates.

It is also pertinent to mention that the cash flow of Indian corporates remains healthy. For the companies under UBS coverage (which occupy c65% of total market cap), we estimate about US$60bn cash flow (pre-capex, pre-dividend) in FY08. This implies that even if external fund raising by Indian corporates does not rise in FY08 (compared to that in FY07), total capex (which, we believe, would be about US$80-90bn in FY08) could be financed easily—even after allowing for a total dividend payment of US$20-25bn.

We therefore believe that financing of infrastructure and industrial capex projects is feasible, unless the Indian economy, and hence, Indian corporate earnings, suffers from a major downturn. None of the macro-economic or real indicators point to such an eventuality today. It is therefore pertinent to look at the beneficiaries of such a large and long-lasting investment cycle, because we believe the investment cycle could generate several durable investment themes.

Beneficiaries

We believe the principal beneficiaries of the current investment cycle would be:

Engineering, construction, cement, steel and steel pipes, banks and financial institutions, and infrastructure asset holding companies are likely the primary beneficiaries

(1) **Service providers**—engineering, capital goods and construction companies;

(2) **Material providers**—building material and other material (eg, steel, pipes etc.) suppliers;

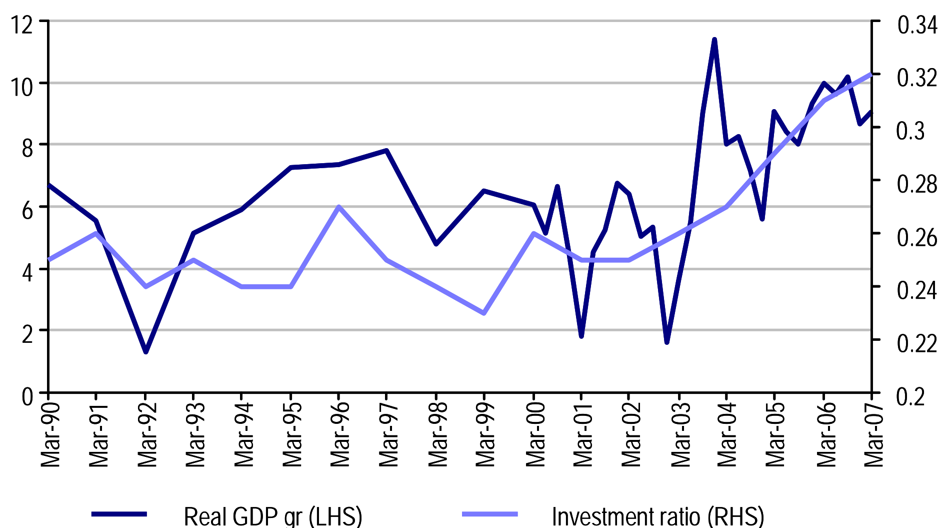
(3) **Finance providers**—banks and financial institutions, especially those having a larger focus on corporate loans or infrastructure loans; and

(4) **Takers of infrastructure project risk**—eg, dedicated infrastructure companies with equity exposure to infrastructure projects.

Capex cycle could have significant positive rub-off on broader economy and employment generation

Another set of beneficiaries are the manpower involved in implementation projects, implying that the indirect beneficiary could be companies in consumer (durables and staples). We believe that in the medium term broader economic growth is likely to be driven by investments rather than by consumption.

Chart 6: Real GDP growth vs investment ratio



Source: CEIC

Rising investment to GDP ratio has driven up the real GDP growth rate in a sustainable manner

The history of India's economic growth shows the investment cycle to be a strong driver of economic growth. From FY90 to FY04, the investment to GDP ratio remained in the 22-26% range, and real GDP growth hovered in the 4-6% range (with the occasional exception of FY95 and FY96). Since FY05, the investment ratio has risen 6%, and real GDP growth has sustainably risen to 8-10%.

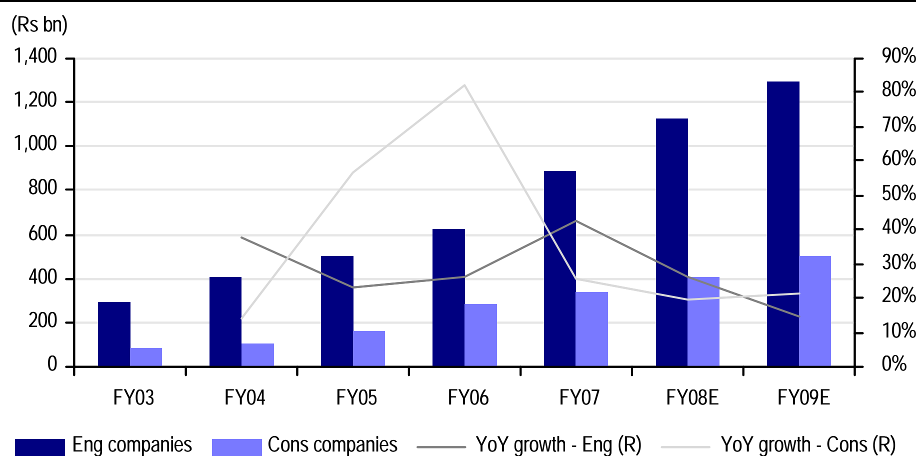
In the following section we analyse the exact nature and magnitude of benefit that could accrue to each of the target sectors, and consequently, identify the key stocks under our coverage that secondary market investors could play in these sectors.

Service providers

The benefits of a large investment cycle to the engineering and construction (E&C) companies is obvious—orders from infrastructure and other construction projects lead to expansion in the E&C companies' order books—and hence to expansion in their topline and earnings. This has been visible in the order backlogs and revenue growths of companies such as L&T, Gammon, HCC, and IVRCL over the past three years.

Biggest direct benefit accrues to engineering and construction companies

Chart 7: Order backlogs of engineering and construction companies



Source: Company data, UBS estimates

Even though growth rates in order backlogs might slow down due to the low base, we believe the strength of new order inflow would continue in the foreseeable future. We estimate 20-22% CAGR in order backlog for engineering and construction companies and 25-30% EPS CAGR for these companies.

Among the engineering and capital goods companies, we like L&T and BHEL. Among the construction companies, our favourite is IVRCL as it has a stronger order book growth profile than competitors, better margins (due to the order backlog being divided into larger number of smaller projects), and relatively low-risk business model (risk diversified across larger number of projects in various sectors).

Table 16: Valuations of leading stocks—Engineering and construction

	Price (Rs)	Market cap	PE (x)				EV/EBITDA (x)			
	3 July-07	US$ m	FY06	FY07	FY08E	FY09E	FY06	FY07	FY08E	FY09E
L&T	2259	15,636	62.4	35.0	28.2	22.6	38.0	22.0	18.1	14.0
BHEL	1546.8	18,696	45.5	29.1	24.2	19.2	27.5	18.5	15.3	12.1
GMR Infrastructure	771.85	6,310	291.0	110.7	128.1	62.8	64.2	48.5	42.2	21.6
Suzlon Energy	1494.9	10,613	54.1	50.3	35.7	24.1	50.0	34.9	22.1	12.9
Gammon India	425.35	919	35.4	37.5	29.7	22.9	20.1	20.9	16.9	13.6
Hindustan Construction Co.	131.7	833	40.7	54.7	40.1	21.4	22.5	17.4	13.8	9.8
IVRCL	394.85	1,316	45.4	37.7	26.9	19.7	40.6	23.7	16.6	12.5

Source: Company data, UBS estimates

Material providers

Cement and steel could be key beneficiaries

The investment cycle is likely to have strongly positive impact on demand for key building materials—cement and steel. Steel demand is also impacted strongly by growth in autos and consumer durables, but cement demand is driven entirely by construction. However, within the broad product segment of steel, demand for certain product segments are influenced by capex in some specific sectors—eg demand for seamless steel pipes and ERW pipes driven by oil exploration and production (E&P) activity. Aluminium demand is also driven by real estate construction, but less so than for steel and cement. Besides, significant demand growth could be seen for construction equipment companies.

The Construction Industry Development Council (CIDC) estimates significant growth in demand for construction materials, construction equipment and manpower requirement for construction industry.

Table 17: Requirements for implementing 11th Five-Year Plan infrastructure target

(Rs bn)	Additional demand
Total investment (11th Plan)	14,700
Effective additional investment in construction	9,000
Monetary requirements	
- For construction materials	4,950
- For construction equipment	1,800
- For Manpower	1,080
Material requirements	
- Cement	381 MT
- Steel	150 MT
Manpower requirements	92 million man-years
- Engineers	3.72 million man-years
- Technicians	4.32 million man-years
- Support staff	3.65 million man-years
- Skilled workers	23.35 million man-years
- Unskilled or semi-skilled workers	56.96 million man-years

Source: CIDC (11th Five-Year Plan draft paper on construction)

We have used CIDC's estimates and our growth estimates for real estate and industrial capex, to arrive at long-term demand forecasts for construction materials.

Cement

Cement demand is most strongly geared to investment cycle. We estimate 11-12% domestic cement demand growth over the next 3-4 years

Close to 70% of Indian cement demand comes from real estate (combining residential, commercial and retail property). Feedback from cement companies and property developers indicates that for construction of one square foot of real estate, about 0.7 bags of cement are necessary—though the quantity required varies significantly with fluctuation in quality of construction. We believe the average quantity of cement required per square foot will rise to 0.75-0.8 bags over the next 4-5 years as urban real estate construction is growing faster than rural real estate.

For demand arising from non-real estate sectors, we use CIDC's estimates, but take into account that CIDC's infrastructure investment estimates (Table 17) include Rs1,500bn investment in rural housing. Taking out the cement demand arising from the housing component in infrastructure, we arrive at 350-355MT cement demand from non-real estate sectors over FY08-12. This implies 13-14% YoY growth in non-real estate demand every year during the 11th Five-Year Plan.

Table 18: Cement demand projections

	FY06	FY07	FY08E	FY09E	FY10E	FY11E
Real estate construction (m sq ft)	2,644	2,869	3,052	3,266	3,534	3,824
Cement bags consumed per sq ft (units)	0.7	0.71	0.73	0.75	0.76	0.78
Cement consumed per sq ft (T)	0.04	0.04	0.04	0.04	0.04	0.04
Cement demand from real estate	93	101	111	122	134	148
Growth		9.3%	9.4%	10.0%	10.4%	10.3%
Demand from non real estate sectors (MT)	43.0	47.9	54.6	61.7	69.7	78.7
Growth		11.3%	14.0%	13.0%	13.0%	13.0%
Demand from real estate as proportion of total demand	68%	68%	67%	66%	66%	65%
Demand from non-real estate sectors	32%	32%	33%	34%	34%	35%
Total domestic cement consumption	135.6	149.0	165.2	183.3	204.0	226.9
YoY growth		9.9%	10.9%	11.0%	11.3%	11.2%

Source: UBS estimates

Combining demand from real estate and non-real estate sectors we estimate 11-11.5% growth annually over FY08-11. Such sustained demand growth over 5-6 years has positive implications for cement prices and cement company valuations. Even though large cement capacities (c70MT) are likely to be commissioned over the next 2-3 years, we believe an additional 55-60MT demand over FY08-10E would be sufficient to neutralize the supply from new capacities.

Our favourites in the cement sector are Grasim and ACC. Grasim is one of the inexpensive large cement stocks in Asia, and Grasim's efficiency, along with that of its 51% subsidiary Ultratech, is rising sharply. ACC's earnings are sensitive to cement prices, and efficiencies are improving post management control by Holcim.

Table 19: Valuation of leading cement companies

	Price (Rs)	Market cap	EV/T	PE (x)				EV/EBITDA (x)			
	3 Jul-07	US$ m	US$	FY06	FY07	FY08E	FY09E	FY06	FY07	FY08E	FY09E
ACC	938.3	4,286	165	74.8	16.3	12.3	11.6	33.2	10.8	8.7	8.2
Grasim Industries	2702.6	6,118	140	24.1	12.9	10.7	9.8	13.8	7.5	6.4	5.9
Gujarat Ambuja Cement	124.4	4,659	215	-	11.3	12.2	10.4	-	8.8	9.7	8.4

Source: UBS estimates

Steel

Steel demand is also a beneficiary, though the near-term price outlook is clouded

India's apparent consumption of steel was c45MT in FY07, of which we estimate c32% was due to construction and infrastructure. CIDC estimates 150MT of steel demand—c25MT per year on an average—due to infrastructure and industrial capex during FY07-12E.This could imply 13-14% CAGR in steel demand from construction-related sectors, and 9-10% overall demand growth over the next five years. This compares to c7% CAGR in domestic steel demand over the past 10 years. In the steel sector, we like Tata Steel, as the acquisition of Corus could lead to margin improvement over the longer term. However, in the near term the steel sector valuations could come under pressure due to downward pressure on domestic steel prices. Recently Steel Authority (SAIL) has reduced steel prices, and we believe Tata Steel could follow suit.

Steel pipes

Oil E&P and pipeline capex should drive demand for seamless pipes, ERW pipes and SAW pipes

Atul Rastogi (see *Maharashtra Seamless: Drilling growth* dated 26 January 2007) argues demand for seamless pipes is strongly correlated with oil & gas E&P expenditure, which could lead to both demand and price upside for seamless pipes. Seamless pipes are predominantly required in oil drilling, while ERW pipes and SAW pipes are needed for transportation of oil, gas and water (which are relatively low pressure applications). UBS oil analyst Harshad Katkar estimates Rs680bn oil E&P capex by Indian companies over the next five years.

Table 20: Indian oil companies' E&P capex plans

(Rs bn)	FY05	FY06	Future plans	Comments
Reliance	1.3	2.2	186.0	Target over FY07-10E
ONGC	20	49	433	Target domestic capex over FY07-12E
Cairn India		3	67	

Source: Company data, UBS estimates

Simultaneously oil & gas transportation network is also likely to expand significantly. India's gas pipeline infrastructure currently stands at 9,988km, 54% of it being operated by Gas Authority of India (GAIL). CRIS INFAC estimates addition of another 3800km pipelines over the next three years—the largest being Reliance's 2,200km pipeline from Kakinada to Uran.

The biggest beneficiaries of E&P and pipeline capex are likely to be the suppliers of seamless pipes (Maharashtra Seamless), SAW pipes, and ERW pipes (Maharashtra Seamless).

Construction equipment

The Indian construction equipment industry is US$2.1bn in size (as of FY07) and growing at 30-40% over the past two years. Globally, the construction equipment industry has a market size of US$76bn, but is growing at only 5% pa. The Indian building equipment sector is extremely fragmented, with more than 200 manufacturers (including multinationals like JCB, Hitachi, Caterpillar) competing with each other.

Construction equipment demand growing at 30-40% over the past 2-3 years; growth could continue at similar rates in the medium term

Table 21: Building equipment industry segmentation

Category	Products	Companies
Earthmoving equipment	Excavators, backhoe loaders, bulldozers etc.	BEML, Telco Construction, Komatsu, JCB.
Construction equipment	Road rollers, concrete mixers, hot mix plants, road making machines, stone crushers.	Telco construction, JCB, Escorts Construction, small unorganised players.
Construction vehicles	Dumpers, tippers, tankers, trailers.	Tata Motors, Ashok Leyland.
Material handling equipment	Mobile cranes, gantry cranes, hoists, forklifts, etc.	Escorts Construction, small unorganised players.

Source: UBS

The largest component of building equipment industry is earthmoving equipment (c75%), where Bharath Earth Movers Limited (BEML) has a commanding market share (c50%). Tata Motors's CV sales are significantly driven by tippers and tractor trailers—demand for which is driven by infrastructure construction. Besides, Tata Motors has a 60% stake in Telco Construction (the remaining 40% with Hitachi).

Finance providers

Banks and financial institutions, especially those geared to infrastructure lending, could be big beneficiaries

We earlier argued that infrastructure loans from banks have been rising sharply over the past couple of years. Funding demand from the infrastructure sector and from corporates could drive loan growth from banks and financial institutions, especially in an environment of deceleration in retail loan growth due to RBI's tightening of liquidity and a hike in risk weights to personal loans. We believe the following categories of banks and financial institutions could be the biggest beneficiaries of the investment cycle:

(1) **Institutions dedicated to infrastructure financing.** For example, Infrastructure Development Finance Co (IDFC).

(2) **Banks with relatively larger exposure to corporate and industrial loans** in their loan book. Examples are HDFC Bank (40% of gross advances in corporate segment), State Bank of India (45-50% of FY07 loan book to corporates) and ICICI Bank (26% of loan book in corporate loans, could increase post equity issue; second largest lead arranger of syndicated corporate loans in FY07).

Our favourite financial play on the investment cycle is IDFC, which we believe is in the best position to capture the funding need of infrastructure projects. The company has strong expertise in project finance, appraisal and risk management, and through its subsidiary IDFC Private Equity, has exposure to private equity funding of infrastructure projects. Mahrukh Adajania and Sonal Gupta (*IDFC: Revising price target to Rs160* dated 2 July 2007) expect 50% growth in IDFC's lending business in FY08 and 40% growth in FY09.

Table 22: Valuations of banks and financial institutions

	Price (Rs)	Market cap	PE (x)				P/BV (x)				ROE		
	3 Jul-07	US$ m	FY06	FY07	FY08E	FY09E	FY06	FY07	FY08E	FY09E	FY07	FY08	FY09
IDFC	131.7	3,650	36.5	28.9	25.0	20.8	5.8	5.0	4.4	3.7	18.6%	18.7%	19.3%
HDFC Bank	1150.55	8,090	41.6	32.2	27.1	20.0	6.8	5.7	3.5	3.1	19.3%	16.1%	16.5%
ICICI Bank	966.2	21,209	33.8	27.9	24.1	18.8	3.9	3.6	2.3	2.1	13.3%	11.6%	11.7%

Source: UBS estimates

Infrastructure companies

Business potential for infrastructure asset holding companies could be large. Valuations of large companies appear stretched

Infrastructure asset holding companies, like GMR, develop projects on a build-operate-transfer (BOT) basis. Each project is implemented by a different special purpose vehicle (SPV) under the ownership of the holding company, and the holding company's revenue stream is the total of revenue streams accruing from each of the SPVs. Given the emphasis in Public-Private Partnership (PPP) in infrastructure development, we expect new projects awarded to such infrastructure holding companies to accelerate significantly.

GMR Infrastructure is India's leading infrastructure company with a project portfolio of six power projects, six road projects and two airport undertakings. Suhas Harinarayanan (*GMR Infrastructure: Building India* dated 29 May) highlights that GMRI is well-positioned to be a major player in the US$75bn market for private investment in Indian infrastructure. Airports account for 79% of GMR's value, roads 5% and power 7%. Real estate at airports contributes 54% to GMR's value.

Lateral beneficiaries

Potential positive impact on employment generation and wage growth

The key takeaways in Table 17 are terms of employment opportunities and income generation possibilities. CIDC's estimate regarding manpower requirement for implementation of the 11th Plan targets implies employment for more than 600,000 additional engineers, 3.9m additional skilled workers, and 9.5m additional unskilled or semi-skilled workers.

Table 23: Estimate of additional manpower needed to implement 11th Plan targets

	Million man-years (additional requirement)	Number of people required (m)	Employed in sector - 1995 (m)	Employed in sector - 2005 (m)	Additional requirement (%)
Total manpower requirement	92	15.3	14.6	31.0	49%
- Engineers	3.72	0.6	0.69	0.82	75%
- Technicians	4.32	0.7	0.36	0.57	126%
- Support staff	3.65	0.6	0.65	0.74	82%
- Skilled workers	23.35	3.9	2.24	3.27	119%
- Unskilled or semi-skilled workers	56.96	9.5	10.67	25.60	37%

Source: CIDC (11th Five-Year Plan draft paper on construction)

CIDC's manpower requirement arises from the target of enhancing delivery potential of construction industry by 33% from current levels. Prima facie, the construction industry's requirements appear difficult to achieve. Each year India produces 500,000 engineers, 2.3m graduates, and 300,000 post graduates. It appears that construction industry wants to attract 20% of all graduating engineers over the next 5-6 years. That could be a tall order given the relative attractiveness (from engineers' perspective) of service sector (particularly IT/ITES) as potential employer.

Implications of such large recruitment plans by the construction industry could be:

(1) **Continued manpower cost inflation**:

(2) **Continued growth in consumption** both in staples and durables. In particular, we would expect tobacco, household products, consumer durables and two-wheelers to benefit.

■ Statement of Risk

The biggest risk to implementation of the investment cycle arises from non-materialisation of large targets in private investment in infrastructure. Several issues in BOT road projects (e.g. rate of increase in toll charges), or in power projects (e.g. fuel linkages) are yet to be fully sorted out. Secondly, infrastructure projects are sensitive to interest rates, and further significant rise in lending and deposit rates could slow down some of these projects. Finally, large capex in some sectors (e.g. cement, steel, passenger cars) could create temporary oversupply, and hence, reduce margins and ROCEs in these sectors significantly.

■ Analyst Certification

Each research analyst primarily responsible for the content of this research report, in whole or in part, certifies that with respect to each security or issuer that the analyst covered in this report: (1) all of the views expressed accurately reflect his or her personal views about those securities or issuers; and (2) no part of his or her compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed by that research analyst in the research report.

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UBS Rating	Definition	UBS Rating	Definition	Rating Category	Coverage[1]	IB Services[2]
Buy 1	FSR is > 6% above the MRA, higher degree of predictability	**Buy 2**	FSR is > 6% above the MRA, lower degree of predictability	**Buy**	48%	39%
Neutral 1	FSR is between -6% and 6% of the MRA, higher degree of predictability	**Neutral 2**	FSR is between -6% and 6% of the MRA, lower degree of predictability	**Neutral**	40%	37%
Reduce 1	FSR is > 6% below the MRA, higher degree of predictability	**Reduce 2**	FSR is > 6% below the MRA, lower degree of predictability	**Sell**	12%	26%

1:Percentage of companies under coverage globally within this rating category.
2:Percentage of companies within this rating category for which investment banking (IB) services were provided within the past 12 months.

Source: UBS. Ratings allocations are as of 30 June 2007.

KEY DEFINITIONS

Forecast Stock Return (FSR) is defined as expected percentage price appreciation plus gross dividend yield over the next 12 months.
Market Return Assumption (MRA) is defined as the one-year local market interest rate plus 5% (a proxy for, and not a forecast of, the equity risk premium).
Predictability Level The predictability level indicates an analyst's conviction in the FSR. A predictability level of '1' means that the analyst's estimate of FSR is in the middle of a narrower, or smaller, range of possibilities. A predictability level of '2' means that the analyst's estimate of FSR is in the middle of a broader, or larger, range of possibilities.
Under Review (UR) Stocks may be flagged as UR by the analyst, indicating that the stock's price target and/or rating are subject to possible change in the near term, usually in response to an event that may affect the investment case or valuation.

EXCEPTIONS AND SPECIAL CASES

US Closed-End Fund ratings and definitions are: Buy: Higher stability of principal and higher stability of dividends; Neutral: Potential loss of principal, stability of dividend; Reduce: High potential for loss of principal and dividend risk.
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Core Banding Exceptions (CBE): Exceptions to the standard +/-6% bands may be granted by the Investment Review Committee (IRC). Factors considered by the IRC include the stock's volatility and the credit spread of the respective company's debt. As a result, stocks deemed to be very high or low risk may be subject to higher or lower bands as they relate to the rating. When such exceptions apply, they will be identified in the Companies Mentioned or Company Disclosure table in the relevant research piece.

Company Disclosures

Company Name	Reuters	Rating	Price	Price date
Associated Cement Companies Ltd.	ACC.BO	Buy 1	Rs1,022.55	04 Jul 2007
Bharat Heavy Electricals Limited	BHEL.BO	Buy 2	Rs1,545.15	04 Jul 2007
Gammon India[20]	GAMM.BO	Neutral 2 (CBE)	Rs425.40	04 Jul 2007
Grasim Industries[16]	GRAS.BO	Buy 2	Rs2,739.65	04 Jul 2007
Gujarat Ambuja Cement	GACM.BO	Buy 1	Rs129.95	04 Jul 2007
HDFC Bank Ltd.[1a, 2b, 4b, 5, 16]	HDBK.BO	Buy 1	Rs1,148.65	04 Jul 2007
Hindustan Construction Company[2b, 4a, 20]	HCNS.BO	Buy 2 (CBE)	Rs128.10	04 Jul 2007
Infrastructure Development Finance[1b, 2a, 5]	IDFC.BO	Buy 2	Rs129.75	04 Jul 2007
IVRCL[13, 20]	IVRC.BO	Buy 2 (CBE)	Rs389.55	04 Jul 2007
L & T	LART.BO	Neutral 2	Rs2,291.45	04 Jul 2007
Maharashtra Seamless[13]	MHSM.BO	Buy 2	Rs642.90	04 Jul 2007
Suzlon Energy	SUZL.BO	Neutral 2	Rs1,479.20	04 Jul 2007
Tata Motors Ltd.[16]	TAMO.BO	Buy 2	Rs697.70	04 Jul 2007
Tata Steel Ltd.[5]	TISC.BO	Buy 2	Rs616.40	04 Jul 2007

Source: UBS. All prices as of local market close.
Ratings in this table are as of the date shown and do not reflect rating changes being announced in this report.

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Additional Prices: Bharat Petroleum Corporation, Rs340.10 (04 Jul 2007); Bharti Airtel Ltd., Rs859.50 (04 Jul 2007); GMR Infrastructure, Rs761.75 (04 Jul 2007); Hindustan Petroleum, Rs265.95 (04 Jul 2007); Housing Development Finance Corporation, Rs1,979.65 (04 Jul 2007); ICICI Bank, Rs985.35 (04 Jul 2007); Indian Oil Corp., Rs452.95 (04 Jul 2007); Mahindra & Mahindra, Rs746.75 (04 Jul 2007); Maruti Udyog Limited, Rs791.20 (04 Jul 2007); Oil & Natural Gas Corporation, Rs874.25 (04 Jul 2007); Reliance Communication Limited, Rs541.95 (04 Jul 2007); Reliance Industries, Rs1,715.70 (04 Jul 2007); State Bank of India, Rs1,563.40 (04 Jul 2007); Source: UBS. All prices as of local market close.

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