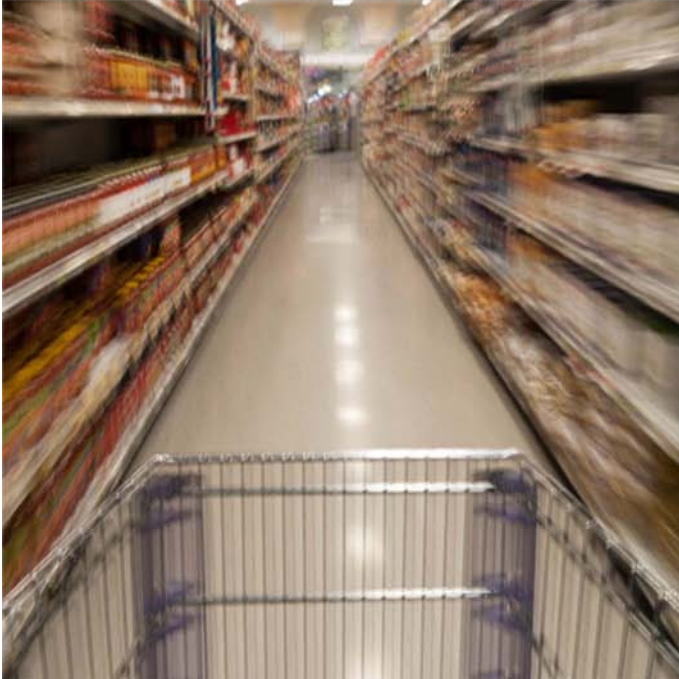


Balancing Priorities

A collection of essays on India

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Overview

An accumulation of fragilities

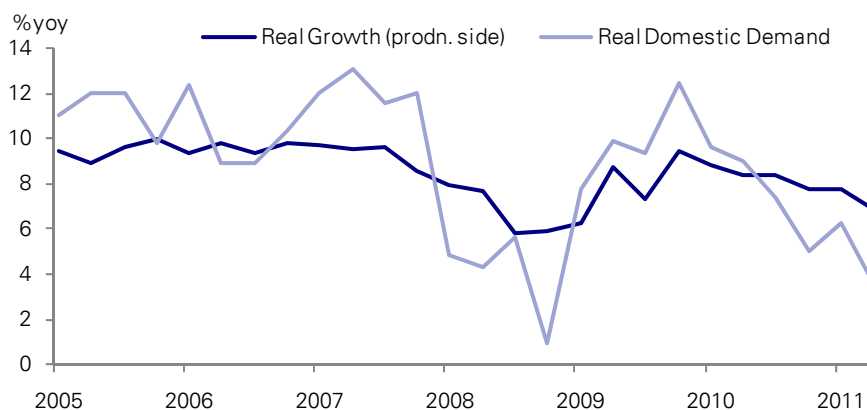
The Indian economy today has more depth and breadth than a decade ago but it is also more vulnerable to global cycles and high expectations from investors and its own population. The key factors that have drawn investor interest to India over the years—favorable demographics, large market size complemented by an aspirational middle class, deep entrepreneurial base, and democratic vibrancy—remain, but there has been a clear souring of sentiments in recent years. Several years of persistently high inflation, an anemic investment cycle, repeated governance scandals, and little movement in market friendly reforms have added a great deal of friction to India's growth engine. The situation has been further compounded due to substantial headwinds from the debt crisis in industrialized economies. Consequently, India's perennial "Achilles' Heel", a pernicious combination of trade and fiscal deficits, has come back under scrutiny.

In this collection of essays, we delve into the drivers of this swing in economic performance and market sentiments. We argue that India can no longer take high growth rates for granted despite its favorable demographics, large consumer class, and dynamic entrepreneurs. Low hanging fruits of reforms from past decades have largely been harvested, and a second reform push is needed to head back to the desired high and stable growth trajectory.

Three key constraints to growth

There are clear signs of some of the steam going out of India's economic engine that generated close to double digit growth for better part of the last decade. We see three major developments of concern:

A steady decline in growth momentum



Source: CEIC, Deutsche Bank

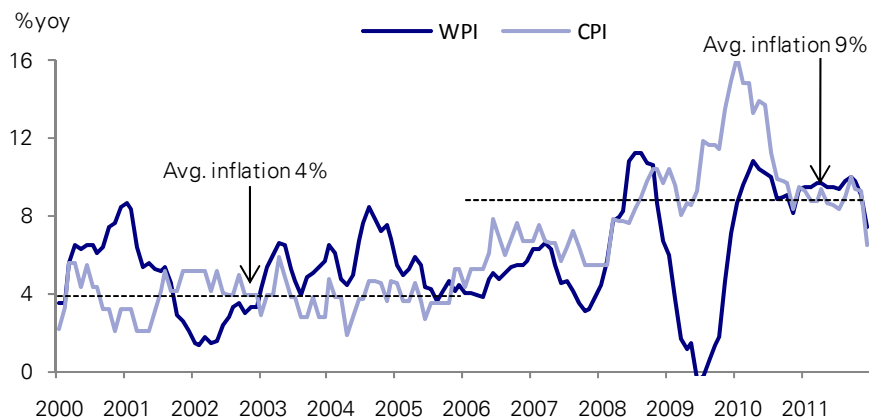
- Macro headwinds.** WPI inflation stayed above 8% through 2010 and 2011, while CPI inflation followed the same behavior from July 2008 to November 2011. Driven by an across-the-board rise of food, fuel, and core prices, the high and sticky inflation situation compelled the RBI to raise the policy interest rate by a cumulative 375 bps during the course of 2010 and 2011. In addition to inflation, global uncertainties have dampened investment sentiments and made financial markets more volatile and less conducive to fund-raising. Another macro drag has been the fiscal position, which has shown no sign of improving in recent years. Steadily rising current account deficit, reflecting high cost of importing fuel and other commodities, has become an additional complicating factor.

- Structural headwinds.** Despite ambitious plans, the authorities have not been able to improve infrastructure bottlenecks sufficiently, thus slowing the pace and raising the cost of transporting goods and supplies, and keeping the cost of doing business high. Regulations and reforms that could improve the business environment have been patchy in implementation. Shortage of power has become a major impediment to growth. The governance situation remains poor, adding a range of costs to day-to-day functioning of the average person or company. While growth has slowed, labor market tightness has persisted due to widening skills mismatch and income policies that have pushed up reservation wages in both rural and urban areas.
- Pace of policy execution.** Both the macro and structural constraints can be largely ameliorated through landmark reform initiatives, but in recent years that has not been the case. Investors have been keenly waiting progress toward a transparent land acquisition law, a more efficient tax regime, liberalization in key sectors such as banking, insurance, and retail, but these reforms have been either delayed or only partially implemented. Populist inclinations have also diluted liberalization initiatives. Perversely, rising popular discontent and ensuing political tension with corruption issues have caused further policy paralysis, as decision-making at the executive and legislative levels has slowed down perceptively.

Inflation

India's clear and present danger is inflation, which has been on a trend rise over the past five years or so. Stubbornly high inflation is a reflection of a number of dis-functionalities in the economy, which are also some of the key impediments to India's stability and prosperity. On the **demand** side, high growth rates of GDP (200bps higher in the past decade than any other period in India's history) and real per capita income (rising by 8% annually since 2001) have kept the economy operating at or above its potential growth rate. Case in point is the dairy industry; despite production rising by double digit rates in recent years, milk prices have risen by an annual average of 13% since 2006 as demand has been outpacing supply. On the back of strong growth, wages have risen sharply in the past decade, adding sizeable purchasing power to millions of Indian households. As household income has risen, consumption has evolved from basic food items to more protein-rich items, but the ensuing demand surge has not been met with an adequate supply response.

CPI and WPI inflation trend

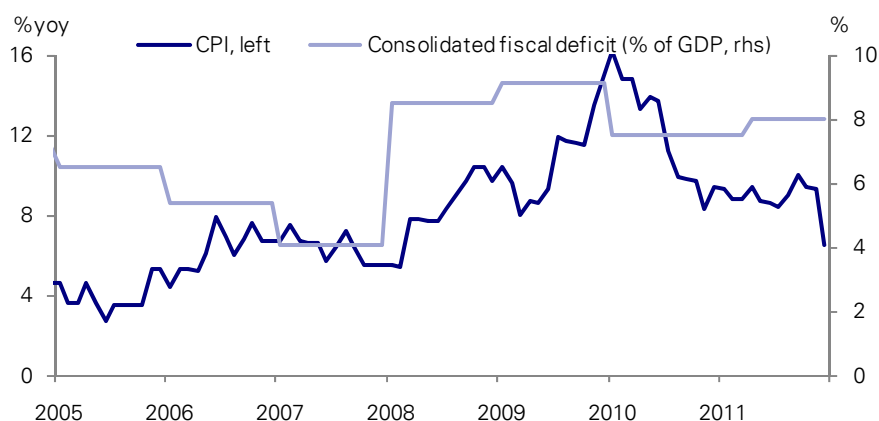


Source: CEIC, Deutsche Bank

On the **supply** side, key impediments lie in the agriculture sector, where production growth has been less than 1% a year in the past decade, thus explaining some of the upward trend in prices. There are also substantial distributional inefficiencies and infrastructure problems that cause prices of goods to jump in a disorderly manner in the event of weather or transportation related shocks.

Fiscal and monetary policies have impacted the inflation dynamic and expectations, and need to be corrected as part of a comprehensive effort to curb inflation. In terms of **fiscal** policy, the government has not succeeded in reducing the fiscal deficit since the onset of the 2008 global financial crisis. While the fiscal stimulus put in place in 2008 helped the economy, spending has become stickier since then, making normalization of fiscal policy difficult. Several social programs have been introduced in recent years, particularly the rural employment guarantee program (that gives 100 days of minimum wage to the rural unemployed), providing substantial impulse to rural demand while making the fiscal position worse. The government's large subsidy programs for food, fuel, and fertilizer (amounting to about 20% of total spending, nearly 3% of GDP) also add to the adverse fiscal position and inflated demand. Monetary policy has had trouble gaining traction as the impact of interest rate increases has been neutralized by large scale government borrowing. Debt/GDP has declined to 65% (from a peak of 81% in 2004) due to the recent path of high growth-and low real interest rate, but could head up again if growth eased toward 6%.

Inflation and fiscal deficit



Source: CEIC, Deutsche Bank. Note: Consolidated fiscal deficit includes state and central government finances, as well as bonds issued as payments to oil and fertilizer companies on account of the losses incurred from the provision of subsidies

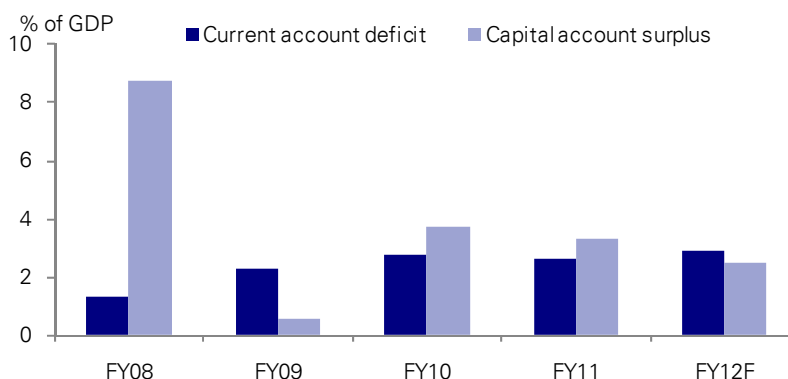
With respect to **monetary policy**, the Reserve Bank of India's attempts to rein in inflation have not been successful in recent years. The central bank lacks a clear inflation targeting objective, although it prefers to keep inflation low and stable. While the RBI's objectives are multiple (including stable inflation, exchange rate and financial sector stability, and promotion of growth), it has made efforts to fight inflation in this cycle, steadily raising the policy rate since early 2010. The central bank however remains uncertain about the efficacy of the policy transmission mechanism, using a series of instruments (reserve requirement, liquidity ratio, reverse repo and repo rates) with varying magnitude and frequency, while still struggling to stabilize the liquidity or inflation situation.

The RBI has had difficulties in getting the inflation forecast right, which has arguably caused policy errors. In recent years the central bank's forecasts have tended to be in the 5-6% range, reflecting more a desired rate than a forecast. The fact that the central bank has routinely gotten the inflation forecast wrong by 100bps or more even with just a two month lag underscores the problems faced by the decision makers at the policy board. We believe that a higher (i.e. more accurate) inflation forecast would have pushed the RBI into raising rates more aggressively in 2010.

External risks

India's impressive track record with respect to growth and market potential has brought in foreign capital in recent years, crucial to the financing of its current account deficit. This is an important issue, as India's domestic savings rate remains in the 32-33% of GDP range, where as investment demand has been around 35% of GDP. As a result a current account of deficit of 2-3% of GDP has become the norm. It was generally regarded that given the economy's high potential rate of growth, there would be no shortage of foreign flows, and therefore financing of the current account would continue unimpeded, allowing even for reserve accumulation and some appreciation in the exchange rate.

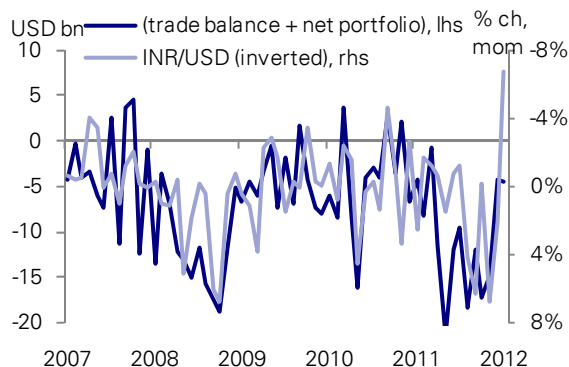
Current and capital accounts



Source: CEIC, Deutsche Bank

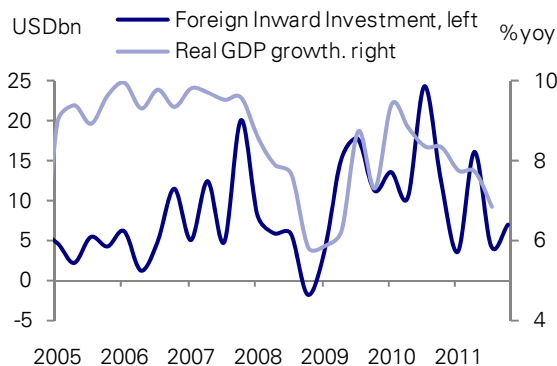
This thesis is, however, being challenged. Global risk sentiment has been poor since 2008, with little respite in sight. India's current account deficit has steadily worsened, primarily owing to high cost of commodity imports, and financing difficulties that were experienced in 2008/09 and again this year. The rupee has come under pressure lately as the oil import bill has mounted and portfolio flows have weakened. Clearly, the exchange rate could be vulnerable as the balance of payments is likely to remain under pressure until commodity prices correct. Persistent inflation is yet another complicating factor, reducing the competitiveness of the currency through real exchange rate appreciation. The rupee therefore has cyclical and structural headwinds. Capital flow volatility is not only becoming a source of stress to the external account, it is impacting growth as well. When flows (FDI and portfolio) dry up, they impact investment, which then has adverse implications for growth. Indeed, in recent years India's growth trajectory has begun to move hand-in-hand with capital flows.

Rupee and external flows



Source: CEIC, Deutsche Bank

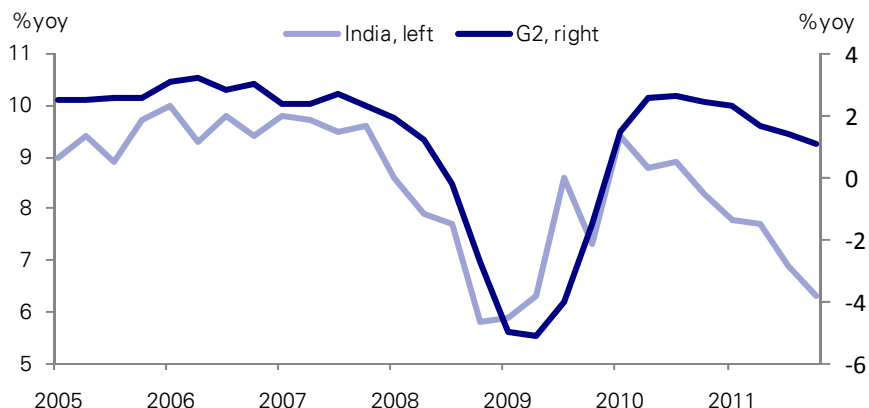
Growth and investment flows



Source: CEIC, Deutsche Bank

One of the appealing characteristics of India for investors has been its resilient internal growth dynamic, driven by domestic demand in a somewhat insulated economy. Our analysis shows that before 2006, the relationship between India's growth and that of the US and Euro Area (G2) was not statistically significant; i.e. the growth dynamic appeared to be impervious of the G2 cycle. But as the economy has opened up, it is no longer shielded from global cyclical movements. The chart below shows that India's growth trajectory is not just mirroring capital flows, but G2 growth as well. The coefficient estimate on a growth regression with G2 growth on the right hand side is statistically significant in the post 2005 period, and the explanatory power of the regression equation is considerable (see below).

Rising correlation with G2 growth



Source: CEIC, Deutsche Bank. Note: A quarterly data regression of India's real growth against ppp-weighted G2 growth, for the sample period 2006Q1 to 2011Q4, obtains a beta coefficient of 0.4, estimated with a statistical significance at 1% level and an adjusted R-squared of 0.61.

Exports have gone from 14% to 25% of GDP in the past decade, while rising investment needs have made the economy more reliant on capital flows. Also, external shocks have become more pronounced. In 2008, for instance, the global credit crunch impacted Indian corporates with external credit lines, while presently risk aversion in Europe is affecting emerging markets in general and India, with its assorted difficulties, in particular. India's insularity is long over.

What is still working?

Given heightened global risks, coupled with the difficulties associated with high inflation and twin deficits, the Indian economy may not appear particularly attractive as an investment destination, but strong pockets of activity are not rare. Thanks to the government's subsidy and employment guarantee programs, rural demand is robust. In the urban areas, labor market skills mismatches are causing businesses to be compelled to accommodate high wage increases to the limited pool of available skilled workers, which is supporting consumption. Businesses involved in retail trade, education, transportation, tourism, and healthcare continue to report robust demand.

The agriculture sector is likely to see a good harvest in 2011/12 due to favorable rainfalls. The sector is also receiving support through a wide range of subsidies to inputs, although inefficient disbursement of subsidies has been a source of waste. Going forward, a program to implement cash transfers as opposed to blanket subsidies would likely have a favorable impact on the sector.

Indian businesses, faced with numerous headwinds, are still generating strong volumes growth, although rising costs have cut into earnings this year. The exports industry, in particular, has been a new source of strength, with India improving its market share in Asia, Middle-East, Africa, and Latin America. Considering that future marginal global demand would come from these regions, there are grounds for optimism for the exports sector.

Indian companies are also moving up the value ladder, with sharp increases in exports of manufactured goods and high value-added, premium textile, jewelry, and leather products. Exports may face some headwinds in 2012 as the global economy slows, but the sector looks likely to broaden further in the coming years, and is a welcome addition to India's growth drivers.

A few upsides

The ongoing macro challenges have not turned away large scale investment entirely. Private investment sentiment in infrastructure may have waned due to red tape, governance, and overbearing regulations, but there is still no shortage of large consumer companies investing in India. Foreign direct investment amounted to USD22.5bn during Jan-Sept 2011, the second best outturn in history. Investment in telecom, banking, auto, pharmaceuticals, and mining continues despite numerous headwinds. Domestic resource mobilization also continues apace, as reflected in private sector credit growth hovering around 20% in recent years. Corporate India's zeal to extract value from India's vast consumer space should not be under-estimated.

There has been some policy traction recently. The government increased the quota for local currency debt investment (both government paper and infrastructure bonds) by a total of USD10bn in November, and has followed through with some liberalization measures in the aviation and retail sectors. The Parliament has several crucial bills pending, including related to land acquisition and insurance sector reform. Passage of these laws could add greater clarity to the investment environment. Implementation of the Direct Tax Code and the much awaited Goods and Services Tax (GST) would enhance operational efficiency of businesses considerably. While both measures would take time to see full and effective implementation, they have the potential to improve tax collection and transparency considerably. Experience from other countries suggests that a successful implementation of the GST could 1% to potential GDP growth.

There will also likely be more policy support for the rural sector and social safety net measures. The government of India appears keen to improve the welfare of the poor through mandated provision for food, education, and employment. These are worthy objectives, as there are hundreds of millions of Indians living below the poverty level, and the programs have clearly added to the demand resiliency of the rural sector. But the measures are costly, particularly given the country's high debt and deficit position.

Conclusion

India can no longer take high growth rates for granted despite its favorable demographics, large consumer class, and dynamic entrepreneurs. Low hanging fruits of reforms from past decades have largely been harvested, and a second push is needed to head back to the high and stable growth trajectory. Given that external headwinds are unlikely to dissipate in the coming years, domestic demand and domestic resource generation would need particular emphasis. The economy is in need of better infrastructure, regulation, governance, and macroeconomic stability. Without encouraging large scale investment, especially in the manufacturing sector, necessary to absorb the tens of millions of Indians entering the workforce every year, social and economic progress will be impossible. Short of a major improvement in infrastructure and the fiscal position, inflation would remain a major constraint to growth as well. In order to reclaim a virtuous cycle of strong macro fueling investment and consumption demand, which in turn supports efficient resource allocation, lower inflation, and improved fiscal and balance of payments dynamic, Indian policymakers need to act expeditiously. The economy is at a cross-road, and it is a time of reckoning for the authorities. Investors remain attracted to the India story, but they need a more enabling environment; this places the burden of progress on the government.

Demographic “dividend”

How it helps, how it can hurt

India is placed to enjoy substantial demographic dividend in the coming years as its population composition shifts toward a lower dependency ratio. Between 2010 and 2030, India’s working age population is projected to rise from 781mn to 1022mn, making it a fertile ground for expansion in large manufacturing and service industry activities, with substantial scope for economies of scale.

Looking at cross-country data, we show that a decrease in dependency ratio tends to be associated with a rise in savings. The increased savings then manifests in a rise in investment, which in turn raises the economy’s potential growth rate. This phenomenon can be observed in Japan from 1950 onward, and in China from 1980 onward. India appears to be on track to follow the same path. Empirical studies using large datasets support the same.

Given its poor infrastructure and relatively low quality human capital, India’s demographic dynamic raises the urgency of reforms. Improvements in education, healthcare, and employment opportunities are essential to prevent the rise of social divisions and tension. Adequately financing these improvements would be a function of better fiscal policy and governance. There are also substantial economic, environmental, and social challenges to managing the emerging population bulge.

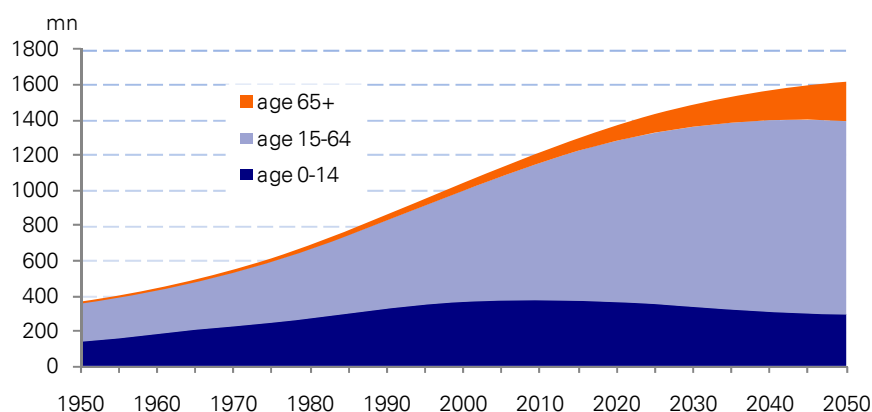
It has become almost conventional wisdom that India stands to benefit from China’s rapidly graying population in the coming years. We point out that India is not unique in enjoying a favorable demographic dynamic. Several countries in the region will have similar advantages, which once more highlights that a large working age population is a key advantage but it is neither a unique nor a sure-fire road to faster growth for India.

Basics of demography

While most industrial, high income countries of the world are experiencing dramatic aging, India is undergoing a striking change in its demographic dynamic. Expected to age at a significantly slower pace, it will see a sustained rise in working age population in the coming years. Under a medium fertility rate scenario projected by the United Nations, India’s population between the age of 15 and 64 is slated to rise from 781 million to about 1 billion over the next 20 years, i.e. its labor force will rise by over 30%, making it bigger than China’s. This has profound implication for the global manufacturing supply chain that focuses on large economies of scale. China has benefitted from its large pool of labor to create large manufacturing facilities in the past decades, and the question is if India can do the same.

The driver behind the projected rise in India’s labor force is a sharp and ongoing decline in fertility rate (average number of children a woman is expected to have in her lifetime), which has fallen from 3.8 in 1990 to below 3 already, and is expected to decline further. Thus, India’s sizeable young (below-15) population of today will steadily join the workforce in the coming decades, while the number of children being born will decline on a relative basis.

Projections suggest a large rise in working age population in the coming decades



Source: UN Population database. Projection based on medium fertility variant. Deutsche Bank

This combination of rising working population and slowdown in childbirth is having a powerful impact on India's population dependency ratio, which is the number of children (age 0-14) and elderly (age 65+) per 100 people in the workforce (age 15-64). From about 65 in 2000, the ratio is expected to decline to 45 by 2030.

There are some obvious, first round, benefits from this dynamic. First, a substantial rise in the number of working age people in the country improves its productive and income generating capacity. Second, declining fertility allows women with more time and flexibility to join the workforce. Third, with more breadwinners relative to dependents, the society is better capable of taking care of those who cannot work.

The focus of this study is on the somewhat less direct but more profound implications from a steady decline in the dependency ratio. People have the capacity and incentive to save when they are employed, and hence a rise in working age population ought to lead to a rise in savings. The increased savings then can be channeled into investment. This, at least in theory, should raise the economic growth rate.

Empirical studies have shown that there are statistically significant and robust economic spillovers from demographic factors. Large panel studies (see, for example, Chapter 3, World Economic Outlook, 2004, "How will Demographic Change Affect the World Economy?" International Monetary Fund) analyzing multi-country, multi-decade data show:

- Per-capita GDP is positively correlated with changes in the relative size of the workforce;
- Per-capita GDP is negatively correlated with changes in the share of the elderly population (this result is a factor driving the expectation of impending decline in potential growth in industrial economies);
- Savings rate rises along with an increase in working-age population;
- Investment rises with an increase in working-age population;
- Current account and fiscal balances improve with a decline in dependency ratio.

We have already highlighted the intuitive link between lower dependency ratio, savings, and investment. With respect to current account and fiscal balance, the former is helped when rising savings outpaces the rise in investment as the working age population booms. With respect to fiscal balance, larger workforce implies higher tax revenues and relatively smaller dependent population means less drag to social security spending.

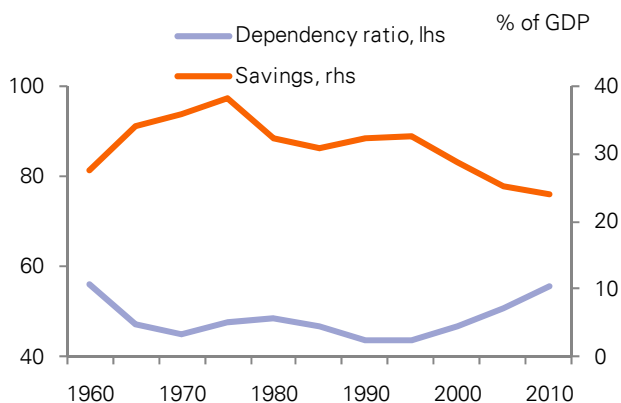
Case studies

We examine the cases of Japan and China in the above context.

Japan: Between 1960 and 1990, Japan enjoyed a steady and low dependency ratio. Savings rate remained above 30% during this period, while growth rate was high (average of 8½% during 1960-75 and 4% during 1975-90). Of course post war reconstruction and sound industrial policy were prerequisites to the growth outcome, but it is doubtful if those would have been sufficient without the substantial savings base and low dependency ratio. Subsequently, aging began, savings rate began to decline, and growth faltered. A financial bubble burst and the subsequent debt-deflation spiral led to two decades of anemic growth. Worsening of the demographic dynamic compounded the situation further.

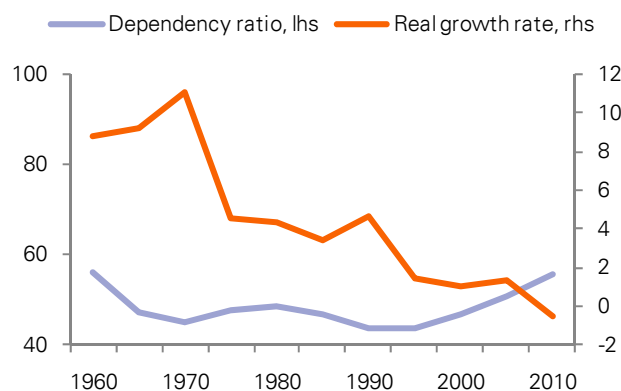
The particularly worrisome factor for Japan is that it has many decades of rising dependency ratio ahead. Indeed, UN projections suggest that the ratio would rise from 55.7 in 2010 to 96.3 in 2050. This will impose an enormous burden on the budget, and have adverse impact on savings, investment, and by extension, could lower growth further.

Japan: dependency ratio and savings



Source: UN, CEIC, Deutsche Bank

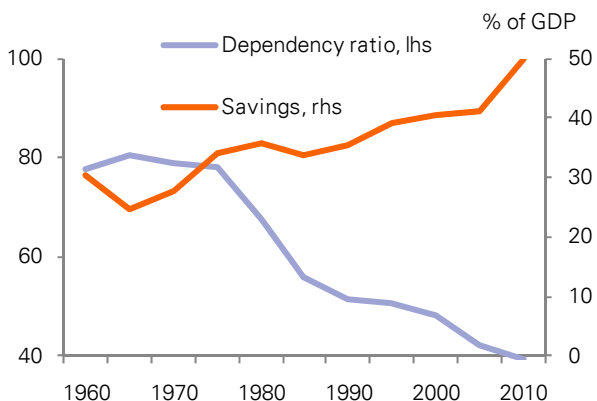
Japan: dependency ratio and economic growth



Source: UN, CEIC, Deutsche Bank

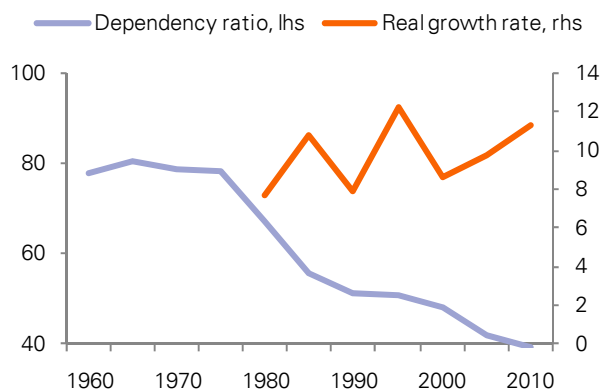
China: This is one of most remarkable growth experiences in history. Prompted by the government’s one-child policy, China saw a sharp decline in fertility rates through the 1960s and 70s, and this resulted in a sharp decline in the dependency ratio subsequently. The chart below shows the accompanying increase in savings rate was dramatic as well. During 1980-2010, China averaged the highest growth rate (about 10%) in the world, while its dependency ratio (from 67 to 39) and savings rate moved in opposing (and expected) directions (from 34% to 50% of GDP).

China: dependency ratio and savings



Source: UN, CEIC, Deutsche Bank

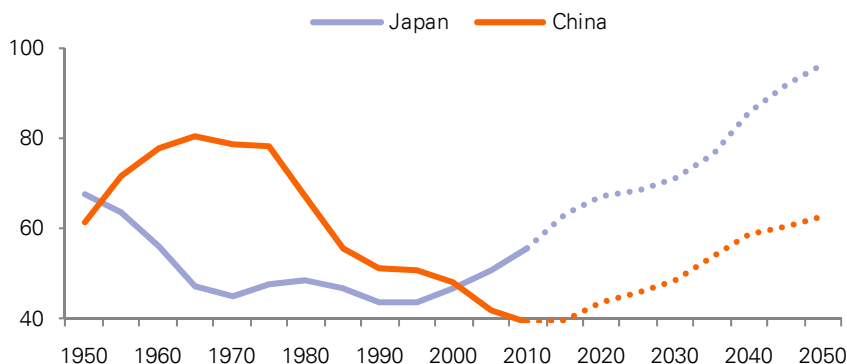
China: dependency ratio and economic growth



Source: UN, CEIC, Deutsche Bank

Thus, the powerful association of demographic dynamic with savings and growth is seen both in cross-country econometric studies and the two case studies presented above. The flipside of these findings is of course is that as a nation ages, it faces headwinds. Incentives and capacity to save declines, the workforce shrinks, fiscal outlays expand, and the savings-investment balance becomes smaller. Japan and China are both illustrations of the benefits of favorable demographic dynamic, but they are also likely to become textbook examples of the adverse impact when the dynamic reverses. As per UN projections, both countries are slated to experience a sharp rise in dependency ratio in the coming years (more dramatic in Japan than China though). This is already having a major impact on Japan's public finances, while the Chinese model of manufacturing-led growth is increasingly being questioned as the country becomes wealthier and its pool of surplus labor shrinks. The chart below shows the projected dependency ratios of Japan and China through 2050. The picture is telling.

Japan and China: projection of dependency ratios



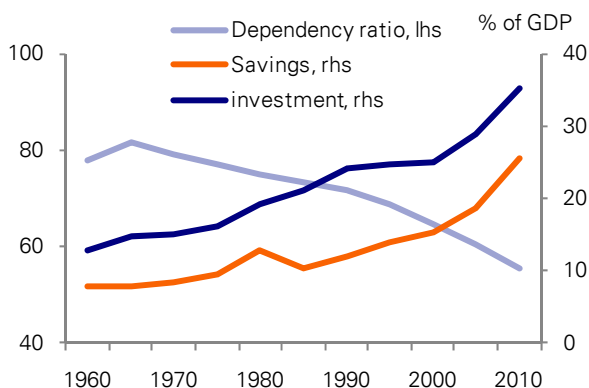
Source: UN, CEIC, Deutsche Bank

India's opportunities and challenges

The empirical regularity seen in the case studies and cross-country evidence appears to be consistent with the ongoing developments in the India. There has been a steady decline in India's dependency ratio over the past decades. The national savings rate, after mostly trending sideways from 1960-2000, began to rise steadily from the beginning of the past decade. By 2008 the savings rate had reached close to 30% of GDP, heading toward the range achieved by Asian EM countries during their growth burst in the 1980s.

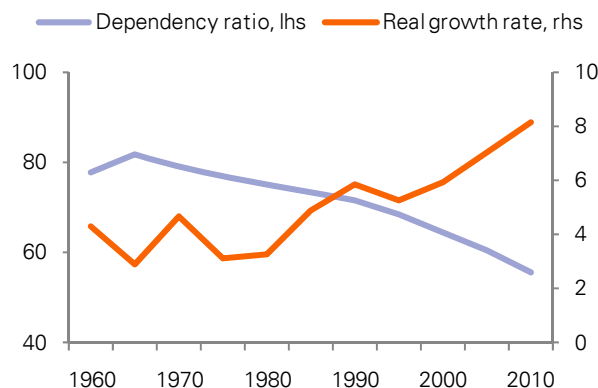
Along with the rise in savings rate, India has experienced a sustained rise in its investment rate (see chart below). After hovering around 20-25% through the 1980s and 1990s, India's investment rate rose markedly in the past decade, crossing 30% of GDP in 2004 and 35% of GDP in 2007. Along with the rise in savings and investment, real GDP growth picked up, consistently exceeding the long-run growth average of 5%. Indeed, growth averaged around 9% during 2004-08, with investment accounting for half of the contribution to growth. The subsequent slowdown is partly a function of reform fatigue and external headwinds, which does not necessarily undermine the underlying long term dynamic.

India: dependency ratio, savings, and investment



Source: UN, CEIC, Deutsche Bank

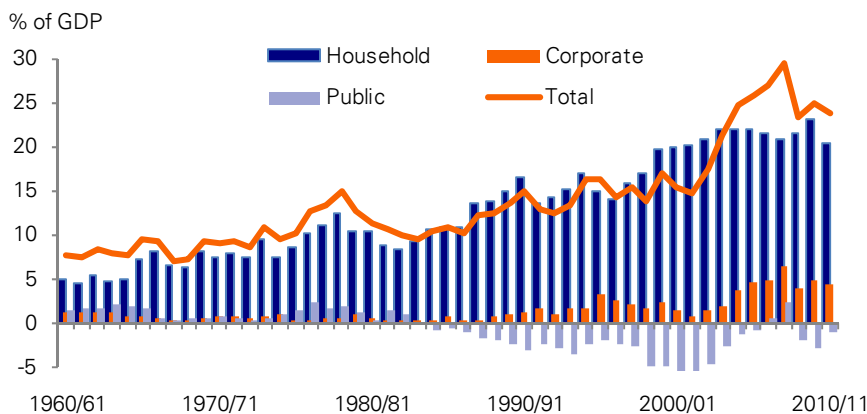
India: dependency ratio and economic growth



Source: UN, CEIC, Deutsche Bank

While the broad trends seen above are instructive, in order to make well-informed predictions about India, the data needs to be looked at in greater detail. Note that in all the charts shown above, the variables are presented in five-year averages. Below we look at the year-by-year evolution of India's savings rate, broken down into its three major components—household, corporate, and public:

Decomposition of India's savings



Source: CEIC, Deutsche Bank. Note that these are net domestic savings figures, and hence add up around 30% of GDP or less. India's gross domestic savings are several percentage points higher than the figures shown above; discussions elsewhere in this publication refer to gross savings.

The chart shows that household savings increased somewhat at the beginning of last decade, but then fell back a tad. The main drivers of India's improved savings behavior were in fact corporate and public savings. Helped by deregulation and pro-business reforms, corporate savings more than doubled during the course of the decade, going from an average of 2% of GDP to over 5% of GDP. Buoyed by high economic growth, the fiscal position—long a source of drag to savings and growth—also became a source of support to the India's national savings.

The chart however makes it clear that cycles matter in these dynamics. Toward the end of the decade, as the global financial crisis deepened, the public sector once again became a source of drag as government borrowings soared to support the economy. At the same time, households saved less as income prospects dimmed, although temporarily. Taken together, despite the long term demographic dynamic remained favorable, India's savings rate declined in 2008-11.

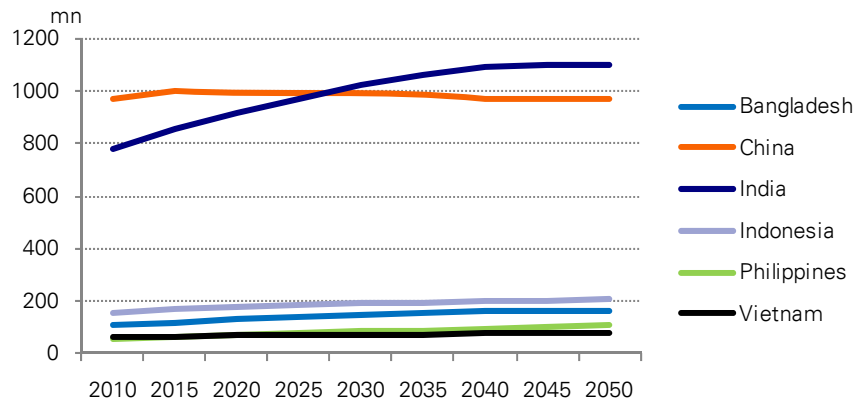
We highlight the above phenomenon to underscore that India's favorable demographic dynamic is by no means a sure-fire source of higher savings, investments, and growth. While the case studies of China and Japan are encouraging for India's prospects going forward, one needs to be cognizant of the associated challenges:

- As macroeconomic conditions normalize, India's savings rate would once again likely rise and flow into investments. The government has to facilitate sufficient macroeconomic and regulatory stability to ensure that investments are channeled to the most productive parts of the economy. Ongoing high inflation adds uncertainty to investment and needs to be brought down. Note that during the period when investment and growth rose sharply in China and Japan, inflation was steady and low.
- Fiscal consolidation is critical at this juncture, with debt/GDP hovering at around 65%. Without bringing down government debt and deficit, the national savings rate would continue to be dragged down by the public sector, while high government borrowing would keep crowding out investments.
- As the population bulges in the middle, the government has to make adequate provisions for making the rising workforce into a productive and healthy one. This would require a substantial expansion and improvement in healthcare, nutrition, education, and infrastructure. Both China and Japan grew through rapid industrialization, which allowed large manufacturing firms to absorb substantial quantity of labor and exploit economies of scale. India needs to lay the groundwork for similar developments.
- Related to the above factor is the issue of generating sufficient employment to absorb the rising working age population. What is being deemed as a demographic dividend could well become a demographic curse if the Indian economy does not manage to channel its human capital in productive activities. India's development has so far centered on service sector growth, with manufacturing making up only about 15% of GDP. The problem with service sector growth is however that it is not suited for large scale employment generation as manufacturing. Hence it is imperative that the manufacturing sector has room and incentive to expand.
- The budget needs to make adequate provisions for the poor, whose number will remain substantial for the foreseeable future. India has made impressive progress toward reducing poverty in recent years, but a simple illustration can establish the scale of the challenge remaining. Even if India's poverty rate is halved (from 38% to 19%) over the course of the next two decades, the country would still have about 280mn people under the poverty line. If the rate goes to no lower than 30%, the number of poor population will remain essentially unchanged in the coming decades, at around 450mn. Either way, there will be substantial demand for social spending for this strata of the population, especially as the government has committed to strengthening the social safety net through programs such Rural Employment Guarantee, National Food Security, and Right to Education. We estimate that if poverty rate were to remain at 30%, budgetary spending would rise by at least 2% of GDP (under the presently planned mandates).
- The impending sharp rise in working age population will continue to exert pressure on the rural-urban migration dynamic. Without a substantial improvement in urban and suburban infrastructure for both work and living, cities would become even more congested, weighing down productivity and quality of life. This could in turn force India into a middle-income trap, where after an initial bout of reforms and growth, policy paralysis sets in as the lingering problems are found to be too difficult for the democratic

leadership to pursue, while the economy moves along (given its internal momentum), but does not quite move upward.

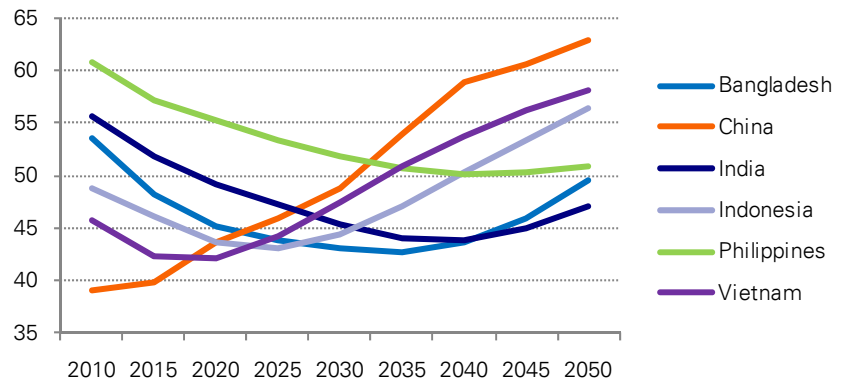
We conclude on an optimistic note. The sheer scale of the likely rise in India’s workforce is bound to be attractive to potential investors. Several other EM countries in the region would also see rising working age population in the coming years, so the competition for taking up China’s shrinking manufacturing base will be substantial. But as clearly depicted in the projections below, no country will be able to match the sheer volume of Indians entering the workforce in the coming decades, and the country’s dependency ratio will remain favorable for a very long time. It is up to the policy makers to harness this great opportunity through appropriate regulation and policies.

Projection of workforce (population between the age of 15 and 64)



Source: UN, Deutsche Bank

Projection of dependency ratio



Source: UN, Deutsche Bank

India's heterogeneous states

Divergence in characteristics and performance

In the previous chapter we looked at India as a whole, but the country is evolving in various ways and at different paces within its parts. India's states have a substantial degree of heterogeneity; not only do they vary widely in geographical area, population size, and institutional characteristics, but also the fruits of the country's recent growth spurt have been spread rather unevenly.

Some of the most populous states in India have the highest incidence of poverty, and some of the poorest states are projected to see the maximum increase in population in the coming years. 60% of the rise in India's population by 2025 is likely to come from six states – Uttar Pradesh, Maharashtra, Bihar, Madhya Pradesh, Rajasthan, and West Bengal. With the exception of Maharashtra, these states have relatively poor human development indicators, are relatively less urbanized, and are typically characterized by weak infrastructure.

Since many of the most populous states have a low degree of urbanization and formal employment; these states would likely encounter considerable economic and social challenges in the years ahead. For investors seeking opportunities, the implications are clear; states with better infrastructure, improving quality of life, and income generating opportunities would continue to create sustainable demand for goods and services. Expecting states with poor indicators to grow faster (and hence provide a better return on investment) due to a lower base may leave investors disappointed as only a few states are showing that tendency.

Studies and findings

India has averaged 7.2% real growth in the past decade, which has caused its real GDP to double during this period. This is an extraordinary outcome for a country with over a billion people. But despite this impressive achievement, many studies have pointed out that the benefits of India's high growth rate of the past decade have been concentrated on the country's richer states. The rich and poor divide has widened, which is compounded by the fact that the poor states of India are also its most populous. Unless these states and people begin to share in the fruits of growth, there is considerable risk of a rise in social, political, and economic difficulties.

There is no paucity of data on this subject; in fact the problem for the curious tends to be the opposite. Our aim in this research is to illustrate some of the key stylized facts on India's states in a user-friendly manner. We also highlight the implications for the future, which at once presents investors with opportunities and challenges.

Studies show:

- The income gap between the rich and poor states is widening; poor states tend to have more volatile growth;
- Rich states don't enrich just a few; instead the fruits of high GDP are reflected in relatively lower poverty in those states;
- States with higher financial development, more flexible labor markets, improved infrastructure, and a better educated population do a better job in generating income and reducing poverty.¹

¹ Two papers present excellent literature summary and analysis on this issue: "Mind the Gap—Is Economic Growth in India Leaving Some States Behind?" by Catriona Purfield, IMF Working Paper WP/06/103, 2006 and "India—Is the Rising Tide Lifting All Boats?" by Petia Topalova, IMF Working Paper WP/08/54, 2008.

In this article we present some illustrations of the above findings. We also show the following:

- Theory suggests that poor states, even if they remain behind, should grow faster than rich states as they begin from a much lower base. Worryingly, this is not clearly evident among Indian states;
- The population dynamic of the poor states is of concern, as they would account for most of India's population increase in the coming years;
- Poor states have mutually reinforcing problems—poverty, low level of urbanization, poor human development indicators, and high populations.

In addition to presenting our analysis through tables, we provide color-coded maps that clearly show the dispersion of wealth and poverty in India. Successive charts show that colors that denote high levels of income, urbanization, better infrastructure tend to be clustered in the same space of the maps. We hope that these illustrations would leave the readers with a clearer impression of where wealth is concentrated. The charts of population dynamic are particularly illuminating, in our view.

The rest of the research is organized as follows. We first present a snapshot on the degree of heterogeneity among Indian states. Then we show how income growth has evolved in these states over the years. We then sequentially examine the population dynamic, and poverty and human development indicators.

Degree of heterogeneity

We restrict our study to a set of 17 states for which data is widely available. These states make up for 90% of India's population, hence represent adequately the country's traits.

The table below shows the wide dispersion of Indian states. They vary in geographical area (Rajasthan is nearly 7 times larger than Punjab) and population (Uttar Pradesh has almost 6 times more people than Kerala). The combined GDP of Andhra Pradesh and Maharashtra is bigger than the combined GDP of 10 states at the bottom end of the wealth spectrum. Perhaps even more strikingly, the per capita GDP of Haryana is nearly 5 times more than that of Bihar.

Delving more into the details of per capita income, the average income of the top five richest states is about 4 times that of the lowest five. Over the past decade, Haryana's nominal per capita GDP has tripled, while two of the most populous states in the country (Uttar Pradesh and Madhya Pradesh) have seen incomes barely keeping up with inflation.²

Note that the snapshot table is ordered according to population size. No more than a glance is needed to establish that some of India's most populous states are also the poorest. As the subsequent sections will show, states like Uttar Pradesh, Madhya Pradesh, Bihar, and West Bengal appear repeatedly as laggards. That these states also make of the bulk of India's population is therefore a cause for concern.

² Note that Haryana's performance has been significantly (and positively) impacted by the fact it is situated next to Delhi, the nation's capital.

Snapshot on Indian states

States	Population 2010, (mn)	Area sq km	GDP current prices 2008- 09, (USD)	Per capita GDP current prices 2008-09, (USD)
Uttar Pradesh	197	238,566	85.8	392.0
Maharashtra	111	307,713	127.2	1012.7
Bihar	96	94,164	30.7	294.1
West Bengal	89	88,752	76.2	781.8
Andhra Pradesh	84	260,068	81.2	880.4
Madhya Pradesh	71	308,144	30.7	388.5
Tamil Nadu	67	130,058	73.0	969.8
Rajasthan	67	342,236	58.5	581.2
Karnataka	59	191,796	58.5	882.4
Gujarat	58	196,024	66.0	985.2
Orissa	40	155,707	28.8	634.2
Kerala	34	38,863	40.9	945.2
Jharkhand	31	79,700	16.3	462.0
Haryana	25	44,212	39.3	1483.3
Chhattisgarh	24	135,194	20.5	742.2
Punjab	24	50,362	35.7	1138.2
Goa	2	3,702	3.7	2272.5

Source: Directorate of Economics & Statistics of respective State Governments, Census of India, 2001, Office of the Registrar General of India, Deutsche Bank

Income

It is generally considered that within a country, where there are no trade and financial barriers, areas with relatively low levels of development will attract capital as it will be deemed to have relatively more potential for growth. Hence, over time, areas with lower levels of development ought to grow faster than areas which have already grown substantially. In economics literature, this concept is known as conditional convergence.

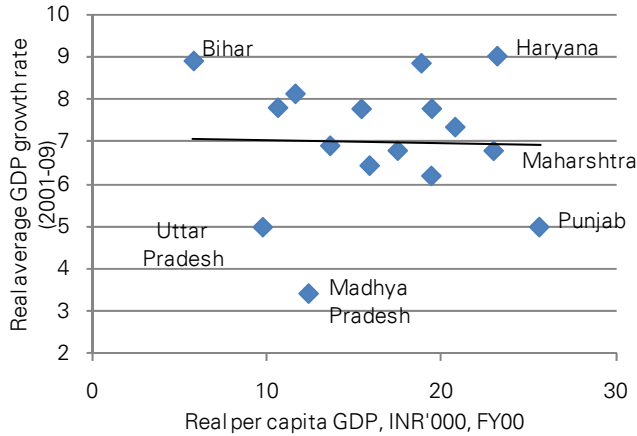
Studies on India have found mixed evidence of conditional convergence. Much has been made about Bihar's high growth performance in recent years (the state has averaged 9% real annual growth in the past decade), which at first glance would appear to be a textbook example of conditional convergence, as the state began the decade as one of the poorest in the country. Indeed, Bihar's example could be encouraging to investors who are looking for low-hanging fruits among lagging Indian states.

Unfortunately Bihar's example is the exception rather than the rule. In the left hand panel below, we plot the real per capita GDP of India's states in 2000 against their average growth performance in the past decade. It shows that while Bihar's high growth rate over the past decade, starting out from a low base, has been impressive, it is among very few states with relatively low income that has managed to grow fast. Glaring examples are Uttar Pradesh and Madhya Pradesh, states that started out the decade with low per capita income and ended the decade with anemic average growth rates, and thus their populations' average income fell further behind the income of the richer states.

Theory would suggest that states with high income would slow down over time. That point appears not to have arrived for India's high-flying states. Haryana, Gujarat, and Maharashtra entered the past decade with some of the highest per capita income in the country, and they completed the decade with high average growth rates. As a result, these states widened the margin over their poorer neighbors substantially through the course of the decade.

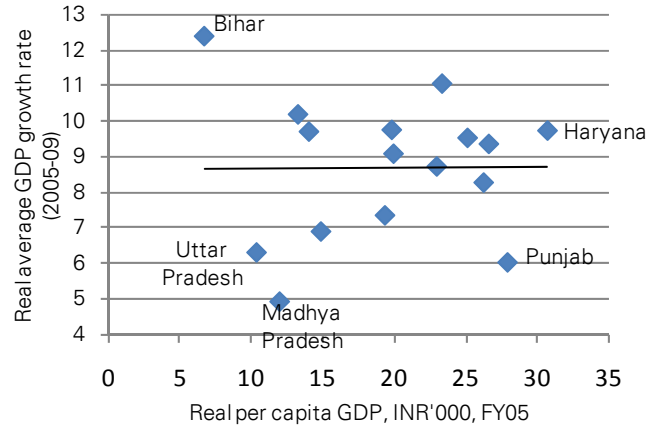
Hence we see that rich states by and large tend to continue doing well, and with the exception of Bihar, the poor states remain laggards. Indeed, the pattern remains unchanged if one looks data from the past five years. Although India's higher growth momentum managed to raise the average growth performance of virtually all states, the ones who have performed better over the long term appear to be doing well in the shorter data range as well.

Over 10 years, rich states have mostly grown faster than poor states



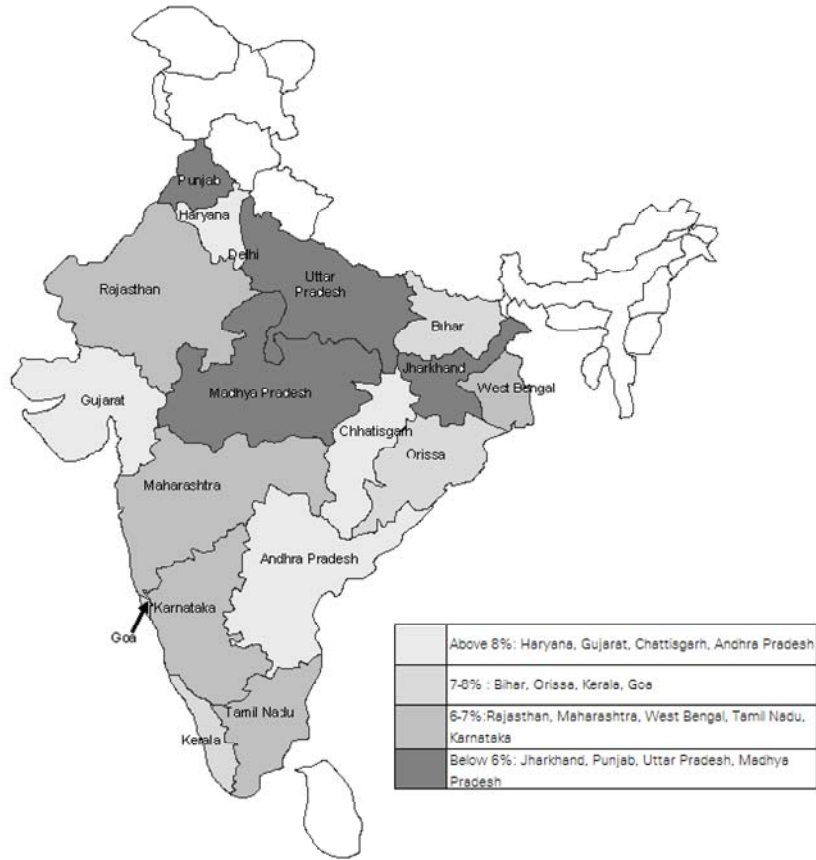
Source: Directorate of Economics & Statistics of respective State Governments, Deutsche Bank

The pattern as become even more stark over the past 5 years



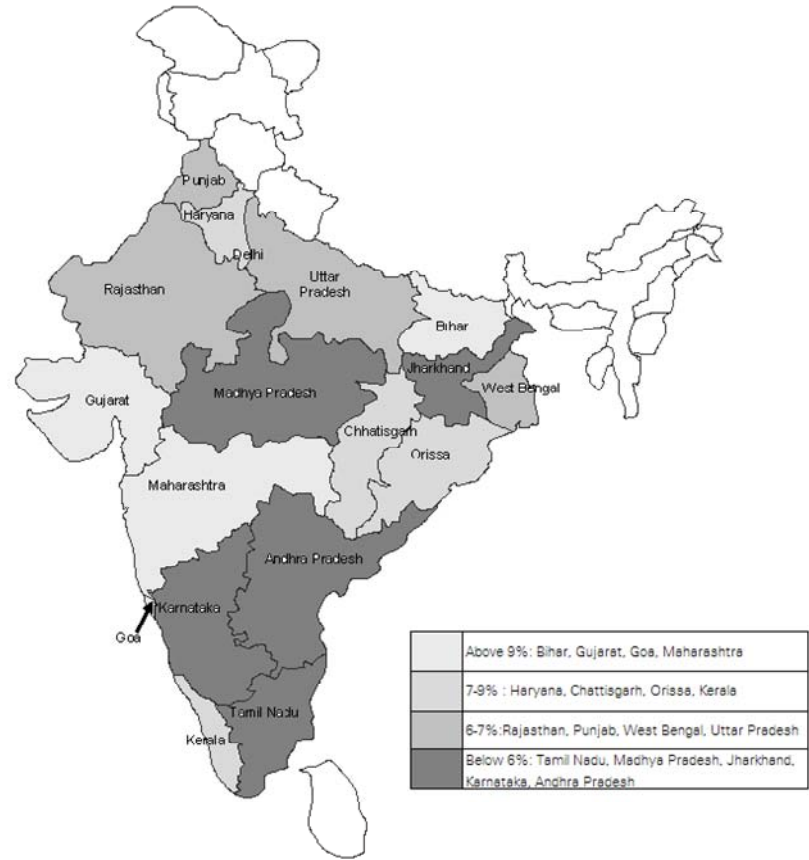
Source: Directorate of Economics & Statistics of respective State Governments, Deutsche Bank

Average real GDP growth : 2000-01 to 2007-08



Source: Directorate of Economics & Statistics of respective State Governments, Deutsche Bank
 Map Source: Courtesy of the University Libraries, The University of Texas at Austin; original image modified by Deutsche Bank

Latest real GDP growth : 2008-09



Source: Directorate of Economics & Statistics of respective State Governments, Deutsche Bank
 Map Source: Courtesy of the University Libraries, The University of Texas at Austin; original image modified by Deutsche Bank

Population dynamic

We have already established a pattern: there is a group of Indian states that has grown consistently at a high rate in recent years; this group has surged ahead relative to another group of poor states. The problem is the population that has been left behind in the poor states is rising rapidly.

The table below summarizes the population dynamic of Indian states. Uttar Pradesh is forecast to see the most dramatic rise in population over the next 15 years, with a projected population of 246mn (a 25% increase from present). We have already shown that this is one of the poorest states in the country, and its growth rate has not accelerated in recent years.

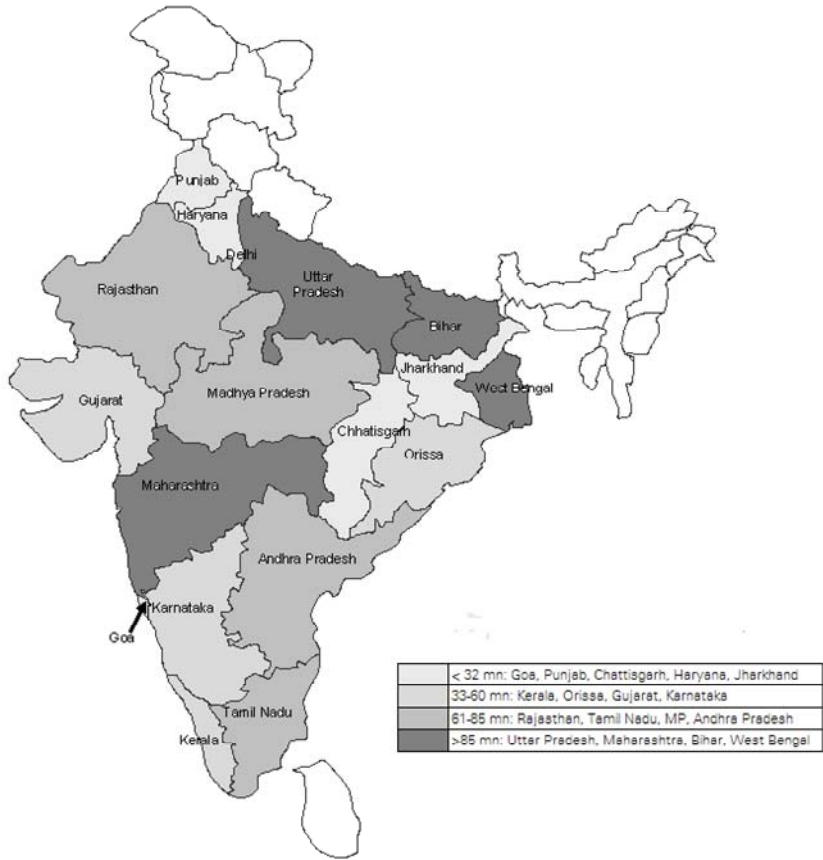
The states of Bihar, West Bengal, and Madhya Pradesh are forecast add another 44mn people in the next decade and a half. Notwithstanding Bihar's strong growth outturn in the past decade, these remain some of the poorest states of the country. Indeed, we estimate that 60% of the rise in India's population by 2025 would come from six states – Uttar Pradesh, Maharashtra, Bihar, Madhya Pradesh, Rajasthan, and West Bengal. Among these, only Maharashtra appears to be growing fast enough to absorb the impending rise in its labor force, but even its potential could be in doubt as Mumbai, the source of substantial wealth and dynamism of the state, would not be able to grow sufficiently to carry the burden as it is already overstretched with respect to its infrastructure and geography.

There are some pockets of comfort, however. Andhra Pradesh, Tamil Nadu, and Karnataka appear to have manageable population growth rates, large area, and a comfortable growth trajectory. Given these attributes, it seems likely that population will spill from the laggard states to these three in the coming decades. Whether these three states in the country's southern region can readily absorb such migration remains an open questions, as the dynamic would entail a host of political and economic challenges.

Population (mn)			
	2001	2010F	2025F
Uttar Pradesh	166	197	246
Maharashtra	97	111	132
Bihar	83	96	113
West Bengal	80	89	100
Andhra Pradesh	76	84	94
Tamil Nadu	62	67	72
Madhya Pradesh	60	71	87
Rajasthan	57	67	81
Karnataka	53	59	67
Gujarat	51	58	69
Orissa	37	40	45
Kerala	32	34	37
Jharkhand	27	31	37
Punjab	24	24	31
Haryana	21	25	31
Chhattisgarh	21	24	28
Goa	1	2	2

Source: Census of India, 2001; Office of the Registrar General of India, Ministry of Home Affairs, Deutsche Bank

Population trend in 2010 across various states



Source: Census of India, 2001; Office of the Registrar General of India, Ministry of Home Affairs, Deutsche Bank.
 Map Source: Courtesy of the University Libraries, The University of Texas at Austin; original image modified by Deutsche Bank

Six states will account for 60% rise in population by 2025



Source: Census of India, 2001; Office of the Registrar General of India, Ministry of Home Affairs, Deutsche Bank.
 Map Source: Courtesy of the University Libraries, The University of Texas at Austin; original image modified by Deutsche Bank

Poverty and human development indicators

We have so far looked at some macro indicators of the well being on Indian states. In this section we break down some of the micro details of poverty and human development. Using latest available data (some of which is unfortunately rather dated), we examine how states fare in critical areas such as literacy, infant mortality, access of drinking water and electricity, and the proportion of population living below the poverty line.

The data (presented in the table below) offer interesting insights. Not all wealthy states have relatively high levels of human development, but the poor states uniformly have relatively low levels of human development and high rates of poverty. Haryana is richer than Kerala but has much lower literacy and higher infant mortality rates. On the other side of the income spectrum, the same group of poor states we have been tracking so far tends to come with low readings on almost all counts of human development and poverty.

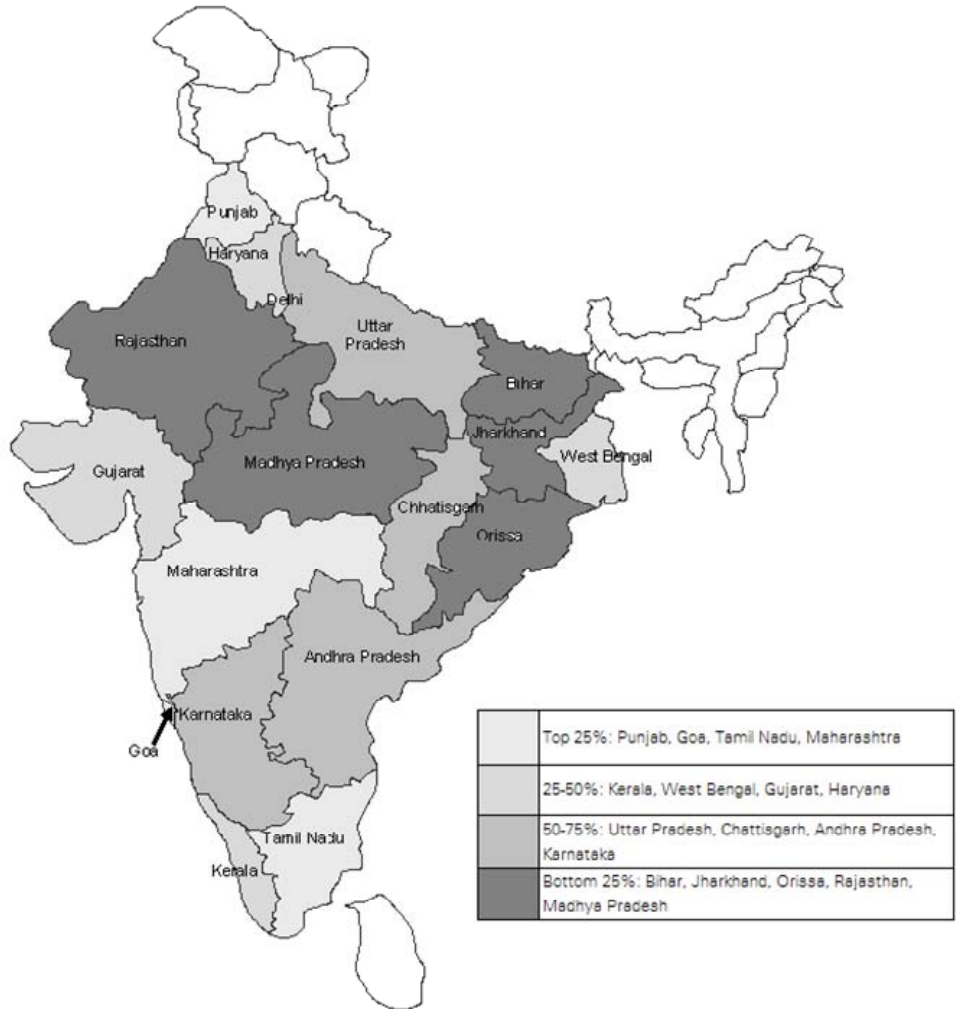
Human development indicators					
States	Literacy rate, 2001 (%)	Infant Mortality rate, 2008 (person, per 1000 live birth)	Access to safe drinking water, 2001 (%)	Household having access to electricity, 2001	% population BPL 2004-05
Haryana	67.9	54.0	86.1	82.9	14.0
Bihar	47.0	56.0	86.6	10.3	41.4
Gujarat	69.1	50.0	84.1	80.4	16.8
Chattisgarh	64.7	57.0	70.5	53.1	40.9
Orissa	63.1	69.0	64.2	26.9	46.4
Kerala	90.9	12.0	23.4	70.2	15.0
Andhra Pradesh	60.5	52.0	80.1	67.2	15.8
Goa	82.0	10.0	70.1	93.6	13.8
Rajasthan	60.4	63.0	68.2	54.7	22.1
Karnataka	66.6	45.0	84.6	78.5	25.0
Maharashtra	76.9	33.0	79.8	77.5	30.7
West Bengal	68.6	35.0	88.5	37.5	24.7
Tamil Nadu	73.5	31.0	85.6	78.2	22.5
Jharkhand	53.6	46.0	42.6	24.3	40.3
Punjab	69.7	41.0	97.6	91.9	8.4
Uttar Pradesh	56.3	67.0	87.8	31.9	32.8
Madhya Pradesh	63.7	70.0	68.4	70.0	38.3

Source: Economic Survey, 2009-10; Office of the Registrar General, India, Ministry of Home Affairs, Deutsche Bank

We synthesize the above data by ranking the states on each category and then taking the average of those rankings. This approach provides us with a composite human development indicator for the Indian states. The results are presented in the following map. Punjab, Goa, Tamil Nadu, and Maharashtra score in the top 25% of the group. These are not necessarily India's richest and fastest growing states, but they are relatively wealthy and endowed with institutions and policies to improve living conditions. The bottom half of the cohort contains the usual suspects, with one interesting omission. Despite being one of the poorer states of India, West Bengal has managed to raise the quality of living of its population somewhat.

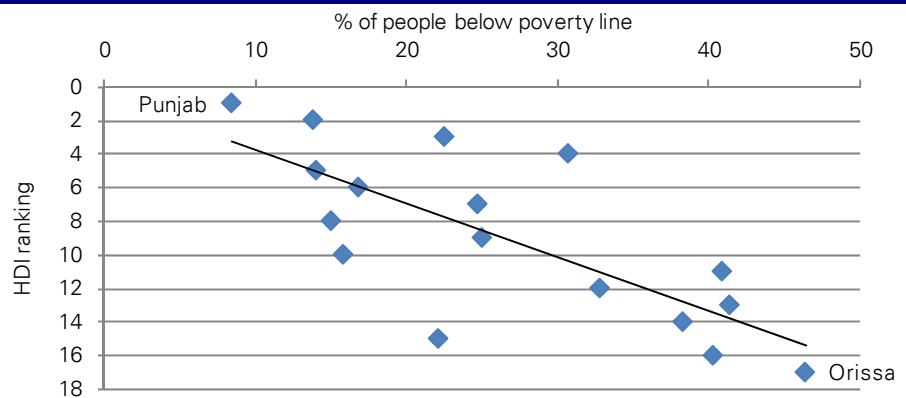
Is there a link between better living conditions and poverty alleviation? It turns out that the link is extremely powerful. In the scatter-plot presented below, we show that states that tend to score high in our development indicator ranking are associated, unambiguously, with lower incidences of poverty. The policy implications could not be clearer.

Human development condition across various states



Source: Economic Survey, 2009-10; Office of the Registrar General, India, Ministry of Home Affairs, Deutsche Bank
 Map Source: Courtesy of the University Libraries, The University of Texas at Austin; original image modified by Deutsche Bank

States with high human developments indicators have less poverty



Source: Economic Survey, 2009-10; Office of the Registrar General, India, Ministry of Home Affairs, Deutsche Bank

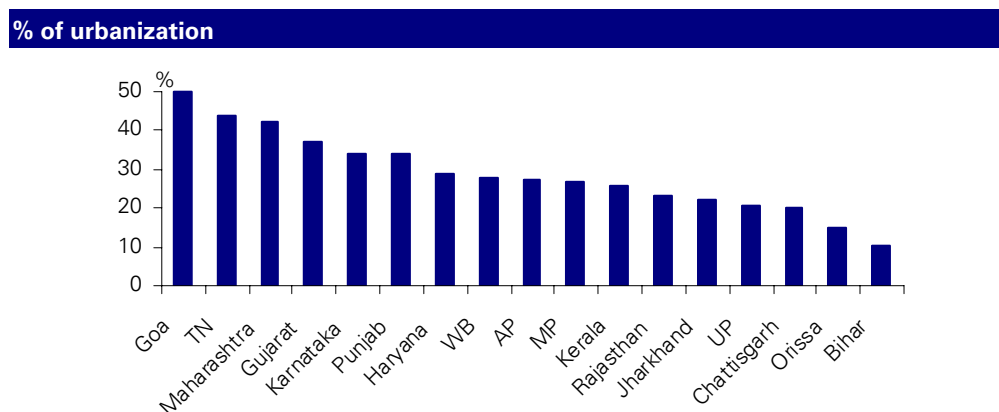
Urbanization and employment

In this final section, we present some findings on how the states look from the angle of urbanization and employment. The table below shows that there is an association between low income levels and the degree of urbanization. States that have come across in this study at the lower end of the income and development spectrum also show up at the bottom of the urbanization table. Conversely, the states that have come across as relatively more developed tend to be more urbanized.

It also turns out that most of the populous states have a low degree of urbanization and formal employment. Clearly the challenge for the policy makers is to deal with states such as Madhya Pradesh, Uttar Pradesh, Bihar, and Orissa. Either these states move toward more urbanization and employment creation, or the existing urban centers of India will continue to face ever increasing pressure from migrants from these states.

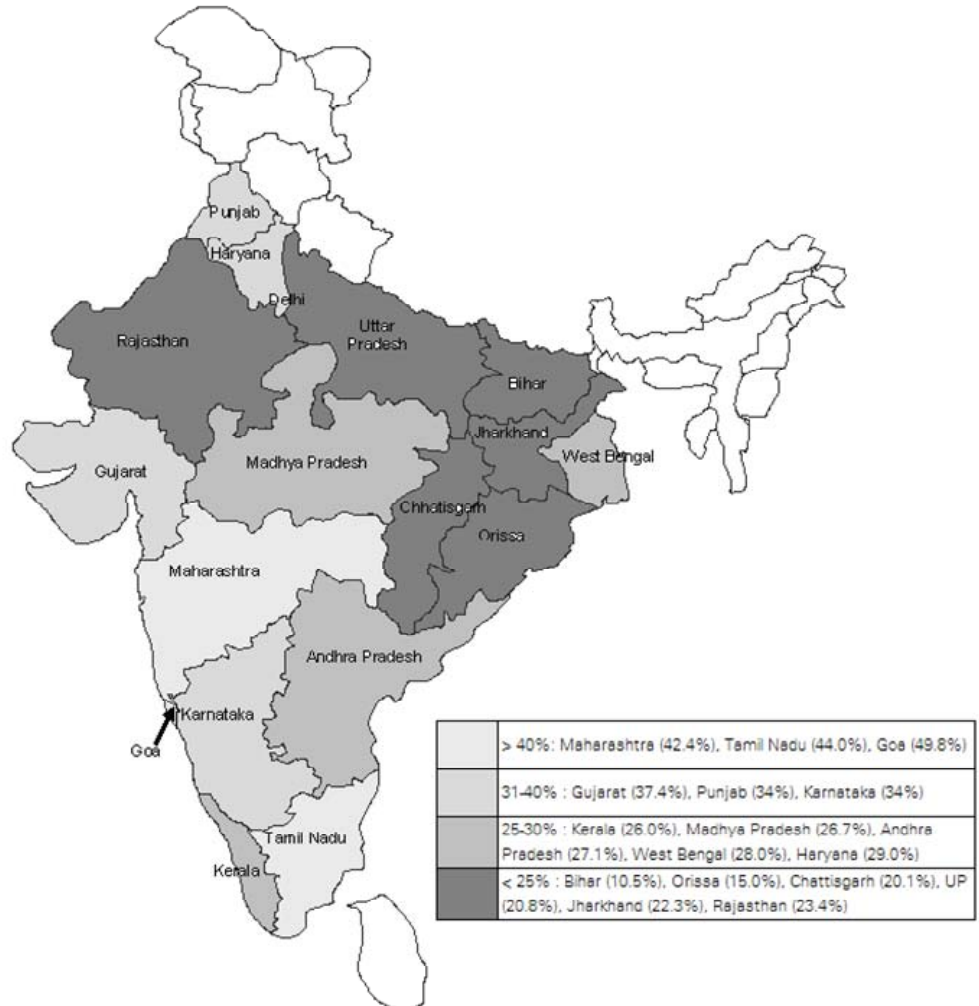
% of urbanization	
Goa	49.77
Tamil Nadu	43.86
Maharashtra	42.40
Gujarat	37.35
Karnataka	33.98
Punjab	33.95
Haryana	29.00
West Bengal	28.03
Andhra Pradesh	27.08
Madhya Pradesh	26.67
Kerala	25.97
Rajasthan	23.38
Jharkhand	22.25
Uttar Pradesh	20.78
Chhattisgarh	20.08
Orissa	14.97
Bihar	10.47

Source: Census of India, 2001; Office of the Registrar General of India, Deutsche Bank



Source: Census of India, 2001; Office of the Registrar General of India, Deutsche Bank

Urbanization trend across states



Source: Census of India, 2001; Office of the Registrar General of India, Deutsche Bank. Map Source: Courtesy of the University Libraries, The University of Texas at Austin; original image modified by Deutsche Bank

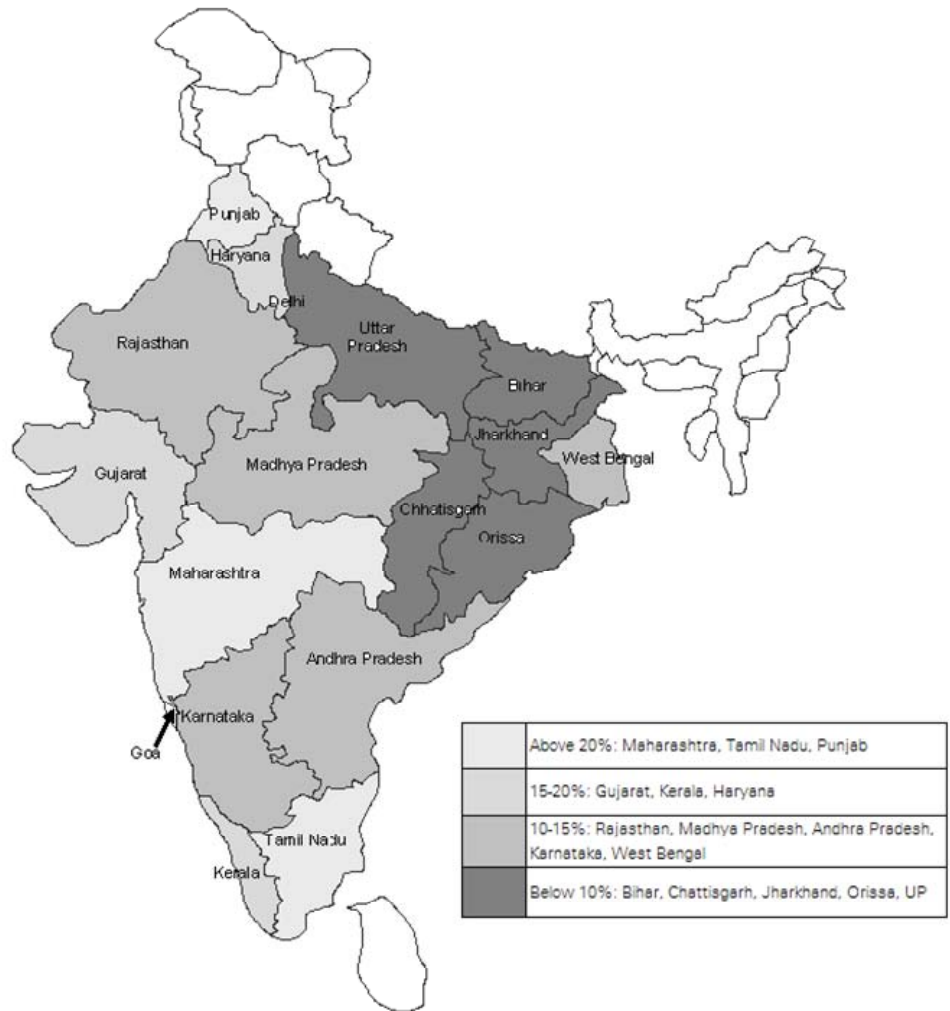
Lack of regular employment is also linked with the backwardness of region. In general, poorer states such as Bihar, Chhattisgarh, Jharkhand, Orissa and Uttar Pradesh have high proportion of workers engaged in informal sector work. In contrast to this, developed states such as Maharashtra, Tamil Nadu, Punjab and Delhi have high proportion of regular employment

Percentage of regular employment to total employment in 2004-05

Very low, less than 10%	Low, 10 to 15%	Medium, 15% to 20%	High, 20% and above
Bihar, Chhattisgarh, Jharkhand, Orissa, Uttar Pradesh	Rajasthan, Madhya Pradesh, Andhra Pradesh, Karnataka, West Bengal	Gujarat, Kerala, Haryana	Maharashtra, Tamil Nadu, Punjab,

Source: NSSO Survey, 2004-05, Deutsche Bank

Percentage of regular employment to total employment in 2004-05



Source: NSSO Survey, 2004-05, Deutsche Bank. Map Source: Courtesy of the University Libraries, The University of Texas at Austin; original image modified by Deutsche Bank

Inflation and monetary policy

No easy respite from inflation

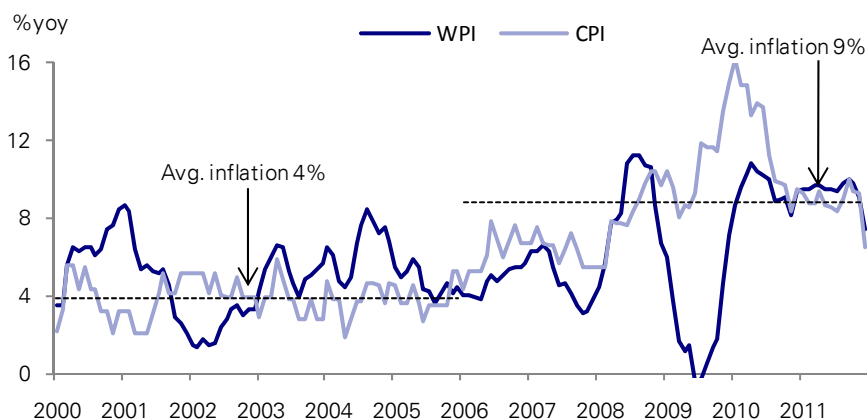
In this chapter we bring together key factors driving India's ongoing high inflation phenomenon. We show that inflation is being driven more by structural than cyclical factors, and there has been a trend rise in inflation pressure in recent years. Given that the structural drivers of inflation are unlikely to be resolved in the near term, India is likely to experience high inflation (and resultant high interest rates) for some years. We also show that sustained high inflation is a clear negative for India's financial markets.

Persistent high level of inflation has been a characteristic of the Indian economy for an extended period, creating serious policy challenges. The Reserve Bank of India's battle to counter inflation pressure has resulted in a steady rise in interest rates through the last two years, which has pushed down the investment and growth momentum substantially. While a rate cut cycle would be a characteristic of 2012, it is most likely to be modest. The risk is that stubbornly high prices push India toward a high inflation/high rates/faltering growth environment for an extended period.

Long-term trend

A gradual and upward shift in inflation and inflation expectations can be seen in India since the middle of last decade. The economy has been growing robustly, pushing up income and demand, which in turn has been accompanied by rising prices. India's growth acceleration began from mid-2003; since then real GDP has grown by an average of 8½%, a sharp contrast from the average growth rate of less than 6% in the previous two decades. The economy appeared to have considerable slack initially; hence inflation remained stable around 4-6% in the first part of the growth spurt. From 2006 onward, however, inflation began to pick up. There has been no pronounced respite since then, especially when one looks at the inflation figures from the perspective of CPI inflation, as opposed to the more commonly followed WPI.

Upward trend in CPI and WPI inflation over the last half decade



Source: CEIC, Deutsche Bank

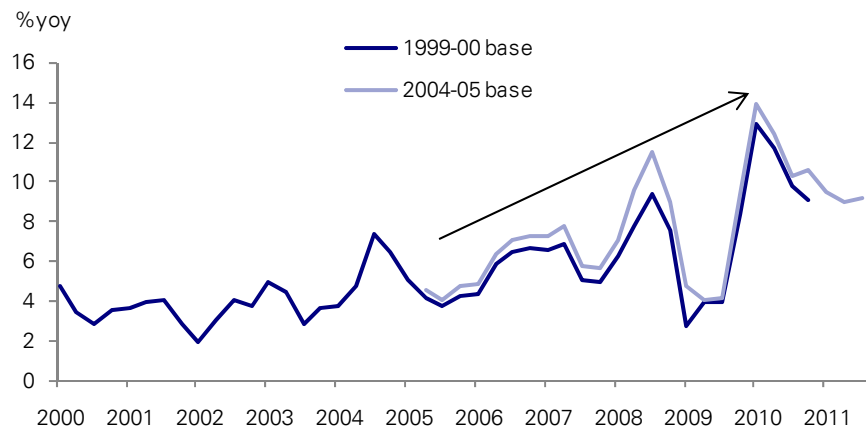
We believe that the CPI is a better indicator of inflation trend than the WPI, although the Reserve Bank of India prefers to use the latter. The case for CPI is particularly compelling for a service-dependent economy like India, as the main difference between the CPI and WPI is that the former contains service sector prices. The central bank's objection, that because of India's geographical heterogeneity a nationwide CPI is not a useful indicator of aggregate

price dynamic, is a constraint faced by many large economies, and hence should not be a deciding factor against its use.

In any case, both the CPI and WPI inflation rates over the past half decade have gradually risen, as shown in the accompanying chart. After diverging in 2009 and the first half of 2010, the two series have converged, displaying a tendency for the inflation rate to hover well over the RBI's comfort level, which is about 5%.

A third indicator of long term inflation trend is the GDP deflator. It too shows a clear rise in the trend of prices representing the goods and services in the national income account.

GDP deflator has been rising at a faster pace

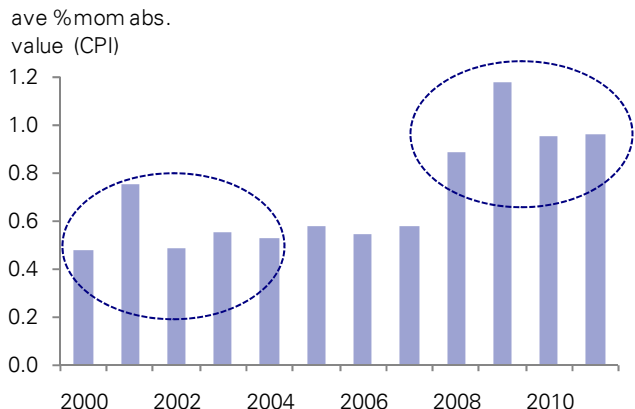


Source: CEIC, Deutsche Bank

The trend rise in the rate of inflation has also been accompanied by a rise in inflation volatility. The price mechanism has become particularly sensitive to shocks, which is a non-trivial point. Note that an economic system is always likely to be characterized by shocks, whether it is from the demand side (global crisis in 2008) or supply side (poor monsoon in 2009). The key is for the system to have the capacity to respond to such shocks. It appears that the shock absorptive capacity of the Indian economy has declined in recent years, making it susceptible to reacting substantially to each shock.

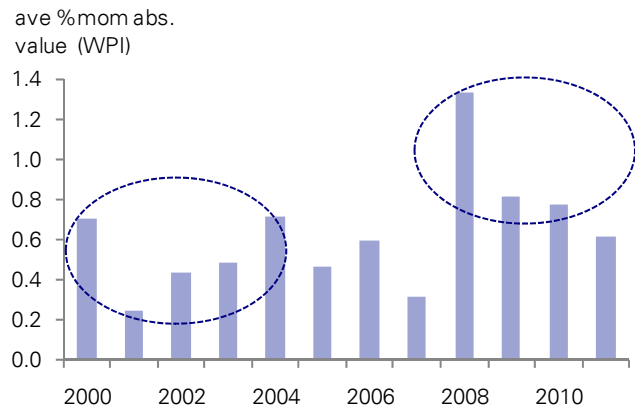
The charts below plot the annual average absolute value of monthly percentage changes of CPI and WPI since 2000 to present. They clearly demonstrate that inflation volatility has picked up in recent years, both in terms of CPI and WPI. The rise in inflation and inflation volatility has particularly adverse implication for consumption and investment decisions, as agents find it difficult to predict near or long term inflation. This in turn caps long term purchases and investments.

Clear uptrend in inflation volatility - CPI



Source: CEIC, Deutsche Bank

Clear uptrend in inflation volatility - WPI

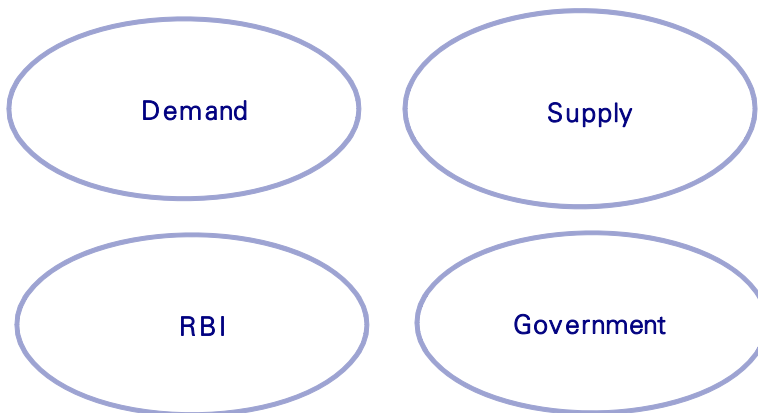


Source: CEIC, Deutsche Bank

Key factors driving the rise in inflation

Having established the trend, we now focus on the four key drivers: demand, supply, RBI, and government policies.

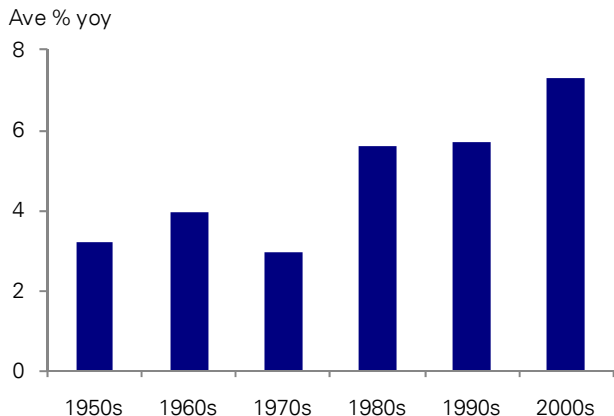
Four major factors driving inflation



Source: Deutsche Bank

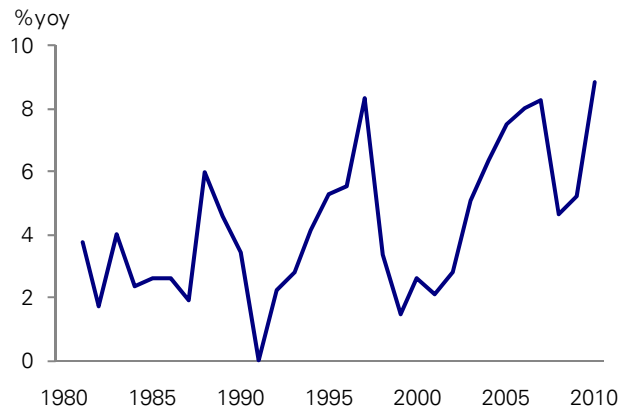
Demand: As already discussed, the past decade or so has seen a marked rise in economic growth in India, a period unmatched by any other in its history. The following chart, presenting real GDP growth rate per decade, shows that India never averaged more than 6% growth from 1950 to 2000. The economy’s structure, with respect to demand management, transportation, logistics, or distribution, was therefore in tune with a far lower growth rate. As growth began to accelerate, slack was quickly eliminated. After that, the main issue was if investment would keep pace with the economy and thus keep the supply-demand dynamic in balance.

Average real GDP growth has picked in recent decades



Source: CEIC, Deutsche Bank

Real per capita income has been rising sharply

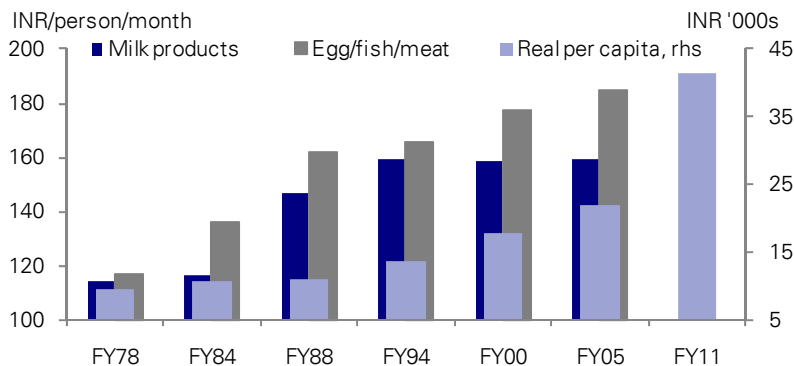


Source: IMF, Deutsche Bank. Derived from GDP per capita income in constant prices.

Growth has been even more pronounced in real per capita terms. While the per capita growth rate figures don't reveal the extent of income growth at the low and high end of the income spectrum (surely it has been more at high end), the fact of the matter is that Indian consumers' purchasing capacity has risen considerably in the past decade. Given the tightness in the labor market (due to a great degree of skills mismatch), the wage outlook is robust, and demand will likely remain strong.

The government household expenditure survey shows that a rise in real per capita income has coincided with a considerable rise in consumption. In the chart below, it is seen that rural per capita income growth has been robust, and along with that there has been a substantial rise in the consumption of protein-rich items (one of the sources of high inflation recently).

Rural income increase has coincided with higher food consumption

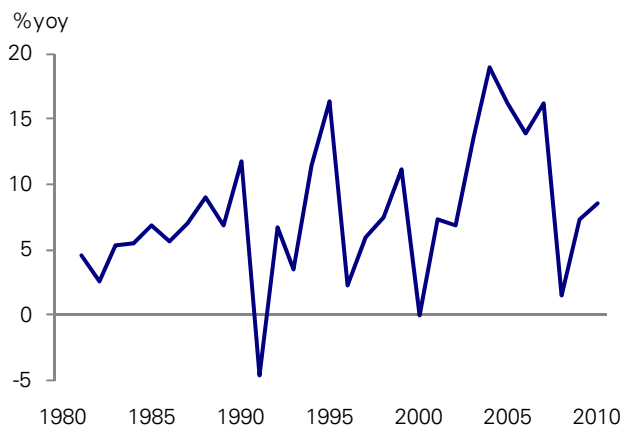


Source: CEIC, National Sample Survey, various issues, Deutsche Bank. Real spending on milk products and egg/fish/meat are scaled to 100 for FY72. Average value of consumption (Rs.) per person/per month of different food items

Demand has also been helped by government programs such as the National Rural Employment Guarantee Program, which has helped put a floor on the income of the rural poor. It would therefore follow that by virtue of smoothing rural income, the government has also played a part in raising consumption demand.

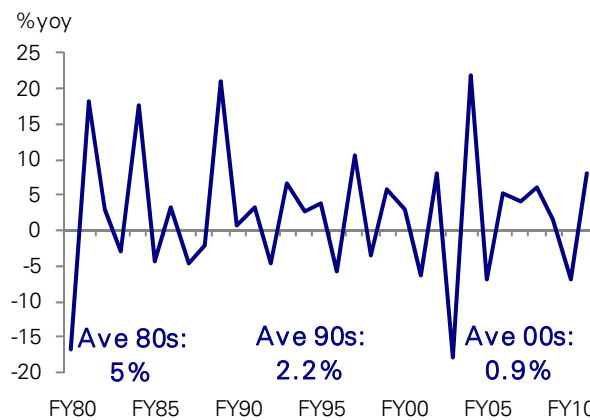
Supply: Inflation can remain stable under a briskly rising demand environment only if the supply side manages to keep pace. While the initial part of India’s growth acceleration phase was accompanied by a substantial rise in real investment, the trend reversed in 2007/08, and has remained anemic since then. Without substantial addition to infrastructure and capacity, the demand-supply dynamic has become precarious, making the system susceptible to reacting substantially to supply side shocks. Food inflation has become a big problem in recent years, and the chart below shows that agriculture production has not kept pace with demand. Over the past decade, production has been rising by less than 1% annually. Clearly this is not sufficient to provide for India’s rapidly growing economy.

Real investment growth sluggish recently



Source: CEIC Deutsche Bank

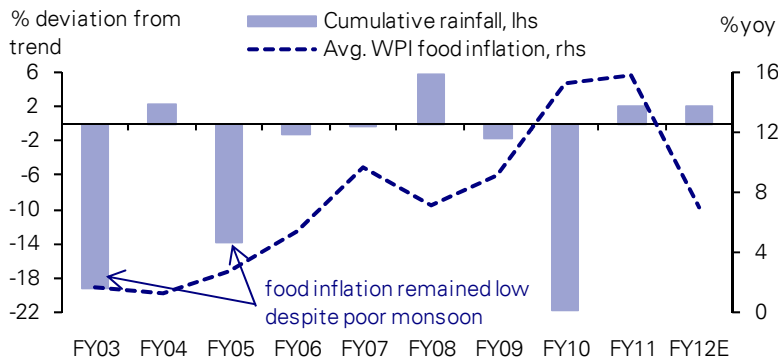
Agriculture production has not kept up with demand



Source: CEIC, Deutsche Bank

In addition to food supply, a poor monsoon is often attributed as a factor driving up food inflation. We have less sympathy with that line of reasoning as the chart below shows that inadequate rainfall is an insufficient predictor of food inflation. If the government deploys its food stocks expeditiously, food inflation can be kept in check. There have been years with poor rainfall when food prices have not been affected, and conversely, years of good monsoon when prices have jumped. Clearly what matters is the use of strategic food stocks in a manner that matches supply and quantity demanded expeditiously. Improvement in the food disbursement system would reduce concerns about rainfall considerably, in our view.

Bad rainfall does not always mean high food prices, and vice versa



Source: India Meteorological Department, CEIC, Deutsche Bank

A normal monsoon is a necessary but not a sufficient condition for anchoring food inflation to mid single digit level

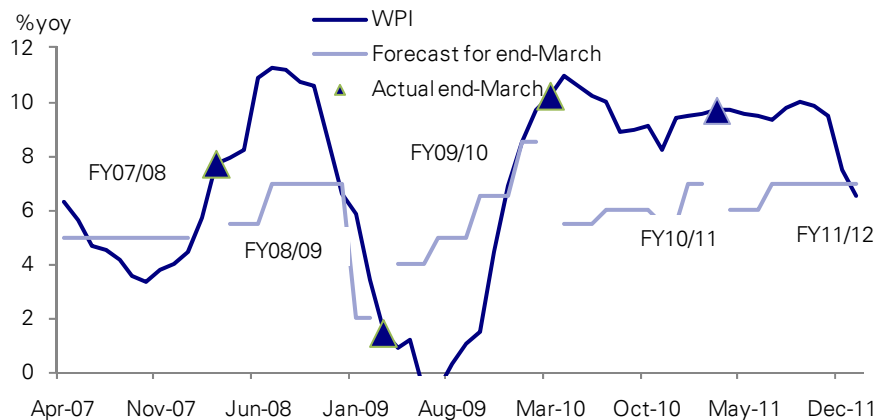
	Inflation (% yoy)						
	Food	Food-grain	Fruits & vegetables	Milk	Egg, meat, fish	Food-grain production	Rainfall
Weight in WPI	14.3	4.1	3.8	3.2	2.4	% yoy	% deviation from normal
FY05/06	5.4	7.2	8.1	1.0	6.4	5.2	-1.3
FY06/07	9.6	14.1	3.8	7.9	6.2	4.2	-0.4
FY07/08	7.1	7.1	11.8	5.2	3.3	6.2	5.7
FY08/09	9.1	11.0	8.5	7.5	7.8	1.6	-1.7
FY09/10	15.2	14.4	9.8	18.7	20.7	-7.0	-21.8
FY10/11	15.8	5.0	16.4	20.7	26.8	8.1	2.0

Source: CEIC, IMD, Deutsche Bank

RBI: The Reserve Bank of India’s attempts to rein in inflation pressure have been challenged considerably in recent years. The central bank lacks a clear inflation targeting objective, although it prefers to keep inflation low and stable. While the RBI’s objectives are multiple (including stable inflation, exchange rate and financial sector stability, and promotion of growth), it has made some effort to fight inflation in this cycle, steadily raising the policy rate from early-2010 to end-2011. The central bank, however, remains uncertain about the efficacy of the policy transmission mechanism, using a series of instruments (reserve requirement, liquidity ratio, reverse repo and repo rates) with varying magnitude and frequency, but still struggling to stabilize the liquidity or inflation situation.

The RBI has had difficulties in getting the inflation forecast right, as demonstrated in the chart below. In recent years the central bank’s forecasts have tended to be in the 5-6% range, reflecting more a desirable rate than a forecast. The fact that the central bank has routinely gotten the inflation forecast wrong by 100bps or more even with just a two month lag underscores the problems faced by the decision makers at the policy board. We believe that a higher (i.e. more accurate) inflation forecast would have pushed the RBI into raising rates more aggressively in 2010.

RBI has struggled to forecast or contain inflation

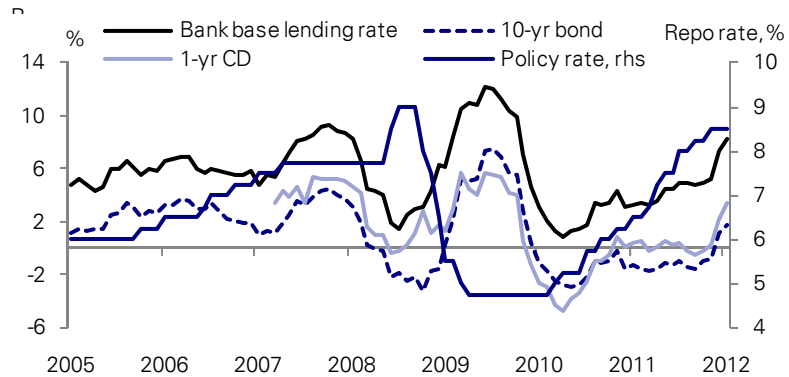


Source: CEIC, RBI, Deutsche Bank

Consequently, despite its prolonged efforts, the RBI has struggled to maintain real interest rates at or above zero. Given that economic growth has been at the 7-9% range, the persisting and wide growth-interest rate differential is bound to be inflationary both with respect to asset and consumer prices. Furthermore, inflation expectations are unlikely to be impacted in a constructive manner with such low levels of real interest rates. The RBI has

recognized this issue in its policy statements, but despite that real rates have tended to be on the low side.

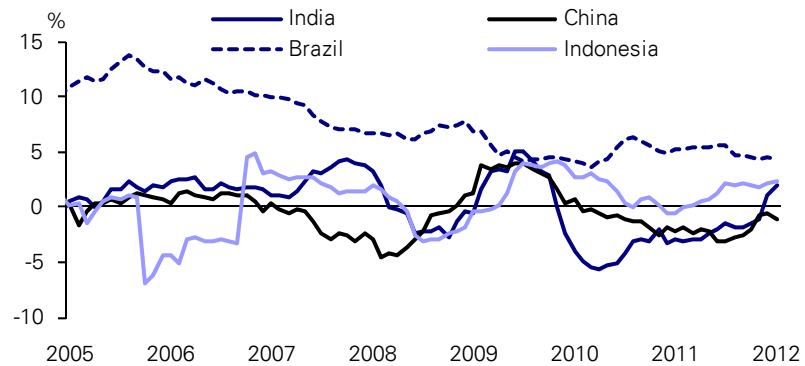
Real interest rates have turned positive after a long gap



Source: Deutsche Bank. Real rates are calculated by subtracting WPI inflation from the rates concerned. Policy rate is in nominal value.

Real rates in India are low not just in relation to its history, but also by cross-country comparison. Among large EM economies, India’s real rates are among the lowest (see below). It is striking that in early 2010 India’s real rates fell below even that of China, which historically has had the lowest rate among its peers.

Real rates in India still among the lowest in the EM world



Source: CEIC, Deutsche Bank

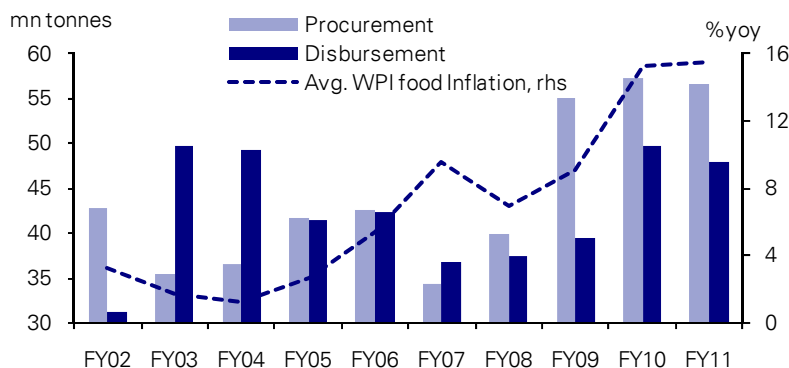
Government: Finally, the government’s role has not been helpful in the inflation situation:

- Policy initiatives such as NREGA and food securities act have enhanced welfare, but at the same time boosted demand for food without the requisite supply side response.
- Wide ranging subsidies in fuel, food, and fertilizer products encourage over-consumption and waste. While the government has begun to move toward market-based pricing and targeted subsidy in these areas, the present practice still involves most food and energy products being subjected to subsidy and ad hoc price adjustments, which in turn contribute toward price volatility.
- Persistently large fiscal deficit and resulting borrowing has impacted monetization and provided adverse impulse to the inflationary dynamic.
- **Food disbursement policy.** During incidences of food production shortage (due to a poor monsoon, for instance), the government of India typically reacts by disbursing food from its reserves to the market. However, in recent years there has been a decline in the efficiency of the food disbursement program. The following chart shows that periods of

high food inflation has been accompanied for lower disbursement (relative to procurement), while in years when disbursement picked up substantially, there was a clear capping of inflationary pressures.

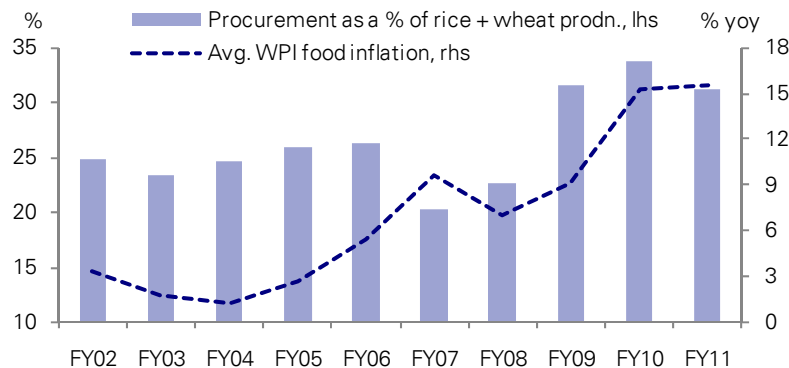
- Government procurement of food grains has increased significantly (to 30-31% recently) from 2008/09 onwards (before this period procurement as a % of total production was 23-26%) and along with a concomitant sharp increase in minimum support prices have resulted in higher food inflation.

Large gap between procurement and disbursement



Source: Ministry of Consumer Affairs, Food and Public Distribution, CEIC, Deutsche Bank

Food inflation has risen along with the increase in procurement ratio



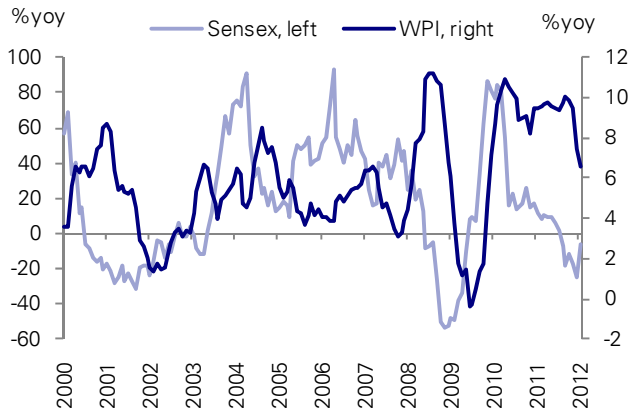
Source: CEIC, Economic Survey, Deutsche Bank

Investment implications

The preceding discussion suggests that a complex range of factors have driven the trend rise in inflation in India in recent years. Given that these factors will not be ameliorated in the near term, the risk is that India may well be characterized by high inflation (and therefore high interest rates) in the coming years (notwithstanding some short term respites and brief easing cycles)

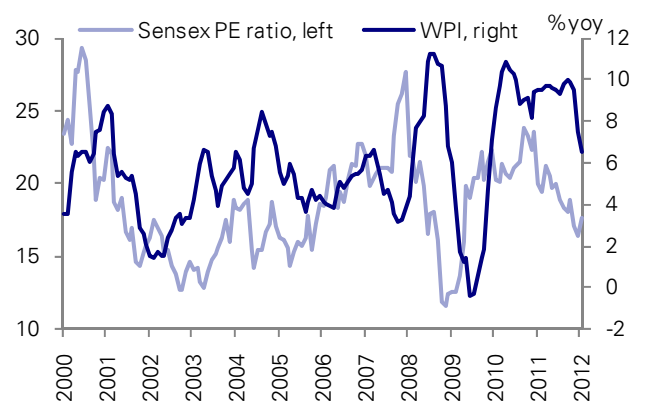
So what are the investment implications? In the short term, an outburst of inflation (in the form of input costs) can initially help companies with pricing power as they can readily pass on the higher prices to Indian consumers, who are in any case receiving substantial wage increases (12-18%, as per recent surveys). But over a longer period high wages begin to hurt all sectors, and the risk of a wage-price spiral dampens the earnings outlook. The charts below show that periods of high inflation have not been helpful to the Indian equity market's price or valuation.

Strong growth leads to inflation, which then tends to affect returns



Source: CEIC, Deutsche Bank

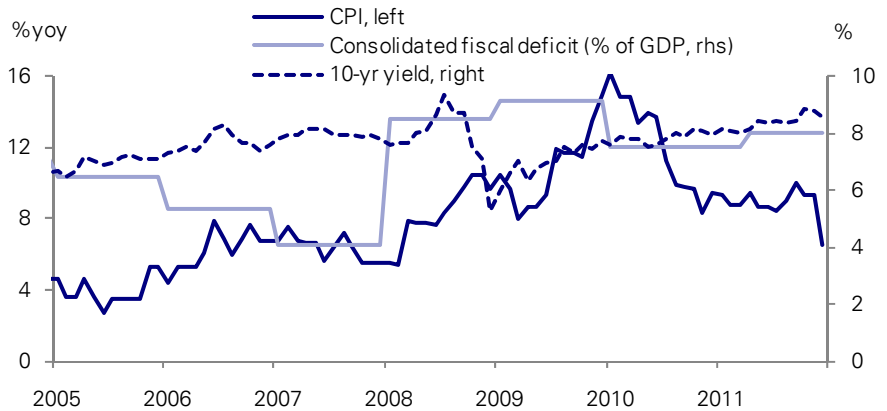
Market valuation is readily impacted by high inflation



Source: CEIC, Deutsche Bank

With respect to the fixed income market, the evidence is more subtle. Periods of high inflation hurt bond yields, but this relationship is weakened when fiscal consolidation is underway (during 2005 and 2006, for example). Hence, fiscal adjustment and lower inflation jointly drive bond market performance, as one would expect.

Bond market is impacted by inflation and deficit risks, unsurprisingly



Source: CEIC, Deutsche Bank

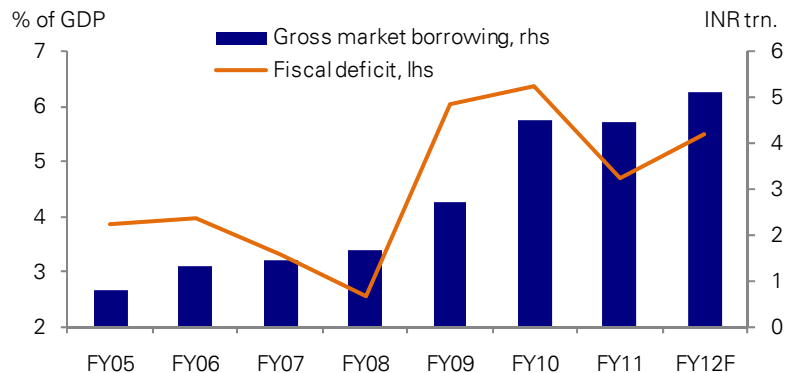
Fiscal deficit and debt

Fiscal issues have become a lingering burden

India's fiscal health remains a key concern despite the enactment of the Fiscal Responsibility and Budget Management Act in 2003 (requiring the government to reduce fiscal deficit to 3% of GDP). During periods when growth was strong and revenues were buoyant, there was some improvement in the fiscal position, but this reflected more of a cyclical improvement than structural consolidation. Since the onset of the 2008/09 global financial crisis and concurrent commodity price upsurge, the government has not succeeded in reducing the fiscal deficit in any meaningful manner. While the fiscal stimulus put in place in 2008 helped the economy, spending has become stickier since then, making normalization of fiscal policy rather difficult.

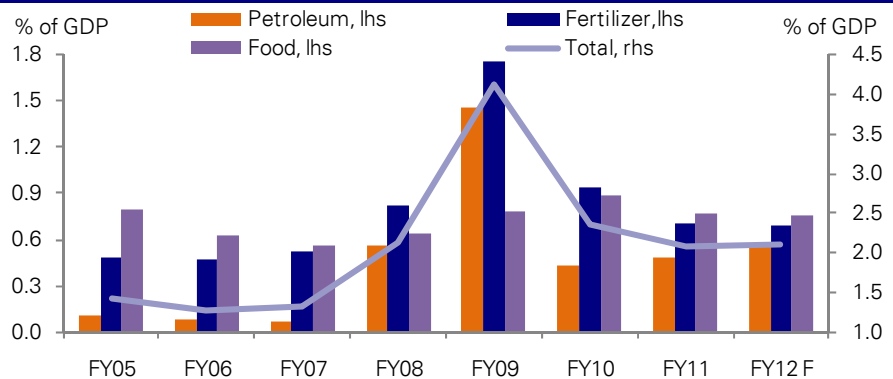
Several social programs have been introduced in recent years, particularly the Rural Employment Guarantee program (that gives 100 days of minimum wages to the rural unemployed), providing substantial impulse to rural demand while making the fiscal position worse. The government's large subsidy programs for food (the enactment of the Food Security Act from FY12/13 will increase the burden of food subsidies further), fuel, and fertilizer (amounting to about 20% of total spending, nearly 2.5% of GDP) also add to the adverse fiscal position.

Fiscal deficit and market borrowing trend



Source: Government budgets, Deutsche Bank. Note: Fiscal deficit and gross borrowing figures are for the central government

Trend of key subsidies



Source: Government budgets, Deutsche Bank. Note: Petroleum and fertilizer subsidy calculation includes off-balance sheet oil and fertilizer bonds issued during FY07/08, FY08/09 and FY09/10

Fiscal position in India vs. Asia – a cross section analysis

Ongoing global fragility rests on the fiscal woes of the United States and peripheral European economies. While India's debt burden is well under 100% of GDP, which is considerably better than many of its industrialized counterpart economies, how does it compare against its Asian peers? In this section, we take a fairly detailed look at the fiscal metrics of India and six other key Asian economies (China, Indonesia, Malaysia, Philippines, South Korea, and Thailand). For ease of comparison, we restrict our study to central government finances. The analysis below shows that India's fiscal position is one of the weakest in the region.

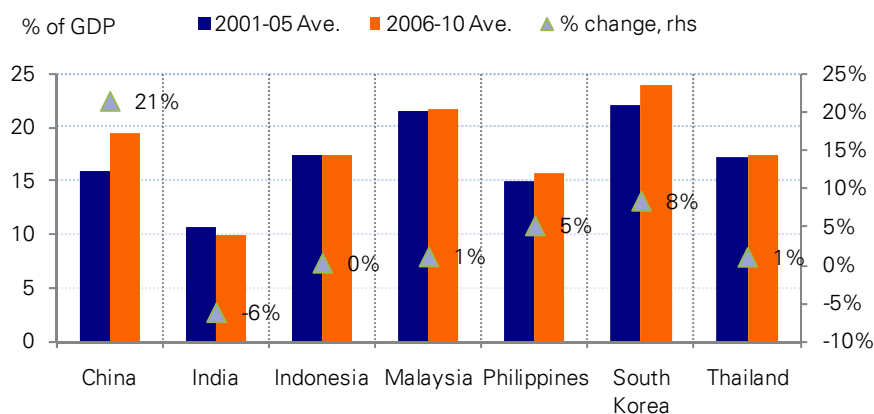
Fiscal Snapshot

Latest annual data ,% of GDP	Revenue	Expenditure	Primary Balance	Debt
China	21.1	22.7	-1.2	16.1
India	10.2	15.2	-2.0	56.1
Indonesia	15.4	16.2	0.6	26.1
Malaysia	20.8	26.5	-3.5	53.1
Philippines	14.2	17.9	-0.2	61.9
South Korea	24.0	23.9	-0.2	32.0
Thailand	16.8	17.9	0.2	41.6

Source: CEIC, IMF, Govt. websites, and Deutsche Bank. Data presented at the central govt. level. Primary balance = revenue – (expenditure – interest payment).

Other than China and South Korea, Asian countries tend to have small governments, with India taking in barely 10% of GDP in revenues at the central government level. Similar trends are seen on the spending side, although Malaysia's expenditures are on the high side. Looking closer at the **revenues** and going beyond latest data, we compare the latest five-year average (2006-10) against the previous five-year average (2001-05). The results reveal fairly divergent trends in revenue collection. China has seen a remarkable jump in the revenue ratio over the past decade, followed by South Korea. The rest have mostly been stagnant, **with India in fact seeing a decline in the revenue/GDP ratio**. The revenue trend is somewhat puzzling, as fast growing economies tend to display revenue buoyancy. Clearly revenue collection efforts are barely keeping pace with economic growth, arguably as governments are giving various tax exemptions and incentives that are acting as dampeners. As a result, most governments find it hard to push for ambitious medium term investment programs like China has done in the past decades.

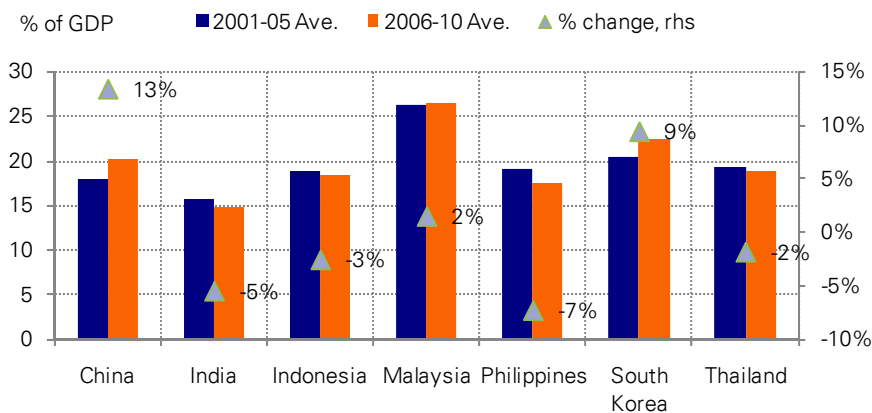
Central Government Revenue



Source: CEIC, International Monetary Fund, Government websites, and Deutsche Bank

Buoyed by robust revenue growth, China has boosted **spending** on both infrastructure and social development. South Korea has done the same at a more modest scale. But the rest of the sample economies have kept spending flat or on a declining path, constrained by lackluster revenue growth and an imperative to reduce debt.

Central Government Expenditure

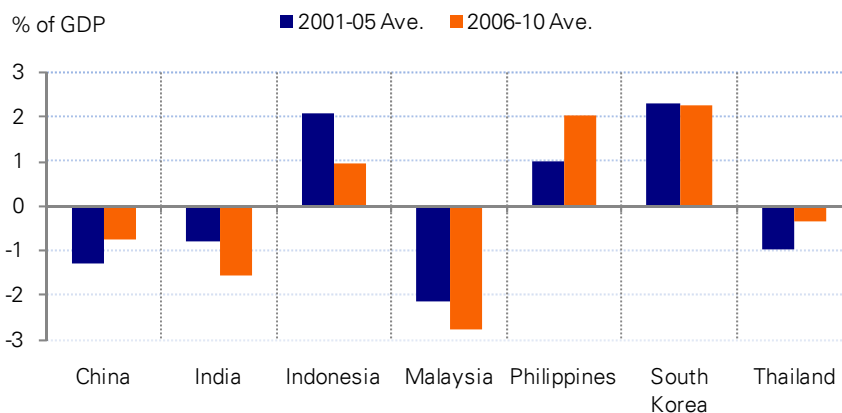


Source: CEIC, International Monetary Fund, Government websites, and Deutsche Bank

The result of fairly stagnant revenue and a slight decline in spending is that most Asian countries have seen an unchanged or improved **fiscal effort** over the past decade. The primary balance (revenue minus spending excluding interest payment) of China, Philippines, South Korea, and Thailand show trend improvement, while India, Indonesia, and Malaysia have seen a worsening of their primary deficits.

From the perspective of the primary balance alone, South Korea appears as the strongest fiscal regime, with over 2% of GDP in primary surplus through the entirety of the past decade. On the other end of spectrum, **both India and Malaysia have seen the cost of subsidizing food, fertilizer, and energy balloon without compensating revenue generation, and have consistently run higher primary deficits.**

Primary Balance



Source: CEIC, International Monetary Fund, Government websites, and Deutsche Bank

India's debt problem

India saw its public debt burden declining during the middle of this decade onward as real economic growth accelerated and the fiscal position improved (primarily due to buoyant revenues, helped by high growth). Public sector debt, after peaking at 81% of GDP in 2004, steadily declined over the next four years. By early 2008 debt was heading below 70% of GDP, and the budget was running a primary surplus. The fiscal responsibility legislation (requiring the government to reduce fiscal deficit to 3% of GDP) appeared to have coincided with a decisive move toward debt and deficit consolidation.

The two tables below summarize the pattern of recent fiscal performance. At the general government level (capturing the finances of both the center and the states), revenues and expenditures have moved in a similar manner, with the exception of FY08, when spending rose sharply on account of soaring fuel subsidy costs. Revenues, as a share of GDP, declined substantially after various cuts to excise and duties were made to cope with the 2008/09 global financial crisis (also, trade-related revenue generating activities declined sharply during that period), and have not yet reverted to pre-crisis levels. Fiscal deficit has remained high, although some marginal improvement has been seen in the past two years.

Consolidated balance of the public sector							
% of GDP	FY04	FY05	FY06	FY07	FY08	FY09	FY10
Revenue	25.2	22.4	23.5	25.3	24.2	22.6	22.5
Primary spending	25.9	23.0	23.2	23.9	27.3	26.6	25.4
Interest payment	6.6	5.9	5.7	5.4	5.3	5.1	4.7
Gross Fiscal Deficit	7.2	6.5	5.4	4.1	8.5	9.5	7.3

Source: Government of India, CEIC, Deutsche Bank

Debt ratios have improved in recent years, helped by strong growth						
% of GDP	FY04/05	FY05/06	FY06/07	FY07/08	FY08/09	FY09/10
I. Central govt debt	53.4	51.9	49.1	45.9	49.1	48.1
II. State govt debt	30.8	30.0	28.0	25.3	24.4	23.6
III. Central loans to states	4.9	4.3	3.4	2.9	2.6	2.2
General govt debt = I + II - III	79.3	77.7	73.6	68.2	71.0	69.5

Source: Government of India, Deutsche Bank

While the year-to-year fiscal performance has not been particularly impressive, India's debt trajectory has been on a broadly downward path, thanks to its high growth and relatively low interest rate of public debt. While debt/GDP rose somewhat in FY08, the ratio has gone already back on a declining path. The government has not yet released general government debt data for FY10/11, but our estimates suggest that the debt/GDP ratio declined to about 64%, thanks to a combination of high growth and low real interest rates (nominal GDP rose by 20%, real GDP by 8.4%, and real interest on government debt was about minus 2%).

Baseline projection

In the rest of the note we present the results of a debt sustainability analysis. We take the latest debt statistics and project them forward under a baseline scenario. Our medium term assumptions are as follows:

- Real GDP grows by 7.5-8%; inflation stabilizes to around 6.5%;
- Real interest rate on public debt is about 1.5% (derived from 8% nominal rate and 6.5% inflation);
- Primary deficit persists at about 3.0% of GDP; primary spending rises by 8% in real terms, in line with past trend; revenues rise in line with GDP;
- The rupee appreciates against the USD by about 2% a year.

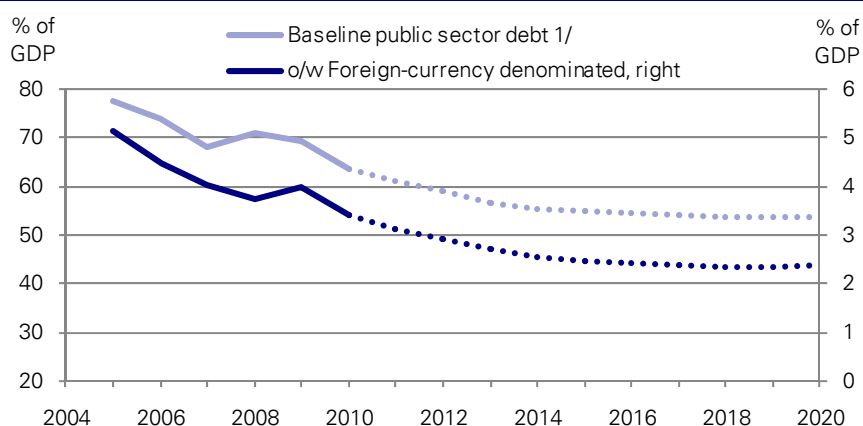
Under this scenario, India's debt path appears to be rather benign. The debt/GDP ratio heads toward 50% of GDP by 2020; in fact the debt ratio appears to stabilize by the middle of this decade. If the government makes further progress toward fiscal consolidation during this phase (if, for example, revenue growth turns buoyant due to strong tax administration and successful implementation of the Good and Services tax and real primary spending growth is kept close to zero) and thus eliminates the primary fiscal deficit, then the debt/GDP ratio could readily head below 40% by 2020.

Given that India's external debt exposure is small (about 4% of GDP in FY09), and that too largely in low interest rate concessional loans, the country's public external debt profile is benign. In our baseline scenario of a steadily appreciating rupee, the external debt/GDP ratio falls to about 2% in the outer years of our forecast horizon. This suggests considerable available room for enhanced external borrowing.

The key to the declining debt path is the real growth to real interest rate differential (on average 7% in our framework). We have seen this differential at play during the last few years as episodes of significant fiscal slippage has caused only a small rise in the debt ratio while even modest improvements have led to a resumption of the sharply declining path.

It is striking however that even under our baseline (optimistic) scenario, India's debt burden remains substantial and rather acutely vulnerable to modest shocks. We delve into this issue further in the next section.

Public debt, history and projection



Source: Government of India, Deutsche Bank. 1/ Combined Central and State level debt.

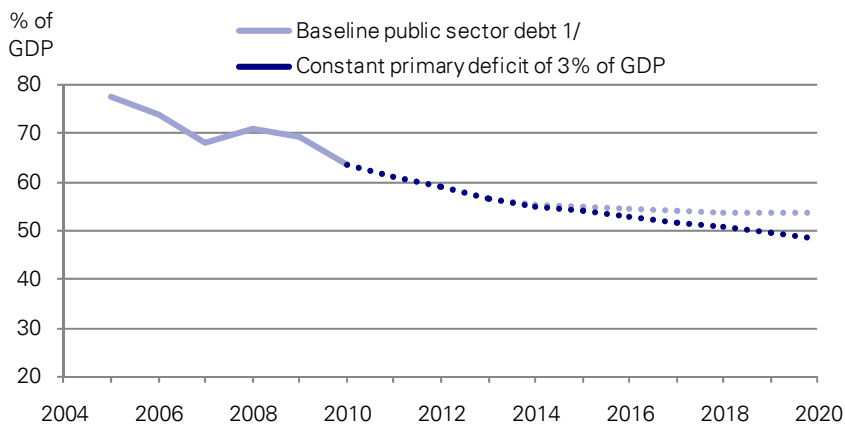
Stress Tests

The framework used here is the standard IMF debt sustainability exercise for emerging market economies. Debt dynamic is a function of previous period's debt stock, interest rate on debt, GDP deflator, real GDP growth rate, and exchange rate.

Shock 1: No change in fiscal effort

If primary deficit stays at around 3% of GDP, and the growth/interest rate nexus discussed above remains in place, India's debt path would remain broadly favorable. Essentially, this is the same scenario as our baseline, where we expect minimal change in the fiscal stance. Note however that the primary deficit was 4% of GDP in 2009 and could well be above 3% of GDP in 2011 if fuel subsidies are not brought under control. Hence even the so-called "constant" deficit assumption entails resumption or reinforcement of fiscal discipline.

Debt dynamic favorable to achieve decline in debt path even with modest fiscal effort

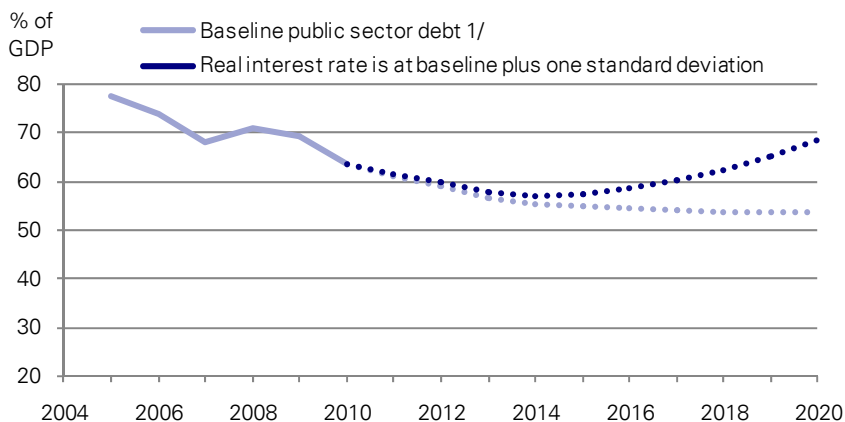


Source: Government of India, Deutsche Bank 1/ Combined Central and State level debt.

Shock 2: Real interest rate rises to about 3%

In this scenario, real interest rate paid on public debt is raised by one standard deviation of the past average (2005-10), which in nominal term implies about 10% interest rate on government bonds. This is not an extreme shock by any means; this level of rates was observed as recently as 2003. The implication of this shock is clearly adverse (see below).

A rise in real interest rate could cause adverse debt dynamic

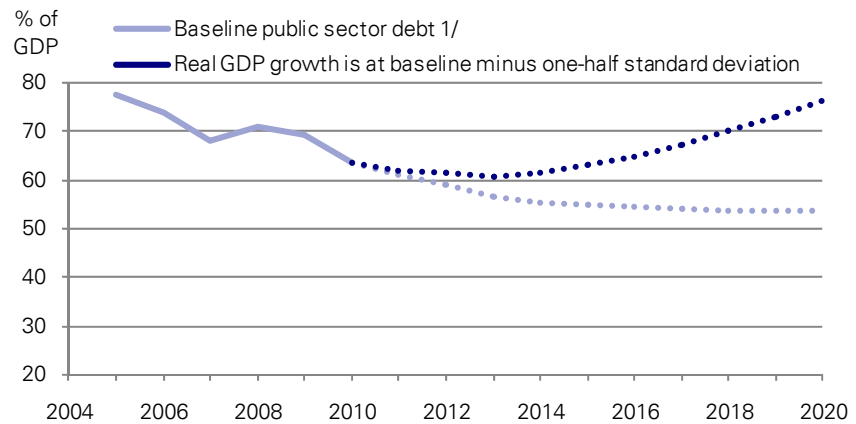


Source: Government of India, Deutsche Bank. 1/ Combined Central and State level debt.

Shock 3: Real growth falls below 7%

In this shock scenario, we lower real GDP growth by one standard deviation, which pegs economic growth at 6.7%. The shock impacts the debt path even more adversely than the interest rate shock, pushing up the debt ratio toward 80% by 2020. Again, growth falling below 7% is not an extreme assumption. India routinely experienced growth rates in the 5-6% range in the 1990s and early 2000s. A return to a path of that nature would cause considerable stress to India's debt profile.

Debt sustainability hinges critically on sustained, strong growth

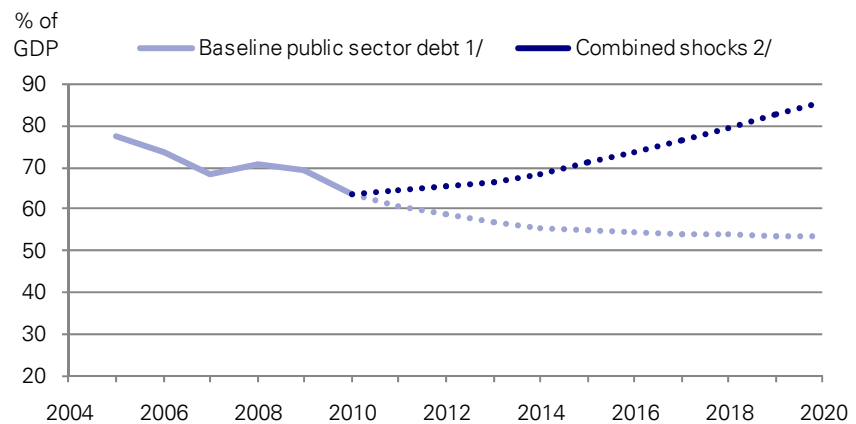


Source: Government of India, Deutsche Bank. 1/ Combined Central and State level debt.

Shock 4: Combined shock

What if shocks were multiple in nature? After all, a fall in growth could well translate into a worsening of the fiscal stance, which could then cause higher bond supply and consequently push up interest rates. With this in mind, we construct a scenario incorporating shocks half the size of the ones discussed above but in conjunction with one another. Unsurprisingly, the impact on debt is immediate and extremely adverse. While the probability of such a manifestation is low, given the proliferation of extreme shocks to the global economy in recent years, it is important to be cognizant of such eventualities.

Debt path can turn rapidly higher if economy is hit with multiple shocks

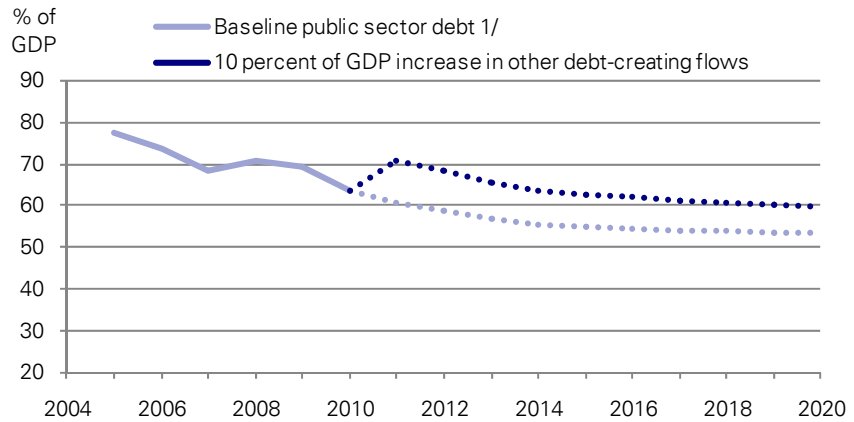


Source: Government of India, Deutsche Bank. 1/ Combined Central and State level debt.. Combined shock scenario consists of a rise in real interest rate, a slowing of real growth, and a worsening of the primary balance by ¼ standard deviation each.

Shock 5: Contingent liability shock

Banking crisis, insolvency of state-owned enterprises, or another bout of global extreme risk aversion, any of these shocks could force the authorities in taking on substantial liabilities, as has been the case in many economies of the world in recent years. In this scenario we raise the government’s liabilities by 10% of GDP in 2011. This keeps the debt level above 60% of GDP through the year 2020.

A one-off increase in liabilities would be a set-back for debt reduction

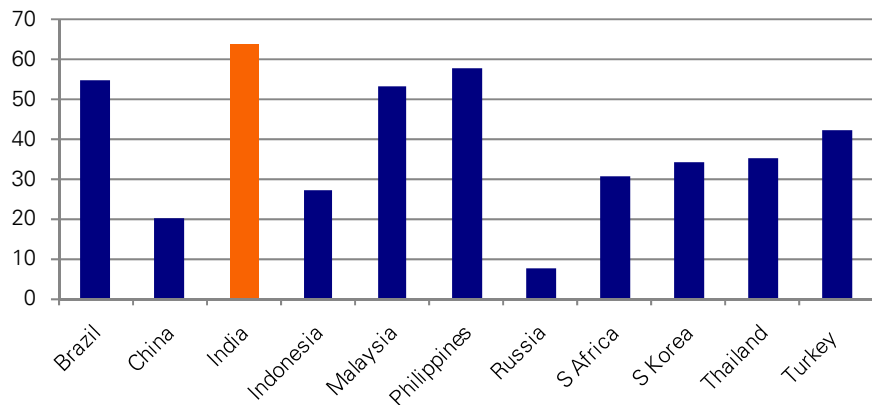


Source: Government of India, Deutsche Bank. 1/ Combined Central and State level debt.

Debt sustainability is not an issue if growth remains robust

The above analysis shows that high economic growth rate and modest fiscal consolidation could stabilize India's debt/GDP ratio in the coming years, but the debt path is vulnerable to modest shocks. Also, a stable or declining debt path does not detract from the fact that at present about a quarter of central government spending is devoted to interest payments, constraining growth critical spending. The high level of debt is also reducing the room for fiscal flexibility to counter future economic shocks. For instance, during the 2008/09 global crisis, the authorities responded forcefully by cutting taxes and boosting spending. The adverse debt paths generated by the shocks discussed above show that in the near term, if there is another economic shock, the government would have considerable difficulties in providing a fiscal answer to the situation. Finally, India's debt burden is one of the highest among emerging market economies, underscoring its need to reduce the public debt burden.

Public debt as a percent of GDP in 2010



Source: CEIC, Deutsche Bank

Impact of Food Security Act

A key legislative effort by the Government of India, the Food Security Act, is slated for implementation from FY12/13 onward. The Act envisages bringing about two-thirds of the population under a comprehensive umbrella of subsidized food through the public distribution system.

We believe that the incremental food subsidy cost in FY12/13 would be no more than INR200bn but the key risk is structural. More focus on social spending without progress in revenue generation will make India's fiscal position weaker in the medium term, a worrying prospect given the already high deficit and debt levels. Expansion of the food subsidy scheme would also cause potential leakage and inefficiency in the subsidy disbursal mechanism. Finally, by augmenting demand, the scheme could increase the risk to food price inflation, especially since a third of the agricultural production is procured by the government to maintain stocks needed to run the subsidy scheme.

Background

Despite being one of the fastest growing economies in the last decade (average real GDP grew by 8%), India ranks poorly in the latest Global Hunger Index (GHI)³ (67th among 81 countries of the world with the worst food security status), with an estimated 22% of the total population (around 250mn people) suffering from undernourishment. India has shown one of the least improvements in the GHI over the last decade.

The government has decided to tackle the issue of enhancing food security in the country by increasing the existing food subsidy net for the underprivileged section of the society.

The Food Security Act (FSA) is slated for implementation from the next fiscal year, which envisages providing subsidized food grains to around two-thirds of the population through the targeted public distribution system (TDPS). Key features:

- The scheme will cover 75% of the rural population and 50% of the urban population in its ambit, with 46% of the rural and 28% of the urban households classified as 'priority' households (extremely poor).
- 'Priority' households will receive 7 kg of rice, wheat or coarse grains per person per month at a subsidized price of INR3/2/1 per kg respectively.
- 'General' households (54% of rural and 72% of urban population) will be entitled to a supply of 3 kg of any of the above grains per person at 50% of the minimum support price (MSP) paid to farmers.
- The scheme also includes nutritional support to pregnant mothers and children and free meals from community kitchens.

Population under coverage

Based on our population forecast for the next three years and assuming a 70/30 split between rural and urban population, we estimate that around 822mn people (67.5% of the total population) will be likely beneficiaries of the Food Security Act in 2012/13 (assuming the program is implemented in its totality), with the number progressively rising closer to 850mn by the end of 2014/15. Combining the rural and urban population together, this is likely to benefit around 495mn people in the 'priority' category and 328mn in the 'general category', with the number rising to 509mn and 338mn in the respective categories through 2014/15.

³ International Food Policy Research Institute's Global Hunger Index 2011 is based on 3 indicators – the proportion of the population that is undernourished, the proportion of children who are under weight and under five child mortality.

Foodgrain required for the scheme

Given that each priority and general sector household are entitled to INR7/kg and INR3/kg of foodgrains respectively per month, we calculate the annual requirement of foodgrains in 2012/13 to be around 53.3mn tons, rising up to 55.0mnt in 2014/15. Adding an additional 8-10mn tons of foodgrain requirement on lieu of other welfare schemes (which are not subsumed within the FSA) and buffer stock maintenance, the total foodgrain requirement under the FSA would likely amount to 63.3mn tons in 2012/13 (rising to about 67.3mn tons by 2014/15), in our view.

Hence the government would need to procure around 63.3mn tons of foodgrain in 2012/13 (up from 57.9mn tons of procurement expected in 2011/12) to meet the foodgrain requirement for the FSA. Procurement as a percentage of total foodgrain production was 31.3% in 2010/11 and is expected to be around 30% in 2011/12. The procurement level has increased significantly from 2008/09 onwards (before this period procurement as a % of total production was 23-26%) and along with a concomitant sharp increase in minimum support prices have resulted in higher food inflation. Our estimates suggest that in order to meet foodgrain demand under the FSA, the procurement ratio has to rise to 32-33% of the estimated production, which along with probable increase in MSPs would likely put further upward pressure on open market prices of foodgrains.

Likely increase in subsidy cost

Our calculation suggests that the subsidy cost on account of the Food Security Act could be close to INR1.1trillion (1% of GDP), assuming full disbursement of foodgrains as planned. The total subsidy cost includes, i) provision for foodgrains under the FSA at a discounted price compared to its economic cost; ii) maternity benefits for 22.5mn pregnant and lactating women (INR6,000 per person/year); and iii) subsidy cost of existing welfare schemes not subsumed under the FSA. Apart from the overall food subsidy cost, the government needs to allocate further resources for agricultural production and enhancing/modernizing storage capacity.

The incremental subsidy cost would work out to INR400mn, assuming the government were to implement the scheme in its totality starting from the next fiscal year, and rising by another INR88-90bn per year in the subsequent years. But it is highly unlikely that the government would want to or be capable of implementing such a massive scheme in one stage. Rather, in our view, the scheme will be implemented in a staggered manner, over the next few years. Assuming 50% of the scheme is implemented in the next fiscal year, the incremental food subsidy cost should be around INR200bn in 2012/13, raising the food subsidy bill to around INR 900bn.

Even with partial implementation, the FSA will undoubtedly strain the fiscal balances in the next fiscal year, unless the government is able to cut wasteful expenditure expeditiously and substantially on other front, which will be extremely challenging, in our view. Given that the pressure on petroleum and fertilizer subsidies is unlikely to abate in the next fiscal year, coupled with a likely subdued prospect for tax collection and disinvestments, the increase in food subsidy bill will only add to the fiscal problem, by making the expenditure side of the budget even more structural. The other two key issues with the FSA that needs to be addressed are i) potential leakage and inefficiency in the subsidy disbursement mechanism through the targeted public distribution system; and ii) risks related to food inflation, given that almost a third of the agricultural production needs to be procured (to meet food grain demand) at a floor price which seems to be rising each year by 20-30% on an average.

Deficit and debt of India's states

The central government finances receive a great deal of attention, but state finances are sizeable too, with state level debt making about a third of the national debt stock. As a federal system, India's states have formal arrangements with the central government with respect to revenue transfer as well as debt and deficit limits. We summarize below some important attributes of states' public finance:

- Debts issued by the states are guaranteed by the center, and a uniform deficit ceiling (i.e. debt issuance limit) for the states is also set by the center every year.
- States have their own revenues, spending programs, and budget reporting systems.
- In recent years, attempts have been made to bring all states under more **formal arrangements** to make their public finances more transparent and prudent. States have implemented a VAT system (which is undergoing further modification); with a few exceptions they have also adopted a fiscal responsibility law, limits on debt guarantees, a streamlined pension system for state employees, and debt management standards.
- The Reserve Bank of India (RBI) acts as the banker, debt manager, and monetary authority for all states.
- States borrow both from the market (about 60% of total in recent years) and government agencies (including the central government, state owned insurance companies, and states' small savings fund).
- With respect to **market borrowings**, states issue dated securities of varying tenures (mostly of 10 years maturity, with over half of the outstanding debt with remaining maturity of 7 years or more) that are largely subscribed by banks and financial institutions. Average interest on these securities is about 8%.
- States also issue guarantees and letters of comfort on behalf of public sector enterprises and other institutions (including urban local bodies) to enable them to raise resources. RBI estimates that these **contingent liabilities** are worth about 3.5% of GDP (as of 2008).
- Although state-to-state performances vary, generally speaking states' debt and deficits were lowered during 2004-08 when the economy was expanding rapidly. Total state debt reached a peak of 32.8% of GDP in 2003/04, and was brought down to 26.2% of GDP by 2008/09. The last two years have seen a pause in states' fiscal consolidation due to the global economic crisis related slowdown. The center allowed states to raise their deficit ceiling to 3.5% of GDP in 2008/09 and 4% of GDP in 2009/10. Consequently the debt/GDP ratio is estimated to have flattened in the last two years.
- States receive substantial transfers from the center under an elaborate set of formulas set by the National Finance Commission. Their **own source revenues** comprise of state-level VAT, stamp duty on property transactions, licensing fees, rental of state properties, utility fees and special surcharges. State spending is concentrated on maintenance and building of infrastructure, running of the civil service, education, health, agriculture, and poverty alleviation.
- There are significant shortcomings with the **state finance data**. Budget documents of the state governments do not provide sufficient details of their outstanding liabilities. For example, information about bank loans such as rate of interest and maturity structure is often unavailable.

Below we present a decade's worth of state-by-state fiscal data. The following four panels present data on states' overall fiscal deficit, primary deficit (i.e. overall deficit minus interest payments), own tax revenue and debt. Some observations:

Deficit. The data show that the fiscal performance of India's states steadily improved till the global crisis of 2008. While at the beginning of the decade virtually all states ran a fiscal deficit of over 4% of state GDP, by 2007 only a handful of states ran deficits higher than that level. While deficits rose across the board from 2008 onward, the fiscal position did not worsen to the extent of reverting back to the earlier years of the decade.

Gross fiscal deficit (% of GSDP)										
States	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Andhra Pradesh	3.9	5.0	4.3	4.6	3.9	3.9	3.5	2.0	2.7	2.8
Bihar	12.2	8.5	7.0	7.6	6.2	1.7	4.7	3.0	1.5	6.5
Chhattisgarh	-	-0.2	3.6	3.0	5.7	2.8	0.8	-0.1	0.2	2.8
Goa	5.4	6.1	5.8	4.7	4.8	4.8	4.5	3.2	3.1	4.5
Gujarat	6.2	7.2	5.3	4.3	5.5	4.6	2.8	2.2	1.6	2.9
Haryana	4.2	3.9	4.2	2.0	3.5	1.3	0.3	-0.9	0.8	2.0
Jharkhand	-	-	4.7	5.8	3.9	7.1	9.0	8.3	9.0	4.9
Karnataka	4.2	3.9	5.2	4.4	3.4	2.3	2.0	2.3	2.2	3.5
Kerala	6.6	5.3	4.2	5.7	5.7	4.0	3.3	2.6	3.7	3.5
Madhya Pradesh	4.9	3.4	4.2	4.7	7.1	6.1	3.9	2.1	2.0	3.5
Maharashtra	4.7	3.6	4.0	4.8	5.3	4.8	4.0	2.3	-0.5	2.3
Orissa	8.7	7.7	8.5	5.7	5.9	1.9	0.4	-0.9	-1.1	2.1
Punjab	4.8	5.2	6.2	5.4	5.4	4.2	2.4	3.6	3.2	4.5
Rajasthan	6.5	5.2	6.3	6.9	6.6	5.2	4.0	2.6	1.9	3.4
Tamil Nadu	4.0	3.5	3.2	4.3	3.2	2.8	1.0	1.4	1.2	2.7
Uttar Pradesh	6.3	5.6	5.2	4.6	7.3	5.2	3.6	3.1	4.0	5.3
West Bengal	8.6	7.6	7.5	6.3	6.8	5.1	4.2	4.3	3.7	3.7

Source: Handbook of Statistics on State Government Finances, RBI, July 2010; Directorate of Economics & Statistics of respective State Governments, Deutsche Bank calculations

Primary deficit (% of GSDP)										
States	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Andhra Pradesh	1.5	2.4	1.4	0.9	0.3	0.5	0.5	-0.6	0.4	0.6
Bihar	6.5	4.4	2.2	2.6	1.2	-3.0	0.1	-0.4	-1.7	3.2
Chhattisgarh	-	-1.3	1.2	0.5	3.0	0.2	-1.1	-1.6	-1.3	1.4
Goa	2.6	3.0	2.2	1.1	1.3	2.0	1.5	0.4	0.5	1.8
Gujarat	3.6	4.4	1.9	0.8	2.0	1.4	0.1	-0.5	-0.9	0.7
Haryana	1.5	1.3	1.7	-0.7	1.0	-1.1	-1.7	-2.6	-0.7	0.7
Jharkhand	-	-	2.4	3.3	1.6	5.6	7.7	7.1	6.1	2.1
Karnataka	2.2	1.7	2.8	1.6	0.6	-0.1	0.0	0.2	0.3	1.7
Kerala	3.7	2.2	1.0	2.4	2.3	0.8	0.3	-0.3	1.1	0.8
Madhya Pradesh	2.2	0.4	1.6	1.8	4.0	2.7	1.0	-1.0	-1.0	0.6
Maharashtra	2.8	1.5	1.6	2.4	2.8	2.5	1.9	0.0	-2.5	0.6
Orissa	5.8	2.4	2.4	-0.1	1.2	-2.7	-4.4	-4.2	-3.8	-1.4
Punjab	0.8	2.1	2.2	1.2	1.3	0.1	-1.0	0.2	0.1	1.3
Rajasthan	3.1	1.2	2.0	2.0	2.3	0.8	0.0	-1.1	-1.4	0.2
Tamil Nadu	2.0	1.3	0.8	1.6	0.5	0.4	-1.0	-0.6	-0.8	0.9
Uttar Pradesh	2.6	1.5	0.9	1.2	2.9	0.5	0.4	-0.3	0.9	2.4
West Bengal	5.5	3.9	3.5	1.7	1.9	0.5	-0.1	0.2	0.0	0.1

Source: Handbook of Statistics on State Government Finances, RBI, July 2010; Directorate of Economics & Statistics of respective State Governments, Deutsche Bank calculations

The **fiscal effort** of the states, measured as primary deficit (overall deficit minus interest payments), shows a more mixed picture. Only a few states have managed to run primary surpluses on a consistent basis, and the magnitude of deterioration in the last two years has been quite dramatic. It is nevertheless noteworthy that all states had a lower primary deficit at the end of the sample period than at the beginning. Three states with the worst fiscal effort in 2000—Bihar, Orissa, and West Bengal—were also the states with marked improvement by the end of the sample period. States that began the decade with relatively strong effort managed to maintain that through the course of the sample period.

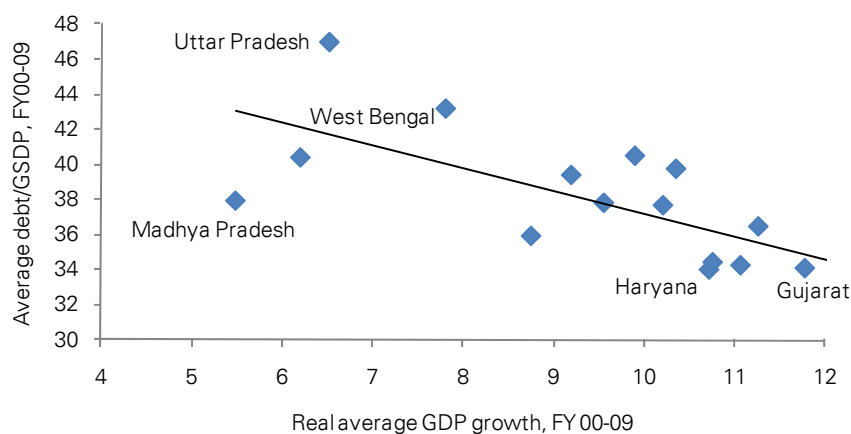
Own-tax revenue. As mentioned above, states do have some own-source revenue, including state-level VAT, stamp duty on property transactions, licensing fees, rental of state properties, utility fees and special surcharges. A state with high own revenue is clearly more autonomous and stronger, as it possesses greater discretionary resources.

There is wide dispersion in the revenue collection record of India's states. Southern states (Andhra Pradesh, Kerala, Tamil Nadu), which are known for strong institutions, sound governance, and relatively less poverty, lead the pack in own-source revenue collection. At other end of the spectrum, states with weaker capabilities and economic activities—West Bengal, Uttar Pradesh, Orissa, and Bihar—predictably have a lower revenue base.

Own tax revenue (% of GSDP)										
States	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Andhra Pradesh	7.0	7.3	8.0	7.6	7.3	7.7	8.0	8.6	8.8	9.6
Bihar	7.3	5.1	4.2	4.3	5.1	4.5	4.5	4.1	4.4	5.5
Chhattisgarh	-	2.9	6.7	7.2	6.7	7.4	7.9	7.8	7.1	7.9
Goa	7.3	7.6	8.0	7.4	7.6	7.5	8.3	8.5	7.9	8.8
Gujarat	7.4	8.1	7.5	6.7	6.6	6.9	6.9	7.0	7.1	6.7
Haryana	6.8	7.4	7.6	7.7	7.7	8.0	8.5	8.4	7.5	7.7
Jharkhand	-	-	5.9	6.0	5.4	4.7	5.3	4.9	5.1	6.6
Karnataka	7.6	8.3	8.7	8.6	9.6	10.3	10.1	11.3	10.9	10.7
Kerala	7.5	8.1	7.6	8.4	8.4	8.1	7.8	8.2	8.2	8.7
Madhya Pradesh	7.2	7.1	5.4	7.1	6.6	7.3	7.8	8.0	8.4	9.0
Maharashtra	7.0	7.8	7.8	7.6	7.4	7.9	7.6	7.9	8.0	7.2
Orissa	4.0	5.0	5.3	5.8	5.4	5.8	6.4	6.4	5.8	6.3
Punjab	5.9	6.6	6.1	6.9	6.8	7.2	8.3	7.4	6.9	7.5
Rajasthan	5.5	6.4	6.2	7.1	6.5	7.2	7.7	7.6	7.5	7.9
Tamil Nadu	8.1	8.4	8.7	9.1	9.1	9.6	9.9	10.0	9.7	9.9
Uttar Pradesh	5.4	6.0	5.4	6.2	6.0	6.3	6.8	7.4	7.2	7.5
West Bengal	3.8	4.1	4.1	4.2	4.6	4.7	4.5	4.4	4.3	4.7

Source: Handbook of Statistics on State Government Finances, RBI, July 2010; Directorate of Economics & Statistics of respective State Governments, Deutsche Bank calculations

Debt. The pattern seen in the previous datasets is repeated here. With a few exceptions, states with strong economies have lower fiscal burden. The highest indebted states have the weakest growth indicators (such as West Bengal and Uttar Pradesh). In general, the debt burden of states has been reduced over the past decade, but interestingly, the relative ranking of states has not changed much. States with the highest debt/GSDP ratio in 2000 remained so in 2009, and the same is true the other way round. It appears that India's poor states are growing slower than its wealthy states; as a result the rich-poor divide is widening, and despite the absolute improvement in the fiscal position, the relative gap between states has not changed, and in fact widened in many cases.

Fast growing, rich, states have lower debt

Source: Handbook of Statistics on State Government Finances, RBI, July 2010; Directorate of Economics & Statistics of respective State Governments Deutsche Bank calculations

Debt (% of GSDP)

States	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Andhra Pradesh	27.0	28.9	31.0	33.5	34.3	35.6	34.7	32.6	30.6	30.0
Bihar	65.5	52.3	59.2	58.9	60.4	58.6	59.6	50.1	46.1	49.1
Chhattisgarh	-	27.0	27.5	29.5	27.9	27.8	25.9	21.7	18.4	19.0
Goa	39.7	41.8	52.8	43.2	41.8	38.5	38.7	38.3	38.6	36.7
Gujarat	31.1	38.5	38.8	39.0	37.1	37.7	36.6	34.6	32.7	30.0
Haryana	26.9	25.2	27.1	27.5	27.1	26.6	25.4	22.5	19.4	17.8
Jharkhand	-	-	28.5	31.3	23.6	25.5	30.8	30.1	30.8	30.5
Karnataka	20.8	23.3	27.8	29.8	30.5	28.4	26.9	28.2	25.4	25.5
Kerala	32.1	36.1	37.9	39.5	40.5	39.6	38.1	36.1	35.3	35.6
Madhya Pradesh	32.4	27.9	30.0	34.4	36.9	41.7	42.5	40.4	38.5	38.8
Maharashtra	23.7	26.8	28.7	30.0	31.4	32.2	33.3	31.6	27.4	26.1
Orissa	48.0	55.9	60.2	62.1	55.5	51.6	51.9	45.2	36.1	36.5
Punjab	39.6	41.2	44.9	48.8	47.5	48.7	47.1	42.1	38.7	40.0
Rajasthan	38.3	43.1	45.4	53.7	47.6	51.1	51.5	46.4	43.7	43.8
Tamil Nadu	22.0	23.5	26.2	28.1	29.5	27.7	27.2	24.8	24.2	24.2
Uttar Pradesh	44.5	45.8	50.4	50.8	54.7	54.8	55.6	54.2	52.2	50.8
West Bengal	32.5	38.2	42.3	46.6	47.3	46.5	49.9	46.9	44.3	43.2

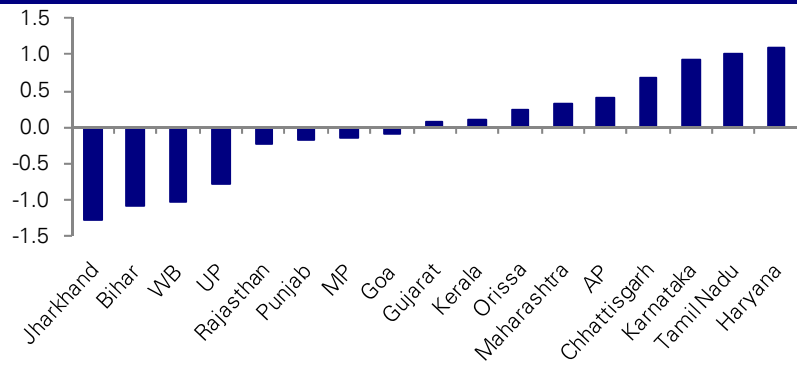
Source: Handbook of Statistics on State Government Finances, RBI, July 2010; Directorate of Economics & Statistics of respective State Governments, Deutsche Bank calculations

Assessing the fiscal health of states

In this section we put together the fiscal data observed separately so far to construct a normalized index of fiscal health. We restrict our analysis to the 17 non-special category states. We use three fiscal parameters – primary deficit, own tax revenue and state debt, all as a % of GSDP to construct a composite fiscal ranking of the states in the following way:

- We first calculate the average primary deficit/GSDP and own tax revenue/GSDP ratio during 2000-09, while taking the latest (2008-09) debt/GSDP ratio of the 17 states;
- We then calculate the sample mean and standard deviation for each of the parameters;
- Using those statistics, we construct state specific z-scores for each of the variables;
- For each state, a composite z-score is then constructed by taking the simple average score of the three fiscal parameters.

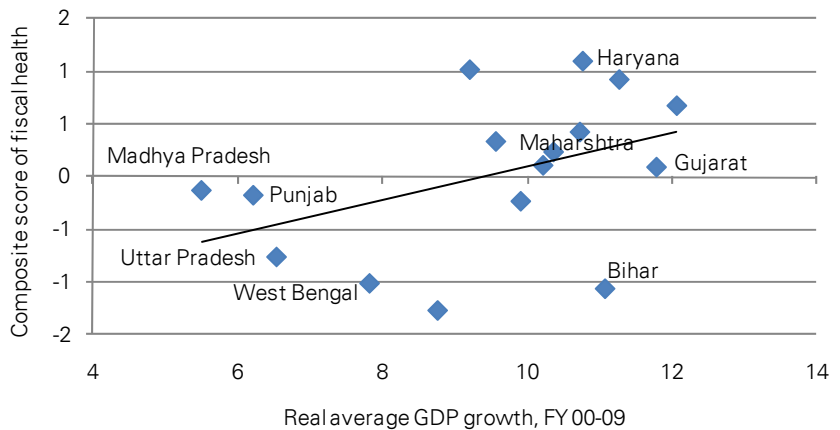
Fiscal health scores



Source: Handbook of Statistics on State Government Finances, RBI, July 2010, Deutsche Bank calculations

The above chart summarizes the findings. It shows that strong fiscal performers are clustered around India’s high growth areas. States like Haryana, Karnataka, and Maharashtra have traditionally had strong economic record, and their fiscal scores are no exceptions. Conversely, the laggard states with respect to fiscal performance are laggards in a wide range of economic and social indicators. We find that Jharkhand, Bihar, West Bengal and Uttar Pradesh are some of the states having the worst fiscal dynamic. **Given that Bihar, Uttar Pradesh and West Bengal together would account for more than one-third of the rise in India’s population between 2010 and 2025, their poor fiscal ranking is particularly worrisome.** Our earlier study has shown that these states rank poorly in human development indicators, and have a low degree of urbanization and formal employment.

Higher growth tends to mean better fiscal health



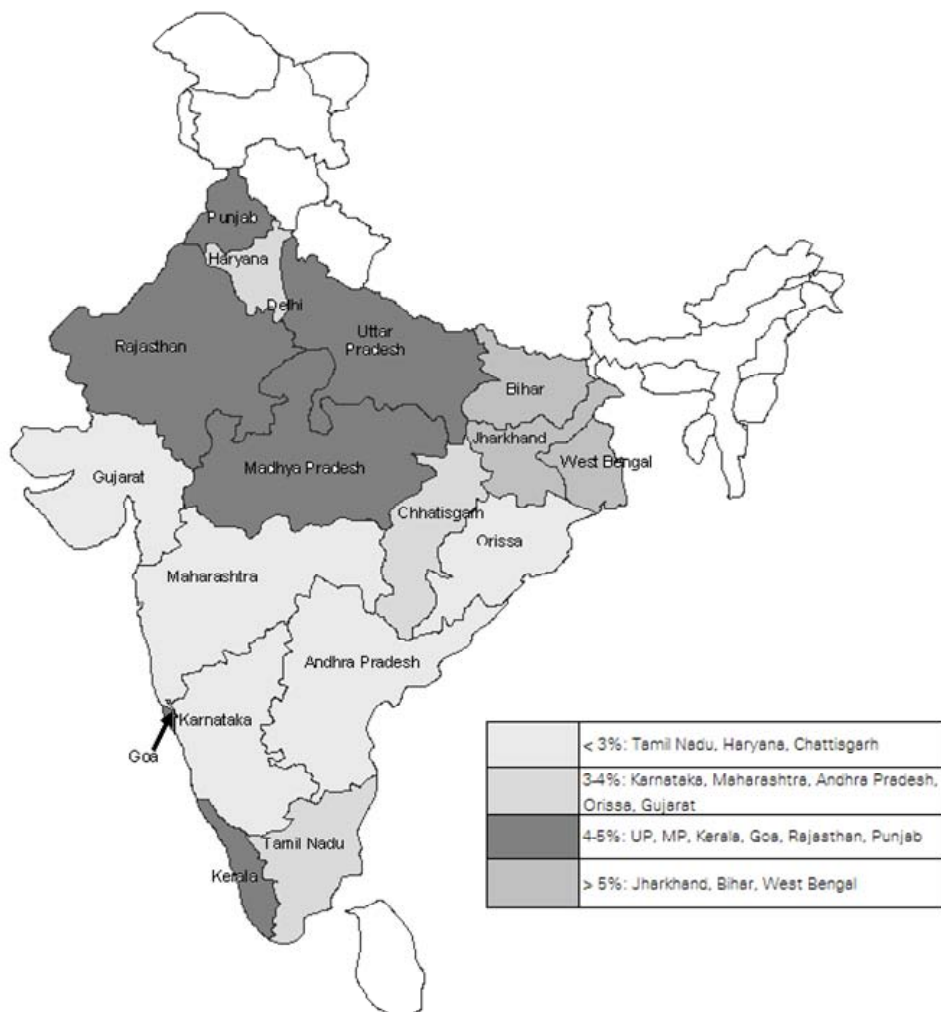
Source: Handbook of Statistics on State Government Finances, RBI, July 2010; Directorate of Economics & Statistics of respective State Governments, Deutsche Bank

As population increases sharply in these states in the next decade and a half, the pressure on these respective state governments will mount to generate new employment and attract higher investments, failing which the incidence of poverty and human development conditions (already in a poor state) could worsen even further. Fiscal support to prop up growth and development would likely be minimal, given that these states already remain severely challenged on that front. If the incidence of migration gathers pace, as people shift elsewhere looking for employment opportunities, the fiscal position of these states could deteriorate even further, as the government’s own tax revenue falls, thereby raising the deficit and the debt. Continued and rapid progress toward fiscal consolidation, therefore, is essential.

In the next few pages, we present a series of maps to summarize the fiscal data of India’s states.

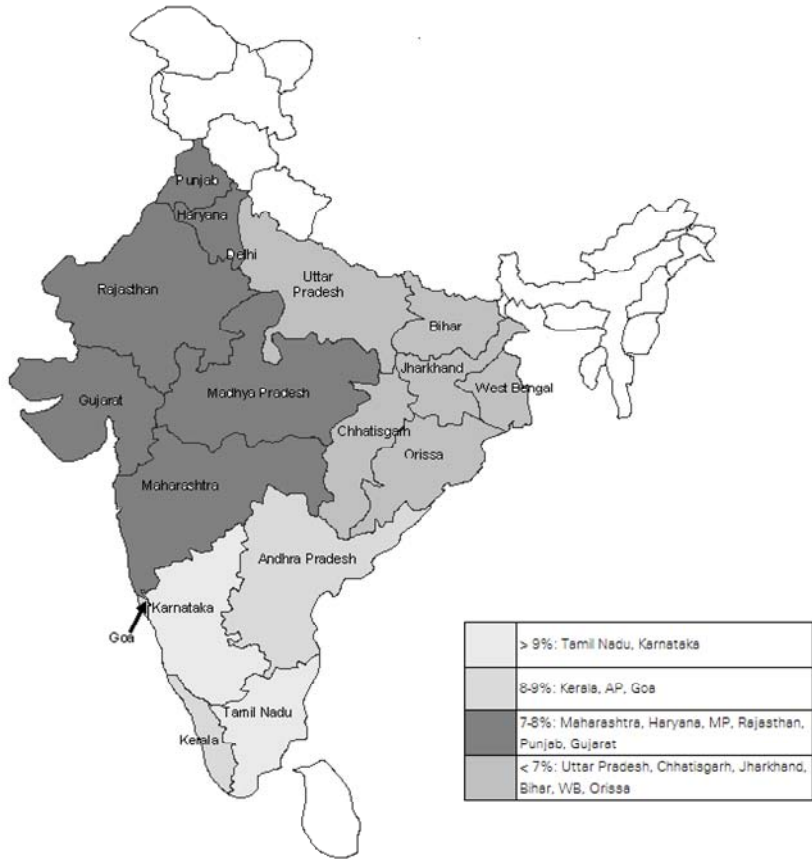
A map-view of states' fiscal position

Fiscal deficit/GSDP ratio (average of 2000-2009)



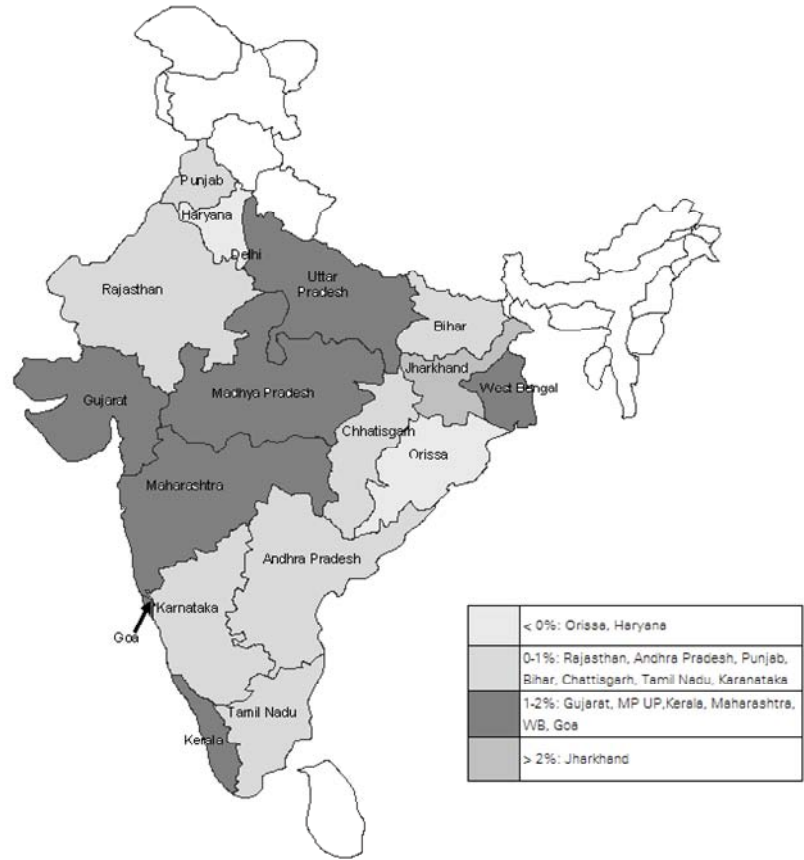
Source: Handbook of Statistics on State Government Finances, RBI, July 2010, Deutsche Bank
 Map Source: Courtesy of the University Libraries, The University of Texas at Austin; original image modified by Deutsche Bank

Own tax revenue/GSDP ratio (average 2000-09)



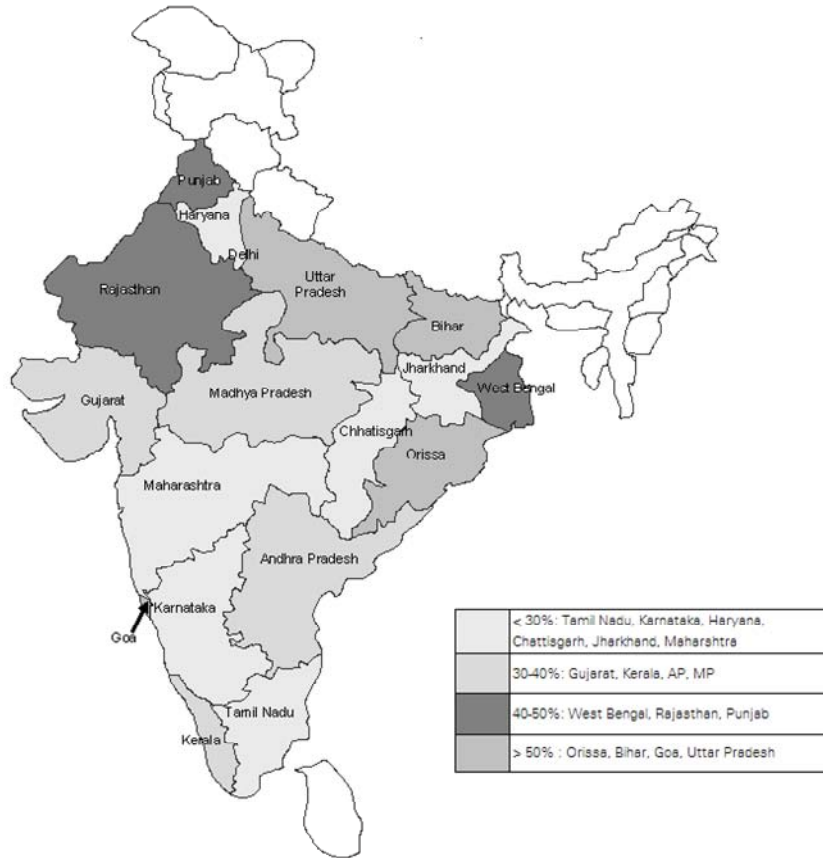
Source: Handbook of Statistics on State Government Finances, RBI, July 2010, Deutsche Bank
 Map Source: Courtesy of the University Libraries, The University of Texas at Austin; original image modified by Deutsche Bank

Primary deficit/GSDP ratio (average 2000-09)



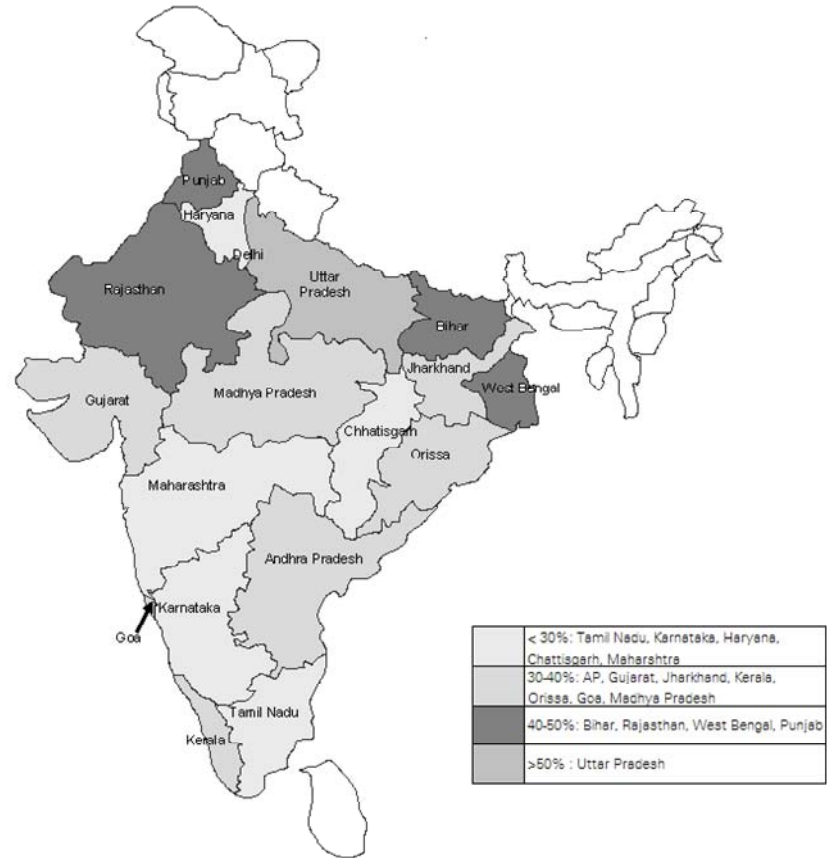
Source: Handbook of Statistics on State Government Finances, RBI, July 2010, Deutsche Bank
 Map Source: Courtesy of the University Libraries, The University of Texas at Austin; original image modified by Deutsche Bank

Debt/GSDP ratio (2001-02)



Source: Handbook of Statistics on State Government Finances, RBI, July 2010, Deutsche Bank
 Map Source: Courtesy of the University Libraries, The University of Texas at Austin; original image modified by Deutsche Bank

Debt/GSDP ratio (2008-09)



Source: Handbook of Statistics on State Government Finances, RBI, July 2010, Deutsche Bank
 Map Source: Courtesy of the University Libraries, The University of Texas at Austin; original image modified by Deutsche Bank

BOP and the rupee

Delicate balance between capital account surplus and a chronic current account deficit

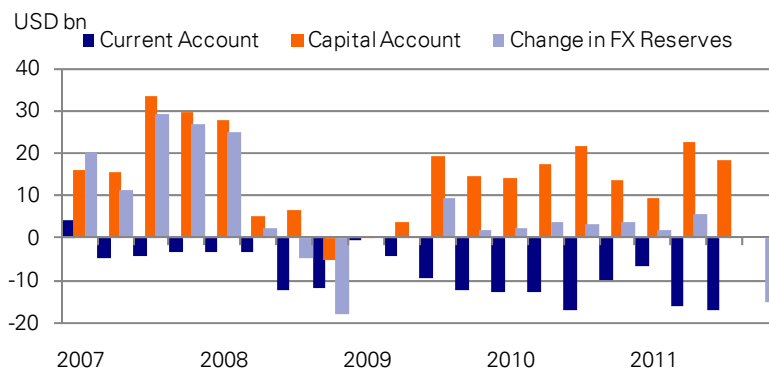
India's current account deficit has become a key characteristic of its balance of payments in recent years. This has added yet another dimension to the economy's vulnerability.

It is generally expected that the Indian economy *should* run a current account deficit of around 3% of GDP in the coming years. This figure is based on a rule of thumb: India's gross savings rate has tended to be in the range of 32-33% of GDP in recent years; an investment rate of 36% is expected to provide around 9% growth (under a 4-to-1 capital-output ratio assumption). The difference between the investment rate and the savings rate points to a current account deficit of around 3% of GDP.

An economy that grows at 8-9% should be able to handle such deficits. If growth slows, along the lines of the argument above, so should the current account deficit. Generally though, foreign investors should be keen to deploy their capital to India to take advantage of these high growth rates, and the exchange rate should therefore be well-supported.

In recent years, this thesis has worked on most, but not all, occasions. The rising current account deficit has, by and large, been comfortably exceeded by a robust capital account surplus. During a brief period in 2008/09, when global risk aversion spiked, India's capital account came under pressure. Again, in the second half of 2011, the capital account experienced some pressure as market sell-offs caused capital outflows. The chart below illustrates that India's net BOP position has only occasionally been on the negative side.

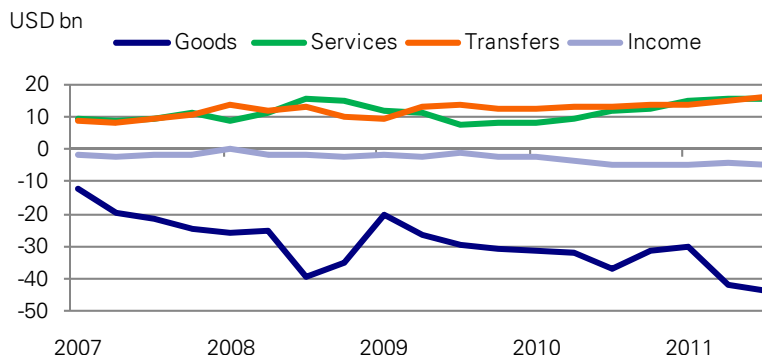
Balance of payments



Source: CEIC, Deutsche Bank. Date ranges from Q1 2007 to Q2 2011.

In recent years, the movement of India's current account appears to have been dominated by fluctuations in the trade deficit. Net balances of payments with respect to services, transfers, and income have been broadly stable (in USD terms), reflecting fairly even growth rates on the payments and receipts sides. But the trade deficit has fluctuated considerably, worsening sharply twice in the last five years when oil prices spiked.

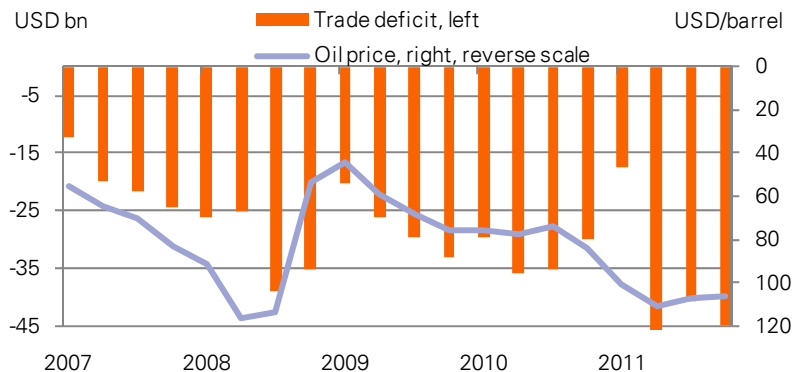
Key components of the current account balance; it's all about trade deficits



Source: CEIC, Deutsche Bank

The chart below shows a clear relationship between the oil price and the trade deficit. India's export sector has done rather well in recent years, growing over 20%yoy for the past half decade. Still, the trade deficit has tended to be large owing to the economy's growing demand for imports in general and oil imports in particular. Spikes in world oil price have coincided with movement in the trade deficit. But note that the nominal value of the trade deficit has not widened considerably in recent cycles; as a result the trade deficit has eased as a share of GDP (from about 10% of GDP in 2008 to about 8% of GDP in 2011).

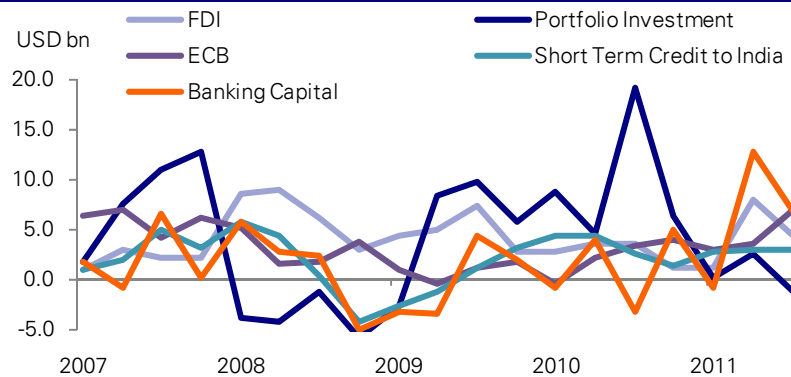
Trade deficit and oil price



Source: Oil price used here is Dubai crude. Bloomberg Finance LLP, CEIC, Deutsche Bank

Notwithstanding the vulnerability of the nominal value of the current account to oil price fluctuations, financing of the current account has been orderly in recent years thanks to a broadly robust capital account. Through past economic cycles, India has been successful in drawing portfolio flows, foreign direct investment, external loans, and banking capital (see following chart). Data show that despite slowing growth both locally and globally, capital account flows have been resilient (with the obvious exception of portfolio flows). Going forward, global risk aversion and financial market stress could stem some flows temporarily, but the experience of the 2008 crisis suggests that flows tend to return to India.

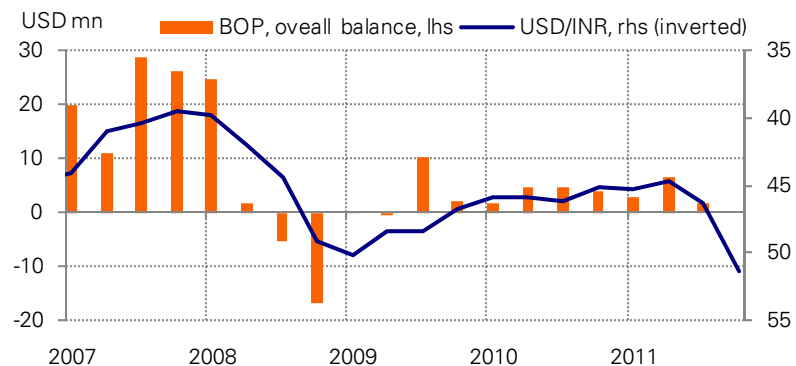
Key components of the capital account



Source CEIC, Deutsche Bank

The rupee came under pressure in late 2011 as the oil import bill mounted and portfolio flows weakened. Since imports are captured in the current account and portfolio flows are in the capital account, the overall balance of the balance of payments ought to be a good indicator of the rupee’s movements. Indeed, the chart below shows that weakness in the BOP is a fairly adequate explanatory factor for the rupee’s direction.

Balance of payments and the rupee



Source CEIC, Deutsche Bank

A flurry of capital account liberalization measures put in place in late 2011, such as opening up the local currency debt market to further investment by institutional and retail investors, allowing foreign individuals to own single-name Indian stocks, and removing the withholding tax on non-resident deposits, helped stabilize the exchange rate. But these measures have basically brought in more portfolio capital, leading to questions about the quality of the financing of the current account deficit.

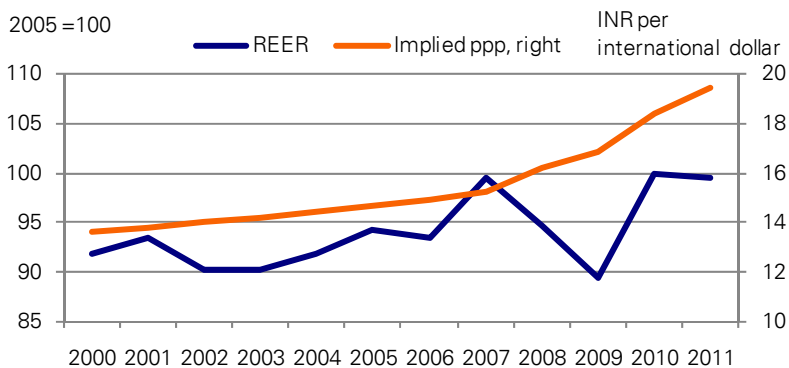
There is a case to be made for better-quality financing, and clearly it would be desirable to see the capital account driven by FDI, which is typically stable, versus portfolio, which can be volatile. For that switch to occur, the onus is on the Indian policymakers to create room for more stable flows.

Whither the rupee?

High-growth economies, by virtue of having productivity differentials with their trading partners, tend to experience a steady rise in the real exchange rate over time. Hence the oft-stated case for India has been that the rupee is poised to display a tendency toward medium-term appreciation, as India's high growth potential should allow it to attract foreign capital and hence it should run an ample and steady BOP surplus. This view has run counter to the argument that India's persistent current account deficit and reliance on commodity imports make the exchange rate unlikely to sustain trend appreciation.

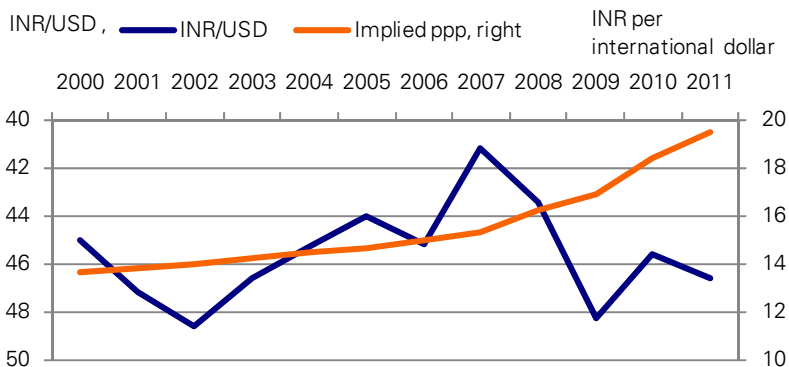
We see an additional force complicating the debate: inflation. The persistence of high inflation over a number of years is bound to impact the economy's competitiveness, as already evidenced by the rise in the real exchange rate (see chart below). Furthermore, the latest estimates of India's purchasing power parity (ppp) based exchange rate also show that one needs substantially more local currency to purchase an internationally comparable set of goods. This is a worrisome development.

Rupee's competitiveness is being eroded by high inflation



Source: International Monetary Fund, Deutsche Bank

Rupee and implied ppp



Source: International Monetary Fund, Deutsche Bank

Going forward, one can envision one of two scenarios – either India brings down inflation sharply to stem the rise in the real exchange rate, or it succumbs to a bout of nominal exchange rate depreciation. We see the rupee's vulnerability rising unless inflation is brought back to the previous trend of 4-6%.

Reserve adequacy

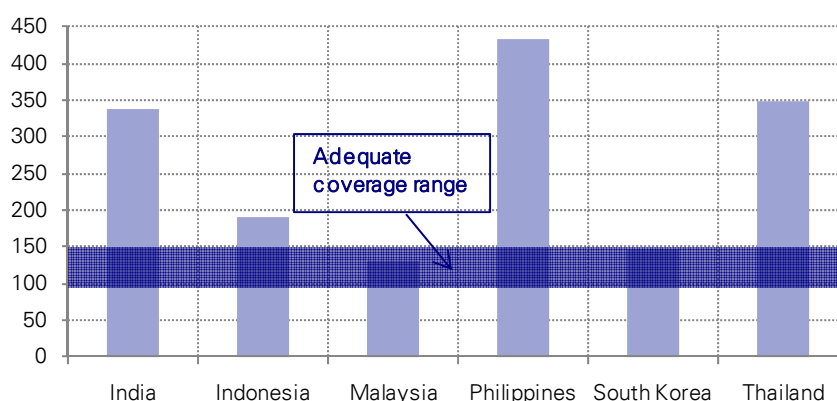
The preceding discussion highlights both short- (oil price) and medium-term (competitiveness) risks to the rupee. There are also external risks; recent years have shown that the exchange rate can be susceptible to considerable volatility during periods of global risk aversion. We estimate that about half the depreciation incurred by the rupee in late-2011 was due to global factors (e.g., a dollar funding crunch owing to Euro area stress). Is the RBI capable of handling such volatility, or should one prepare for continued bouts of volatility? We examine this question by using a new approach to measuring external strength. Under this approach, a risk-weighted metric is used to observe a country's reserve holdings. Based on a methodology recently published by the IMF, we infer the degree to which India's foreign exchange reserves cover is consistent with that of its peers.⁴

In this approach, variables that could constitute outflows are examined. These include short term external debt, current account balance, broad money, portfolio investment, and exports. The relative riskiness of each of these variables is estimated using historical volatility (based on observed distribution of outflows during episodes of exchange market pressure).

The chart below presents the estimates of this metric using the latest available data. According to the IMF analysis, reserves to risk-weighted liabilities is considered "adequate" in 100-150 range. India, by virtue of having relatively low external debt and sizeable reserves, scores very well on this measure. Indeed, India gets the second-highest score of reserve adequacy in our analysis.

The analysis suggests that the rupee is in little danger of facing a disorderly depreciation risk. If the exchange rate depreciates further, we believe the Reserve Bank of India can readily intervene and comfortably backstop outflows and thus manage the exchange rate. We note that the central bank did little to prevent depreciation in late-2011, and this was likely a reflection of the authorities' desire to see the currency correct some overvaluation, but as we see it, there should be no doubt about the capability of the intervening authorities to protect the exchange rate.

Reserves to risk-weighted liabilities



Source: CEIC, Deutsche Bank. Risk weighted liabilities include short term external debt, current account balance, broad money, portfolio investment, and exports.

⁴ See *Assessing Reserve Adequacy*, International Monetary Fund, February 2011.

Reform outlook: Electricity

A critical need, with near term risks

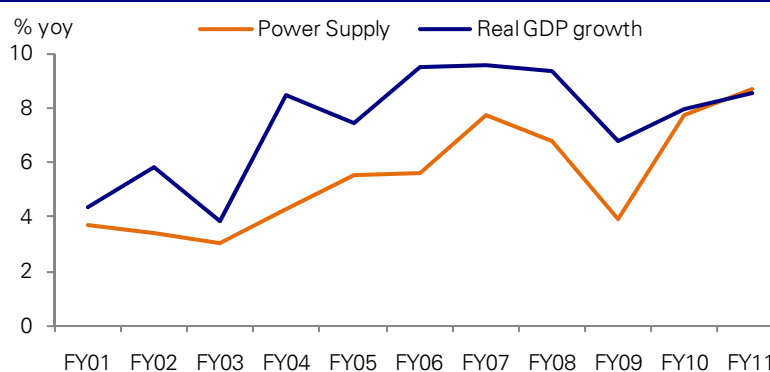
India is thirsty for electricity. India's real economic growth has averaged 8% in the past decade, with energy demand growth averaging about 6.5%. During the same period power supply has risen by just under 6% a year. Looking ahead, it is reasonable to expect that demand would remain strong for years to come, and hence the burden will be on the power sector to produce electricity that is reasonably priced, timely produced, and reliably supplied. Intrinsicly associated with electricity generation is coal production; indeed, power remains a key component of coal demand in India. Owing to ongoing and likely persisting coal shortage, India's power demand-supply gap may not be bridged even in FY15.

If the supply-demand gap worsens from the present 5% to 7-8%, which could happen in 2012 and 2013 if the coal supply situation is not addressed expeditiously, the ensuing shortage could subtract as much as 0.5% from growth. Higher price of coal and electricity is a stated policy goal, but the implementation is likely to be gradual, perhaps over several years. We estimate that a 30% rise in coal and electricity prices could add a cumulative 150bps to inflation. Cumulative losses worth 0.8% of GDP of State Electricity Boards pose a risk to both the banking sector and the government's fiscal position, though it is encouraging to note that power distribution companies in most states have been allowed to raise tariffs recently to reduce their losses.

Demand

India's real economic growth has averaged over 8% in the past decade, with energy demand growth averaging about 6.5%.⁵ During the same period power supply has risen by just under 6% a year. Looking ahead, it is reasonable to expect that demand would remain strong for years to come, and hence the burden will be on the power sector to provide reasonably priced, timely produced, and reliably supplied electricity.

Power supply and real GDP growth trend in the last decade



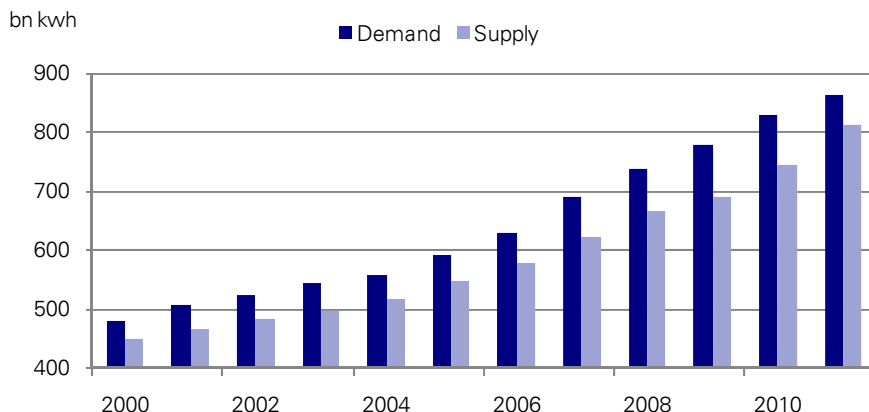
Source: CEIC, Deutsche Bank

In this section we look at some of the micro structural aspects of electricity production, and assess the economic implication, especially with respect to macro parameters such as growth, inflation, financial sector, and the fiscal deficit. Recent developments suggest that

⁵ This implies an energy demand elasticity with respect to growth of about 0.8. There is evidence that the elasticity is gradually declining with a rise in productivity. See *Approach to the Twelfth Five Year Plan, Planning Commission of the Government of India, August 2011*.

even if growth slows in the near term due to the ongoing global economic crisis, the gap between steady demand and inconsistent supply is likely to persist, which could impact these macro parameters significantly.

Electricity supply and demand



Source: CEIC, Deutsche Bank

Given that there is substantial demand for power, the basic issue is why the market isn't responding with adequate supply. This issue is at the heart of India's power shortage. The fact of the matter is **profitable production of power requires steady supply of inputs (mostly coal and gas in the context of India), a tariff structure to ensure cost recovery and reasonable profit, and a well maintained distribution and bill collection system.** Unfortunately there are numerous layers of complications associated in this chain due to state intervention at various points. In this issue we look at some of these complications.

Current issues and outlook

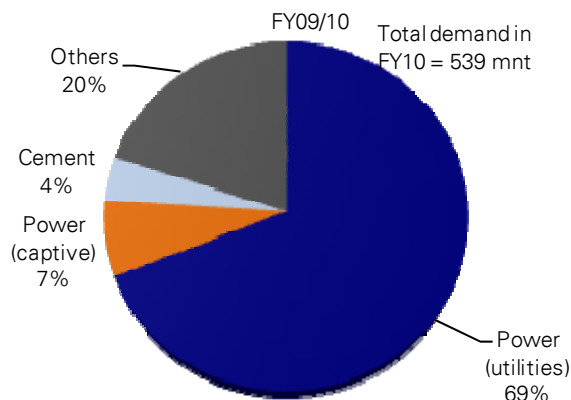
We discuss the issues and outlook related to the power sector under the following heads:

(i) Pricing and supply of input; ii) Pricing and supply of output; and iii) Profitability

(i) Pricing and supply of input:

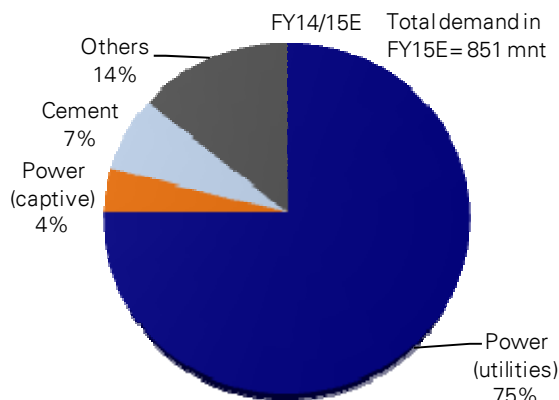
Coal remains the key input for generation of electricity in India (nearly 80% of total power production is driven by coal fueled generators). The other important users of coal are the cement sector, sponge iron and the construction material segment, which includes bricks and kiln.

Coal demand by sector - FY10



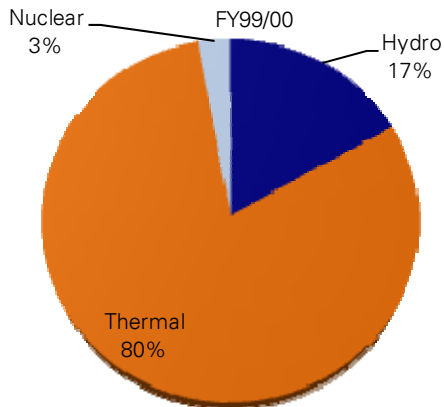
Source: CEIC, Deutsche Bank

Coal demand by sector - FY15E



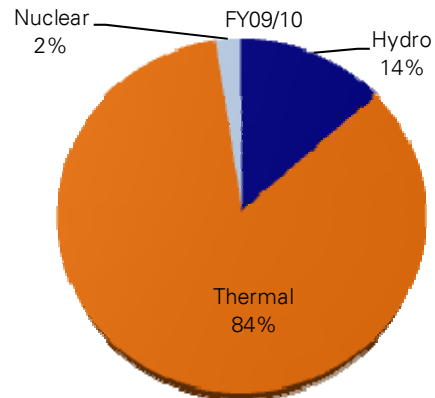
Source: CEIC, Deutsche Bank

Electricity generated through coal, hydro, nuclear (% of total)



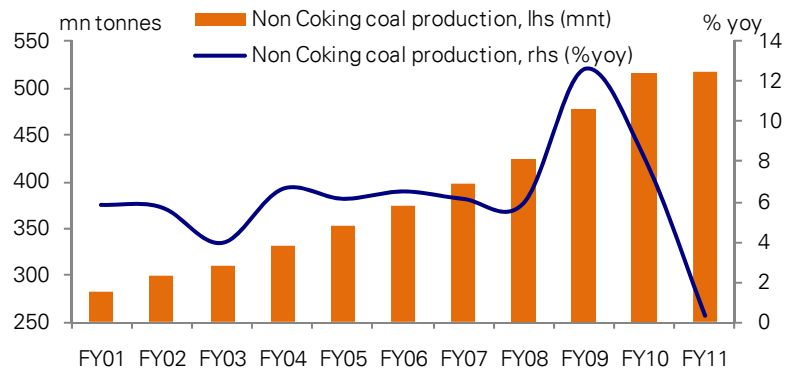
Source: CEIC, Deutsche Bank

Electricity generated through coal, hydro, nuclear (% of total)



Source: CEIC, Deutsche Bank

Coal production trend in the last decade



Source: CEIC, Deutsche Bank

But coal production has not kept in with demand in recent years. Key constraints on the growth of coal production can be classified under three areas:

- **Regulatory constraints.** The Ministry of Environment & Forests has introduced stringent regulations to reduce pollution and prevent illegal mining in the country, which is a positive in theory but has limited the ability to expand domestic production of coal.
 - **Comprehensive Environment Pollution Index (CEPI).** CEPI norms were introduced in 2010 which prohibited mining in areas with a high pollution index, even if the pollution was due to other industrial sources.
 - **'Go – No Go' policy.** The Environment ministry also adopted a policy of 'Go – No Go' (introduced in 2009) in which coal mining was completely banned in No Go areas (a major portion in Chhattisgarh, Jharkhand, Orissa, Madhya Pradesh).
- **Law and order issues.** Rising Maoist insurgency threat at some of the areas where coal mining is prevalent has hampered production in recent years. For example, coal production in Jharkhand is often affected due to strikes and obstructions created by Maoist groups and other anti-social elements.
- **Infrastructure bottlenecks.** Reliable supply of coal to the consumption point is greatly dependent on the efficacy of transport logistics which is mainly railways. The poor state of railway infrastructure in the country has taken a toll on coal production.

According to our coal analyst's estimate, coal supply will fall short of demand (average 8% growth likely between FY12-15E) by FY13, which will likely necessitate coal imports to rise appreciably in the next few years (see table below).

Coal supply to fall short of demand from FY13

mnt	FY08	FY09	FY10	FY11	FY12E	FY13E	FY14E	FY15E
Total supply of coal	474	547	598	621	657	702	754	802
Non Coking coal production	422	476	515	517	539	570	606	646
Coal Imports	52	71	83	105	118	132	148	156
Demand for coal	465	511	539	620	656	716	766	851
Gap	9	36	59	1	1	-14	-12	-49

Source: Deutsche Bank

This poses two problems. First, Indian power plants are not designed to take more than 10-15% of imported coal. Second, since coal imports are much more expensive (the price of domestic coal is 65% lower than imported coal), power producers may not be willing to accept higher cost fuel because that puts them at a disadvantage compared with producer using domestic coal.

Comparative prices in INR/mn kcal

As on	Indonesian coal	South African coal	Indian coal	Discount of Indian coal w.r.t. Indonesian coal	Discount of Indian coal w.r.t. South African coal
Jan-06	263	314	184	-30%	-41%
Jan-07	357	356	184	-48%	-48%
Jan-08	466	629	206	-56%	-67%
Jan-09	691	614	206	-70%	-66%
Jan-10	582	643	226	-61%	-65%
Jun-11	788	871	293	-63%	-66%

Source: Deutsche Bank. Note: Indonesian Coal is McCloskey 5,200 kcal index; South African coal is Richard's Bay 6,200 kcal index; Indian coal is Grade-E 3,500 kcal coal from Northern Coalfields of Coal India Ltd.

(ii) Pricing and supply of output:

Power shortage is commonplace in India, primarily due to poor project implementation, inadequate domestic manufacturing capacity, and shortage of power equipment. For example, the Planning Commission estimates that the government will at best manage to achieve 50GW of additional capacity expansion for grid power in the 11th Plan period (FY06/07 to FY11/12) as against its provisional target of 78.7GW, largely on account of slippages in public sector projects. However, it is encouraging to note that the share of the private sector in capacity expansion has gone up substantially in the last five years and it is expected that 33% of the total incremental capacity will now come from the private sector. Notwithstanding the higher participation rate of private sector players, the acute coal shortage problem will likely make matters more challenging for the power sector going ahead. Indeed, our in-house forecasts show that owing to the above mentioned problems, India's power demand-supply gap is unlikely to be bridged even in FY15.

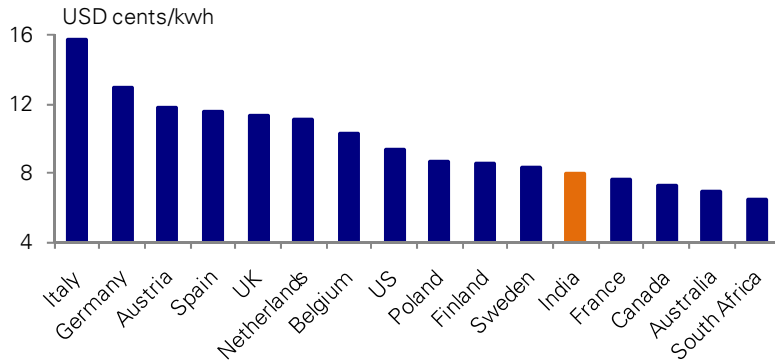
Power shortage to persist even in FY15

bn units; (1 unit = 1kwh)	FY08	FY09	FY10	FY11	FY12E	FY13E	FY14E	FY15E
Power Demand	739	778	831	863	906	970	1037	1110
Power Supply	666	692	747	826	868	924	1002	1060
Gap	-73	-86	-84	-37	-38	-45	-35	-50

Source: Deutsche Bank

Electricity to the consumer is also under-priced. Electricity tariffs are not only very low for agriculture, but also lower than they should be for many other categories of consumers. This jeopardizes the financial position of the distribution companies. The chart below shows the power tariffs in India are rather low.

A cross-country comparison of power tariff

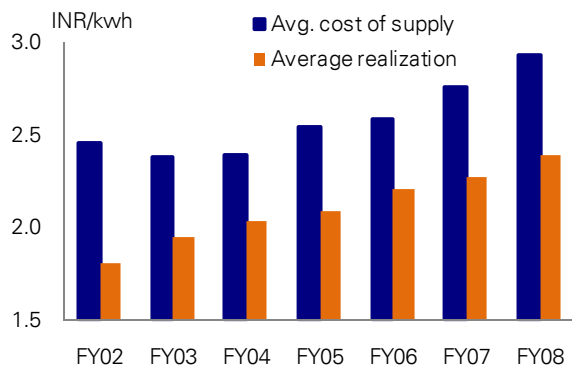


Source: Powergenworldwide.com; Deutsche Bank

(iii) Profitability:

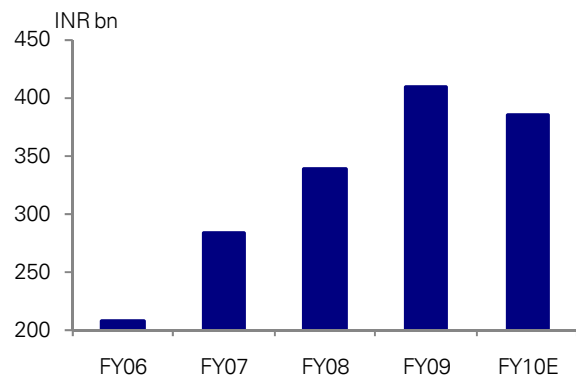
According to the Planning Commission of India, losses of distribution utilities before accounting for State subsidy are approximately INR700bn. These losses are on account of keeping end-user tariffs unchanged (7-8 years in some cases), primarily due to political pressure, even as power purchasing costs of distribution companies have kept on rising. Free power to farmers and high incidence of power theft also attributed significantly to the losses. Clearly this situation needs to improve in order to make the power sector viable. In this regard, it is encouraging to note that distribution companies in most states have been allowed to raise tariffs, as high as 35% in a few cases in recent years (see table below). This should help to improve the financial health of the State Electricity Boards (SEBs) on the margin, but the losses are too high to take comfort at this stage.

Rising gap between cost and realization



Source: Economic Survey, Planning Commission, Deutsche Bank

Commercial losses of 20 major states without subsidy



Source: Planning Commission, Deutsche Bank

SEB tariffs finally witnessing a sharp rise in FY11

States	-----Tariff (INR/ kWh)-----			-----Growth in Tariff %-----	
	FY09	FY10	FY11	FY10	FY11
AP	2.57	2.48	3.35	-3.6	35
Maharashtra	3.77	4.36	4.26	15.5	-2.4
Gujarat	4.05	3.73	3.36	-7.7	-10.1
Rajasthan	3.4	3.21	3.23	-5.6	0.6
Punjab	NA	3.84	4.27	NA	11.1
UP	2.85	3.68	NA	29.4	NA
WB	3.35	3.49	4.72	4.2	34.9
MP	3.78	3.71	4.22	-1.9	13.7
J&K	2.38	2.42	2.70	1.4	11.7
Karnataka	3.43	3.94	4.29	14.9	8.8
Chhattisgarh	3.15	2.87	2.97	-8.9	3.7
Tamil Nadu	2.81	NA	3.15	NA	NA
Kerala	3.15	3.38	3.44	7.2	1.8
Haryana	4.47	3.81	4.33	-14.8	13.8
Orissa	2.81	2.65	3.21	-5.8	20.9
Delhi	4.26	4.41	4.59	3.7	4.1
Himachal Pradesh	3.11	3.04	3.04	-2.2	-0.1
Bihar	3.12	3.26	3.39	4.6	4.1
Jharkhand	3.32	3.28	3.22	-1.2	-1.8

Source: Government sources, Deutsche Bank

Macro implications

Growth:

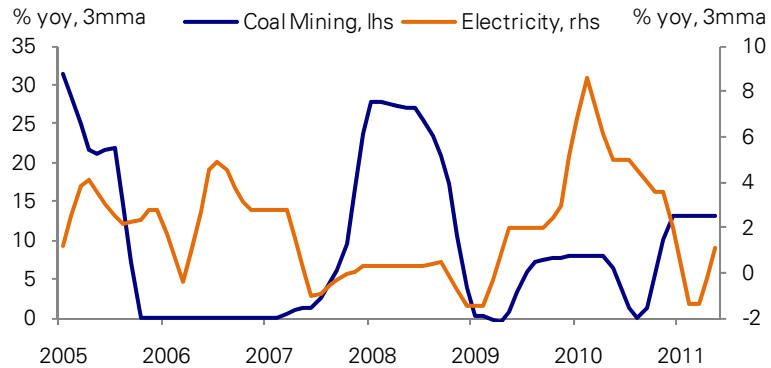
Despite the shortage of power, India's growth track record has been impressive in recent years. But as global headwinds mount, supply shortages become more chronic, and economic fragility rises (due to macro structural problems such as high inflation, deficit, and infrastructure bottlenecks), there is a risk that power sector problems could begin to hamper the growth process more visibly than the past.

We estimate that if the supply-demand gap worsens from the present 5% to 7-8%, which could happen in 2012 and 2013 if the coal supply situation is not addressed expeditiously, the ensuing shortage could subtract 0.5% from growth. With the economy already showing signs of weakening, this might be considerably damaging to India's economic performance.

Inflation:

In order to resolve the power supply situation, the government of India will be sooner or later compelled to allow for market based pricing (or at least higher tariffs to make investment returns more attractive), which would have temporary inflationary implications. Higher price of coal and electricity is a stated policy goal, but the implementation is likely to be gradual, perhaps over several years. We estimate that 30% rise in coal and electricity prices would add a cumulative of 150bps to inflation (based on first and second round pass-through).

Inflation trend of coal and electricity

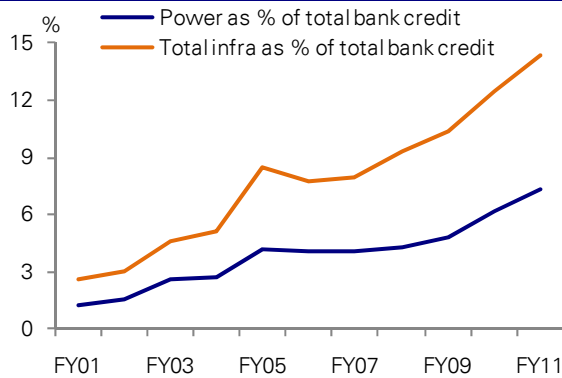


Source: CEIC, Deutsche Bank

Fiscal/financial position:

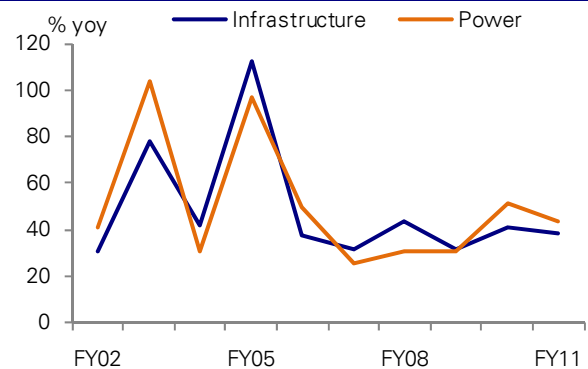
Domestic banks and institutions are the major providers of credit to the power sector, with little financing coming from foreign sources. The poor health of State Electricity Boards (SEBs) – the primary buyers of power – has long been a deterrent to foreign funding. In fact, as intermediaries, banks and other lenders such as Power Finance Corporation (PFC) and Rural Electrification Corporation (REC) have had greater success in borrowing from foreign markets for the purpose of on-lending to the power sector, possibly because the foreign lenders had greater faith in these institutions’ ability to manage the power sector risk rather than they themselves. It has also helped that from the perspective of banks, PFC and REC are perceived to be quasi-sovereign institutions.

Power has become a large proportion of banks’ credit portfolios



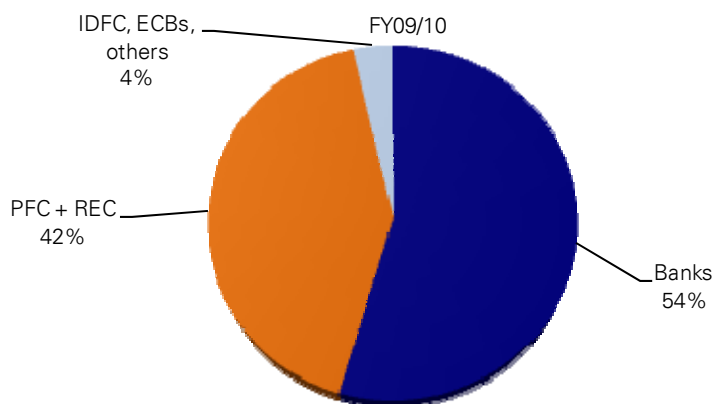
Source: RBI, Deutsche Bank

Banking system’s credit growth to infrastructure, and within that power, remains strong



Source: RBI, Deutsche Bank

Market share of groups in power financing



Source: Deutsche Bank

The losses of SEBs have risen significantly in recent years. The V. K. Shunglu committee, appointed to suggest ways to improve the financial condition of power distribution utilities, estimates that cumulative SEB losses have risen to INR700bn (0.8% of GDP) in FY10/11. Such losses pose risk both for the banking sector and the fiscal position of the government. Further losses in the power sector could potentially raise non-performing assets of the banking system and compel banks to restructure some part of the power sector loans, thereby straining their profitability. In case the banking sector seeks a bailout package from the government, then it could deteriorate the general budget deficit of the government further, which is already significantly high at around 8.0% of GDP.

Reform outlook: Education

Education reform is a prerequisite to sustainable growth

India's education indicators have improved in recent years, but they still lag comparators' substantially. Spending on education has fallen short of official goals; more critically, development in the education sector has been hampered by inefficiencies and disincentives.

The private sector has been playing a complementary role in education. Indeed, the more dysfunctional the public system in parts of the country, one sees a greater incidence of private schools. Competition between states and substantial entrepreneurial interest would likely create more scope for private sector investment in India's education sector in the coming years.

Education and growth

There has been a lot of focus on education in India in recent decades. While gains from education seem to be obvious, there is no shortage of authoritative studies that underscore the point from various angles. Studies show that there is a strong relationship between improvement in education and economic prosperity, especially in developing economies. Barro (2000)⁶, in a canonical study, establishes the following:

- An extra year of schooling is estimated to raise the growth rate by 0.4 percentage points per year;
- Primary schooling is a prerequisite to higher schooling and hence critical to growth, but education only becomes a major factor on growth when schooling reaches secondary levels;
- Higher test scores also tend to be associated with higher economic growth. Indeed, quality of education measures matters more on growth than mere years of schooling.

The impact of basic education goes beyond the returns on the economy. Amartya Sen highlights six key social impacts from basic education.⁷ He finds that literacy--

- provides uneducated parents the satisfaction of enhancing the chance of their children to have a better future;
- reduces human insecurity in a competitive and globalizing world;
- enhances peoples' ability to understand and assert their legal rights;
- increases their political opportunities and enhances their enfranchisement;
- helps tackle health issues in a more informed way;
- fundamentally, education improves women's well-being and has a positive impact on the family dynamic. Educated mothers are more likely to strive for income and savings, provide their children with better nutrition, and push them toward education, thus creating a virtuous cascading effect.

⁶ Robert Barro (2000), "Education and Economic Growth," Working Paper, Harvard University. <http://www.oecd.org/dataoecd/5/49/1825455.pdf>

⁷ See <http://www.guardian.co.uk/education/2003/oct/28/schools.uk4>

Since independence, Indian government programs have regularly set goals of raising literacy, improving school access—particularly to women and the poor, and enhancing the quality of education. Indeed, the goal of spending 6% of GDP in education was not first mentioned in the latest 5-year Plan, but in the 1960s.

To be fair, some achievements have taken place. Primary school enrollment has risen sharply in recent years (from 80% in the 1980s to about 100% presently), as has overall literacy (from 60% to close to 80% during the same period). This trend will likely continue and reaching universal literacy in a decade or so is conceivable. But this would not happen automatically. Much more needs to be done, in our view.

The problem of incentives

While the focus of education in developing countries such as India has largely centered on increasing the resource base and the number of government-run schools and clinics, much less attention has been paid to the question of how efficiently the allocated resources are spent. There are substantial wastages and inefficiencies in the education sector, and glaring gaps exist in the incentive structures facing each agent in the chain from policy formation to actual implementation. **Unlike the agents in the public sector, entrepreneurs tend to be less subject to incentive shortfalls.** They are also in a position to offer quicker remedies to these shortfalls.

Incentives don't necessarily mean higher salaries. An often-heard reason for poor performance by government employees is that they are not paid enough. But, research on India's schools shows that more highly paid teachers in public schools are in fact more likely to be absent, with absence being higher among more educated teachers, older teachers, and teachers holding higher ranks.⁸ In fact, private school teachers – who are on average paid much lower salaries (as low as one-tenth as much as regular government school teachers in many rural areas) – are less absent and more likely to be teaching when they are present.

What is perhaps needed, in fact, is greater accountability of teachers. Surveys have confirmed the general perception that hardly anyone ever gets fired in public schools in India. Indeed, a survey of 3000 government primary school found only 1 case of a teacher being fired for repeated absence.⁹ Also pay needs to be performance based and differentiated.

Results from research in Andhra Pradesh suggest that even providing small monetary bonus payments (with an average annual bonus typically less than half a months' salary) to teachers on the basis of the average improvement in student performance on independently administered tests led to large gains in student learning outcomes. Recent research also shows improving working conditions and strengthening monitoring and supervision are two most effective channels of improving teachers' incentives. Also useful are programs of teacher certification, teacher training, and cash grants to schools.¹⁰

While there is much to be done in education, all is not dependent on public policy. In fact, there is widespread private sector participation in India's education sector already.

⁸ See Michael Kremer, Nazmul Chaudhury, F. Halsey Rogers, Karthik Muralidharan, Jeffrey Hammer (2005) "Teacher Absence in India, A Snapshot," *Journal of the European Economic Association*, April–May. http://econ.ucsd.edu/~kamurali/jeea_teacher_absence_in_india.pdf

⁹ See again the Kremer et al (2005) study

¹⁰ Kremer et al (2005)

Entrepreneurs can make a (profitable) difference in education

There are many examples of long-standing private sector participation in education. The Tata family helped set up the Tata Institute of Fundamental Research in 1945, which today remains a thriving center for cutting edge research in higher sciences and mathematics. The Birla Education Trust has been involved in setting up numerous schools and colleges and technical institutes. Many families and corporations run schools, provide scholarships, and extend grants for the building and upkeep of the educational infrastructure.

Strikingly, the poor state of public schools has already generated a private sector response. A large-scale study (Muralidharan and Kremer, 2008), covering 98% of India's school districts, finds that private, fee-charging schools are widespread in India, with 28% of the rural population having access to rural private schools.¹¹ Also, **the more dysfunctional the public system, one sees a greater incidence of private schools.**

Desire for English-medium education, better quality and more accountable teachers have fueled the demand for private schools. India has a large pool of educated unemployed youth, which is a potential source of supply for teachers. The private sector has identified and taken advantage of this demand and supply side dynamic to come up with a beneficial solution.

Extremely successful companies have been set up to provide online tutorials to students preparing for examinations, as well as learning tools for language, mathematics, etc. Combining modern technology and private sector acumen, it is easy to see how entrepreneurs can supplant or complement the public education system. Chain schools are being set up, financing appears to be available, and there are many enterprising investors diving into the field. These developments always come with questions about the profit motive of the entrepreneurs, the quality of the institutions, and the impact on the students, but regulatory oversight is in place quite strictly in India, and the reputation of the private schools has been rather good.

There is scope for both for-profit and charitable private investments in education. Charities have long run schools and colleges in India, and missionary schools have been associated with education excellence. There is substantial room for for-profit ventures as well. Recent estimates suggest that the private education market in India is worth USD40bn, and it would expand by 50% in the next 5 years. India's high savings rate (about 35% of GDP) is widely considered a potential source of increased investment in its infrastructure. Education entrepreneurs should be able to tap into this pool readily.

India's federal system, often a source of delays on reforms, has had one positive impact. Competition to draw investment has increased between states in recent years, and this competition has manifested in states relaxing regulations to bring in private investment. In the area of education, states have circumvented the center's red tape and expedited the formation of schools and universities. Again, this should be a source of encouragement for entrepreneurs.

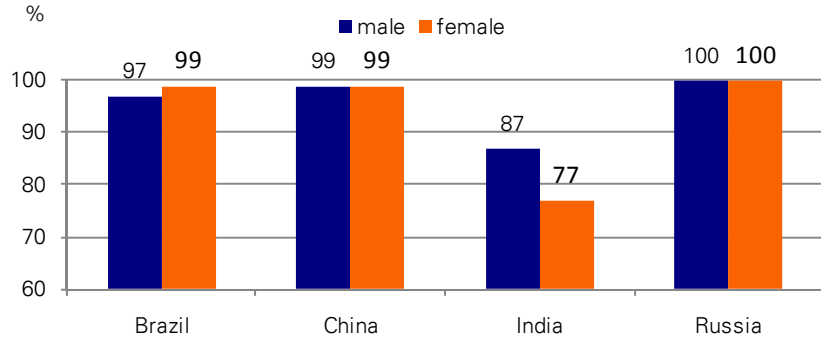
¹¹ These research findings are drawn from Kartik Muralidharan and Michael Kremer (2008), "Public and Private Schools in Rural India" in *School Choice International*, edited by Paul Peterson and Rajashri Chakrabarti, MIT Press.
<http://econ.ucsd.edu/~kamurali/public%20and%20private%20schools%20in%20rural%20india.pdf>

Some statistics

India's education indicators are poor. About 8mn children remain out of school.¹² Since 1991, substantial resources have been set aside for education. While the population has increased by 32%, the number of primary schools has increased by 49% and the number of high schools and colleges has doubled. Enrollment ratios improved by 5-10% during 2001-05, but on a comparative basis the indicators are far worse than comparator countries.

Literacy rate is well below 90%

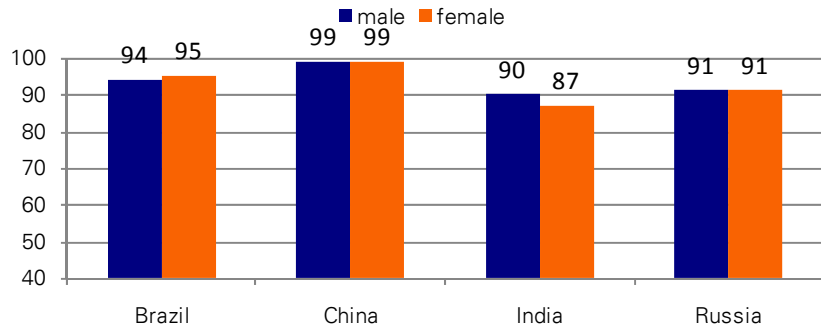
Youth (15–24 years) literacy rate



Source: UNICEF, 2000-07, Deutsche Bank

Recent initiatives have led to a strong pick-up in primary level enrollment...

Primary school enrolment ratio

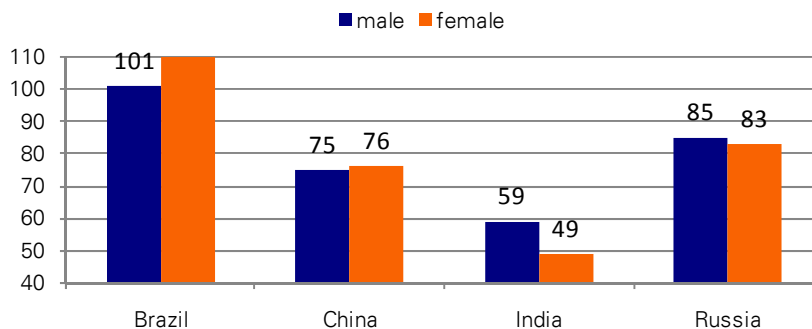


Source: UNICEF, 2000-07, Deutsche Bank

¹² See Unicef. <http://www.unicef.org/india/education.html>

...but the retention into the secondary level remains poor

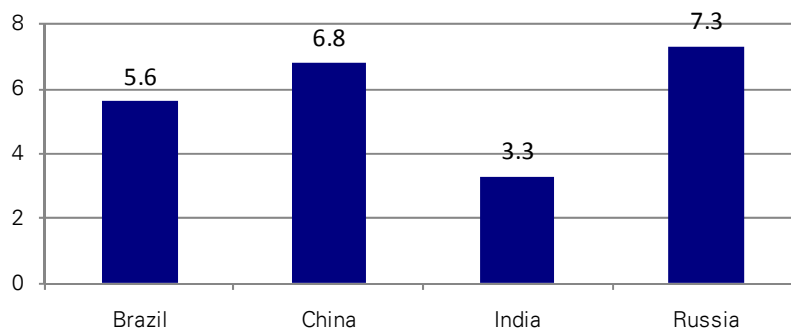
Secondary school enrolment ratio



Source: UNICEF, 2000-07, Deutsche Bank

A survey of education quality, examining parameters such as education statistic on enrollment, retention, access, and outcome, finds India lagging.

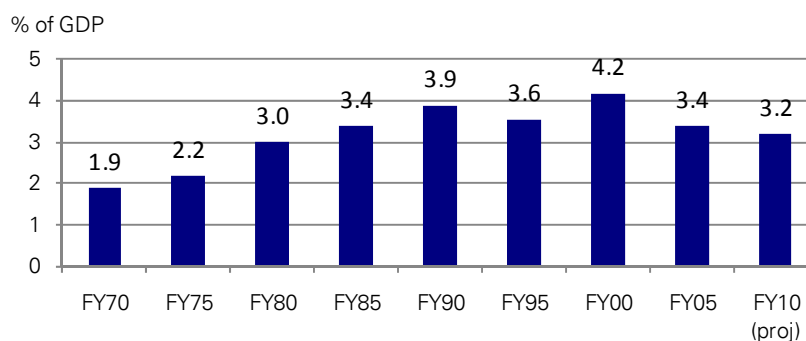
Quality of education survey



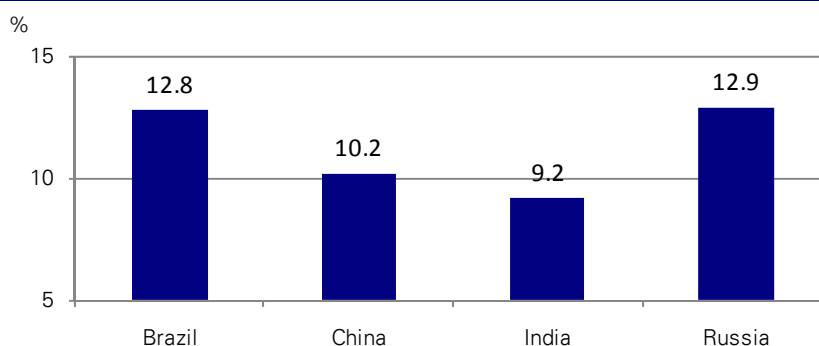
Source: ASSOCHAM, Survey 2008, Deutsche Bank

According to the Planning Commission and the Ministry of Education:

- Average school attendance is around 70%. In States like UP and Bihar, the average attendance is as low as 57% and 42%, respectively (latest data).
- One-third of the teachers in MP, 25% in Bihar, and 20% in UP do not attend schools.
- Teacher attendance, ability, and motivation appear to be the weakest links of elementary education programs.

Spending on education, despite an often stated goal of reaching 6% of GDP, has lagged**Education spending**

Source: Ministry of Education, Deutsche Bank

On a per student, per capita basis, India spends the least among BRIC countries on primary education**Public spending per student on primary education**

Source: ASSOCHAM, Survey 2008. The measure is derived by the following formula: (spending per student)/(GDP per capita), Deutsche Bank

India Economic Survey on education (see <http://www.indiabudget.nic.in/es2008-09/chapt2009/chap108.pdf>)

- Multiple controls and regulations by the governments and statutory bodies make education reform difficult and slow
- India needs professional regulators along with private-public partnership to ensure universal primary education
- Competition in tertiary and secondary education is also equally essential.
- Rating the quality of educational institutions and all education service providers (private and public) may be helpful.
- Entry of registered societies (non-profit) and publicly listed (education) companies in all fields of education, subject to the regulatory framework which ensures quality and reasonable pricing may be encouraged.
- The number of institutions could be increased through entry of private players while ensuring that they are professionally regulated so that their curriculums/degrees are internationally accepted.

Concluding thoughts

10 signals that could make for a second push

In this collection of essays we have gone over a host of issues that highlight the Indian economy's considerable prospects and yet noteworthy challenges. India has recently undergone a phase of discontent, fueled by high inflation, slowing investment and growth, and a slowdown in reforms. What needs to be kept in context is that despite the slowing down of growth, it remains one of the fastest expanding economies in world, with considerable investor interest in its potential. That the economy can deliver attractive returns is well accepted; the question is if the recently observed slowdown in momentum can be arrested in an expeditious and sustainable manner.

What would make us believe that the engine of growth that roared mightily from 2003 to 2007 is about to get a second burst of acceleration? Below we list ten key areas where changes are needed; we believe that movement in these areas would complement India's demographic dividend and entrepreneurial zeal, likely unleashing an extended period of stable and inclusive prosperity.

- **Improved governance.** We have observed popular discontent about corruption and inefficiency in recent years, calling for more transparency and effectiveness in decision making processes in all walks of life. Institutional (an empowered office of ombudsperson) and technological (database for subsidy disbursal, universal identification, e-governance) reforms would help in this area, both in terms of enhancing faith and efficiency in day-to-day transactions of individuals and businesses.
- **Power supply.** We have highlighted the criticality of power sector reforms. There is no choice but to move toward market-based pricing of inputs and outputs in this sector. We are heartened by recent developments that suggest that the authorities are taking tough decisions in the desired direction.
- **Fuel price liberalization.** India cannot afford to incur 1% of GDP in fuel subsidies year after year. It distorts demand, burdens the fiscal position, adds volatility to price expectations (when the inevitable, ad hoc, fuel price adjustment is made to reduce the gap between world and local prices), and undermines the financial performance of the energy sector. A movement toward market-based pricing therefore would be a positive in a variety of ways.
- **Labor market measures.** Wage pressure has picked up in recent years due to high inflation and the government's income support policies. Another reason for tightness in the labor market is rising skills mismatch. There are many jobs for which only a few are qualified (such as skilled manufacturing) whereas the reverse is true in other areas. Progress in skills building is absolutely essential to maintain competitiveness and support job creation. Education reform is key, as flagged in the previous chapter.
- **Agriculture subsidy reform.** There is considerable scope for improving the way the agriculture sector is being managed. The government seems to be pursuing a model of income tested, cash-based direct transfers to farmers as opposed to providing untargeted and subsidized supply of electricity, seeds, and fertilizer. This would be best practice, when implemented, but in the meantime even partial progress toward rationalizing farm subsidies (as has been the case with fertilizer recently) would be helpful. Improvement in land title registration would not only help the agriculture industry by facilitating consolidation of farms, it would help other parts of the economy as well (such as the setting up of industrial plants that need large tracts of land).

- **Tax reform.** India has two landmark tax reforms in the making; the Direct Tax Code (DTC) that aims to streamline and reform the collection of income tax, and the Goods and Services Tax (GST) that is geared toward subsuming various sales taxes (that exist across states) and replacing them with a uniform and transparent rate. The DTC is expected to be implemented from 2012 onward, although having gone through numerous revisions, the impact of the measure is open to question. Perhaps substantially more influential is the likely implementation of the GST, although that measure has been delayed repeatedly due to a lack of agreement among states, as well as other execution related hurdles (such as human resource and IT problems). The authorities have to find a way to facilitate a consensus among states to bring this measure to fruition, which could lead to considerable improvement in tax administration and the movement of goods in the country.
- **Retail reform.** India's retail sector is beset with distributional inefficiencies. Allowing foreign retailers in the market would allow for greater competition and technology transfer. Large players in the retail space would be able to use economies of scale to push down inflation, as well as offer consumers more choice and better quality.
- **RBI's policy framework.** The Reserve Bank of India, given its constraints of dealing with inflation without support from fiscal policy, has generally done the right thing in recent years. It has, sometimes belatedly, raised rates to stem rising inflationary expectations. Beyond that, it has overseen financial sector stability during recent bouts of global financial crises, and taken a largely laissez faire approach to exchange rate management. Still, the RBI needs to communicate more clearly to the market with respect to its inflation objectives and policy instruments. Using multiple instruments (CRR, SLR, repo rate, and so on) and non-explicit inflation objectives do not ensure, in our view, a stable monetary policy regime. We look forward to RBI's move toward a single objective (say inflation targeting) and instrument.
- **Deepening of the financial sector.** India's financial sector remains tightly controlled; a characteristic that has enabled it to withstand several global financial shocks in recent years. While the authorities can rightly take credit for preventing global spillovers of stress from gravely impacting India's financial system, it is high time to add more competition and activities to the system. Between the statutory liquidity ratio and the cash reserve ratio, Indian banks have to put aside 30% of their deposits in cash and government bonds, and on top of that they also have priority sector lending requirements. Easing these constraints would help intermediation and ease liquidity. Opening up the sector to more competition and products would also be a positive signal for the economy.
- **Regulatory stability.** India's regulatory regime with respect to investment needs greater uniformity, transparency, and stability. Investors should be able procure land with certainty, abide by existing regulation in good faith, be assured of consistent treatment under the law, and not be subject to sudden changes in regulations. By coming across as investor friendly, the authorities would signal that the country is open for business, where capital and labor is mobile, competition is open, and laws are transparent and uniformly applied, and breaches of governance are not tolerated. We await that juncture.

Appendix 1

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