ECONOMIC AND
MARKET ANALYSIS:
INDIA

Economics

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India in 2007

Managing the New Growth Paradigm

- **In 2006 India's economic growth bar was impressively raised. Drivers are in place for India to not only deliver on those expectations (+8%), but raise the bar even further in 2007**
- **Though people, prices and politics are real risks, we expect the odds to favour India in 2007**
- **Looking ahead, India has potential to *further* lift its trend growth level from 8% to 10%. However, to move to a higher trajectory, we see four challenges that need to be addressed**
- **These include: (1) Higher infrastructure spend; (2) Overcoming the human resource paradox; (3) A need for inclusive growth; and (4) Politics including the Maoist challenge**

Asia Pacific

Contents

Investment Summary

2007 – What lies in store? While 2006 was when the economic growth bar was raised, we see the India opportunity as more fact than fiction in 2007. But is the euphoria glossing over some of the stresses – people, prices and politics? They are real risks, and beg the question - 'Can India accelerate above its current growth path?' Outlining the risks, we believe the odds favour India in 2007

Economy in 2007 – More fact than fiction

Robust corporate investment and infrastructure spend have underpinned an uptrend in overall investment, while steady growth of both income and jobs have strengthened consumer spend –which reflect India's potential to further lift its trend growth level. On the monetary front, 2007 could see the use of multiple policy instruments. While RBI's rate tightening should end with one further hike early this year, we could also see a CRR hike or an SLR cut. Strong growth and buoyant tax collections imply a better-than-budgeted fiscal balance, which increases the likelihood of a rating upgrade. Current account deficits are likely to continue, but are easily financed through strong capital inflows. This should underpin an upward trend for the Indian rupee.

Accelerating growth from 8% to 10%: The four challenges

We believe India has potential to further lift its trend growth level. However, to move to a higher trajectory, the four challenges that need to be addressed are:

Challenge I - Infrastructure

While current infrastructure reforms will help sustain GDP growth of 8-9%, there remains a need to increase infrastructure spend across sectors. In 2007, we see the government facilitating investments via the Public Private Partnership frame-work model. This would accelerate infrastructure build through accountability, transparency and inclusiveness.

Challenge II – Human resource paradox

While India's favorable demographics have been touted as a key factor contributing to growth, unless job creation becomes a priority, it could result in social tension. In addition, India's economic boom has not been preceded by a scaling up of talent supply. Herein lies a major paradox - the need to create more jobs on one hand, and an emerging talent shortage on the other.

Challenge III – Inclusive growth

The widening gap between states has resulted in growth being concentrated in a few states resulting in a divergence in per-capita incomes and social sectors such as education and health. Addressing the growing disparity will be vital since 60% of the incremental rise in India's population up until 2051 is likely to occur in three of the poorest states - Bihar, UP, and MP.

Challenge IV – Politics

Politics remains a concern, given the nature of India's coalition government. In addition, the current Maoist insurgency, if not adequately restrained, could result in deteriorating governance and undermine investment activity.

Global Backdrop for 2007

- **The most likely outcome for financial markets in 2007 is benign. Easing core inflation should give the Federal Reserve scope to cut short-term rates one time in 2Q, the Bank of Japan is likely to raise rates in January, and two more times in 2007 while ECB should hold rates steady until 4Q07**
- **The dollar should continue to drift lower on a trade-weighted basis. The locus of dollar depreciation should shift, however, from the euro and other G-10 currencies towards emerging Asia**

Overview: Risk and opportunity in a low-volatility world[1]

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The most likely outcome for financial markets in 2007 is benign. Two prominent economic risks — the threat of a more severe housing-led slowdown of the US economy and the risk that core inflation in the US will remain too high — appear set to dissipate next year. This favorable environment should be generally supportive for many risky assets.

Our base case for markets is benign...

We do not expect interest rates to move far from recent trading ranges in most industrial countries — Japan is an exception where we think the Bank of Japan (BoJ) will continue the process of normalizing rates. Credit products should be well supported, but valuations leave little room for further spread declines. Equity valuations are reasonable by historical standards and consequently they would appear to offer attractive opportunities. The dollar should continue to trend lower on a broad trade-weighted basis, but that weakness will increasingly be relative to Asian currencies. Most emerging economies are doing well but aggressive pricing of many emerging market assets makes risk-reward tradeoffs less attractive.

...largely because we expect economic volatility to remain low

This relatively sanguine view of financial market prospects in 2007 is, to a significant degree, based on two basic judgments: Most major economies appear to be operating close to their potential; and economic volatility is likely to remain relatively low. In recent years credible monetary policy and structural factors, such as improved information technology and financial innovation, appear to have led to a material and sustained decline in fluctuations of economic growth and inflation in industrial countries, and increasingly in emerging economies as well. This more stable economic environment has contributed to lower risk premiums in a variety of financial markets. We expect this pattern to continue.

Risks to the base case are two-sided

We recognize that our base case for financial markets reflects a balance of risks. Many, if not most, risk premiums are already low by historical standards, but they could fall further. In 2007, economic risks could wane quickly, and saving-investment imbalances could widen further adding to liquidity and risk appetite. Alternatively, any number of factors — a loss of central bank credibility, supply shocks, changes in global savings-investment balances, a rise in protectionism — could push risk premiums back toward historical norms. So, we consider

[1] Extracted from "*Opportunity and Risk in a Low-Volatility World- Market Implications for 2007 and Beyond*", Nov 22, 2006.

circumstances that could lead to outcomes for financial markets that are very different from our base case.

Global imbalances and the Dollar

The US current account continues to be a drag on the dollar

Large US current account deficits continue to put downward pressure on the dollar. The dollar has declined in real, trade-weighted terms every year since 2002 — despite relatively high US interest rates. Non-US portfolios are already heavily tilted toward the dollar, and the risk-adjusted return advantage of US securities has slipped in recent years.

But the strong US economy...

However, there are cross-currents that should continue to support the US dollar. First, doubts about euro area and Japanese economic and market prospects are likely to persist. In our baseline forecast, the "growth gap" of these countries with the US narrows, but both the euro area and Japan are tightening policy, amid subpar domestic demand growth and unclear progress on structural reforms.

...and more favorable capital flows work in the other direction

Furthermore, the pool of savings available for cross-border investment is growing. This expansion of internationally mobile savings has enabled the US (and other net debtors, such as Australia) to run current account deficits that are much larger than historical experience suggested was possible. The pool of mobile savings appears likely to expand, as countries such as China and India lower barriers to private capital outflows, and as investors in open countries such as Japan adjust their portfolios to a less deflationary state.

Still, US deficits are unprecedented in size, and there are risks of a much deeper US dollar slide. Such scenarios could arise from a disruption of capital flows. A US inflation surge could lead to a crisis of confidence among private investors. Shocks such as a supply-side driven spike in oil prices could raise risk premiums, hurting the currencies of debtor countries like the US. Official reserve accumulation could reach a tipping point.

A disruptive dollar sell off still looks unlikely

In order to trigger a violent US dollar slide, though, an unlikely combination of factors probably would be necessary. If private capital flows into the US were to decline suddenly, important emerging economies would probably redouble their efforts to stabilize their currencies against the dollar. Official reserve holders would probably only slow accumulation of dollar reserves in an environment of robust global economic growth. In this event, private investors likely would step in to take up the slack, as has happened since 2005. It is difficult to conjure up a scenario of a big portfolio shift away from the US dollar, in an environment of firm global growth, low volatility, and declining barriers to global capital flows.

Figure 1. Global Long-Term Forecasts

	GDP Growth (%)					Exchange Rates(Average)					Long-term Rates (%)				
	2007E	2008E	2009E	2010E	2011E	2007E	2008E	2009E	2010E	2011E	2007E	2008E	2009E	2010E	2011E
United States	2.8	3.4	2.7	3.0	3.0	NA	NA	NA	NA	NA	4.75	4.90	4.90	5.00	5.10
Japan	2.3	2.5	0.8	1.8	2.1	111	104	102	97	96	2.00	2.40	2.00	2.50	2.75
Euro Area	2.0	2.4	2.0	1.8	1.7	1.25	1.23	1.26	1.27	1.27	3.85	4.00	4.00	4.00	4.00
China	9.8	10.7	10.0	9.8	9.5	7.57	7.11	6.75	6.48	6.22	3.0	4.5	4.0	4.5	5.0
India	**8.0**	**8.0**	**8.3**	**8.6**	**8.0**	**43.20**	**42.00**	**41.50**	**41.00**	**40.50**	**7.8**	**7.50**	**7.50**	**7.50**	**7.50**

Source: Citigroup estimates.

Indian Economy in 2007: Drivers, Prospects and Challenges

- **Robust corporate investment and infrastructure spending have underpinned an uptrend in overall investment, while steady growth of both income and jobs have strengthened consumer spending – all of which reflect India's potential to further lift its trend growth level**
- **2007 could see the use of multiple monetary policy instruments. While RBI's rate tightening should soon come to an end, possibly with one further hike by 25 basis points early this year, we could see the possibility of a CRR hike or an SLR cut**
- **Strong economic growth and better-than-expected tax collection imply that the fiscal balance may turn out to be better than budgeted. In our view, a rating upgrade remains likely in 2007**
- **Current account deficits are likely to continue, but their shares of GDP should decline over time, as exports will likely outpace imports**
- **With unusual levels of investor confidence, strong capital inflows could continue in the near term. These should underpin an upward trend for the Indian rupee**
- **The key challenges that need to be overcome to facilitate the move to a higher growth trajectory (from 8% to 10%) are bridging the infrastructure deficit, finding a solution to the human resources paradox, inclusive growth and nipping deterrents to investment**

India opportunity: More fact than fiction

Growth: Potential to lift trend growth over 8%

We believe India's level of trend growth will likely be sustained at 8%+, thanks to improved macroeconomic stability, liberalization in a number of key areas and gradual improvement in infrastructure.

A rapid pace of investment growth looks sustainable in the perceivable future, given current significant infrastructure gaps and above-90% capacity utilization ratios in many key industries. Gross capital formation has been growing at an above-10% pace for more than four years. Latest data, including those on the order-books of engineering and construction companies, bank credit and imports also point to strong investment momentum. The recently announced Ultra Mega Power Projects (UMPPs), continued momentum in telecom coupled with initiatives in the transport sector (road, rail, ports and airports) all bode well for an uptrend in overall investment.

Consumption has been growing at rates slightly below GDP growth. But a rising proportion of young persons in the population, growing income, and increasing retail credit point to immense potential for consumption growth. In addition is the fillip to rural incomes given that retail companies are increasingly building supply chains directly with farmers for their retail/export forays. Given the reform momentum and relatively low levels of income and economic development, we believe India probably has potential to further lift its trend growth level and to remain one of the fastest-growing economies in the region.

Monetary policy: Possibility of use of multiple instruments

We expect the central bank (RBI) to hike its reverse repo rate once more to 6.25% on higher inflation and above-target money and credit growth. However, we maintain our view that yields are unlikely to cross 8% levels given the greater conviction that the RBI will control inflation over time coupled with: (1) Likely Fed easing in 2007; (2) lower oil prices; and (3) higher demand for bonds on the back of declining SLR ratio, higher FII limits and demand from insurance companies.

While we do not expect more than one rate hike in 2007, if capital flows remain buoyant and the RBI wants to limit the issuance of market stabilisation bonds[2], we cannot rule out the possibility of another Cash Reserve Ratio (CRR) hike, similar to the 50bps hike in December 06. At the same time with credit growth remaining strong, banks holding of SLR securities is slowly approaching the statutory minimum of 25% from over 35% a year ago. In order to sustain the growth momentum but keeping in mind asset quality, the possibility of a reduction in the SLR is high in 2007.

Fiscal: High possibility of better fiscal result than targeted

The introduction of a VAT, a buoyant economy, and better adherence to legally mandated deficit reduction targets have resulted in a decline in fiscal deficits from 9.9% of GDP in FY02 to 7.5% in FY06. Strong economic growth and better-than-expected tax collection imply that the fiscal balance may turn out to be better than the budgeted estimate in FY07. With both Moody's and Fitch upgrading their sovereign ratings on India to investment grade, we think S&P will eventually follow in 2007 and upgrade India to investment grade from BB+ currently. Nonetheless, there is room for further improvement on the fiscal front, as still-high fiscal deficits and debt burdens remain key barriers to faster growth. Unless further tax and spending reforms are implemented, India has very limited scope for increasing public spending on infrastructure.

External sector: FDI – the next leg up

As mentioned by our strategist Ratnesh Kumar in the equity outlook for 2007, we expect to see a scale change in foreign direct investment (FDI). So far, portfolio investments have outstripped FDI. However, we believe will likely change, driven by positive economic growth momentum, the country's relatively lesser vulnerability to slowdown elsewhere (i.e., US housing), a robust MNC sentiment toward India, widening outsourcing horizons, further regulatory relaxations, and opening up of various sectors (i.e., manufacturing, real estate, infrastructure, property). Outward FDI has also seen a rising trend. In all, we expect the annual run rate of FDI flows to cross US$10bn per year, during in 2007. This would further strengthen the external account and improve India's resilience to volatility in oil prices and portfolio flows.

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[2] In a bid to keep inflationary pressures in check and minimize the cost of sterilization the RBI launched a Market Stablization Scheme to absorb additional liquidity from the markets arising due to capital flows. The MSS is a sterilisation tool, where-in the RBI issues t-bills and dated securities with a maturity of less than 1 year to absorb liquidity. Unlike the past, the MSS is on the books of the government and impacts the fiscal deficit through an increase in interest expenditure rather than the surplus of the RBI.

Currency: Appreciation trend to continue

Currency appreciation will most likely continue, with USD/INR likely to touch 43 within 12 months. The current account deficit is a concern, though one that has lessened modestly with lower oil prices. Strong capital inflows linked to solid growth prospects should overcome any drag on the currency in the short run. Over time, however, continued currency strength will depend on India's ability to contain the current account deficit and avoid a sudden halt of capital inflows.

The overheating debate

With GDP growth beating expectations and coming in at 9% for two consecutive quarters and money supply and bank credit growth running at 19% and 30% (far ahead of targets of 15% and 20%) , respectively, the RBI and others have expressed concerns about the possible *over-heating* of the Indian economy. In this section, we present both sides of the overheating debate and also our views on the issue.

Is the economy overheating?

The RBI in its monetary policy statement in 31 October 2006, defined an overheating economy as one *"that is growing rapidly but its productive capacity cannot keep up with resulting demand pressures."* Since inflation is the first indication of overheating, policy makers closely analyse the output gap which is defined as the *"excess of current output over potential or full capacity output"*. Thus, if monetary authorities believe that there is unutilized capacity, then the increase in demand generated growth can be accommodated without any inflationary pressures and this would negate any policy measures. However, if monetary authorities view that demand is running ahead of full capacity, then this warrants monetary tightening to slow down the economy.

As on 31 Oct 2006: RBI says no conclusive evidence of overheating

While noting that potential output in India is difficult to ascertain given the underemployment of resources and the current structural transformation in the economy, the RBI pinpointed current trends in growth, rise in consumer prices, escalating asset prices and tightening infrastructure bottlenecks as key symptoms of firming pressures. That said, it has maintained that there appears to be *'no conclusive evidence of overheating in the economy at the current juncture'.*

RBI's stance on overheating:

Turns amber in December

As on 8 Dec 2006: RBI notes significant developments on the domestic front

However, in early December, the RBI hiked the CRR by 50bps and said that this was on the back of significant developments on the domestic front. These included:

1. Two consecutive quarters of 9%+ GDP growth;
2. Non-food credit up 30.1% in Nov on top of an increase of 31.1% a year ago;
3. M3 growth up 19.4% in Nov v/s 17.3% a year ago;
4. Reserve money growth up 17.5% in Nov v/s 14.9% a year ago;
5. Rise in MSS balances to Rs390bn in Nov v/s Rs290bn in March;
6. Rise in WPI to 5.3% in Nov v/s 4.1% in March; and
7. Rise in CPI (IW) to 7.3% in Nov v/s 4.2% in March.

The other side of the story

Excerpts from RBI policy

Interestingly, though the RBI had expressed caution on the possible overheating of the economy, in its monetary policy statement it also said that current trends in money supply and credit growth seem to be mirroring the accelerated pace of overall economic activity.

Further, the RBI said that *"there seems to be anecdotal evidence of ongoing expansion in productive capacity, which is perhaps muting inflationary pressures that are traditionally associated with high monetary expansion"*.

With regard to credit growth, the RBI has said that credit penetration in India remains low and there is empirical evidence of a structural break in the evolution of the elasticity of bank credit with respect to output, with an upward shift since the end of the 1990s.

Finance Ministry's mid-year review (Dec 06)

In its mid-year review, the Finance Ministry said that *"the issue of overheating relates to the fundamental question of whether a country is growing beyond its growth potential thereby straining its labour force and capital stock and hence engendering inflation"*. As per the Finance Ministry mid-year review, the indicators of overheating are: (1) merchandise import growth as a measure of domestic demand; (2) retail sales as a measure of consumption demand; (3) industrial sales as a proxy for investment demand; (4) money supply; (5) trends in bank credit; and (6) per capita income.

The Finance Ministry believes that while there is need for continuous caution in maintaining macro-economic stability, a large part of the current problem of inflation is a result of commodity-specific supply side factors. Thus, a durable solution to the price rise problem would lie in efforts to raise yields and thus domestic output. More importantly, the Ministry believes that *"**if investment continues to be buoyant and efficiency improves, the problem of overheating may turn out to be less real and more imaginary**."*

The key reasons why the Ministry believes that the Indian economy is not yet overheating are:

1. While admitting that it is difficult to be definitive about the sustainable level of the current account deficit, it believes that India's current level (FY06 = 1.3%) is not a cause of concern. It re-iterates the recommendations of the committee on capital account convertibility which states the need for policy action if the ratio rises substantially over 3%;
2. Latest available national accounts data indicates the addition to production capacity to support a higher growth rate. Moreover, output as measured by the index of industrial production coupled with the import of capital goods are indicators of investment demand and current trends reflect the uptick in activity;
3. While acknowledging that overheating of some economies in the past was attributed to speculative debt flows through the BoP resulting in excessive liquidity, current trends in India indicate that a major chunk of the flows are non-debt creating; and

4 While admitting that making a judgment on stock market valuations in hazardous, the review says that a possible reason for the increase in stock valuation could be due to higher corporate earnings and higher growth expectations in the economy.

What do we think?

While we believe that concerns on overheating are valid, it is important to note the various structural changes that have taken place over the last few years. There has been a change in the composition of India's GDP and the emergence of three 'mega' themes. These include: 1) investment led by infrastructure spending and a pickup in corporate capex; 2) urban consumption led by services and retail credit; and 3) outsourcing in sectors such as autos, auto components, pharmaceuticals and engineering goods.

This has resulted in India moving to a higher growth trajectory, with non-farm growth accounting for close to 80% of GDP. In addition, an encouraging development, which we expect to continue in 2007, is the emergence of mini themes such as textiles, retail, real estate, travel and tourism (including medical tourism), emission trading, branded jewelry, outward FDI, entertainment and media — all of which have an impact on either growth or the balance of payments.

Thus we believe that moving to a high growth trajectory, warrants higher levels of credit growth and money supply. Moreover the drivers of the current levels of economic activity are different from those of the mid 1990s. The key point to note is that the current capex cycle is happening after a gap of over 10 years. In the previous cycle of 1994-95, capex was created in anticipation of demand, but today it is being done to meet existing demand. Moreover, in the 1990s many companies based their investment decisions on the back of the tariff advantages which in some cases were as high as 100%, whereas today domestic tariffs are largely in line with Asian levels.

As regards concerns on the current account deficit, we find that this is due to higher imports – both oil as well as non-oil. Moreover, an analysis of analysis of non-oil imports in FY06 indicates that 70% of this is due to capital goods and industrial inputs – which, in our view, are justified given that India has moved to a higher growth trajectory.

The bottom line, in our view, is that given the evidence of new capacities coming on stream, we believe that in the long term, the output gap is not likely to be inflationary. However, asset bubbles need to be checked/corrected in time. Thus, directed measures in certain areas such as housing and capital markets would be more appropriate than monetary policy measures which affect the entire system.

Accelerating growth from 8% to 10%: The four challenges

Given the reform momentum and relatively low levels of income and economic development, India probably has potential to further lift its trend growth level and remain as one of the fastest-growing economies in the region. However, to move to a high growth trajectory, the four challenges that need to be addressed are:

Challenge I – Infrastructure

While current reforms in the infrastructure are encouraging and will be able to sustain GDP growth at 8-9%, we believe the first challenge to double-digit GDP growth is the need to increase infrastructure spend across sectors. Looking ahead for 2007, we see the government facilitating investments and allocating a bigger role for the private sector via the Public Private Partnership frame-work model. This would accelerate the provision of infrastructure taking into account accountability, transparency and inclusiveness.

Challenge II – Human resource paradox

While India's favorable demographics have been touted as being the key factor contributing to growth, what needs to be noted that unless job creation becomes a priority, it could result in social tension. Another issue is the fact that India's economic boom has not been preceded by a scaling up of talent supply. Here-in lies a major paradox - the need to create more jobs on one hand, and an emerging talent shortage on the other.

Challenge III – Inclusive growth

The widening gap between states – due largely to institutional reasons, has resulted in economic growth being concentrated in a few states resulting in a divergence in per-capita incomes and social sectors such as education and health. Addressing the growing disparity will be vital since 60% of the incremental rise in India's population up until 2051 is likely to occur in three of the poorest states - Bihar, UP, and MP.

Challenge IV – Politics: (a) Stability of coalition; and (b) How real is the Maoist threat?

Politics remains a concern, given the nature of India's coalition government. Over the past year, a string of disquieting political incidents has stalled the reform progress. While slow progress on reforms already has been factored into our economic forecasts, our base case remains that the government will complete its term.

Related to politics is the Naxalite issue. The Naxalite/Maoist movement is a group engaging in a violent struggle on behalf of the landless and tribals[3] against landlords and their agents has spread across 165 districts in 14 states, with fatalities involving Naxalites rising during the last two years. The rise in violent incidents led PM Singh to remark that Naxalism is the '*single biggest internal security challenge*' for India. The Maoist insurgency, if not adequately restrained, could be a threat to the country's law and order situation, resulting in deteriorating governance and undermining investment activity. However, given the government's resolve to address the Naxalite issue, we believe it is unlikely to get out of hand.

[3] Tribals: Indigenous ethnic groups in India

Accelerating Growth From 8% to 10% - 4 Key Challenges

Challenge #1: Infrastructure

- **Although current reforms in the infrastructure are encouraging and will likely be able to sustain GDP growth of 8-9%...**
- **…we believe the first challenge to double-digit GDP growth is the need to increase infrastructure spend across sectors**
- **Looking ahead, we see the government facilitating investments and allocating a bigger role for the private sector via the Public Private Partnership (PPP) frame-work model**
- **This would accelerate the provision of infrastructure taking into account accountability, transparency and inclusiveness**

Infrastructure in India: Where we stand

In our report published on 9 January 2006, *"India in 2006- Maintaining the Momentum"*, we commented on the status of infrastructure projects and found that while government reforms had been encouraging, the pace of development varied. For instance, progress in telecom, roads, and civil aviation had been fast - benefiting greatly from government emphasis on private sector participation, the power sector has been laggard suffering from delays in the implementation of policy, major shortfalls in capacity, and a distorted pricing structure. However, the implementation of Ultra Mega Power Projects is now encouraging. As regards ports, the government is gradually allocating a growing role for the private sector, while railways have also seen a significant turnaround, admittedly with little private sector participation. Looking ahead, we expect to see PPP initiatives coming to the forefront.

Figure 2. Infrastructure in India: A Summary

Sector	Key Stats	Reform Initiatives and the emphasis on Private Sector participation
Power	Installed Capacity- 127,600MW; Avg PLF- 75%. FDI limit: 100%	The National Electricity Policy, announced in February 2005 sets the roadmap for transformation of the power sector; but the moot point lies in its implementation of deadlines fixed. Key PPP initiatives include the successful privatization of the Delhi power sector, and the recent implementation of Ultra Mega Power Plants which will help meet the government's 'Power for all by 2012' target.
Roads	Length: 3.3mn kms. FDI limit: 100% for both construction and maintenance	The most visible action in highway development is taking place through the National Highway Development Program (NHDP). NHDP is implemented in Phases, and while time and cost overruns are likely to remain concerns, a renewed focus on road development would boost the construction segment. Over time, there has been a growing emphasis on private sector participation, with phases III onward funded largely by PPP (through BOT and BOOT projects).
Telecom	Cellular Subs- 92mn, Fixed Line Subs: 56.4mn:FDI:74%	One of the biggest beneficiaries of market-oriented reforms. Going forward, lower access deficit charges, license fees, 'One India' rate proposals, and measures to boost rural telephony would give a further boost to the sector.
Ports	Traffic Handled: 423mn tonnes; FDI: 100%	The National Maritime Development Policy, which aims at improving hinterland connectivity through private-public partnerships; the Sagar Mala Project; and freight corridor are encouraging initiatives. Deregulation in the sector has resulted in growing private sector participation, primarily on a BOT basis, with a number of the major ports operated by international players. Given that the experience of operating berths through PPPs at some of the major ports has been successful, the Ministry has decided to expand the programme and allocate new berths to be constructed through PPPs.
Railways	Length: 63000km; revenue-earning traffic: 667mn tonnes	Perhaps the largest PPP initiative for the railways sector is the dedicated freight corridor linking ports of the east and west to Delhi and Punjab. The project, which involves building 2700km at an estimated cost of over Rs220bn, will help ease port congestion, upgrade rail infrastructure, and aid energy efficiency through reduced diesel consumption.
Airports	Passengers Carried: 73mn. FDI:49%	A major PPP initiative for the aviation segment is the modernization and expansion plan for airports. While modernization of Mumbai and Delhi airports is already underway, greenfield airports are being developed in Bangalore and Hyderabad and a comprehensive plan for 35 other non-metro airports is also being prepared. With total investments for the development of airports pegged at Rs400bn during FY07-14, Rs310bn is envisaged from PPPs.

Source: Ministry of Power, NHAI, TRAI, Indian Railways, Ministry of Ports and Shipping, Director General of Civil Aviation, Airports Authority of India, IDFC, CEIC Data Company, Citigroup.

Public Private Partnerships: The way forward

With the magnitude of investment required in infrastructure pegged at US$320bn; financing India's infrastructure deficit remains an immediate concern. An increase in public investment is not really feasible given that the fact that the government is running a deficit around 7% levels. In addition, given the long gestation periods and a lack of financial viability, investment in infrastructure is typically unattractive for the private sector. Mobilizing resources through debt finance is also an issue since India's pension and long-term debt markets are still relatively underdeveloped.

To this end, the government has taken several steps to encourage the private sector through Public Private Partnerships (PPP). PPP infrastructure projects typically involve transfer of public assets, delegation of government authority for recovery of user charges, private control of monopolistic services and sharing of risks and contingent liabilities with the government. As the 11th Five Year Plan points out, PPPs must be *seen as a way of attracting private money into public projects, rather than putting public resources into private projects.* Two key initiatives include:

- **Viability gap funding**. This refers to a grant – one time or deferred – to make the project viable. In order to be eligible, the project needs to be implemented and operated by a private company, selected by a statutory body through the process of competitive bidding. More-over, the project should provide a service against payment of a pre-determined tariff or user charge. Currently, government support for projects in roads, power, ports, airports, SEZs, and international convention centres is capped at 20% of the capital costs[4].
- **The India Infrastructure Finance Company Limited** (IIFCL) is a special purpose vehicle set up by the government to meet *long-term financing requirements of potential investors.* Corporatized early in 2006, the IIFC is expected to provide financial support through long-term debt either by way of re-finance to banks and financial institutions or by direct lending to project companies. It raises funds from both domestic and external markets against government guarantees, the limit of which is prescribed each year (limit for FY06 was Rs100bn or US$2.2bn)

Other initiatives by the government include encouraging FDI in infrastructure. The government has also set up a three-member Investment Commission to make recommendations on policies and procedures to facilitate investment. The committee submitted its report earlier this year and recommendations included lifting FDI caps in strategic sectors, promoting SEZs, creating a fast-track mechanism for priority sector projects, enhancing labor flexibility and diluting PSU dominance.

Figure 3. Infrastructure- Investment Opportunities across Sectors (US$bn)

Sector	US$bn
Power	200
Roads	60
Rail	5.0
Ports	4.5
Airports	9.0
Telecom	22

Source: PM's Committee on Infrastructure

[4] In order to be eligible for funding the PPP must be implemented by an entity with at least 51% private equity.

Power – Ray of light at the end of the tunnel

Overview

India's installed capacity at 127,056MW, is dominated largely by the public sector (states have a share of 55%, while the centre accounts for 32.5%), with the private sector accounting for just 12% of total installed capacity. Burgeoning demand coupled with high transmission and distribution losses (at 32.5%) has resulted in a significant demand-supply gap in power. During FY06, the energy deficit was 12.5%, while the peak deficit was 8.3%. As a result, per capita consumption of power remains a poor 606KwH, far lower than the global average of 3000KwH.

Figure 4. Power Sector – Key Statistics

	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
Installed Cap ('000 MWs)	88.1	92.3	96.7	100.2	103.8	106.8	110.2	117.3	127.6
Hydel	21.9	22.5	23.9	25.2	26.3	27.0	29.5	32.1	33.6
Thermal	64.0	67.6	70.2	72.3	74.8	77.1	78.0	81.9	83.9
Nuclear	2.2	2.2	2.7	2.7	2.7	2.7	2.7	3.3	3.9
Plant Load Factors (Avg,%)	64.7	64.6	67.3	69.0	69.9	72.2	72.7	75.0	73.6
T&D Losses (%)	24.8	26.5	30.9	32.9	34.0	32.7	32.5	NA	NA

Source: Ministry of Power, CRIS Infac

Reform initiatives

There have been a number of government initiatives in the power sector during the last three years. These include the Electricity Act 2003[5], establishment of a regulatory framework for the sector, coupled with schemes for the settlement of dues of State Electricity Boards[6] (SEBs), all of which have resulted in an improvement in the financial position of SEBs. Efforts to strengthen infrastructure and reduce T&D losses, under the Accelerated Power Development Program[7] are also positive. Finally, the government's resolve toward power sector reform (as seen in the Dabhol issue) is encouraging.

In order to sustain 8-9% growth rates, the Ministry has set the target of providing 'Power for All' by 2012. This entails capacity creation to the tune of 100,000MW during 2002-12 of which a capacity addition of 40,000MW was targeted for the 10th plan (2002-07) while 60,000MW was targeted for the 11th Plan (2008-12). As the 10th plan is likely to fall short of its target by 7,000MW, the 11th Plan would need to see 67,000MW being built for the government to achieve its target of 'Power for All.'

Moreover, 100% FDI is permitted across transmission, distribution and generation. Looking ahead, the government envisages investment opportunity to the tune of US$200bn in the power sector, over a seven-year horizon. While these measures are resulting in a turnaround in the sector, apart from the successful privatization of the power sector in Delhi, there remains slow progress on the privatization of distribution. In addition, there is lack of an adequate payment security for independent power producers (IPP) setting up generation capacity.

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[5] Power sector reforms in India have been underpinned by **the Electricity Act, 2003**, which calls for the de-licensing of power generation and frees up the distribution sector, allowing the direct sale of power to consumers (open access). It also permits private sector participation in Transmission and Trading; and makes it mandatory for states to unbundle the State Electricity Boards (SEBs).

[6] Under the **One-Time-Settlement Scheme**, losses of SEBs were securitized through the issue of tax-free bonds (bearing 8.5% interest and maturing in stages from Oct 2006 to Apr 2016)

[7] **The Accelerated Power Development Program,** established in 2000 was later transformed into the Acclerated Power Development and Reform Program (APDRP). Its key objectives include improving the financial viability of SEBs, reducing T&D losses to 10%, and increasing the reliability and quality of power supply.

Ultra-Mega Power Projects: A key harbinger of change

In order to achieve its ‘Power for All’ by 2012 target, the government has announced the setting up of seven major Ultra Mega Power Projects (UMPPs)[8] with capacities of 4000MW each, which would entail investment to the tune of Rs150bn. This would be done through tariff-based competitive bidding via a two-stage process featuring separate requests for qualification and requests for proposal. In order to make the funding of UMPPs attractive, the government intends to relax the limit of ECBs. They may also be funded through long-term debt instruments, such as 20-year infrastructure bonds. Funding from Export Credit Agencies who have the ability to lend long tenors should also be considered.

Several foreign and domestic players have shown an interest in the UMPPs. Bids have been awarded for the Sasan and Mundra projects with Lanco Infratech the highest bidder for Sasan, and Tata Power the top bidder for Mundra. The PFC aims to open bids for a third project (Krishnapatnam in AP) by March 2007.

We believe these projects are a step in the right direction for the power sector and appear to be an ideal solution for cash-strapped state governments. Under the UMPP arrangement, states can enjoy the benefits of capacity addition without making any cash investment, by merely providing requisite clearances. As a result, there have been a number of states - including Tamil Nadu and Jharkhand- that have recently jumped on to the UMPP bandwagon. Benefits for private players are also evident, since major hurdles such as fuel linkages and other clearances - which are currently one of the biggest deterrents to investment - are handled by the state governments.

Figure 5. Ultra Mega Power Projects – Key Details

Project	Units (MW)	Cost (Rs Bn)	Location	Fuel	Allocation
Coastal Maharashtra Mega Power Ltd	4000	150	Girye, Maharashtra	Imported Coal	Rajasthan, MP, Chhattisgarh, Maharashtra, Karnataka
Coastal Karnataka Power Ltd	4000	150	Tadri, Karnataka	Imported Coal	Rajasthan, TN, Kerala, Maharashtra, Karnataka
Coastal Gujarat Power Ltd	4000	150	Mundra, Gujarat	Imported Coal	UP, Punjab, Rajasthan, Haryana, Gujarat, Maharashtra
Akaltara Power Ltd	4000	150	Akaltara, Chhattisgarh	Indigenous Coal	
Sasan Power Ltd	4000	150	Sasan, MP	Indigenous Coal	UP, Delhi, Uttaranchal, Punjab, Rajasthan, Haryana, MP, Chhattisgarh
Coastal Andhra Power Ltd	4000	150	Krishnapatnam, AP	Imported Coal	Andhra Pradesh, Karnataka, Tamil Nadu, Maharashtra

* Two additional UMPPs have been proposed in Ib Valley, Orrisa and Tamil Nadu. Source: CRIS INFAC, Media Reports.

[8] For more details, please see India Macroscope- ‘*UMPPs- A Likely Panacea for the Power Sector*’ , October 2006

Roads - Cruising ahead

Overview

Indian roads carry 85% of the passenger and 61% of the freight traffic of the country

India has a vast road network of 3.3mn kms. While this is much higher than China's, it compares poorly in terms of lane capacity and surface quality. National and state highways, with a total length of 1, 97,000 km constitute the lifeline of India's transport system. Yet, they account for just 2% of total road length, but carry over 40% of total traffic across the length and breadth of the country. As a result, 25% of national and state highways are congested, with truck and bus speeds averaging just 30-40km/hour, though expected averages are twice these figures.

Looking ahead, the government has forecast a 12-15% increase in annual passenger traffic growth, and 15-18% for cargo traffic. While this will be an additional strain on roads, the government's renewed emphasis on public private partnerships is encouraging, with Build-Operate-Transfer (BOT) projects, which earlier accounted for less than 10% of total financing, now accounting for a bulk of project costs. Apart from concerns on time and cost overruns, we believe that road development is on the right path.

Current reforms

NHDP: On track, though delays remain a concern

The National Highways Development Program (NHDP), which has been expanded to include five new phases *(Phases III-VII- see table below);* is a mammoth initiative by the government to upgrade and strengthen the national highways, and entails investments to the tune of Rs2200bn over the next seven years. Almost the entire amount will be funded through concessions/contracts.

Figure 6. NHDP: Key Facts

NHDP	Description	Length	Cost		Targets Met	
			Rs Bn	US$bn	% Complete	Target Date
Phase I	Also known as Golden Quadrilateral, this project links the four metro cities	5,846			93%	Dec-07
Phase II	The North-South East West Corridor; aims to link four extreme points of the country through highways	7,300	540	12.0	12%	Dec-09
Phase III	Up gradation and 4-laning of select high-density corridors and linking state capitals as well as places of economic/commercial importance. Financing on a BOT basis	10,000	652.0	14.2	0.4%	Dec-12
Phase IV	Strengthening and widening highways to 2-lanes, with paved shoulders	20,000	278.0	6.0	NA	Dec-12
Phase V	Widening 4-laned sections to 6-lanes on DBFO basis	6,500	412.1	9.0	NA	Dec-12
Phase VI	Construction of expressways connecting major commercial/industrial townships on DBFO basis	1,000	166.8	3.6	NA	Dec-12
Phase VII	Construction of ring-roads, bypasses, grade separators, flyovers to regulate traffic movements (BOT basis)		166.8	3.6	NA	NA
Total		**50,646**	**2200**	**47.8**		

Source: NHAI

Role of the private sector

Financing the NHDP

The initial phases of the NHDP (phases I-II) were supported largely through a cess of Rs2/liter on petrol and diesel, market borrowings and loan assistance from external agencies such as the ADB and the World Bank. Cess inflows totaled Rs33bn in FY06, and are budgeted to double to Rs67bn in FY07. However, recent years have seen a shift in funding patterns such that from NHDP III onward, funding mechanism has been largely through public-private participation (PPP). In order to encourage private sector participation, the National Highways Act 1956, has been amended such that private entrepreneurs can undertake projects on a BOT basis and recover investments through tolls.

The Model Concession Agreement (MCA) sets out a precise policy and regulatory framework to reduce uncertainties, and apportion risks and rewards between public and private partners. A key commercial difference in the new MCA is the linkage of the concession period to traffic growth. If the traffic level at the target date is lower than a pre-specified number, then for every 1% shortfall, the concession period goes up by 1.5% (upto a maximum of 20%), while if it exceeds the target traffic by 1%, the concession period is reduced by 0.75% (upto a maximum of 10%). Several states have also made amendments in the Indian Toll Act 1951 so as to allow the private sector to levy and collect tolls on state roads.

Public-Private Partnerships

Two forms of PPP arrangement in the roads sector include:

- **Design-Build-Finance and Operate (DBFO)** where the private sector meets the entire cost of design, construction, and expenditure on annual maintenance, and recovers this along with interest through toll collections during the concession period. To increase the viability of the project, a capital grant upto a maximum of 40% of the project cost is provided by the client. There is no obligation to transfer ownership to the government.
- **Build-Operate-Transfer (BOT)** the private sector incurs expenditure on the design, operation, and maintenance, and then transfers it to the government when the operating contract ends, or at some other pre-specified time. BOT projects can be either toll or annuity based. In BOT toll, the government provides viability gap funding to the tune of 40% of the capital cost, whereas in BOT annuity, the concessionaire recovers the entire investment through pre-determined annuity contracts. The NHDP is targeting to award 175 contracts covering 15803kms on a BOT basis by FY08.

Key private sector players participating in road development include Larsen and Toubro, HCC and GMR.

Negative grants – Sign of growing confidence

An interesting development that is gaining further traction is the fact that despite the availability of viability-gap funding wherein the government gives a capital grant upto 40% of the capital cost, construction companies today are actually paying NHAI for permission to carry out the projects. Latest available data indicates that there is a negative grant to the tune of over US$400mn for 17 contracts covering 835kms.

Telecom - Spurred by reform

Overview

India's telecom sector has been one of the biggest beneficiaries of market-oriented reforms, and is now amongst the fastest growing markets in the world. Supportive government policies along with private sector participation have resulted in the number of wireless subscribers at 135mn, exceeding fixed line subscribers (56.4mn); India's tele-density is just 16% currently, indicating significant potential for growth.

Figure 7. Telecommunications - Key Indicators

	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07E
Cellular (Mns)	0.9	1.2	1.9	3.6	6.5	13.9	33.3	53.4	91.9	162.2
Fixed Lines	17.8	21.6	26.5	31.9	37.8	41.7	46.7	51.8	56.4	61.5
Tele density	1.9	2.3	2.8	3.5	4.2	5.2	7.4	9.6	13.3	19.8

Source: TRAI, CIR estimates

Reforms: Past, present and future

The growing contribution of the private sector, lower re-load denominations (i.e. for prepaid cards) and cheaper handsets are also enhancing coverage expansion

The announcement of the New Telecom Policy, 1999[9] was a watershed event for the sector. Other policy milestones have included the opening of the long-distance market in 2002, the termination of VSNL's monopoly over international traffic in the same year, and the resolution of the Wireless in Local Loop Issue. As a result, telecom tariffs which were among the highest in the world less than four years ago are today among the lowest. Looking ahead, government policy should continue to target higher tele-density levels and remain supportive to the sector. The regulatory changes likely ahead include:

- **Access Deficit Charges (ADC)**: TRAI maintains its commitment to a transition to a revenue- share Access Deficit Charge (ADC)[10] Regime. ADC, which is currently Rs35bn (FY07), is to be reduced progressively to nil in FY09. We expect the private operators to pass on these ADC cuts to subscribers, resulting in lower tariffs.
- **License fees:** TRAI's recommendation to move to a Unified Licensing Regime[11] is likely to lead to a reduction in license fees. In its earlier recommendations, TRAI had suggested a uniform license fee of 6%, irrespective of the type of circle, as against the 6%-10% slabs in existence today. The government has been favorably disposed towards this, though the final decision has yet to be taken.

What lies ahead

Strong trends should continue to pan out

Currently, wireless penetration is in line with trends in per capita income. But given rapidly rising nominal GDP levels, our telecoms analyst, Rahul Singh[12], believes penetration is likely to rise to around 30% in 2010 and 50% in 2016. Apart from this, he sees two key factors continuing to drive growth in the telecom sector: **affordability** (revenue yields are just 2cents/min), which has offset India's low per capita incomes; and **coverage**- since just 50% of the population is currently covered, and most operators are in the midst of rapid geographical expansion.

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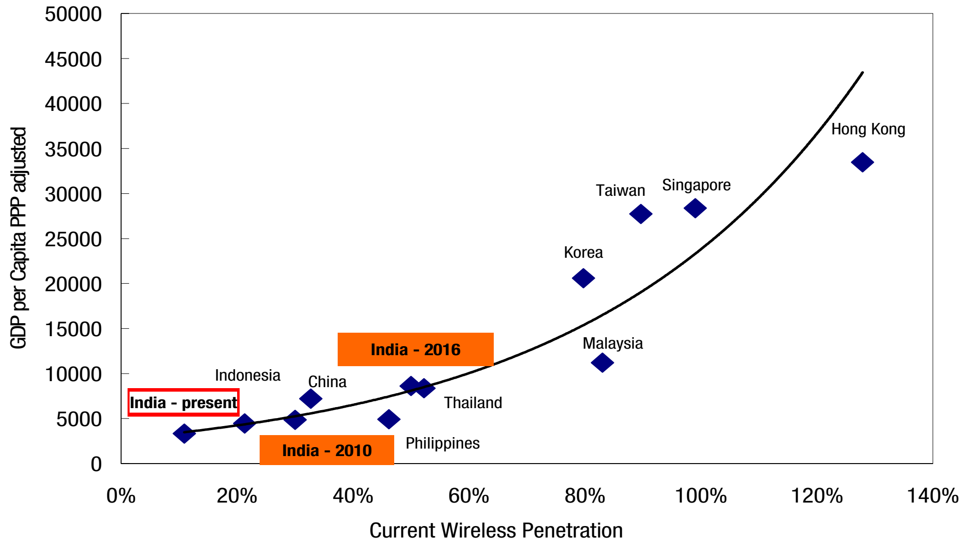
[9] Under this, fixed line and cellular service providers could migrate from a fixed license fee regime to a revenue sharing arrangement

[10] ADC charges are levied on all calls, to compensate fixed line operators for the losses incurred on account of the difference between access costs and revenues. In simple terms, the ADC is a surcharge on all calls paid to the state-owned enterprise- BSNL- to fund its below cost services.

[11] This is a single, technology-neutral license for both fixed and cellular operators.

[12] See "Indian Wireless- Soaring Higher; Raising Targets for Bharti, Reliance and HTIL" dated 12 October 2006

Figure 8. Wireless Penetration in Sync with Per Capita GDP



Source: Citigroup

Rural areas could be a major growth driver for the sector

Rapid growth in tele-density has so far been concentrated largely in urban areas (31% penetration), while in rural areas, tele-density remains low- just 2%, given the high cost of providing backbone infrastructure to sparsely populated areas with limited usage. This resulted in the Department of Telecommunications initiating the *Universal Service Obligation* (USO)[13] Scheme. Currently, the USO is used to support only village public telephone; but last year, the FM announced that Rs15bn from USO fund will be used for rural expansion.

So far, 21 companies have been short-listed to set up **passive cellular infrastructure** in rural areas. Passive cellular infrastructure involves acquiring land, setting up towers, and electrical/civil works that need to be in place before operators can install active infrastructure such as wireless radio equipment. Identified sites under the USO funded scheme will cover 11% of the total population, and implementing the scheme would raise rural tele-density to 8% by 2007. Combined with an expected urban tele-density of 43%, this would take overall tele-density to 20%.

Broadband – The next revolution

With an increasing number of players- both in the public as well as the private space, broadband subscribers have seen significant growth over the past year- from just 0.2mn in 2005 to nearly 2mn currently, and government estimates subscribers to touch 20mn by 2009. To encourage growth, BSNL and MTNL have come out with aggressive plans to provide broadband connections with minimum download speed of upto 2 Mbps from Jan 2007.

[13] The USO aims at providing access to basic telephone services to people in rural and remote areas at reasonable prices, even when some of these connections may not be justified on commercial considerations. USO Recommendations were passed in 2001. Under the scheme, a 5% levy on revenues earned by operators is put into a fund and fixed service providers are reimbursed from this fund.

Ports – Connectivity to hinterland the key

Overview

India's 12 major[14] and 185 minor ports transport about 95% by volume, and 70% by value of the country's international trade. The current aggregate capacity of the 12 major ports is 456m tonnes in FY06 (against traffic of 423m tonnes) while the minor ports handle150m tonnes. However, on the back of rising exports and rapid growth in the manufacturing sector, coupled with the government's aim to raise exports to 1.5% of the world total from 0.8% currently, the government is planning to augment capacities in the major ports to 1000mt by FY12. The government has pegged capacity addition required at 545m tonnes during the next six years.

Figure 9. Major Ports: Projected Traffic and Investments

	FY06	FY12 Projections			
	Traffic Handled (Mn Tonnes)	Projected Traffic (Mn Tonnes)	Capacity Addition (Mn Tonnes)	Total Investment (US$mn)	Of which :Pvt Investment (US$mn)
Kolkata	10.8	13.4	18.4	1127	951
Haldia	42.2	44.5	20.3	266	122
Paradip	33.1	76.4	45.0	685	459
Visakhapatnam	55.8	82.2	66.2	695	307
Chennai	47.3	57.5	21.6	498	244
Tuticorin	17.1	31.7	32.4	998	800
Cochin	13.9	38.2	32.5	1800	1484
New Mangalore	34.5	48.8	22.5	1579	1353
Mormugao	31.7	44.6	36.7	261	162
Jawaharlal Nehru	37.8	66.1	58.3	2218	1186
Mumbai	44.2	71.1	47.2	624	241
Kandla	45.9	86.7	68.4	998	799
Ennore	9.2	47.0	75.7	1429	1178
All major ports	**423**	**708**	**545**	**13,178**	**9,286**

Source: Department of Shipping

Reform initiatives

The National Maritime Development Policy (NMDP) is a major initiative, covering 276 projects involving investments to the tune of US$12.4bn until FY12, which will enhance private investment and promote competitiveness[15]. A significant chunk of funding (about US$7.7bn) is from the private sector. The NMDP also includes the Sethu Samudran Project to dredge a navigable channel between India and Sri Lanka.

Apart from the NMDP, capacity expansion plans also include **the Sagar Mala program**[16] launched in 2003, with investments over Rs1000bn spread over the next 8-10 years. In order to modernize and upgrade the 12 major ports to attain world-class standards, each port is preparing a **perspective plan for 20 years** and an action plan for seven years. International experts have been engaged for assisting the ports

[14] Eleven of the 12 major ports are Port Trusts, governed by the Major Port Trust Act, 1963. The 12th ports- Ennore Port- is a corporate port. The 185 minor ports are controlled by the respective states.

[15] The NMDP covers aimed at improving hinterland connectivity and encouraging private-public partnerships, including berth development, deepening of channels, up gradation of cargo handling equipment

[16] Under Sagar Mala, all major ports will be connected with the Golden Quadrilateral through high-speed expressways, and rail connectivity to ports will also be strengthened

in this exercise. Recognizing that the shipping industry is moving towards large vessels, a plan for **capital dredging** of channels in major ports has also been formulated. Changes in **customs procedures** are being carried out with a view to reducing the dwell time and transaction costs.

Efforts toward road-rail connectivity of major ports

Despite having adequate capacity and modern handling facilities, average turn-around times are 3.4 days as compared with 10 hours in Hong Kong, which undermines the competitiveness of Indian ports. Congestion is due primarily to the evacuation of cargo rather than a lack of handling capacity, since ports are not adequately linked to the hinterland. To this end, all port trusts have set up groups with representatives from NHAI , the Railways, and State governments to prepare exhaustive plans aimed at improving road-rail connectivity of ports. A dedicated freight corridor linking Delhi, Kolkata, Chennai and Mumbai (*see page 25 for details*) has already been approved, implementation of which will help ease port congestion, and enhance export competitiveness. Road-rail connectivity projects will be funded through an SPV where the NHAI will bear 30% of the project costs, port trusts bear upto 30%, and 40% is met by market borrowings.

Role of the private sector

Deregulation in the sector has resulted in growing private sector participation. Areas that have been opened up to the private sector on a BOT basis include construction of cargo-handling berths and dry-docks, container terminals and warehousing facilities and ship-repair facilities.

Significant investment on BOT basis by foreign players including Maersk and CONCOR (JNPT and Mumbai) and P&O Ports (JNPT, Mumbai and Chennai), Dubai Ports International (Cochin and Vishakhapatnam) and PSA Singapore (Tuticorin). The government is now planning to develop the Paradeep port under the BOT model as well. Minor ports are also being developed by domestic and international private investors: Pipavav Port by Maersk and Mundra Port by the Adani Group (with a terminal operated by P&O).

The road ahead: The government currently envisages 64% of the proposed investment in major ports from private players. This is primarily on a Build-Operate-Transfer (BOT) basis, with a number of the major ports operated by international players. Given that the experience of operating berths through PPPs at some of the major ports has been successful, the Ministry has decided to expand the programme and allocate new berths to be constructed through PPPs. A model concession agreement is being formulated for this purpose.

Railways – A paradigm shift

Overview

The Indian railway network, spread over 63,000 route kilometers, is the largest in Asia and the second largest in the world under a single management. The current structure links four metropolitan cities and the diagonals through a high density corridor known as the Golden Quadrilateral (GQ), which is a double-line, flat, electrified route. As regards the Mass Rapid Transport systems or Metro Rails, while Phase 1 of the *Delhi Metro* Rail is completed, work has started on Phase II. Other metros undertaken include the *Hyderabad Metro* and the *Bangalore Metro*.

Figure 10. Indian Railways – A Snapshot

	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
Rev-Earning freight traffic (million tons)	409	429	421	456	474	493	519	550	602	668
Passenger kms (billion)	358	381	405	431	458	494	485	508	565	626

Source: Ministry of Railways.

Turnaround in railway fortunes

A Significant Turnaround

Stagnant trends in railway infrastructure had resulted in deteriorating railway finances and declining operating ratios[17]. However, over recent years, a revamped tariff policy coupled with supply-side measures such as increasing the axle loan from 20.3 to 22.9 tonnes and reduction in turnaround time from 7 to 5 days has resulted in a significant turnaround in rail finances with operating ratios coming down from over 98% in FY01 to 83% currently. Rail traffic has been growing at an average of 9.4% and 7.4% (freight and passenger traffic, respectively) over the past two years as compared with 3-4% levels in the past, and with operating ratios coming down, railways have earned a record surplus of Rs126bn in FY06 as compared with just Rs52bn in FY04.

Quoting PM Singh *"… Indian Railways has staged a dramatic turnaround with the same employees and same assets. The turnaround strategy has been based on simple principles. Have higher freight volumes, improve occupancy in passenger trains, control costs and most importantly reduce tariffs. Through this, railways have improved their market share and operating volumes. Railways reforms have been introduced without losing sight of our social obligation. This is what we call* ***'inclusive growth'****".*

Looking ahead: The Rail Ministry anticipates traffic volumes to double by 2012. The key elements of the strategy entails investment in infrastructure, modernization of wagons technology, advanced signaling and telecommunication including the building of passenger and freight terminals in line with global standards. Tariff rationalization and effective cost allocation mechanism are also on the anvil. This includes a methodology for indexing the fare structure to line haul costs. Efforts aimed at introducing commercial accounting and information technology systems are also underway.

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[17] With 1.6mn people, the department of railways accounts for more than half of the total civilian employees in the central government, and is the only department that has to bear pension liabilities from its own resources. Implementing recommendations of the Fifth Pay Commission, which suggested a hike in salaries; was also a major drain on rail finances. The operating ratio is calculated by dividing the Railways operating expenses by operating revenues. A ratio of 93% thus implies that to earn Rs100 of revenue, the railways spend Rs93.

Role of the private sector

Private sector participation in the railways sector has been encouraged only recently as compared with other sectors. Besides the proposed dedicated freight corridor, key public-private projects (PPPs) include the setting up of locomotive manufacturing units, port connectivity works through the Rail Vikas Nigam Limited, and the setting up of budget hotels and food services at major stations. Container movement – earlier the monopoly of CONCOR – a public sector entity – has also been thrown open to competition and private sector entities have been made eligible for running container trains. Fourteen applications have been approved for container train operation and with the model concession agreement (MCA) likely to be signed shortly, 2007 could be the year that private container trains see the light of day.

The railway freight corridor

Perhaps the largest PPP initiative for the railways sector is the dedicated freight corridor linking Delhi, Kolkata, Chennai and Mumbai with the foundation stone being laid on 6 October 2006. The project, which involves building 9,380km of track at an estimated cost of Rs660bn, is due for completion within 5-7 years[18]. The first phase consists of linking ports of the east (Kolkata) and west (JNPT-Mumbai) to Delhi and Punjab. This phase involves building 2,700km at an estimated cost of over Rs220bn.

A specially-constituted Task Force had recommended that the project be financed by a Special Purpose Vehicle (SPV) having a diversified ownership structure that would include the Indian Railways, public sector users of freight services, and the private sector. However, the railway ministry rejected the idea of private players having a stake in the SPV. The private sector would only be allowed for construction and maintenance of sections of the corridors for a pre-defined period of time, after which ownership would be transferred to the Railways. However, with the railways likely to have full administrative control of the SPV, we believe financing would be a key risk.

The proposed SPV would own and maintain the track infrastructure, but not own or lease any rolling stock nor engage in freight business other than the haulage of freight trains. This would enable it to provide non-discriminatory track access on payment of haulage charges by train operators. This is believed to attract large scale private investment and competition in freight operations.

Key benefits

Likely benefits of the corridor: Currently passenger and freight traffic operate on the same route resulting in problems relating to cross-subsidization[19], capacity, quality of service, safety and market share. Moreover, stagnation in rail infrastructure has resulted in port congestion and reduced competitiveness. We thus believe implementation of the freight corridor will help ease port congestion, upgrade rail infrastructure, and aid energy efficiency through reduced diesel consumption.

[18] Although proposals were submitted last year, disagreement between the Railway Ministry and the Ministry of Finance on project financing held up implementation

[19] Unit costs are distorted since passenger fares are highly subsidized at the cost of freight rates, even though freight is more profitable.

Aviation – Flying high

Overview

Accelerating economic growth and growing liberalization in the air travel space have led to unprecedented growth in civil aviation traffic in the country. Passenger traffic witnessed growth of 20%+ for the second year in a row from single-digit growth earlier, while cargo traffic remained buoyant but choppy at 10%+. While trends are encouraging, and are likely to continue at a sustained pace, this has placed some strain on airport infrastructure[20].

Cargo carried by air into India accounts for 35% of the total value of exports. Better cargo handling facilities would thus lead to enhanced export competitiveness, especially of capital goods and high-value items. Moreover, 97% of the country's foreign tourists arrive by air, and tourism is the nation's second largest foreign exchange earner.

Figure 11. Key Statistics – Domestic Scheduled Services of Indian Carriers

	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07*
Air Craft Movement('000s)	**468**	**490**	**510**	**561**	**641**	**718**	**838**	**495**
International	100	103	108	116	136	163	191	103
Domestic	368	387	402	444	505	554	648	392
Passenger Traffic(Mns)	**39**	**42**	**40**	**44**	**49**	**59**	**73**	**44**
International	13	14	14	15	17	19	22	12
Domestic	26	28	26	29	32	40	51	32
Cargo ('000 tonnes)	**376**	**1404**	**1280**	**1069**	**979**	**854**	**846**	**763**
International	532	557	560	646	693	824	920	507
Domestic	266	288	294	333	375	457	484	256

* April-September2006. Source: Director General of Civil Aviation.

Low-cost carriers – Here to stay

Liberalization of the airlines segment, particularly since FY05, has resulted in the entry of a number of private players. Today, private airlines, such as Jet Airways, Sahara, Kingfisher, Air Deccan, Spicejet – account for about 60% of the domestic passenger traffic. The entry of Low Cost Carriers (LCCs) has led to a sharp decline in airfares. Given the further rise in capacity addition (with 430 planes on order, the Indian fleet, which is currently around 200 planes is forecast to more than double over the next decade); our aviation industry analyst, Jamshed Dadabhoy, believes that the entry of LCCs has commoditized air travel. This will likely lead to a shift in consumer preferences over the longer term, thus ensuring that fares remain structurally low thereby resulting in continued buoyancy in air traffic growth.

Current reforms

The growing strain on aviation infrastructure points to an urgent need for modernization and up-gradation of India's civil aviation facilities. However, similar to roads and telecom, the government's efforts toward encouraging private sector participation are positive and we believe reforms[21] in civil aviation are on the right track. Currently, FDI is aviation is permitted upto 49%, and the government is also

[20] Although there are 449 airports in the country, the Airports Authority of India (AAI) manages only 127, and these handled traffic of 42m passengers in FY05 alone. In fact, Mumbai and Delhi alone handled 52% of the traffic.
[21] Until 1990 the airlines sector comprised primarily of state-owned companies .Over FY05, the government continued to ease restrictions for the private sector. Under the Open Skies policy, private domestic carriers were allowed to fly on international routes. In Oct 05, the government also hiked FDI limits from 40% to 49% through the automatic route, which has further encouraged competition.

considering raising FDI in air cargo to 74% FDI from 49% currently. Other legislative reforms include amending the Airports Authority of India Bill to ensure a level playing field for private sector greenfield airports by lifting control of AAI.

Role of PPP in airport infrastructure:

Modernization plan is slow, but positive

While the entry of LCCs is positive in terms of volume, they have imposed a significant strain on India's airport infrastructure. Even major airports cannot handle more than 25-30 movements per hour (as compared with 45-50 movements by international standards).

In a bid to ramp up airport infrastructure to cope with a growing number of low-cost carriers, the Committee on Infrastructure has recommended the modernization of metro airports and development of Greenfield airports, primarily on a PPP basis. In addition, to ensure balanced airport development around the country the Airports Authority of India has drawn up an Action Plan to develop and modernize 35 selected non-metro airports based on a model where-in city-side will be developed through the PPP mode and air-side by AAI. With total investments for the development of airports pegged at Rs400bn during FY07-14, Rs310bn is envisaged from PPPs.

Work in progress: The modernization and expansion plan for the Delhi and Mumbai airports on a PPP basis is already underway[22]. The Mumbai airport has been handed over to a private consortium with a 74% stake (comprising GVK, ACSA, BSD; the remaining 26% continues to be held by the AAI); while the consortium with a stake in the Delhi airport comprises of GMR group, Fraport AG, MAPL and IDF.

In addition to expansion and modernization of the existing airports at Bangalore and Hyderabad airports, Greenfield international airports at Bangalore and Hyderabad[23] have been approved, are currently under construction, and scheduled for completion by April 2008. Both projects are being developed on a Build-Own-Operate-Transfer (BOOT) basis. Other metro airports such as Chennai and Kolkata are also proposed to be taken up for modernization through the PPP route Greenfield airport projects are also being planned in resort destinations and emerging metros such as Goa, Pune, Navi Mumbai, Greater Noida and Kanpur.

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[22] On the analogy of the highways sector, a Model Concession Agreement is also being developed for standardizing and simplifying the PPP transactions for airports

[23] The Bangalore Airport is being developed by a consortium comprising of Siemens, L&T, and Unique Zurich; along with the state government and the AAI. The Hyderabad Airport has been awarded to a consortium led by the GMR Group and Malaysian Airports Holdings Berhad.

Challenge #2: Human Resource Paradox

- **While India's favorable demographics have been touted as being the key factor contributing to growth, what needs to be noted is that unless job creation becomes a priority, it could result in social tension**
- **Another issue is the fact that India's economic boom has not been preceded by a scaling up of talent supply**
- **...here-in lies a major paradox – the need to create more jobs on one hand, and an emerging talent shortage on the other**

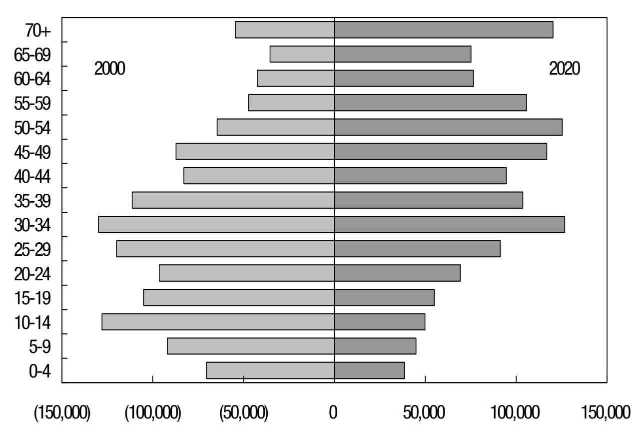
India's demographic dilemma

The positives – Favorable backdrop to the consumption story

India's rising proportion of young workers in the labor force, a growing middle class and a retail lending boom is a favorable backdrop for the consumption story. One of the key drivers of India's economic boom is its demographics. Its critical mass of skilled, English-speaking labor force has helped fuel an off-shoring and service-sector boom; and with 32% of the population below the age of 15, the Indian workforce will continue to burgeon, contributing to growing urbanization and shifting consumption habits.

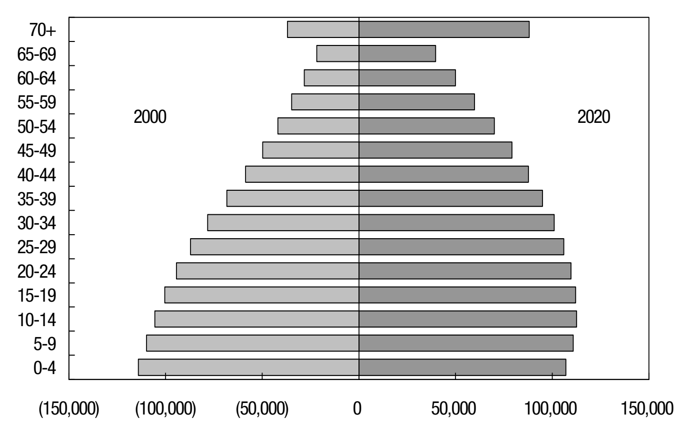
In comparison with China, India remains at an advantage. Reports indicate that China's demographic advantages could diminish over the coming years, as, due to its one-child policy, competitive pressures on China may increase from other low-income economies in labor intensive markets. For India, this is in fact positive, since labor costs in the manufacturing sector in India are only a fraction of those in China.

Figure 12. Evolution of Demographic Structure in China, 2000 and 2020F ('000 Persons in Each Age Group)



Source: Asian Demographics Ltd.

Figure 13. Evolution of Demographic Structure in India, 2000 and 2020F ('000 Persons in Each Age Group)



The negatives – Could result in social tension

Unfortunately, India's demographic boon could also be its bane. While India's favorable demographics have been touted as being the key factor contributing to growth, what needs to be noted that unless job creation becomes a priority, it could result in social tension. Despite the acceleration in growth, creation of job opportunities has not kept pace with the growing workforce. For instance, India's software industry including (BPO) has only added a little over one million jobs during the last ten years.

This situation could worsen in the coming years given India's favorable demographic profile. Official statistics peg the current unemployment rate at 9.2%. The Planning Commission says that even if the country registers 8% GDP growth, unemployment could increase to 10.6% by 2012[24].

To capitalize on India's demographic dividend (i.e., growth rate of labour force is higher than the population growth), creating more jobs is essential. In this regard, given that a major chunk of the emerging labour supply[25] is likely to be unskilled (educated below primary level), there is need to promote sectors in the economy that can employ them. These could possibly include projects such as the Bharat Nirman[26] and the National Urban Renewal Mission[27]

The Rural Employment Guarantee Scheme

In its efforts to provide a safety net and try and solve the country's unemployment problem, the National Rural Employment Guarantee Act, promises 100 days of work to one member of every rural household each year at the minimum wage on public-works projects, and has reserved 33% of the total number of applicants for women. However, two concerns surrounding this scheme is a possible strain on public finances and proper implementation of the project in order to prevent leakages.

Figure 14. Projected Age Distribution of Population (Millions)

Age	2001	2006	2011	2016	2021	2026
Under 15	363	360	351	343	337	328
% to total	*35.3*	*32.3*	*29.3*	*26.9*	*25.0*	*23.2*
15-64	622	702	780	854	916	967
% to total	*60.6*	*63.0*	*65.2*	*67.0*	*68.0*	*68.5*
65+	42	52	66	78	94	116
% to total	*4.1*	*4.7*	*5.5*	*6.1*	*7.0*	*8.2*
Total	**1027**	**1114**	**1197**	**1275**	**1347**	**1411**

Source: Registrar General India

Figure 15. The Unemployment Rate is projected to rise to 10.6% if growth continues at 8%+

	1999	2001	2002	2007E	2012E
Labor Force (Mns)	363.3	371.5	378.2	413.5	451.5
No Employed (Mns)	336.8	340.8	343.4	373.0	403.5
No of Unemployed	26.6	30.7	34.9	40.5	48.0
Unemployment Rate (%)	**7.3**	**8.3**	**9.2**	**9.8**	**10.6**

Source: Plan Documents

[24] We believe the estimates are likely to be on the low side as India suffers from a substantial amount of 'hidden' or 'disguised' unemployment, i.e. there are a large number of people who cannot afford to be unemployed, and so engage in low-productivity work earning income below the minimum wage. This occurs mainly in the unorganized or informal sector, which employs more than 94% of the total workforce

[25] 60% of the incremental rise in India's population up until 2051 is likely to occur in three of the poorest states- Bihar, UP, and MP where literacy levels are very low

[26] This is a four-year time bound plan that aims to achieve goals in six areas of rural infrastructure (irrigation, water supply, housing, roads, telephony, and electrification) that should greatly unlock the potential of rural India

[27] Initiated by the UPA government, NURM involves the re-development of 60 major cities — which includes the 7 mega-cities (Delhi, Mumbai, Bangalore, Chennai, Kolkata, Hyderabad and Ahmedabad), 29 cities with populations of over 1m and 24 cities with populations of less than 1m. The FY06 Budget allocation for NURM was Rs55bn (US$1.25bn) and is an encouraging start, and in our view, indicating the seriousness of this initiative

The Indian talent shortage

In addition to the demographic dilemma, India is facing a major paradox – the need to create more jobs on one hand, and an emerging talent shortage on the other.

Talent – The world's most sought after commodity

A growing number of businesses across the globe are faced with the predicament of 'attracting and retaining' the correct talent. Key reasons for the global talent crunch include: (1) flattening or declining birth rates (as in the US, EU and Japan); (2) trends in migration; and (3) structural changes that call for jobs which cannot be automated. The Bureau of Labor Statistics estimates that the US will have a shortfall of 10mn workers by 2010, and China and the EU will likely face labor shortages as well. A survey by McKinsey finds that although the *potential* supply of talent in low-wage countries is large and growing, only 13% of potential job candidates[28] are suitable for employment given the dispersion of labor force and domestic competition for talent.

NASCOMM projects a shortfall of nearly 0.5mn skilled employees by 2010, 70% of which will be concentrated in the BPO industry

The global talent crunch comes to India

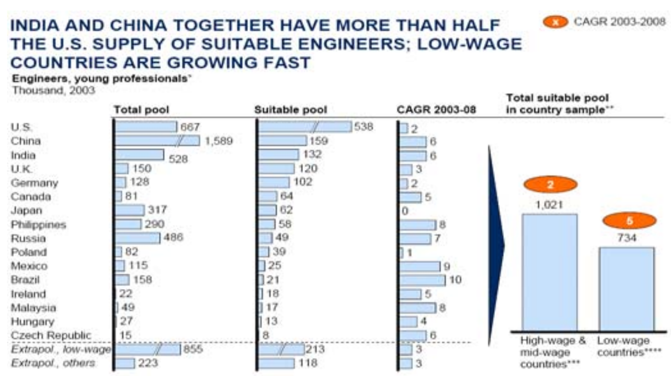
Unfortunately, the human resource crunch that developed nations are facing is likely emerging in India as well. While India's talent pool is often said to be one of the economy's biggest advantages, reports suggest that this pool is not quite as 'deep' as estimated. A report by NASSCOM[29]- McKinsey also states that while close to 3mn students (including 400,000 engineers) graduate from universities in India each year; only about 25% of engineering graduates and 10-15% of general college graduates are considered suitable for direct employment in the offshore IT and BPO industries, respectively. With growth in the off-shoring sector averaging more than 20% p.a. over the last 10 years, wages for IT project managers have increased 23% annually over the last four years – an indication of talent shortage. Even in the engineering segment, while order books of the construction and power equipment majors are filling up, a shortage of suitable engineers remains a concern. Other sectors that are seeing a talent shortage include textiles, aviation, telecom and retail firms.

Figure 16. Talent Pool in India

		Stock as of 2001	Annual Out-turn, FY06 estimates
Engineers	Degrees	1,024,380	222,000
	Diploma	1,531,720	219,000
Graduates	Arts	8,768,000	1,200,000
	Commerce	4,853,000	565,000
	Science	4,025,000	505,000
Post Graduates	Arts	3,917,278	190,000
	Commerce	902,504	70,000
	Science	805,041	50,000

Source: Nasscom, Institute of Applied Manpower Research, Ministry of HR Development.

Figure 17. Suitable Talent Pool - A Comparative Picture



Source: McKinsey

[28] Interviews conducted by McKinsey with 83 human resource managers in MNCs. For full study, please see "The Emerging Global Labor Market: The Supply of Offshore Talent in Services"; McKinsey & Co; June 2005.

[29] **National Association of Software and Service Companies (NASSCOM)** is the premier trade body and the chamber of commerce of the IT software and services industry in India. NASSCOM has projected India's IT-ITES exports to grow from US$23.4bn in FY06 to US$60bn by FY10, a CAGR of 26-27%

Why is India facing a talent shortage?

An uneven education system is among the biggest handicaps

One of the reasons behind the skills shortage is growing demand for labor particularly in the tech and outsourcing sectors as well as in the high growth industries such as retail, civil aviation, finance and engineering. However, a more important reason behind the talent crunch is India's education system, which is creaking under the strain of economic growth. While graduates from the top schools (such as the IITs and IIMs) are suitable for direct employment, the education system is uneven, and a wide variance in the quality of education explains why the average suitability rate for Indian engineers is only 25%. Other handicaps include an uneven quality of primary education and the fact that most of the older generation who worked during the license-raj have not really re-trained. High emigration rates further reduce the supply of suitable graduates from top schools.

Impact of the talent shortage

Wage cost inflation: The shortage in talent has already resulted in wage cost inflation kicking in. Growing demand from multinationals – both in the manufacturing and services sector – has helped bid wages up as these companies search for qualified labor. Although industry-specific data on salary increases in the private sector is not publicly available, reports[30] indicate that a shortage of skilled labor has in fact resulted in wage cost inflation kicking in with salary increases at 22% during 1HFY07, the highest in over three years with the biggest jump coming from service industries, including banks, airlines, IT and telecom companies; where salary bills have risen by 30-50% in just a year.

Why is the wage rise higher in India? According to the Hewitt Global Salary Planning Report, the overall salary increases in India[31] (across ranks) averaged 13.8% over 2005 – the highest among all Asia Pacific countries, followed by Philippines (8.2%) and China (8%). The key reason for higher wage increases in India is the fact that the demand for labour in India is largely coming from the knowledge-led services sector while in China the demand is largely from the manufacturing led blue collar worker.

Problems of retention/attrition: Besides higher wage inflation, the talent shortage has resulted in problems of retention as well as higher attrition. This is more so in the service sector due to the fungibility of skills. For instance, the skill set for customer relations in banks, hotels, hospitals, retail is more or less similar. As a result, while several corporates are in expansion mode, they are finding it difficult to bridge the talent crunch.

Development of new talent centers: A positive offshoot of India's talent crunch is that as wages increase in destinations such as Mumbai, Bangalore and Gurgaon, companies are entering smaller metros such as Hyderabad, Jaipur and Pune where supply of labour exceeds demand. This we believe will be an indirect way of achieving the government's new mantra of "inclusive growth".

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[30] Please see http://www.business-standard.com/common/storypage_c.php?leftnm=10&bKeyFlag=BO&autono=264559&chkFlg= for article. More details on the talent shortage are in the India Macroscope, at https://www.citigroupgeo.com/pdf/SZB40750.pdf

[31] The Hewitt Global Salary Planning Report: 2005 & 2006 compiles salary information in 34 countries for (1) Top executives (2) Middle management (3) Professional and supervisory (4) Clerical and administrative; and (5) Manual. The full report is available at http://www.hewittassociates.com/_MetaBasicCMAssetCache_/Assets/Articles/global_salary_planning.pdf

Reversing the talent crunch

While India's talent crunch has already resulted in wage cost inflation kicking in, we believe that this is only a temporary setback that can be addressed by enhancing the knowledge base and through corporate initiatives

Upgrading the education system

Though India has over 300 universities and 15,600 colleges resulting in 2.5mn graduates a year, which in terms of volume trails just behind the US and China, its quality is far from satisfactory. Though the top schools are comparable to the best in the world, they generate few graduates, while the quality in private colleges is un-even. This we believe is one of the key reasons causing the talent crunch.

Thus a key solution for addressing the talent crunch lies in upgrading the education system, so as to improve not just the *quantity* of graduates but the *quality* as well. This would entail the government developing better certification procedures and insisting on higher standards that would result in a higher turnover of suitable candidates. To this end, de-regulating the higher education system and providing greater autonomy to universities would provide them with greater freedom to develop curricula to meet the needs of industry.

Corporate initiatives

Globally, companies are recognizing the need to garner talent and have developed appropriate recruitment strategies. In India, most IT firms, including Infosys and Tata Consultancy Services have resorted to hiring fresh graduates and training them on the job to bring them up to par with industry standards. In this regard, IT training businesses are also seeing structural changes; with companies such as NIIT profiting from the IT companies' search for cheaper non-engineering talent.

Other sectors such as aviation and retail are also seeking talent through new means- for instance, Pantaloon Retail funds two-year retail-management courses at two colleges in Bombay and is slated to set up its own retail school. Other organizations, such as Crompton Greaves, Johnson and Johnson, and Mahindra & Mahindra have arrangements with universities to hire students as part of sponsored projects during their period of study.

Other innovative ways to hire suitably skilled labor include web-based recruiting drives, whereby students take on-line tests to qualify for jobs; and partnering with educational institutions to enhance skills.

Government policy

Recognizing the looming talent shortage, the government is making an effort to improve the education system, both at the grassroots level as well as secondary and higher education. For instance, the national program for universal elementary education - *Sarva Shiksha Abhiyan* - initiated in 2001; addresses the needs of 209mn children in the age group of 6-14 years. This has resulted in gross enrollment ratios for the age group increasing from 32.1% in FY51 to nearly 85% currently. As far as higher education is concerned, the government has recently cleared FDI in education, which would allow foreign universities to enter India as deemed universities.

Another encouraging development is the setting up of the National Knowledge Commission (NKC) in 2005. The Commission's mandate is to use knowledge as a key tool for economic development, by promoting excellence in education, science and technology, agriculture, industry, and e-governance; and has been given a three-year time frame (until 2 October 2008) to achieve its objectives. The Commission has also attracted the interest of several corporates, particularly in the fields of IT and biotechnology. Given India's vast untapped talent pool, we believe the NKC will help leverage the country's knowledge base, and also build educational facilities and human capital at the grassroots level.

Improving infrastructure in the emerging talent centers

With companies slowly entering smaller metros where supply of labour exceeds demand, the government would need to build/improve the infrastructure. A McKinsey study[32] stated that in order to enable companies avail untapped pockets of labour supply, the government would need to build airports in less well-known cities and help them with marketing. The study said that companies exploring the second-tier cities could consider telecommuting as a way of gaining access to additional employees and/or offer incentives to get graduates to move.

Role of the diaspora

India's 20mn strong diaspora is also playing a part in mitigating the skills shortage. A NASSCOM survey finds that 68% of Indian executives in America were actively looking for opportunities to return home, which is likely to reverse the brain drain that has already taken place, and help augment the talent pool within the country. The government is taking active measures to allow this diaspora to 'participate in the Indian boom'- such as issuing special visas for Persons of Indian Origin, observing an annual Pravasi Bhartiya Divas, and relaxing norms for investment in India.

The quota issue could see more graduates in premier universities

Earlier this year, the government proposed a move to introduce reservations for Other Backward Classes (OBCs)[33] in central universities. While reservations for OBCs were abolished in private colleges in August 2005, re-visiting the Mandal Committee recommendations[34], the government is now proposing to introduce reservations for OBCs in central government – funded universities such as the IITs and IIMs. We believe this move is regressive and will raise reservations to 27% from 22.5% currently.

To examine this issue, an Oversight Committee (also known as the Moily Committee) was established. The committee report estimates that in order to implement 27% reservations, an expansion in seats to the extent of 54% over three years would be required, for which a package totaling Rs172bn would have to be put into operation.

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[32] *'Ensuring India's Offshoring Future'*; by Diana Farrell, Noshir Kaka, and Sascha Sturze ; McKinsey Quarterly; Sept 2005

[33] To explain briefly, castes in India are classified into forward classes (FC), other backward classes (OBCs), scheduled castes (SCs), and scheduled tribes (STs), based on social, historical, and economic criteria. Individuals in each classification might be rich or poor, as class does not necessarily define wealth in today's India. However, the SCs and SCts (collectively known as Dalits), as well as the OBCs, can access affirmative action programs that reserve jobs, scholarships, and other benefits for castes that were historically persecuted or disadvantaged.

[34] OBCs were identified in 1953 under the Kaka Kalelkar Commission; however, they came under the spotlight only in 1978, when the Mandal Commission used 11 criteria to identify 3,743 caste groups as OBCs, comprising 52% of the population at that time. A complete list of OBCs is available at http://www.ncbc.nic.in/

Challenge #3: Need for Inclusive Growth

- **The widening gap between states – due largely to institutional reasons – has resulted in economic growth being concentrated in a few states, resulting in a divergence in per-capita incomes and social sectors**
- **Addressing the growing disparity will be vital since 60% of the incremental rise in India's population until 2051 is likely to occur in three of the poorest states – Bihar, UP, and MP**

Growing state disparities

Among the biggest concerns is the widening gap between states, resulting in growth being concentrated in cluster of states while others are left behind resulting in a divergence in per-capita incomes. It is reported that, India's ***five poorest states****, home to 40% of its population – account for only 25% of its output; while the* ***five richest states****, home to only a quarter of the population, produce 40% of the output*[35].

Capital flows are similarly concentrated, with half of FDI approvals and 55% of total capital stock going to the five richest states while the five poorest states receive only 15%. As a result, new job opportunities are higher in the rich states resulting in them being generally better at reducing poverty. We believe addressing the growing disparity is going to be vital as 60% of the incremental rise in India's population up until 2051 is likely to occur in three of the poorest states- Bihar, UP, and MP.

Figure 18. Growing Divergence Between India's States – Key Indicators (Rs, %)

Poor States			Middle-Income States			Rich States		
	Per capita Income	% of Pop below poverty line		Per capita Income	% of Pop below poverty line		Per capita Income	% of Pop below poverty line
Bihar	6,327	43.0	Andhra Pradesh	25,526	16.0	Tamil Nadu	25,965	21.0
Uttar Pradesh	11,477	31.0	W Bengal	20,896	27.0	Gujarat	26,979	14.0
Orissa	13,026	47.0	Kerala	27,048	13.0	Haryana	32,712	9.0
Madhya Pradesh	14,626	37.0	Karnataka			Maharashtra	29,204	25.0
Rajasthan	15,673	15.0				Punjab	30,701	6.0

Source: RBI; IMF; 2001 Census

What's behind the uneven growth?

The reason behind poor growth in some states compared with others is institutional rather than structural – as due to federal structure, states' revenue-raising powers do not match their expenditure responsibilities[36]. Besides the inherent problem of dependence on central government transfers, which has led to soft budget constraints and a reliance on bailouts, the situation is further worsened by archaic agricultural polices, labor laws and weak infrastructure.

[35] India is a federation of 29 states and 67 Union Territories. To read IMF Report, see Mind the Gap- Is Economic Growth in India Leaving some states behind?' ; Catriona Purfield; IMF Working Paper

[36] States undertake over half of govt spending, but account for less than 40% of total receipts. While the center imposes direct taxes, and it taxes goods at the manufacturing level, states tax goods at the point of sale. Major sources of revenue for the states are thus limited to agricultural taxes, sales taxes, excise duties on liquor and motor vehicle taxes, among others. However, states are responsible for implementing spending on a range of services, including power, health, public order, and rural development

Dependence on central government transfers

Fiscal federalism in India

India's fiscal system has been ranked as one of the most decentralized in the world with the centre and state sharing constitutionally defined revenue and expenditure functions. However, as states' revenue-raising powers do not match their expenditure responsibilities, the gap between states' expenditure and revenue inflows is largely bridged by: (1) inter-governmental transfers (sharing of taxes and giving grants); and (2) borrowings. The inter-governmental transfers are largely determined by the Finance Commission (FC) (extent of 65-70%) and the Planning Commission (30-35%). The FC is the body that determines how taxes are shared between the centre and states and also makes grants to states. The grants recommended by the FC made up the shortfall between the states expenditure and post-tax devolution revenues. The Planning Commission which formulates five-year development plans transfers resources for implementing these plans. Plan expenditure is met by plan assistance, borrowings and current revenue balance of states.

The FC is a body of five experts constituted by the president every five years that makes recommendations for the devolution of tax revenues to states, and suggests measures to raise revenue collections

As seen in the table below, states with greater access to central government transfers tend to have higher deficits as the link between revenue and expenditure is broken. This in turn leads to an increase in the debt burden and expectations of bailouts. Moreover, when funds available from bail-outs are limited, social sector spending takes a hit resulting in lower human development indicators in poorer states.

Figure 19. Indian States - Key Indicators

	Gross Fiscal Deficit (% to GSDP)	Revenue Deficit	Total Debt (Rs Bils.)	GTransfers from Centre (Rs Bils.)	Per Capita NDP* (Rs)	Population (Mils.)	Literacy Rate (%)	% Below Poverty Line
Andhra Pradesh	3.9	0.5	914	149	25,526	75.7	61.0	16.0
Arunachal Pradesh	12.4	-8.0	20	18	17,393	1.1	54.0	34.0
Assam	6.5	0.7	191	96	14,523	26.6	63.0	36.0
Bihar	8.3	0.3	549	160	6,327	82.9	47.0	43.0
Chhattisgarh	3.0	-1.8	150	44	14,863	20.8	65.0	–
Goa	6.1	0.6	59	6	58,677	1.3	82.0	4.0
Gujarat	3.2	0.2	861	57	26,979	50.6	69.0	14.0
Haryana	2.0	0.7	299	22	32,712	21.1	68.0	9.0
Himachal Pradesh	4.2	0.4	184	43	30,139	6.1	77.0	8.0
Jammu and Kashmir	6.9	-7.9	150	102	16,126	10.1	56.0	4.0
Jharkhand	10.2	3.2	231	50	8,025	26.9	54.0	–
Karnataka	2.9	-0.7	539	96	21,696	52.7	67.0	20.0
Kerala	5.3	4.0	577	66	27,048	31.8	91.0	13.0
Madhya Pradesh	4.0	0.0	535	108	14,626	60.4	64.0	37.0
Maharashtra	3.9	0.3	1,546	106	29,204	96.8	77.0	25.0
Manipur	7.4	-11.2	33	22	14,766	2.4	71.0	29.0
Meghalaya	3.8	-2.3	28	21	19,572	2.3	63.0	34.0
Mizoram	10.0	-5.5	31	15	22,207	0.9	89.0	20.0
Nagaland	3.5	-5.6	29	24	20,746	2.0	67.0	33.0
Orissa	2.2	0.8	394	85	13,026	36.7	63.0	47.0
Punjab	3.7	1.7	576	42	30,701	24.3	70.0	6.0
Rajasthan	5.0	0.7	727	101	15,673	56.5	60.0	15.0
Sikkim	16.2	-11.6	16	10	24,115	0.5	69.0	37.0
Tamil Nadu	2.6	0.2	687	96	25,965	62.1	74.0	21.0
Tripura	5.8	-5.9	50	27	18,676	3.2	73.0	34.0
Uttaranchal	10.4	1.8	152	46	16,528	8.5	72.0	–
Uttar Pradesh	5.1	1.2	1,614	269	11,477	166.1	56.0	31.0
West Bengal	4.9	3.8	1,262	110	20,896	80.2	69.0	27.0
NCT Delhi	1.5	-2.6	183	-12	51,664	13.8	82.0	8.0
All States	**3.2**	**0.5**	**12,587**	**1,979**	**23,241**	**1,027.0**	**65.0**	**26.1**

* Latest available. Source: RBI Report on State Finances 2006-07, 2001 Census

Reforms are encouraging

Fiscal measures

Gap-filling grants that are largely unconditional, coupled with a fixed grant-loan ratio of 30:70 has resulted in a steady deterioration of state finances since states increasingly ignored budget constraints and relied instead on frequent bailouts with the deficit in FY02 touching a high of 9.9%..

Following this, the government set up the Twelfth Finance Commission (TFC). TFC recommendations stipulated the passing of the Fiscal Responsibility and Budget Management Act (FRBM)[37], which subjects states to greater market discipline, and rewards them for fiscal consolidation targets.

Education

Government efforts toward improving education have been encouraging, with key initiatives towards both elementary (*Sarva Siksha Abhiyan* – a comprehensive program that aims to provide elementary education for all is a major initiative) as well as higher education. As a result, literacy rates have seen a significant jump, from 18.3% in 1951 to 64.8% in 2001. However, this continues to be below par, with higher rates in several other developing countries such as China (86%) and Sri Lanka (92%). Even more concerning are growing inconsistencies in educational parameters across states. While the southern states have performed well, the larger northern and eastern states continue to be laggards. For instance, the southern states account for just 0.6mn out-of-school children, while the northern states together account for 3.5mn out-of-school children. Reports[38] suggest that disparities are due to low levels of investment and the 'higher per capita' effort required for the larger states. Even within states, government funding has been uneven for urban and rural areas. We believe these discrepancies are a cause for concern and need to be addressed.

Health

Over the past few years, the government has taken major steps to increase health spending. The National Health Policy, 2002, addresses all aspects of healthcare and aims to increase public spending on health. However, health indicators remain weak. The World Health Organization (WHO) reports that India has just seven hospital beds per 10,000 people, compared with 23 in China, and 33 in the US. Due to a burgeoning population, the density of physicians per 1000 people is also low – just 0.6 as compared with nearly three in the US. Similar to other social sector parameters – healthcare systems are better in the southern states, which is reflected in lower infant mortality rates and a higher number of professionals; while the northern states are lagging behind. For instance, Tamil Nadu has 4.3 healthcare professionals per 1000 people, while Bihar and Jharkhand have just 0.5 professionals. While the skewed distribution is a cause for concern, the National Rural Health Mission (NHRM), launched in April 2005 is encouraging since it aims to strengthen primary healthcare for the rural population, with a special focus on 18 states that have particularly weak health indicators.

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[37] The Fiscal Responsibility and the Budget Management Act (FRBM), passed in 2004, mandates annual reductions in the central government's fiscal deficit to 3% of GDP by 2009 and aims to eliminate the revenue deficit completely by then.

[38] Economic Times; 21 December 2006- *Regional Disparities*

Challenge #4: How Real is the Maoist Threat

- **The Naxalite/Maoist movement, which basically refers to groups engaging in a violent struggle on behalf of the landless and tribals[39] against landlords and their agents, has spread across 165 districts in 14 states, with fatalities involving Naxalites rising during the last two years**
- **The rise in violent incidents led PM Singh to rightly remark that Naxalism is the *'single biggest internal security challenge'* for India**
- **The Maoist insurgency, if not adequately restrained, could be a threat to the country's law and order situation, resulting in deteriorating governance and undermining investment activity**
- **However, given the government's resolve to address the Naxalite issue, we believe the odds of it going out of hand are limited**

Naxalites in India

Naxalites or Naxals is a term that is used to define Maoist groups waging a violent struggle or what they call a class struggle on behalf of landless labourers and tribal people against landlords and their agents which include the government, forest contractors etc.

Inception of the Naxalite Movement

The Naxalbari uprising

The Naxalite Movement is a revolutionary communist opposition that took shape in early 1967, inspired by the Chinese Communist Party and Mao Zedong thought. It derived its name from an uprising in Naxalbari – a village in the Darjeeling district in West Bengal. The Naxalbari Uprising[40] was led by Charu Mazumdar and Kanu Sanyal; two leaders of the Communist Party of India (Marxist); or the CPI (M) who broke away from the parent CPI (M) and along with others formed the **CPI (Marxist-Leninist)**. This became the principal organization of the movement, advocating guerilla warfare for the purpose of *'class annihilation with the aim of establishing a communist regime'*.

Formation of the MCC and the PWG

Following Mazumdar's death in 1972, the movement was fragmented into several small groups and lost its impetus. Two of these groups- the Maoist Communist Centre **(MCC)** in Bihar, and the People's War Group **(PWG)** in Andhra Pradesh, assumed importance. Both thrived in underdeveloped areas where there existed class segregation between rich landowners and landless tribals; and organized the poor on demands for higher wages, and redistribution of land; targeting landlords, politicians, police officers, and forest contractors. Their strategy entailed '*building up bases in rural and remote areas and transforming them first into guerrilla zones and then as liberated zones'*.

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[39] Tribals: Indigenous ethnic groups in India

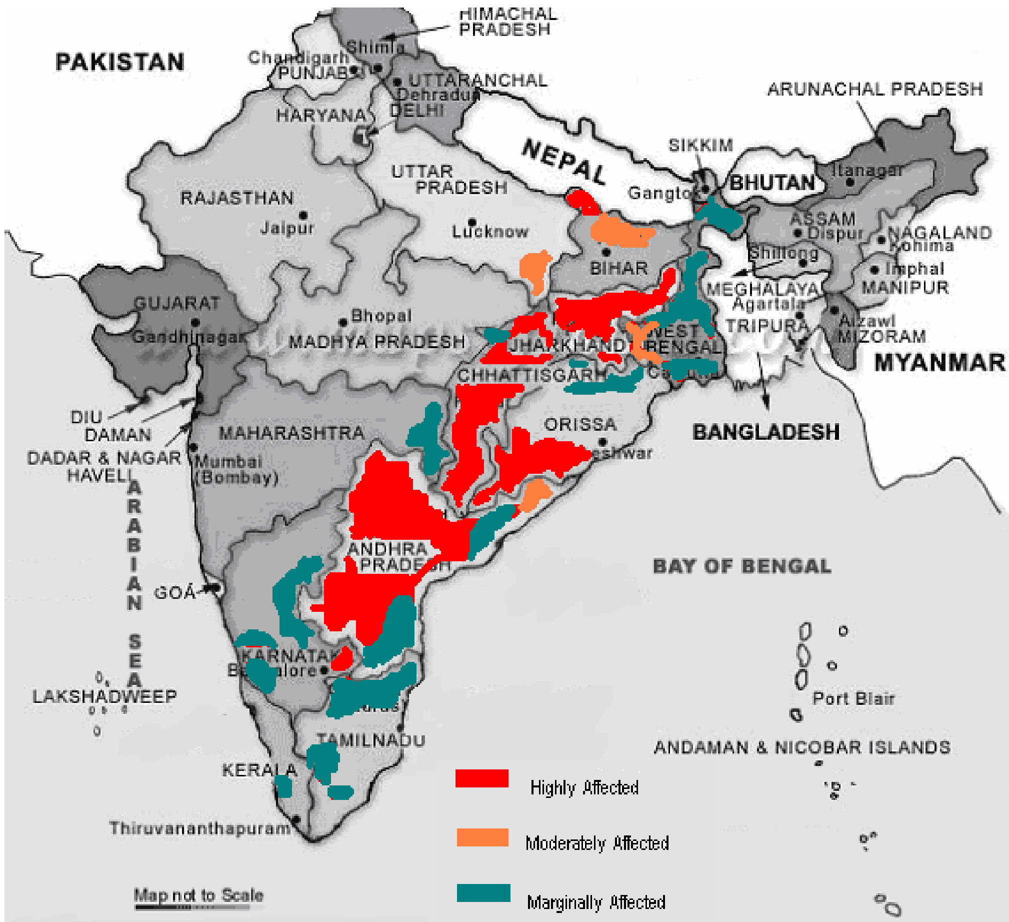
[40] The Uprising began the 'land-to-tiller' slogan and occurred when landless peasants backed by the CPI(Marxist) led an armed protest against landlords

The Naxalite Movement today

Consolidation of the MCC and PWG: The CPI (Maoist)

In **September 2004**, the MCC and PWG merged to form the **CPI (Maoist)**[41], which is the largest Naxalite group in India. Together with other smaller organizations, the Naxalites have succeeded in establishing rule over a large geographical stretch known as the '***red corridor***', across central India from Nepal in the north to Karnataka in the south, and including Andhra Pradesh, Chattisgarh, W Bengal, and parts of Orissa. The Naxalites are most well-entrenched in the Dandakaranya region in the state of Chattisgarh, where they have established a government of their own- the *Janatana Sarkar*. The Maoists continue to perpetrate grave acts of violence, with the number of fatalities in Naxalite-related incidents rising to 628 in the 9 months to October 2006.

Figure 20. The Red Corridor: Spread of the Maoist Movement in India



Source: Institute for Conflict Management; The Economist

[41] Reports suggest that there exist fraternal and logistic links with the Communist Party of Nepal (Maoists) and the CPI (Maoists).

Can the Maoist Movement impact investment activity?

The Naxal problem extends to 165 districts in 14 states covering close to 40% of the country's geographical area and affecting 35% of the population. Given that the Naxalite movement has spread to the mineral-rich states of Orissa, Chhattisgarh, Jharkhand, and slowly even around the districts in Bangalore, its economic impact could be far-reaching.

Orissa, which has abundant reserves of iron ore (33% of the country's total reserves), 51% of bauxite, 25% of coal, and alumina, is the destination for a large number of the country's steel and aluminum plants (including Tata Steel, NALCO). With major projects[42] totaling over Rs2,509bn, and several major companies including Posco and Vedanta proposing to set up plants in the state, naxalite disturbances remain a major threat.

In Chhattisgarh, home to India's richest reserves of iron ore, coal, limestone and bauxite - where investments for steel and power total are estimated at Rs130bn, the Naxalite campaign against industrialization remains a looming risk. Reports suggest that the Maoists have also issued a direct threat to multinational corporations, and view hi-tech industries as a 'symptom of an oppressive capitalist system'.

Government measures

While a number of rival groups- such as the Ranvir Sena and the Salwa Judum[43] have sprung up to tackle the Naxalite threat, these are equally militant in their approach. Government measures have primarily aimed at stepping up security related expenditure (in FY06, Rs200mn was released to nine Naxalite-impacted states) and strengthening the police force. As a grassroots initiative, the government also aims to improve the physical and social infrastructure in backward areas under the Backward Districts Initiative.

While the threat of the Naxalite movement in India cannot be dismissed, we believe the government's recognition of the gravity of the situation, coupled with adequate measures to address the issue should restrain its spread. However, the movement could impose a threat to governance and could hinder investment flows (particularly FDI flows) if not restricted in time.

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[42] Based on report in Economic Times, dated August 5, 2006 –"Hype or Opportunity". Figure includes projects by Reliance, Posco, Arcelor-Mittal, and Tata Steel, amongst others.

[43] It is reported that the Chattisgarh government has raised the Salwa Judam which is supported by both the Congress and the BJP

Statistical Snapshot

Figure 21 India — Macroeconomic Summary, FY98-08E (Percent unless otherwise indicated)

Year-end 31 March	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07E	FY08E
National income indicators											
Nominal GDP (Rs bn)	15,224	17,409	19,588	21,077	22,813	24,497	27,602	31,214	35,315	40,082	45,293
Nominal GDP (US$ bn)	409	413	451	461	475	507	601	694	797	885	1048
Per Capita GDP (US$)	422	418	453	458	467	494	583	672	761	832	972
Real GDP growth (%)	4.8	6.5	6.0	4.4	5.8	3.8	8.5	7.5	8.4	8.3	8.0
Agriculture growth (%)	-1.9	7.1	0.5	0.0	6.2	-6.9	10.0	0.7	3.9	3.0	3.0
Industry growth (%)	5.8	3.4	56.3	6.3	2.7	7.0	7.6	8.6	8.7	9.2	9.2
Services growth (%)	9.0	8.1	75.4	5.6	7.1	7.3	8.2	9.9	10.0	9.8	9.2
Real indicators (% Y/Y)											
Cement dispatches	10.6	6.4	14.1	0.1	8.6	11.1	6.5	9.3	10.3	10.0	10.0
Commercial vehicle sales	-33.2	-11.2	22.0	-11.9	-4.5	27.9	38.1	24.0	13.0	24.0	9.0
Car sales	1.1	-0.9	54.9	-6.9	4.5	7.6	32.8	18.7	7.0	15.0	12.0
Two-wheelers	-3.7	5.0	-5.4	-28.1	-3.1	-13.1	10.6	16.8	15.0	14.0	13.0
Diesel consumption	3.5	3.7	5.5	2.0	-3.5	3.0	4.5	5.5	3.0	5.0	5.0
Tele-density	1.9	2.2	2.8	3.5	4.3	5.2	7.4	9.4	12.7	16.2	17.2
Monetary indicators											
Money supply	18.0	19.4	15.0	16.4	14.1	14.7	16.7	12.3	21.2	18.0	18.0
Int rate PLR - year end	13.0	12.0	11.3	11.5	11.3	10.8	10.3	10.0	10.3	10.5	10.0
Inflation - WPI	4.4	5.9	3.3	7.2	3.5	3.4	5.4	6.5	4.5	5.3	4.5
CPI	6.8	13.1	3.4	3.8	4.3	4.0	4.0	4.5	4.0	6.0	5.0
Bank credit growth	16.4	13.8	18.2	17.3	15.3	23.7	15.3	30.9	30.0	23.0	20.0
Deposit growth	18.4	19.3	13.9	18.4	14.6	16.1	17.5	13.0	17.0	15.0	15.0
Fiscal Indicators											
Centre's fiscal deficit	4.9	5.1	5.3	5.6	6.2	5.9	4.5	4.0	4.1	3.8	3.5
State fiscal deficit	2.9	4.3	4.7	4.2	4.2	4.2	4.5	3.5	3.2	2.7	2.5
Combined deficit (Centre+State)	7.2	8.9	9.4	9.5	9.9	9.6	8.5	7.5	7.5	6.4	7.0
Combined domestic liabilities	62.0	63.0	66.4	70.8	76.4	81.0	81.6	82.5	79.5	77.5	75.7
Combined o/s guarantees	9.7	9.9	11.0	12.1	11.5	11.2	11.0	9.9			
External Sector											
Exports (US$bn)	35.7	34.3	37.5	45.5	44.7	53.8	66.3	85.2	104.8	125.7	148.4
% YoY	4.5	-3.9	9.5	21.1	-1.6	20.3	23.3	28.5	23.0	20.0	18.0
Imports (US$bn)	51.2	47.5	55.4	57.9	56.3	64.5	80.0	118.9	156.3	187.6	213.9
%YoY	4.6	-7.1	16.5	4.6	-2.8	14.5	24.1	48.6	31.5	20.0	14.0
Trade deficit (US$bn)	-15.5	-13.2	-17.8	-12.5	-11.6	-10.7	-13.7	-33.7	-51.6	-61.9	-65.5
Invisibles (US$bn)	10.0	9.2	13.7	9.8	15.0	17.0	27.8	31.2	40.9	45.3	49.3
Current Account Deficit (US$bn)	-5.5	-4.0	-4.1	-2.7	3.4	6.3	14.1	-2.5	-10.6	-16.6	-16.2
% to GDP	-1.3	-1.0	-0.9	-0.6	0.7	1.3	2.3	-0.4	-1.3	-1.9	-1.5
Forex reserves (excl gold) (US$bn)	26.0	29.5	35.1	39.6	51.0	71.9	106.1	135.1	145.1	155.1	162.5
Months of imports	6.1	7.5	7.6	8.2	10.9	13.4	15.9	13.6	11.1	9.9	9.1
Exchange rate											
Rs/US$ - annual avg	37.2	42.2	43.4	45.7	48.0	48.3	45.9	45.0	44.3	45.3	43.2
% depreciation	4.8	13.4	2.8	5.3	5.0	0.6	-5.0	-2.0	-1.6	2.3	-4.6
Rs/US$ - year end	39.52	42.4	43.6	46.5	48.9	47.5	43.6	43.8	44.6	44.5	43.2
% depreciation	10.4	7.3	2.8	6.7	5.2	-2.9	-8.2	0.3	2.0	-0.3	-2.9

Source: CSO, RBI, Ministry of Finance, Citigroup estimates

Global Economic Forecasts

	GDP Growth			CPI Inflation			Current Balance (% of GDP)			Fiscal Balance (% of GDP)		
	2006F	2007F	2008F	2006F	2007F	2008F	2006F	2007F	2008F	2006F	2007F	2008F
Industrial Countries	**3.0%**	**2.5%**	**2.9%**	**2.3%**	**1.7%**	**1.9%**	**-2.0%**	**-2.0%**	**-2.1%**	**-2.1%**	**-1.7%**	**-1.5%**
United States	3.3%	2.8%	3.4%	3.2%	1.8%	2.2%	-6.5%	-6.2%	-6.4%	-2.6%	-1.9%	-1.9%
Japan	2.9	2.3	2.5	0.2	0.3	0.5	3.5	3.4	3.5	-4.4	-3.9	-3.2
Euro Area	2.6	2.0	2.4	2.2	1.9	1.9	-0.3	-0.2	-0.2	-2.0	-1.6	-1.5
Asia	**7.9%**	**7.6%**	**8.1%**	**3.4%**	**3.2%**	**3.9%**	**4.6%**	**4.3%**	**3.6%**	**-1.5%**	**-1.7%**	**-1.7%**
China	10.3	9.8	10.7	2.0	3.0	4.5	6.8	6.5	5.3	-1.0	-1.8	-2.0
Hong Kong	6.7	6.0	5.8	2.1	2.5	3.2	9.8	9.2	6.5	2.4	2.0	1.5
India(Inflation is WPI)	**8.3**	**8.0**	**8.0**	**5.3**	**4.4**	**4.0**	**-1.8**	**-1.5**	**-0.8**	**-7.0**	**-6.7**	**-6.4**
Indonesia	5.4	6.0	6.5	13.1	5.9	6.4	1.7	0.6	0.2	-1.1	-0.8	-0.5
Korea	5.1	4.7	5.0	2.3	2.5	2.7	0.4	0.0	0.3	0.8	2.0	2.0
Malaysia	5.5	5.5	5.5	3.7	2.5	2.5	14.2	12.5	10.4	-3.6	-3.5	-3.2
Philippines	5.4	5.7	5.8	6.3	4.2	3.8	3.7	3.7	2.7	-1.3	-1.0	-0.3
Singapore	8.1	5.6	5.5	1.0	1.5	1.7	26.1	24.5	22.5	8.0	7.0	6.0
Taiwan	4.1	4.3	4.8	0.7	1.5	1.7	6.0	5.2	5.0	-2.5	-2.5	-2.3
Thailand	4.3	4.3	4.8	4.5	2.0	1.9	1.5	2.3	1.9	-0.3	-2.0	-1.0
Vietnam	8.0	8.0	8.0	7.5	6.0	6.0	-2.7	-2.6	-3.0	-2.5	-2.5	-2.7
Latin America	**4.8%**	**4.4%**	**4.0%**	**5.1%**	**4.8%**	**5.4%**	**1.9%**	**0.8%**	**-0.1%**	**-0.7%**	**-0.9%**	**-0.8%**
Argentina	8.3	6.8	3.3	10.9	9.6	11.6	3.2	2.7	1.5	1.7	1.3	0.9
Brazil	2.8	3.5	3.8	4.2	3.3	3.9	1.6	0.6	0.0	-3.7	-2.8	-2.0
Chile	4.6	5.4	5.2	3.4	2.7	3.0	3.9	4.2	3.0	8.5	4.5	2.5
Colombia	5.5	5.0	4.0	4.3	4.3	4.0	-1.8	-2.0	-2.6	-1.2	-1.7	-2.2
Ecuador	5.0	5.0	5.5	3.4	3.7	3.5	0.4	1.0	1.0	1.7	0.9	0.0
Mexico	4.5	3.4	3.8	3.6	3.5	3.2	-0.4	-1.2	-1.6	0.3	0.0	0.0
Panama	7.0	6.2	7.0	2.4	1.4	1.3	-3.0	-4.0	-8.0	-1.8	-1.7	-1.4
Peru	7.3	6.2	5.7	2.0	2.6	3.5	1.4	1.2	1.0	1.5	1.9	1.0
Uruguay	7.4	5.0	4.5	6.4	6.0	5.3	-1.0	-1.2	-1.0	-0.6	-0.6	-0.5
Venezuela	10.2	7.8	5.0	13.5	17.1	21.5	16.7	9.1	3.8	-0.2	-2.2	-2.5
Europe	**5.9%**	**5.5%**	**5.2%**	**7.4%**	**6.7%**	**5.9%**	**1.3%**	**-0.2%**	**-0.6%**	**2.1%**	**0.7%**	**0.1%**
Bulgaria	6.0	6.2	5.5	7.0	6.3	3.0	-12.5	-12.0	-11.5	3.0	2.0	2.0
Czech Republic	5.5	4.5	4.2	2.6	2.9	2.8	-3.0	-0.6	-1.0	-3.4	-3.5	-3.5
Hungary	3.6	3.1	3.3	3.9	5.8	0.7	-7.8	-7.4	-7.0	-9.0	-7.0	-5.0
Poland	5.0	4.3	4.0	1.1	2.4	2.5	-2.1	-2.7	-3.1	-2.1	-3.8	-3.8
Romania	7.6	7.0	5.5	6.7	8.3	3.2	-11.8	-13.3	-10.5	-2.0	-2.5	-2.5
Russia	6.6	6.5	6.5	9.8	7.8	7.7	10.5	6.0	4.5	7.7	5.5	4.3
Slovak Rep.	9.0	8.0	5.4	4.4	2.5	2.7	-7.0	-3.0	-2.5	-2.9	-3.0	-3.2
Turkey	5.0	4.0	4.0	9.8	8.3	7.7	-8.7	-7.5	-6.5	-0.5	-3.2	-3.5
Ukraine	6.0	3.5	3.0	8.6	10.0	7.5	-0.5	-2.0	-1.5	-3.0	-2.6	-3.0
Africa/Mideast	**5.0%**	**4.6%**	**4.8%**	**5.2%**	**5.1%**	**4.5%**	**-2.6%**	**-1.9%**	**-1.8%**	**-2.8%**	**-2.8%**	**-2.1%**
Egypt	5.6	5.8	6.0	7.5	6.0	5.5	1.2	0.4	-0.5	-8.1	-7.1	-6.2
Israel	4.6	4.5	3.9	2.1	0.6	1.9	3.3	3.5	3.8	-1.4	-2.5	-2.0
Pakistan	6.0	5.0	5.8	7.6	7.0	6.5	-5.4	-4.0	-3.0	-5.0	-4.3	-4.1
South Africa	4.5	4.0	4.2	4.8	6.0	4.4	-5.9	-4.5	-4.7	-0.3	-0.4	0.5
Total	**3.9%**	**3.4%**	**3.8%**	**2.9%**	**2.4%**	**2.6%**	**-0.7%**	**-0.8%**	**-1.1%**	**-1.7%**	**-1.5%**	**-1.4%**

Note: GDP and CPI are expressed as year-to-year percent change. Source: Citigroup estimates.

Notes

Notes

Disclosure Appendix

ANALYST CERTIFICATION

This research report contains commentary and analysis by Rohini Malkani and Anushka Shah. Each of these individual analysts/strategists/economists hereby certifies that, with respect to the issuers about which they have provided commentary or analysis all of the views expressed in this research report accurately reflect the analyst's/strategists/economists personal views about the subject issuer(s) and its (their) securities. Each of these individuals also certifies that no part of their compensation was, is, or will be directly or indirectly related to the specific recommendation(s) or view(s) in this report.

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