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Can India Achieve Double-digit growth ?

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By Richard Herd, Paul Conway, Sam Hill, Vincent Koen and Thomas Chalaux

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ABSTRACT/RESUMÉ

Can India Achieve Double-Digit Growth?

In recent years, India has enjoyed one of the highest growth rates worldwide, weathering the global financial crisis better than many other countries. Prudent macroeconomic policies will be critical to prolonging the current expansion, given the risks associated with high inflation and volatile capital flows. A steadfast commitment to fiscal consolidation is needed to continue to reduce the large deficit that emerged in the aftermath of the slowdown and avoid crowding out private investment. Stepping up structural reforms will also be necessary if double-digit growth rates are to be achievable over the coming decade or so. Indeed, the operating environment for private business remains challenging. While infrastructure is improving in key sectors, partly thanks to greater private investment, bottlenecks endure and efforts to intensify competition and ensure continued strong investment are required. Labour market reforms are also required to promote job creation. Rapid economic development has boosted living standards and reduced poverty but poverty remains high. There is a need to strengthen social welfare systems and access to health and education to ensure widespread benefits from continued high growth.
This Working Paper relates to the 2011 *OECD Economic Survey of India* (www.oecd.org/eco/surveys/india)

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Keywords: competition; demographics; education; growth; health; India; inflation; infrastructure; investment; labour market regulation; macroeconomic policy; poverty; product market regulation; saving.

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L'Inde peut-elle réaliser un taux de croissance à deux chiffres ?

L'Inde a connu, ces dernières années, l'un des taux de croissance les plus élevés au monde, et a su mieux que bien d'autres pays traverser la crise financière mondiale. Pour prolonger l'expansion actuelle, des politiques macroéconomiques prudentes sont essentielles, étant donné les risques liés à une inflation élevée et à flux capitaux volatiles. Le pays devra également s'engager résolument sur la voie de l'assainissement budgétaire s'il veut continuer à réduire le large déficit apparu au lendemain du ralentissement économique et éviter l'éviction de l'investissement privé. L'accélération des réformes structurelles est également nécessaire pour rendre possible une croissance à deux chiffres sur la décennie à venir. En effet, l'environnement dans lequel opèrent les entreprises privées reste difficile. Si l'infrastructure s'améliore dans certains secteurs clés, en partie grâce à un accroissement des investissements privés, des goulets d'étranglement demeurent et il faudra s'efforcer d'intensifier la concurrence et de maintenir le dynamisme des investissements. Des réformes du marché du travail seront également nécessaires pour promouvoir la création d'emplois. Le développement économique rapide a stimulé le niveau de vie et réduit la pauvreté mais le nombre d'Indiens vivant dans l'indigence reste élevé. Il faudra renforcer les systèmes de protection sociale et l'accès à la santé et à l'éducation pour que la poursuite de la croissance profite au plus grand nombre.
Ce Document de travail se rapporte à l'*Etude économique de l'OCDE de l'Inde 2011* (www.oecd.org/eco/etudes/inde)

Classification JEL : E02, E21, E22, E23, E27, E31, E66, I131, J24, J68, L50, L93, L96, L98, N15, N75, O11, O43, O47, 053.
Mots-clés : concurrence; facteurs démographiques; éducation; croissance; santé; Inde; inflation; infrastructures; investissement; réglementation du marché du travail; politique macroéconomique; pauvreté; réglementation du marché des produits; épargne.

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CAN INDIA ACHIEVE DOUBLE-DIGIT GROWTH?

Richard Herd, Paul Conway, Sam Hill, Vincent Koen and Thomas Chalaux[1]

India's growth performance has improved so spectacularly over the past few decades that a prominent question is now whether and under what conditions double-digit growth might be achievable over the next ten to 15 years. This paper describes the acceleration of growth in India since the 1950s, with a focus on recent developments and near-term prospects. It then looks further ahead and turns to some of the main determinants of growth: fiscal policy and how it may constrain private investment; the quality of the country's physical infrastructure and how potential bottlenecks can be overcome; improvements in education and the evolution of human capital; financial sector reform and how it can both encourage saving and channel it to where returns are highest; and structural reforms needed for greater competition and better factor allocation. Against this backdrop, and assuming that the conditions for sustained faster growth are met, the paper presents a stylised growth projection at the 2025 horizon, taking into account demographic conditions, which are conducive to an increase in saving. Ultimately, however, improvements in living standards across a broad spectrum of the population are key, and India's recent record in poverty reduction points to the need for more inclusive growth.

The growth record since the 1950s: a bird's eye view

Three decades of sluggish growth

Historically, growth in India has long been held back by extensive and intrusive product and labour market regulations. Indeed, between the early 1950s and the late 1970s, total factor productivity (TFP) growth was close to nil and net fixed capital formation was extremely low (Figure 1). During that period, annual GDP growth barely averaged 4% and per capita income grew at a pace of only 1¾ per cent. This performance contrasted sharply with the contemporaneous take-off of some East Asian countries, such as Japan and South Korea. In the mid-1970s, it was coined, somewhat derogatorily, as the "hindu rate of growth", by Raj Krishna, who described the pervasive license-quota system of that era, and the associated black markets and corruption, as "socialist allocation in the first round followed by market allocation in the second round" (Ahluwalia, 1995).

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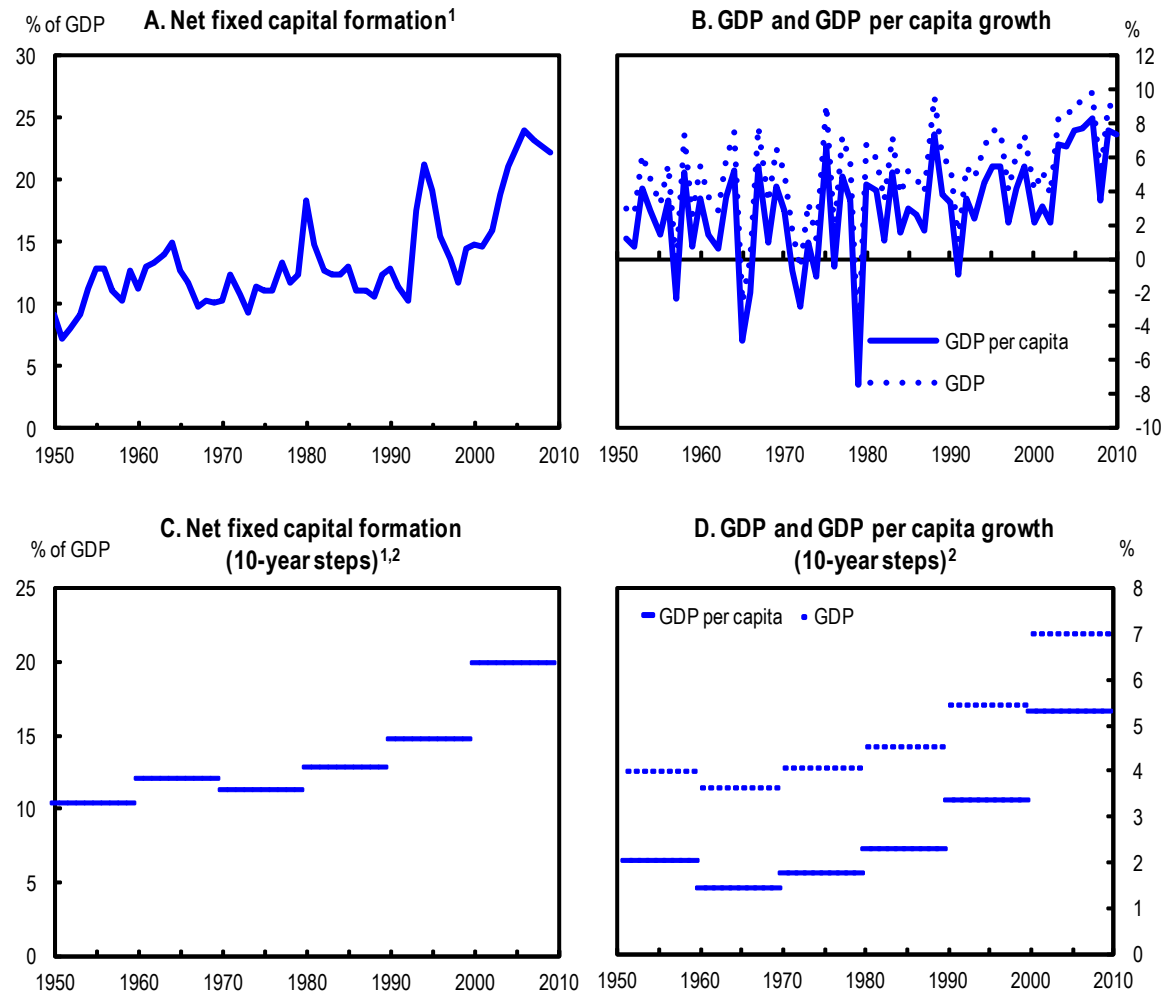
Figure 1. Investment and growth since the 1950s



1. The net investment data prior to 2000 are based on a spliced capital stock series at 1993/94 prices.

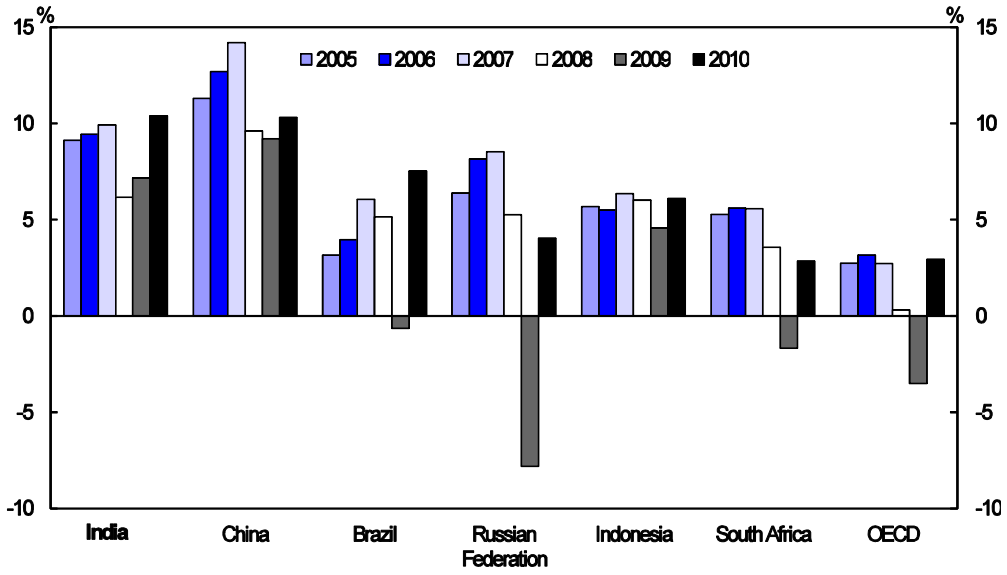
2. 1950s ≡ 1951-59; 1960s ≡ 1960-69; 1970s ≡ 1970-79; 1980s ≡ 1980-89; 1990s ≡ 1990-99; 2000s ≡ 2000-09.

Source: CEIC; authors' computations.

Three decades of trend acceleration

Growth started to pick up in the 1980s, as the government's attitude to business began to change, which unleashed the animal spirits of India's private sector (Rodrik and Subramanian, 2005). Growth received a further boost with the comprehensive domestic and external market-oriented liberalisation measures taken in the early 1990s. Real GDP growth rose to over 9% by the mid-2000s, a pace second only to China among the large emerging market economies (Figure 2). The acceleration was underpinned by an increase in net fixed capital formation, whose share in GDP exceeded 20% by 2005. This pushed up GDP growth though the expansion of employment and a markedly better TFP performance also played a role (Herd and Dougherty, 2007).

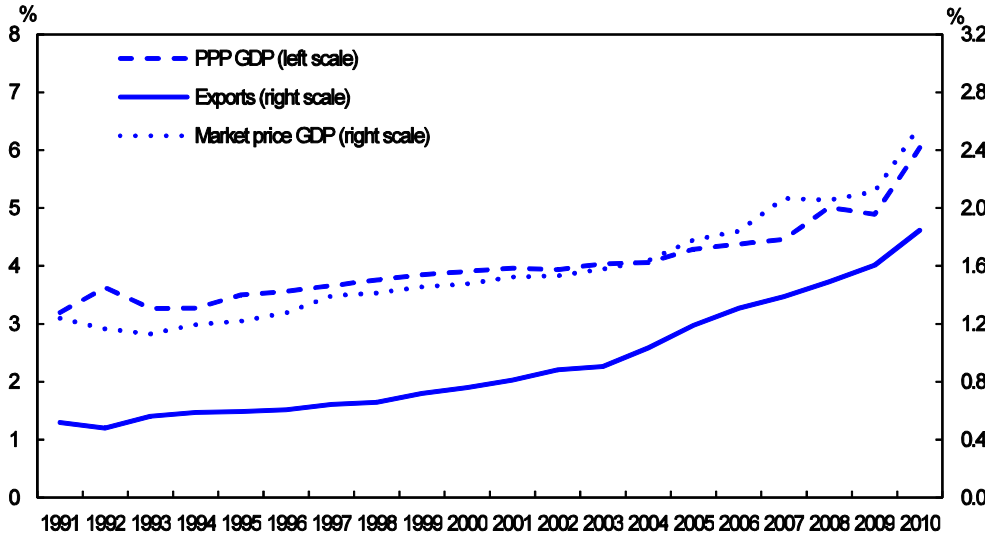
Figure 2. GDP growth in India, other large emerging economies and the OECD
In per cent



Source: OECD.

The acceleration was not monotonic. An abrupt slowdown took place in the context of the balance of payments crisis of the early 1990s, followed by a sharp reacceleration. A second marked slowdown occurred in the late 1990s, partly in connection with the Asian crisis, but growth soon regained increased momentum, aided by stability-oriented macroeconomic policies and a supportive international environment (OECD, 2011b). As a result, living standards rose rapidly, even though the benefits of strong growth were not shared as widely across society as might have been expected based on cross-country performance (see below). Concomitantly, India's importance in the world economy grew substantially (Figure 3).

Figure 3. India's share in world GDP and trade



Source: World Bank, World Development Indicators.

The recent downturn and near-term prospects

India weathered the global financial and economic crisis well

A third sudden deceleration occurred in 2008, in the context of the global financial and economic crisis, even if India remained a standout performer. Annual growth declined to around 5% but soon bounced back vigorously (Table 1). The Indian economy has become more susceptible to global business

Table 1. Selected macroeconomic indicators

	% share in GDP 2004-09	Average 1998-2004	2005	2006	2007	2008	2009	2010
GDP								
Real GDP, factor cost		6.1	9.5	9.6	9.3	6.8	8.0	8.5
Agriculture, forestry and fishing	18.2	1.8	5.1	4.2	5.8	-0.1	0.4	6.6
Non-agriculture	81.8	7.3	10.5	10.8	10.1	8.2	9.4	8.9
Industry	19.9	5.5	8.5	12.9	9.2	4.0	8.3	7.8
Construction	8.2	9.0	12.8	10.3	10.7	5.4	7.0	8.1
Services	53.7	7.9	11.0	10.1	10.3	10.1	10.1	9.4
Real GDP, market prices		6.2	9.3	9.3	9.8	4.9	9.1	8.8
Private consumption	58.6	4.9	8.5	8.3	9.3	7.7	7.3	8.6
Public consumption	10.8	3.6	8.9	3.7	9.5	10.7	16.4	4.8
Fixed capital formation	31.7	9.5	16.2	13.8	16.2	1.5	7.3	8.6
Exports	20.9	16.1	25.8	20.0	5.9	14.4	-5.5	17.9
Imports	25.8	10.2	32.5	21.3	10.2	22.7	-1.8	9.2
Real GDP per capita (factor cost)		4.3	7.8	8.0	7.8	5.3	6.5	7.1
General government finances *(% of GDP)*								
Current receipts		17.5	19.1	20.4	21.3	19.9	19.1	18.4
Current expenditures		23.3	21.8	21.7	21.5	24.3	24.8	22.2
Capital expenditures		3.7	4.2	4.1	4.9	4.3	4.4	4.1
Fiscal deficit		-8.6	-6.5	-5.4	-4.1	-8.5	-9.6	-7.3
Gross debt[1]		74.1	78.5	74.7	70.1	72.7	70.8	66.3
Balance of payments								
Current account balance (% of GDP)		0.2	-1.2	-1.0	-1.3	-2.3	-2.8	-2.6
Goods balance (% of GDP)		-3.0	-6.2	-6.5	-7.4	-9.8	-8.6	-7.6
Goods exports		17.6	22.0	25.1	14.6	28.4	0.5	32.1
Goods imports		17.8	30.3	24.1	20.0	35.7	1.3	21.9
Services balance (% of GDP)		1.1	2.8	3.1	3.1	4.4	2.6	2.8
Services exports		23.2	32.0	30.3	9.0	34.4	-7.1	32.5
Business service and software exports		44.9	42.5	41.9	10.8	29.8	-3.0	30.8
Services imports		17.9	22.6	30.7	3.4	15.9	18.3	35.3
Foreign direct investment inflows (bn $)		4.3	9.0	22.8	34.8	37.8	37.8	30.4
External debt (% of GDP)		12.4	7.2	6.3	4.1	6.0	10.9	12.4
International reserves (bn $)		61.9	142.1	173.1	253.9	277.9	275.3	290.2
International reserves (% of GDP)		11.0	17.0	18.2	20.5	22.9	19.9	16.8

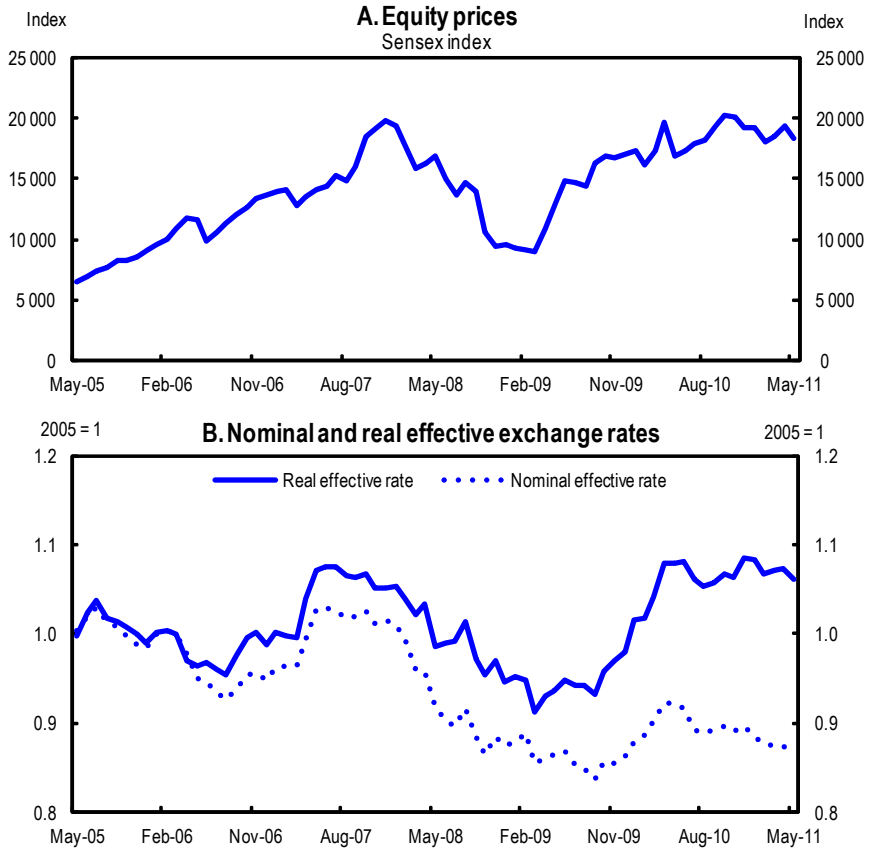
Note: Unless otherwise indicated, the data are presented in rupee growth rate terms and on an Indian fiscal year basis (*e.g.* 2009 stands for the 2009-10 fiscal year, which runs from April 2009 to March 2010). General government finance figures for 2010 are based on 2011-12 Budget estimates and OECD projections for GDP. Debt is measured at the beginning of a fiscal year.

Source: CEIC, Ministry of Finance and RBI.

cycles, and as in many other emerging economies, international trade was one of the main transmission mechanisms of the global slowdown. Though India is still relatively closed by international standards, the export share in GDP had been rising rapidly prior to the global downturn and the value added content in Indian exports is relatively high. While services trade is generally less susceptible to business cycles, they held up less well than goods exports. Business service and software exports fared better than other service exports, however, possibly reflecting new demand from global firms seeking cost savings. One offsetting factor from the collapse in world demand was the sharp fall in oil prices, which also helped cool inflation.

Just as the rising importance of exports increased the exposure of the real sector to the collapse in world trade, greater international financial integration amplified the initial shock of the global downturn through financial channels. The Indian banking system had little direct exposure to foreign subprime mortgage markets (Mohanty, 2009) and the market share of foreign banks in India is still relatively small. However, the corporate sector is reliant on external capital (Subbarao, 2009). Like other emerging economies, India suffered as liquidity-constrained firms and banks in advanced economies reduced foreign asset holdings to shore up their balance sheets. In early 2008, as global stock markets and business confidence began to turn and concerns surrounding the strength of international banks intensified, India, like many emerging economies, experienced sharp capital outflows. The Sensex index plunged (Figure 4A) while the effective exchange rate depreciated markedly (Figure 4B). With foreign sources of capital drying up, firms turned to local credit markets, which came under severe pressure. In contrast to portfolio investment, foreign direct investment (FDI) was resilient throughout the downturn, testifying to investors' confidence in the long-term prospects of the Indian economy.

Figure 4. Equity prices and effective exchange rates



Note: Real effective exchange rate based on CPI measures of prices.
Source: CEIC and BIS.

In the second half of 2008, as exports weakened and financial conditions deteriorated, industrial output growth suffered a steep, broad-based slowdown. Business investment also slowed, even briefly contracting. The reliance on external borrowing to fund purchases of capital equipment and reduced lending by foreign banks held back investment in some sectors. Even so, investment weakened far less than in most advanced economies. Private consumption growth softened in tandem with the downturn in trade and weakening remittances, and as the formal sector shed jobs (Ministry of Labour and Employment, 2009). In contrast, public consumption contributed substantially to growth through the downturn, on account of fiscal stimulus measures as well as large spending initiatives predating the crisis (see below).

The resilience of GDP growth through the global downturn was all the more impressive as external weakness coincided with one of the worst droughts in recent history, which depressed agricultural output. Although the importance of agriculture has steadily declined in recent decades, it still accounts for around 15% of GDP and remains an important source of household income in rural areas. In 2009 the monsoon was around 22% below the long-term average (the worst shortfall since 1972). As a result, the agriculture sector grew by less than 1% in 2009, compared to a trend rate of around 3½ per cent, reducing GDP growth by about half a percentage point.

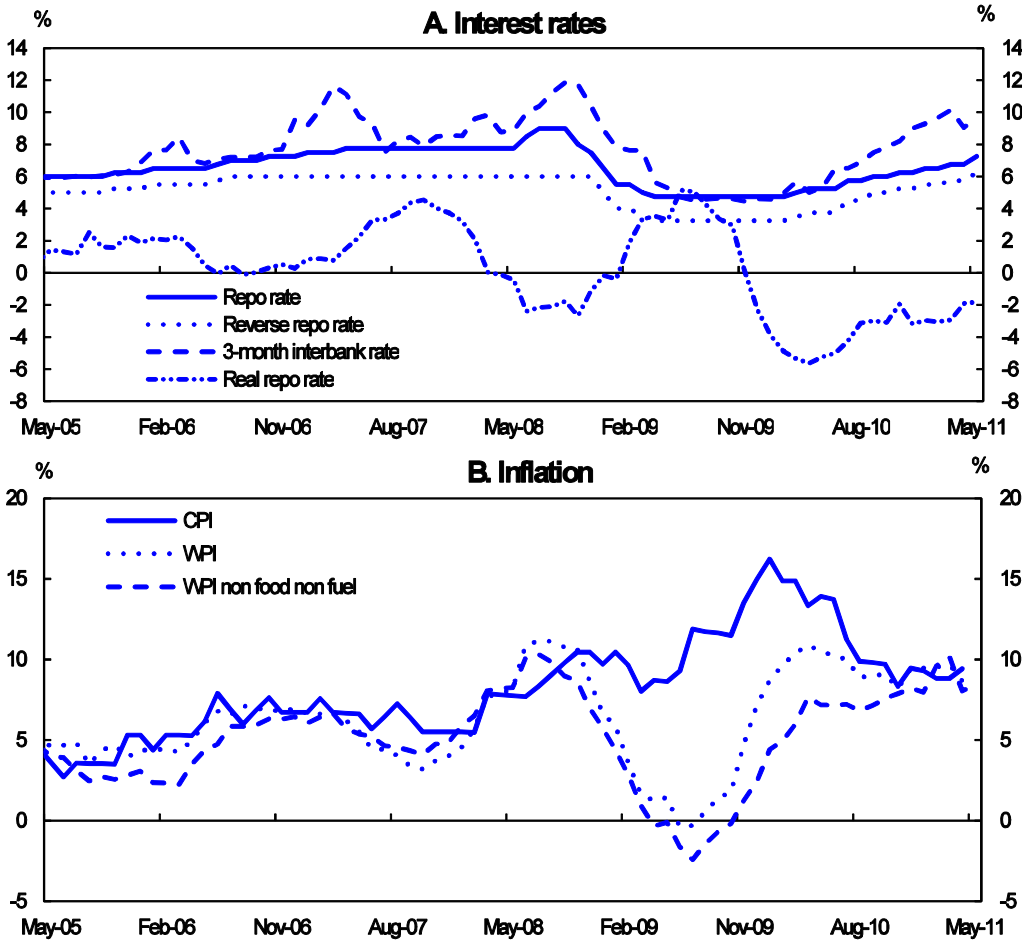
Expansionary macroeconomic policies cushioned the downturn and domestic demand led the recovery

Fiscal consolidation achieved in the years leading up to the downturn gave some space to implement discretionary measures to support demand, notably cuts in central excise duties (except on petroleum products) and in the central service tax, plus an increase in the limits on state government borrowing. These measures came on top of several large spending commitments announced earlier that were scheduled for rollout through 2008 and beyond (OECD, 2011b). Over 2008-12, expenditure on education, health and rural infrastructure was set to rise substantially, as was funding for the National Rural Employment Guarantee Scheme (NREGS), which provides guaranteed short-term employment to rural inhabitants and thus supported rural incomes during the downturn. Between 2007-08 and 2008-09 the general government deficit rose sharply, from around 4% to 8½ per cent of GDP.

The RBI responded forcefully to the deteriorating global environment. As capital outflows accelerated it intervened in the foreign exchange market. Monetary policy shifted to a highly accommodative stance as the repo rate was cut 425 basis points to 4.75% (Figure 5A). The cash reserve ratio was reduced from 9% to 5%, thereby injecting substantial liquidity into the banking system. Restrictions on external commercial borrowing were eased: ceilings on maximum borrowing costs were raised, while the permissible areas for borrowing through the automatic route were widened and loan limits increased. These various measures eased financial pressures and helped avoid a credit crunch during the peak of the global financial crisis.

The recovery in India began earlier than in most other major economies, led by domestic demand. The slowdown in the industrial sector turned out to be relatively brief, with output accelerating by mid-2009. Good rainfall in late 2009 ensured that the damage to the agricultural sector from the poor monsoon was contained. The recovery of farm output was consolidated by good monsoonal rainfall in 2010 (Ministry of Finance, 2011). As conditions in the global economy began to improve, Indian exports also began to recover. With domestic demand and imports strong the current account deficit widened to over 3% of GDP in the second half of 2010. Against this backdrop, the focus shifted to inflation, which in wholesale price terms reached double digits by early 2010 (Figure 5B). Despite the strong recovery in the farm sector, food prices surged as a delayed consequence of the poor 2009 summer crop. With the recovery gaining momentum and inflation rising, the RBI began to unwind crisis-related stimulus. As risk appetite amongst global investors returned and spreads between interest rates in India and most advanced economies widened, short-term capital inflows regained momentum.

Figure 5. Interest rates and inflation



Note: Real interest rate deflated by WPI.

Source: CEIC.

Prudent macroeconomic policies will be essential to maintain the expansion

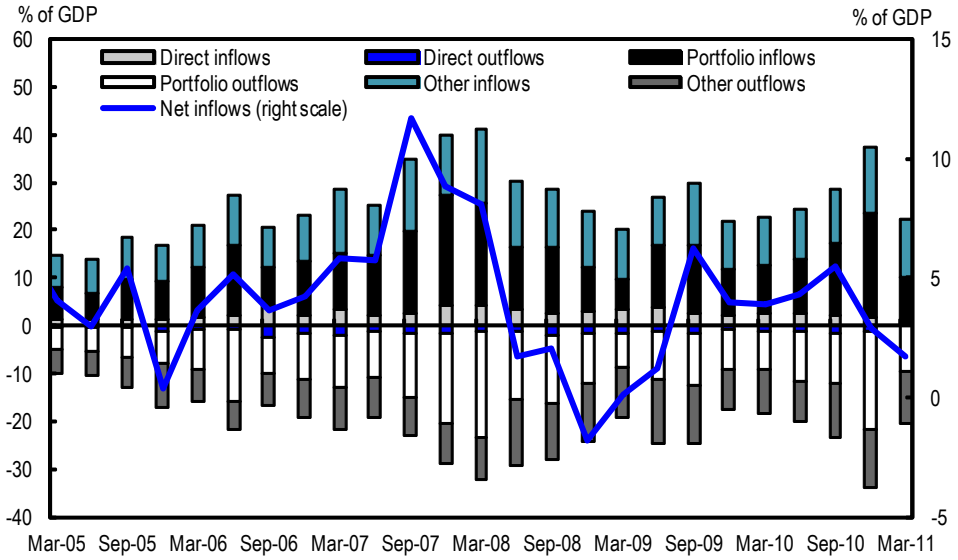
With the economy back on a solid growth trajectory, the challenge is to ensure sound macroeconomic policies to maximise the duration of the expansion. Ongoing changes in the structure of the Indian economy, and in particular a shift from public to private investment, heralds the emergence of a more pronounced Indian business cycle. Managing the upswing of the new cycle will therefore be challenging. The near-term outlook is for continued solid growth, underpinned by buoyant business investment and solid household consumption. Following a strong rebound from the crisis which saw growth near or above potential through much of 2010, spare capacity is likely to be limited. This, together with a surge in oil prices and a renewed acceleration in food prices, has caused stubbornly high inflation.[2] Recently, there have been signs that growth may be moderating and further fiscal consolidation and monetary policy tightening should promote balanced growth going forward. This, along with a stabilisation in international commodity prices is projected to bring about gradual disinflation.

2. The shift towards more protein-intensive diets in India may also be driving a secular increase in relative food prices (Gokarn, 2010).

Faced with stubbornly high inflation, the RBI had hiked the repo rate to 7.5% by June 2011, a cumulative increase of 275 basis points from the low point during the crisis. Nevertheless, *ex post* real interest rates were still negative. The extent of further required monetary tightening will depend, in the short term, on the outlook for fiscal policy. As noted, fiscal policy had been very expansionary at the time of the global downturn. However, the 2010 Budget set out an initial path for substantially reducing the central government component of this deficit. More recently, the 2011 Budget confirmed that fiscal consolidation was underway and planned for a reduction in the deficit from 5.1% of GDP in 2010-11 to around 4.6% of GDP in 2011-12. The government is also targeting deficit reductions of a similar magnitude in the following two years. Much of the planned consolidation in the current fiscal year depends on a sharp slowing in government spending, with current expenditure budgeted to rise by only 4% in 2011-12, compared with a 15% increase in the previous year. However, high inflation has created pressure to increase spending on subsidies. Following the delivery of the budget the government lifted prices for subsidised fertiliser. In addition, it decided to prevent the full pass-through of higher international oil prices to domestic petroleum product prices. This will likely result in higher-than-budgeted spending on subsidies as well as higher losses for oil marketing companies and oil producers. A steadfast commitment to spending restraint will be important to minimise fiscal slippage.

One set of risks in the current context pertains to the return of large capital inflows that could give rise to instability. In many advanced economies interest rates remain near historical lows (OECD, 2011a). Many emerging economies, including India, are likely to remain an attractive destination for internationally mobile capital given the outlook for continued economic buoyancy and relatively high interest rates. Strong capital inflows could put upward pressure on the rupee, raising the prospect of worsening competitiveness and a further widening in the current account deficit, which is already high by historical standards. A shock to the global economy could lead to a sudden change in investor appetite for risk which could trigger a sudden reversal in capital flows, as witnessed during the downturn. There is also a risk that large inflows, of short-term capital in particular, could fuel asset price inflation.

Figure 6. External capital flows



Source: CEIC.

Strong inflows are, however, needed to finance the current account deficit. Appreciation also helps to contain inflationary pressures in the near term (Bhattacharya *et al*., 2011). Substantial deficits, and hence the capacity of the economy to absorb capital inflows, are likely to persist for some time. The composition of capital inflows has shifted towards portfolio investment in recent quarters but not in an unprecedented manner and relative to GDP these flows have not exceeded pre-crisis levels (Figure 6). Moreover, to date there is scant evidence that the risks associated with strong inflows are materialising. To guard against possible asset price bubbles and bad debts the authorities should continue to focus on strengthening macro-prudential policies.

Longer-run growth prospects: some determinants

Looking further out, India's growth performance will be influenced by a number of factors – on top of demographics, which are discussed in the next section. The extent of fiscal consolidation will have a bearing on private capital formation. So will the structure and efficiency of public spending, notably with respect to physical infrastructure, but also as regards human capital formation. Potential growth will further depend on how vigorously the remnants of old legal and regulatory corsets are dismantled and replaced by more effective frameworks, in product, financial and labour markets. Considerable progress has been made in some of these areas, but further reforms are required in other to keep up and *a fortiori* to lift potential growth.[3]

Fiscal policy and crowding out

Aside from supporting monetary policy in demand management, fiscal policy has an important role to play in facilitating continued high growth by limiting the burden of government borrowing on national savings. In the years leading up to the downturn fiscal consolidation led to a significant reduction in government borrowing which allowed a high investment rate without a substantial widening in current account imbalances. The introduction of the Fiscal Responsibility and Budget Management Act (FRBMA) in 2003 played an important role in this achievement, even if the originally envisaged deficit reduction timetable was not fully adhered to, and notwithstanding some off-budget subsidy financing (Herd and Hill, 2011). As noted above, fiscal consolidation efforts resumed in 2010 but to ensure continued progress the medium-term fiscal framework needs to be improved, notably by embedding the annual budget in a detailed three-year rolling programme. The adoption of an appropriately defined and measured golden rule may also help to instil discipline and to limit the extent of crowding out. Public expenditure needs to become more efficient, not least with respect to education, health care and social assistance, which are key to ensure inclusive growth (see below).

The ongoing reforms of direct and indirect taxation are equally important, both to ensure sufficient revenue and to promote growth. In particular, the government's proposal to cut the corporate income tax rate to 30%, coupled with ending a number of allowances, is welcome as it goes in the direction of widening the tax base and lowering marginal rates. The government should also consider removing accelerated depreciation and putting depreciation onto an economic basis, which would move taxation closer to being on a book profit basis and allow for a deeper cut in the tax rate. The planned introduction of the GST will be a major gain for the country as it will permit a unified market for the first time, while maintaining the fiscal autonomy of states. It will also permit a major simplification of the various exemptions that bedevil indirect taxes and should set the scene for a similar unification of the tariff structure. And while they have been lowered, there remains scope to reduce customs duties in some sectors.

3. The fiscal policy, education and financial market aspects are discussed at greater length in Herd and Hill (2011), Hill and Chalaux (2011) and Herd *et al*. (2011). Other important dimensions, highlighted by Ahluwalia (2011), include raising efficiency in the still large agricultural sector and managing urbanisation.

Financial sector reform

Efficient financial intermediation is crucial to allocate savings to the most productive uses and thereby help sustain rapid growth. The Indian financial system has made considerable progress since its liberalisation in the 1990s (Herd *et al.*, 2011). Interest rates have been deregulated and the banking sector has been transformed by allowing a restricted number of new entrants into the market. A world-class stock exchange has emerged complemented by a large and vibrant equity derivatives markets. A sizeable microfinance industry has sprung up, providing credit to low-income households in a way that the banking system cannot, which helps promote financial inclusion. Even so, many Indians still lack access to basic banking services and remnants of the former policy regime still remain in place. The RBI continues to see one of its roles as micro-managing the banking system and deciding on the sectors to which bank credit should be directed. The potential main financial market (government bonds) is anaemic and suffers from having the owner, operator and regulator all in one. At the same time, the legal framework is outdated and continues to rest on laws drafted long before current financial markets came into existence. Meanwhile, the scale of saving within the economy has expanded considerably, much as in East Asian economies during their high-growth period. This adds to the need for further financial-sector reform. In particular, banks need much greater freedom in asset allocation. While public-sector banks did appear sounder to the public during the 2007-08 crisis due to implicit government backing, they ought to be privatised to improve their governance and minimise the recurrent need for recapitalisation. The remaining obstacles to new entry have to be reduced. Financial inclusion is an important priority and restrictions on microfinance should be avoided.

Product market regulation and competition

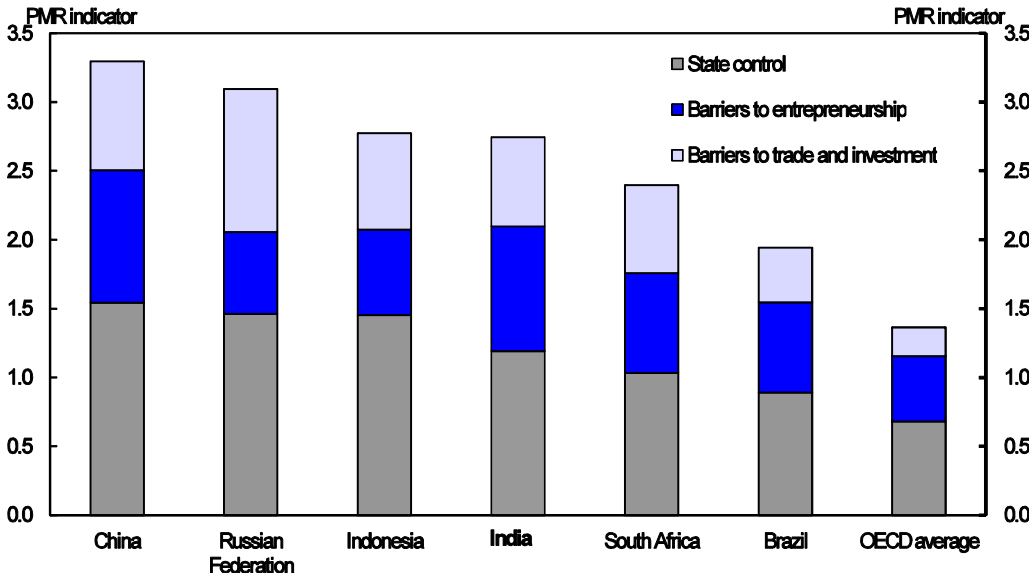
The extent to which the laws and regulations governing economic activity encourage competitive markets is a key determinant of economic growth. Although the effects of product market regulation (PMR) may depend on how close a country is to the global efficiency frontier (Aghion and Howitt, 2006), there is a clear link between regulation and economic performance (Arnold *et al.*, 2008). Broadly speaking, promoting competition by lowering (domestic and border) barriers to entry and levelling the playing field for different firm types encourages the movement of capital from low to high productivity firms and sectors, thereby improving resource allocation. For example, using micro data on manufacturing firms, Hsieh and Klenow (2009) find that reallocating capital and labour to equalise marginal products to US levels would boost manufacturing total factor productivity by 40 to 60% in India and 30 to 50% in China. There is also evidence that more liberal PMR speeds up the international diffusion of new technologies and production techniques, with more open economies growing faster as a result of higher physical and human capital investment and sustained productivity improvements (Arnold *et al*., 2008; Wacziarg, 2001; Aghion and Griffith, 2005). This is particularly relevant to India given the still large labour productivity gap with OECD countries.

A revised and updated PMR indicator is used to benchmark India's regulatory environment against other countries.[4] While good progress has been made in liberalising extremely interventionist policies since the mid-1980s, the overall regulatory environment in India is still distinctly less favourable to competition than in the average OECD country and some non-member countries (Figure 7). This reflects relatively restrictive regulation across all three of the broad regulatory domains assessed in the PMR framework – state control, barriers to entrepreneurship and obstacles to trade and investment. Notwithstanding extensive policy and institutional reforms, further efforts are therefore needed to improve India's

4. The OECD's PMR indicators measure the extent to which the regulatory framework is supportive of competition in markets for goods and services where technology and market conditions make competition viable. The indicators cover most of the important aspects of general regulatory practice as well as some aspects of industry-specific regulatory policy (see Wölfl *et al*., 2009).

investment climate and deliver sustained and inclusive growth and rapid economic convergence going forward (Conway *et al.*, 2010).

Figure 7. OECD product market regulation indicator



Note: The indicator score is for 2008 and runs from 0 to 6, representing the least to most restrictive.

Source: OECD.

High state control in India *vis-à-vis* OECD countries reflects relatively activist industrial policies that entail widespread government control over business enterprises and a prevalence of coercive instead of incentive-based regulations. Although important steps have been taken to lessen government involvement in product markets – notably by stepping up privatisation – public sector units (PSUs) still operate across most sectors of the economy and the line between the public and private sectors remains somewhat blurred. While public ownership does not need to be at the expense of competition, PSUs are, in practice, often granted "national champion" status and enjoy some degree of monopoly power and soft budget constraints. Also, the strategic decisions of some of the PSUs can still reflect the government's intentions, implying that improvements in governance would help PSUs operate on commercial grounds and maintain an arm's length relationship between the state and market. Building on current efforts to create an "enabling ethos" within government, more complete implementation of the OECD Principles of Corporate Governance would be helpful in this regard. Continued reductions in the size and scope of the state enterprise sector would help reduce implicit barriers to entry and spur competition in a number of sectors.

Administrative reforms have generally made the Indian government less reliant on microeconomic interventions and more focused on framework conditions with an improved capacity to oversee a market-based economy. In addition, by OECD standards, formal legal barriers to entry are low in India. However, barriers to entrepreneurship remain high in international comparison, deterring private sector entry and competition. These barriers primarily reflect heavy administrative burdens for setting up enterprises, which may also be indicative of more widespread transaction costs and excessive bureaucracy in government administration.[5] This suggests that recent initiatives to improve government bureaucracy

5. By way of confirmation, the World Bank's Doing Business indicators rank India 165th out of 183 countries for the ease of starting a new business. The overall "ease of doing business" in India is ranked 134th out of 183 countries, according to these indicators. See http://www.doingbusiness.org.

and cut red tape have made less headway in practice than expected and need to be reinvigorated. At the same time efforts need to be stepped up to increase transparency in public sector governance, including in dealings with the private sector, and to reduce corruption. The Central Vigilance Commission, the key anti-corruption authority, needs to be strengthened, including by making the process for appointment of its head more independent.

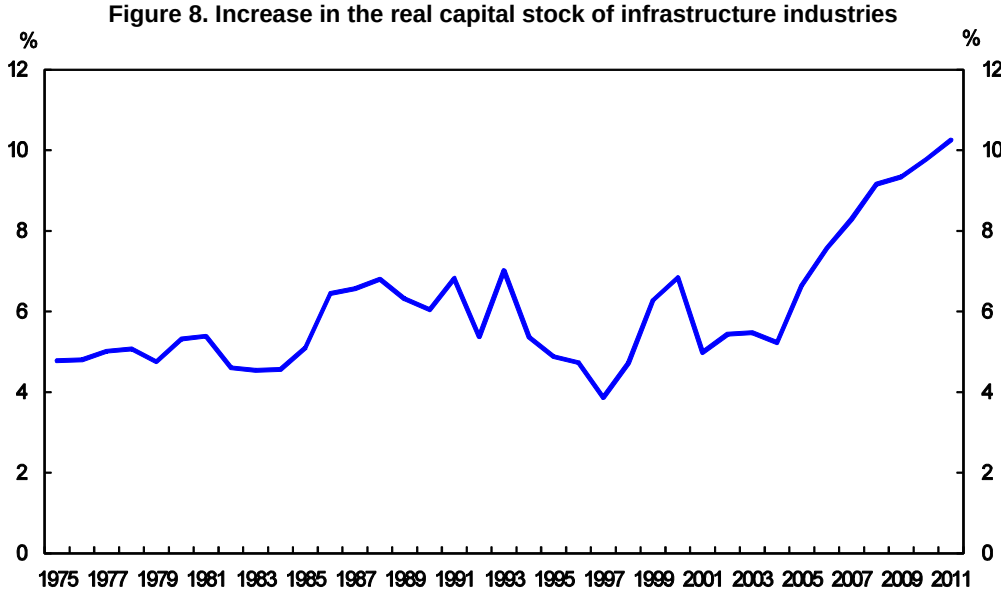
Barriers to trade and investment, as measured by the PMR indicators, also remain high in India. In particular, despite some improvements, restrictions on FDI remain onerous, especially in the services and network sectors. In practice, the regulations governing FDI are also relatively opaque, though the government has made some progress in clarifying policies for investors by consolidating regulations. Barriers to FDI are reflected in moderate rates of foreign investment into India, consistent with cross-country evidence (Golub, 2009). Although FDI inflows have been steadily increasing since the 1990s, they remain low as a share of investment in international comparison. Tariffs are also relatively high in India, particularly bound rates, and leave ample scope for selective policy intervention. For example, in 2008-09 only 45% of notional customs duties were collected as a result of numerous exemptions primarily designed to encourage exports (Ministry of Finance, 2010b). Peak tariffs need to be progressively lowered and the various customs duty exemptions need to be reduced and rationalised.

Previous OECD work has found that the degree to which PMR is supportive of competition varies considerably across Indian states, affecting both labour and total factor productivity at state level (Conway *et al.*, 2008). This implies that inappropriate regulatory settings impinge on the ability of the state economies to reap the full benefits of economic reforms undertaken at the national level. As such, ongoing reform of anti-competitive regulations in the less productive states would help reduce gaps in economic performance and ensure that the benefits of India's economic transformation spread throughout the national economy, which is important to further reduce poverty (OECD, 2007). In the relatively more liberal states and at the centre, the challenge is to further improve business framework conditions towards those in the OECD area so as to hasten the international diffusion of more efficient production techniques.

Physical infrastructure

Growth in recent years has benefited from the pick-up in investment in infrastructure (Figure 8). No long time series are available, but the capital stock in this area can be proxied based on total investment in electricity, gas, water, railways, other transport and communications. Extra infrastructure investment can be expected to have considerable spillover effects, reducing the uncertainty surrounding production schedules as electricity supply improves and transportation times shrink, thus allowing for a much greater specialisation of production. Cross-country evidence for spillovers is mixed. Some authors have failed to find any in East Asia (Young, 1995), but others have found some for advanced economies (Aschauer, 1989). In India, there appear to be strong externalities in manufacturing (Sharma and Sehgal, 2010) and the spillover effect from highways has been estimated to be large (Hulten *et al.*, 2006).

Figure 8. Increase in the real capital stock of infrastructure industries



Source: Central Statistical Office, National Accounts Statistics.

Despite the acceleration of infrastructure spending, bottlenecks remain pervasive and can be a major impediment to sustained growth. India's longstanding problems in this area are epitomised by poor roads, recurrent power cuts and outdated airports. A series of reforms have given price signals a greater role in orienting investment flows through the involvement of the private sector. Such framework conditions were

Table 2. Infrastructure investment

	10th Plan	11th Plan						Projected change in share of GDP from 10th to 11th Plan
	Total	2008	2009	2010	2011	2012	Projected outcome for 11th Plan	
	% of GDP at 2006-07 prices							%
Private-sector dominated	0.78	0.93	1.36	1.50	1.75	2.09	1.56	100
Telecommunications	0.61	0.68	1.06	1.21	1.46	1.80	1.28	111
Airports	0.04	0.15	0.15	0.13	0.12	0.12	0.13	253
Ports	0.14	0.11	0.14	0.16	0.16	0.17	0.15	10
o/w private sector	0.44	0.69	1.05	1.17	1.43	1.76	1.26	184
public sector	0.34	0.24	0.31	0.33	0.32	0.32	0.31	-10
Public-sector dominated								
Transition sectors	2.78	3.28	3.35	3.40	3.61	3.67	3.47	25
Roads	0.76	0.91	0.97	1.03	1.10	1.12	1.03	37
Electricity	2.03	2.37	2.37	2.37	2.51	2.55	2.44	21
o/w private sector	0.87	1.31	1.17	1.21	1.23	1.26	1.24	42
public sector	4.70	5.24	5.52	5.59	5.99	6.08	5.71	22
Private sector absent	1.60	1.90	2.10	2.14	2.06	2.12	2.07	29
Railways	0.61	0.66	0.79	0.81	0.71	0.75	0.74	22
Irrigation	0.64	0.83	0.91	0.92	0.94	0.95	0.91	44
Water and sanitation	0.36	0.41	0.40	0.41	0.42	0.42	0.41	16

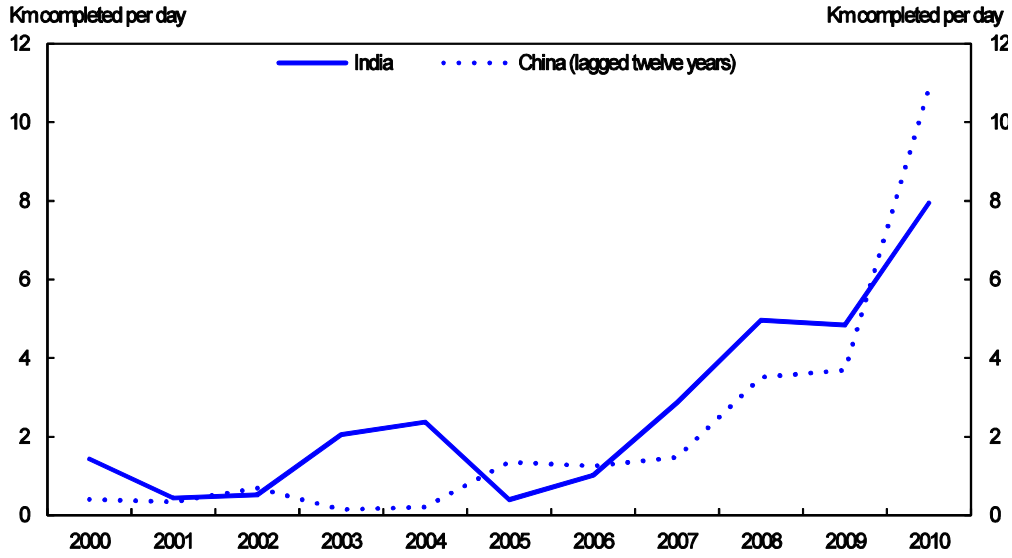
Note: Data presented on an Indian fiscal year basis.
Source: Planning Commission (2010).

first put in place for telecommunications, airlines and ports. More recently, headway has been made in other sectors, such as highways, electricity and airports and the benefits are now evident. Relative to GDP, investment in the private-sector dominated areas almost doubled between the 10th and 11th Plan periods (2002-07 and 2007-12) (Table 2). In contrast, where the private sector is absent, the increase was less than one third, with an abysmal performance in the provision of water and sanitation.

Highways

Well-designed public-private partnerships (PPP) can contribute to modernising the highway network (OECD, 2007). Initially there were doubts over the attractiveness of PPP contracts and the private sector only took on projects in high-income and good-governance states (Anant and Singh, 2009). The PPP system was completely overhauled in 2006-07, however. A standardised PPP contract was introduced allowing for a degree of risk sharing between the concessionaire and the government. As a result, the length of four-lane highways constructed under the build, operate and transfer regime grew very quickly (Figure 9) and the proportion financed by the private sector soared from one tenth in 2006-07 to close to 100% now.

Figure 9. Highway completion in India and China
Four-lane highways in India, expressways in China



Note: Indian data on an Indian fiscal year basis starting in April. The observation for 2010 reflects actual completions up to September and the expectation of the National Highways Authority for the remaining six months of the fiscal year. Chinese data on a calendar year basis.
Source: NHAI and China Statistical Yearbook.

Land as a barrier to infrastructure development

The land acquisition process for roads differs from that followed by normal eminent domain land purchases. The former is governed by the 1956 Highways Act and the latter by the 1895 Land Acquisition Act, which is more generous than the newer law, as it offers more generous compensation for compulsory purchases. Expectations over compensation have been set by the Acquisition Act and so disputes over valuation are common under the Highways Act. These have to be settled in the court system, which results in significant delays. Moreover, the National Highway Authority of India does not control the acquisition process: this is delegated to the state government revenue departments. Often, the process is not at the top of the local officials' agenda. Staff turnover amongst managers is also high. More fundamentally, land-title records are poorly maintained.

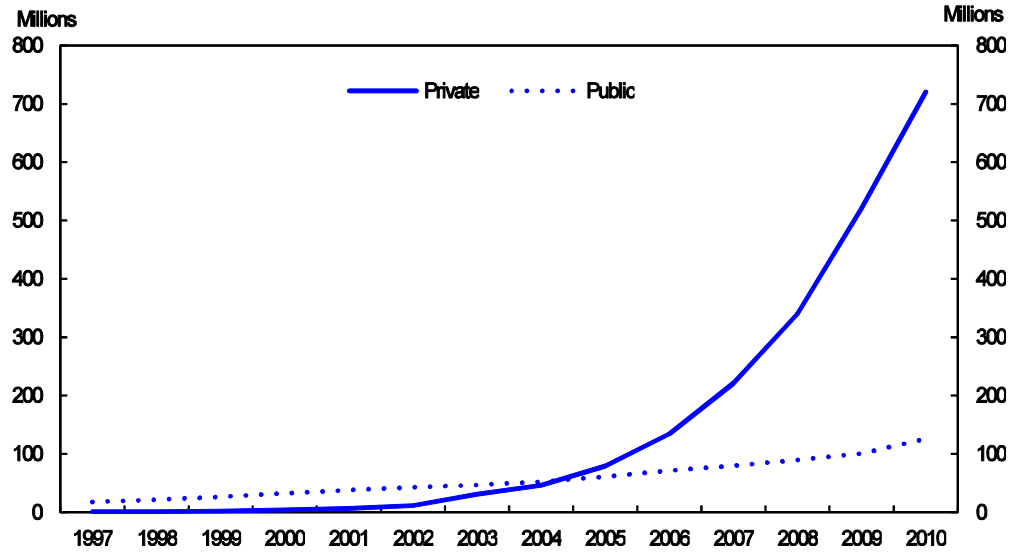
Land acquisition is widely seen as a key reason for implementation delays. Some states have attempted to computerise records but these tend to be outdated, inaccurate and incomplete. The major reason is that the 1908 Land Registration Act ensures that details of property transactions are recorded but generally provides no guarantee as to whether the title is legitimate. Moreover, there is no unified map of parcel boundaries. In 2008, the government announced that it would move towards a system of guaranteed title. A National Land Records Modernisation Programme was launched. According to the government, "the task appears to be stupendous, with monumental challenges at every step of the way" (Sinha, 2009). At the technical level, though, the capacity for this project exists in the Indian private sector. Witness, one Indian company completed the entire digitisation of Irish property parcel boundaries (Karandikar, 2007).

The government has proposed a Land Titling Act that will eventually result in a guaranteed title for all land parcels. The proposal follows best practice in that it creates a three-pronged structure that separates policy, operations and regulation. Each state will have to create a Title Authority, separate from the Land Ministry, and a Land Tribunal will be established to control decisions of the Authority with appeals possible to the Supreme Court (Sinha, 2010). This should also help to reduce the workload of the courts, where one third of cases are related to property titles.

Telecommunications

Legislative changes have transformed the telecommunications sector (OECD, 2007). First, the government converted the historic provider of land lines from a government department into a public corporation. It then created an independent regulator and auctioned frequency for private-sector providers of mobile telephony services. As a result there are 15 providers of mobile services. Even in local markets, there is competition as both GSM and CDMA technologies are typically on offer. Prices have fallen enormously over the past decade and are extremely low, at one third of the level in China and one-tenth the level in Europe. The number of subscribers has soared, mostly in the private sector, reaching 67% of the population by early 2011 (Figure 10), near the average in all developing countries (ITU, 2010). With urban

Figure 10. Number of telephone subscribers
Public and private sector companies



Note: Data presented on an Indian fiscal year basis.
Source: Telecommunications Regulatory Authority of India.

areas moving toward saturation, rural consumers accounted for 40% of new subscribers in 2009-10. The development of internet subscriptions has been held back by the very low number of fixed-line subscribers (around 35 million and falling). However, the government auctioned licences for 3G, 4G and WiMax frequencies in early 2010, and the latter should especially facilitate the delivery of fixed-link broadband internet through wireless networks, while 3G services can serve mobile internet users, even if they generally face capacity constraints as demand rises. The regulator has also licensed voice-over-internet telephony services.

Electricity

The electricity-generating industry has also undergone fundamental changes in recent years. It used to be dominated by state electricity boards. The 2003 Electricity Act, however, set the ground for a competitive market, splitting the boards into separate distribution, transmission and generation companies. It created regulators independent from government that control prices and allowed private generators into the market. By 2010, private-sector generators were playing a key role. They no longer needed a licence from the government to build plants and were free to sell power to the grid. This has been aided by the creation of a trading system for electricity, which functions through a broker-based and two order-driven markets. The main buyers are the state distribution companies. When the market was introduced in 2008, prices were high, averaging INR 7 per Kwh, over three times the long-run marginal cost of electricity. This gave strong entry incentives to merchant (private) power generators. Within two years, the average price had fallen to INR 4. This is still high relative to production costs and so further expansion of trading seems likely, beyond its 9% market share in the first nine months of 2010. Indeed, in the first three quarters of 2010, 45% of all new generating capacity came from the private sector.

Seeing the need for further expansion of generation capacity, the government created a mechanism for the private sector to provide it. The Central Electricity Authority carried out the necessary land and permit acquisition by establishing a company for five so-called ultra-mega power plants (of 4 000 MW each). States were required to indicate their demands and then power companies were invited to bid for the plants. Private companies won all of the tenders. The move towards the private sector may be spurred by the end of cost-plus tendering for new plants in January 2011, when all tendering for new plants was put on a competitive tariff basis.

The trading market is often disrupted by a lack of transmission capacity. The public-sector power grid company (now a listed company) is responsible for developing the grid, but independent transmission companies can enter the market. The national company plans cumulative outlays of $ 22 billion in the seven years from 2010, against the annual expenditure of $ 44 billion by the Chinese industry. The transmission lines for the ultra-mega power projects will be supplied through private-sector build-and-operate contracts.

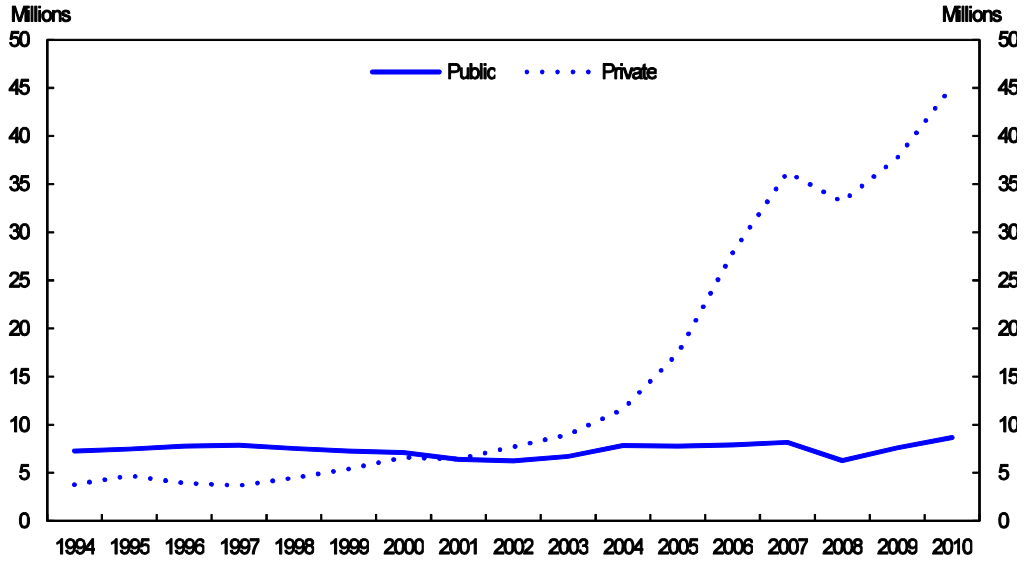
A further boost to private power companies came as state electricity regulators were required to provide plans for open access to electricity for major consumers. This is meant to allow final customers to contract with independent merchant suppliers. Nearly all state regulators have introduced such plans and have announced the cross-subsidy surcharge that the customers must pay. Such a surcharge is necessary due to the high price borne by industrial and commercial consumers (Herd and Conway, 2011). In practice, the open access policy has not yet achieved its goal of increasing competition. The main reason is the high prices of traded electricity which, once a surcharge has been added, results in a tariff higher than that offered by the distribution companies to their large customers. Even in the few states that set surcharges at zero, such as Haryana, the policy has not worked as regulators in neighbouring states have refused to allow the export of electricity to zero surcharge states when their own states have a power deficit.

The major problem in the electricity sector now lies in distribution, which is controlled by state governments. Almost all states have now separated their electricity boards into a generation, a transmission and a distribution company. Of the 72 distribution companies in India, electricity loss data is available for 60. A small minority of companies – of which all but two are privately owned – manage to keep losses from transmission and theft under the international norm of 10%. Amongst the remaining companies for which there is data, the median loss is as high as 30%. Resolving the distribution problem is key to eliminating shortages of electricity. The overall transmission losses run at around 2% of GDP (Jalan, 2010) and prevent the distribution companies from making sufficient investment in their network and in metering. In addition, the workforce of the state electricity boards is not adapted to a competitive client-oriented environment. For example, when a private company took over the North Delhi network, almost one third of the labour force was let go through a voluntary redundancy scheme. The sector is burdened with archaic procedures, corruption and unprofessional work attitudes. A few State electricity companies and boards have managed to reduce losses, but the way forward is to either sell or franchise distribution systems to private-sector operators.

Aviation services

The airline industry was first opened to competition in 1994 and completely liberalised in 2003. Many new firms, often of a low-cost type offering point-to-point services with no frills, entered the market. While private-sector traffic surged (Figure 11) and competition intensified, market concentration remains high on some routes (Dasgupta, 2009). State-owned Air India and Indian Airlines have been merged, but the combined airline has an old fleet, low productivity and suffers acute cash flow problems (OECD, 2011b). The distribution of slots is a barrier to entry since they are typically re-allocated to existing users each year. A free bidding system would be superior to such grandfathering. Also hampering entry are the so-called Route Dispersal Guidelines: in order to be allocated routes in the more attractive areas, airlines must also offer routes in the less attractive ones. An alternative, more transparent arrangement would be for the government to directly subsidise certain routes.

Figure 11. Domestic airline passenger traffic by sector
Millions of passengers per year



Note: Data presented on an Indian fiscal year basis.
Source: CEIC.

There was a considerable delay between the liberalisation of the airlines and private sector entry into the provision of airport services. With the surge in traffic, the two major airports in the country operated at twice their designed capacity, generating deterioration in service quality that the government owner (Airports Authority of India – AAI) was unable to remedy. As a result, the government decided in 2003 to create joint ventures with the private sector. A consortium was awarded a contract to build and operate Mumbai and Delhi airports. The latter is now open with its international terminal being one of the largest in the world, and further work is in hand to quadruple capacity. At the same time six new airports were constructed under PPPs, which now account for over 60% of nationwide air passenger movement.

The other airports are publicly owned through AAI. Only seven of the 57 operational airports run by AAI make a profit. Despite the plans to upgrade 35 airports in smaller cities, government investment has been limited and more private sector investment is necessary. One way to attract such investment would be by awarding contracts to the group asking for the smallest subsidy. Most airports have extensive land holdings, usually more than needed for aeronautical activities. However, due to the drafting of the 1994 Air Act, AAI does not have the legal right to use this land for commercial purposes, nor to lease it. The government should amend the Air Act to enable AAI to lease the land.

A new airport economic regulatory authority to control the pricing of aeronautical services in the major airports was created in 2009. Regulation of the remaining small airports remains with the AAI, which is also the owner and operator of these airports. This is a step in the right direction but the regulator of small airports should not also be the operator and owner. Given the experience that the new economic regulatory authority will build up over time, it would seem wasteful to have two regulators. Thus, the new regulatory authority should cover all airports. Moreover, given the interaction between airline ticket pricing and slot allocation, it should be responsible, through slot allocation, for ensuring sufficient competition on at least domestic routes. Separation of policymaking and regulation would also be improved by transforming part of the Directorate General of Civil Aviation into a separate airline safety agency. Responsibility for monitoring airline ticket pricing should be undertaken by the Competition Commission of India. The new regulators need to be made independent of ministries through sectoral funding, overseen by Parliament and subject to an appellate tribunal (Kacker, 2010).

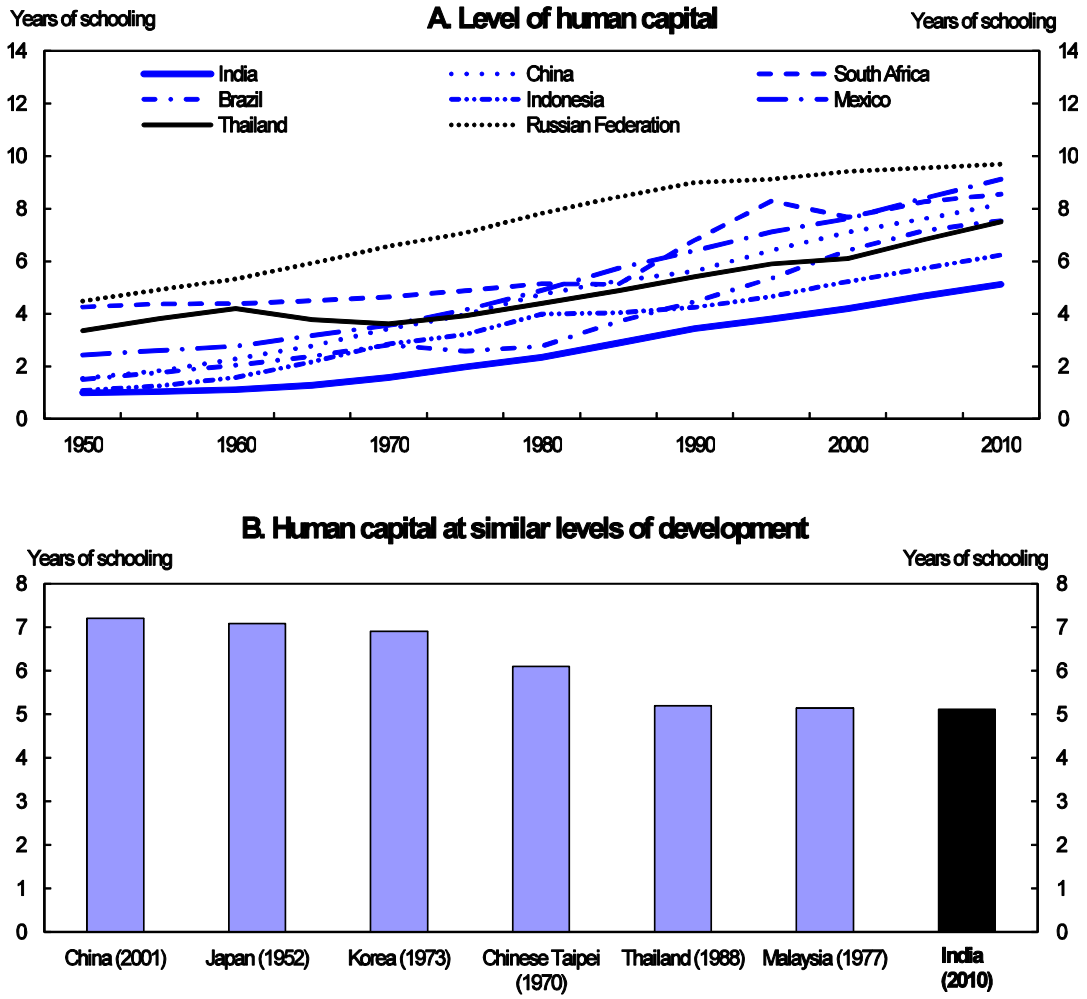
Human capital formation

Human capital in India is still low relative to a number of North-East Asian economies when incomes there were similar to those in India in 2010 (Figure 12). On the other hand, the overall level of education is similar to that of a number of South-East Asian countries, when they were at India's level of development, and these countries subsequently achieved rapid growth. This deficit of human capital is being filled, as educational achievements are rising faster than in a number of emerging economies (Hill and Chalaux, 2011). As yet though, the faster growth is not narrowing the absolute gap in years of schooling.

The extent of the contribution of better education to past growth depends on the method of calculation and there are marked differences in the literature as to how to measure human capital. Using the measure of years of schooling, human capital grew by 2% per year between 1985 and 2010, according to Barro and Lee (2010). They also estimate that in South Asia, the increase in GDP per person for each year's increase in schooling is 11%. Consequently, their estimates suggest that the increase in human capital has contributed 0.2% to overall growth. Another approach is to look at the share of workers with a given educational level and at the average wage of all employees with that education level, so as to derive the increase in average wages that, over time, is due to increased education. Such a calculation puts the increase in the average wage due to better education as 0.5% annually between 1990 and 2004 (Aggarwal, 2011). Given a labour share of between 0.4 and 0.5, such an improvement in labour quality implies that increased human capital has raised growth by around 0.3% per year. These two estimates may understate the contribution of education since there may be external benefits from a better educated labour force

through their ability to use more sophisticated technology. Indeed, improvements in cognitive skills, as reflected in higher student test scores, exert a stronger positive impact on economic growth (OECD, 2010b).

Figure 12. Human capital across economies



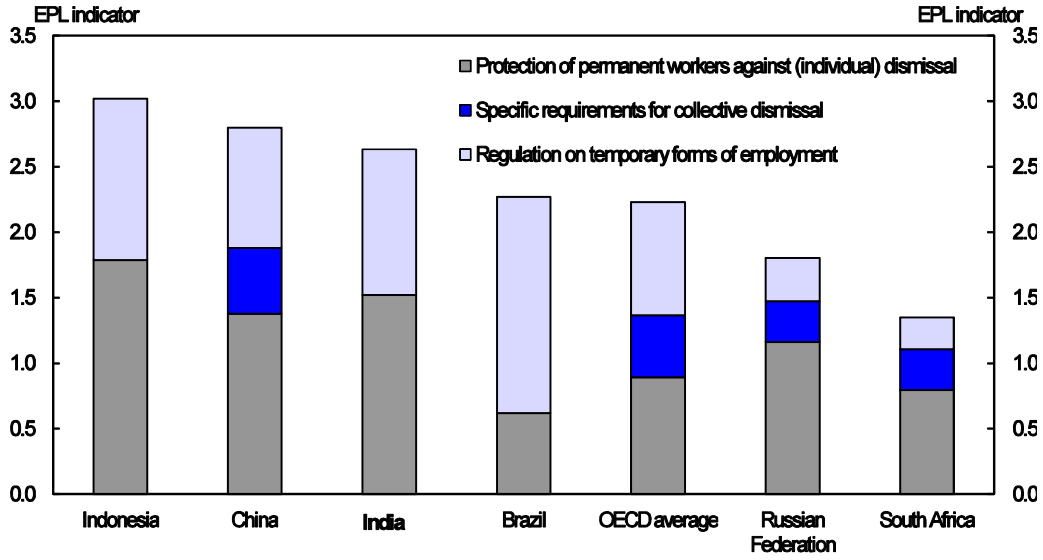
Note: Years of schooling for population aged 15 years and over.
Source: Barro and Lee (2010) and Penn World Table version 7.

Labour market regulation

Firms confront a number of challenges when starting up and expanding, including gaining access to land and reliable electricity supply (see above). They also face a range of labour market regulations administered by the state and central governments. More restrictive state-level employment regulations have been shown to reduce labour market dynamism and reforms to ease regulations tend to increase the creation of regular jobs (OECD, 2007; Goldar and Aggarwal, 2010). At the central level, the dismissal laws under the Industrial Disputes Act likely restrict job creation in large manufacturing firms, especially compared to smaller informal ones (OECD, 2007). Manufacturing firms with more than 100 employees must gain permission from the Ministry of Labour and Employment to dismiss just one worker, regardless of whether there are sound economic grounds. While there is no additional requirement for collective dismissal, the need to gain permission to dismiss any worker means that India has amongst the strictest rules for dismissal of any OECD or emerging economy, as measured by the OECD employment protection

legislation indicator (Figure 13). In 2009-10, under the Industrial Disputes Act, only 12 firms were officially granted permission to dismiss workers, with 2 146 workers dismissed in total (Ministry of Labour and Employment, 2010). Given the size of India's labour force, it is clear that many firms are avoiding their legal obligations.

Figure 13. OECD employment protection legislation indicator



Note: The indicator score is for 2008 and runs from 0 to 6, representing the least to most restrictive.
Source: OECD.

The fact that employment protection rules, and the Industrial Disputes Act more generally, apply only to firms with more than 100 employees provides incentives for firms to stay small or to hide the full extent of their employment. As a result, compared with other large emerging economies, India's employment is dominated by small firms: 84% of manufacturing employment in India is in firms with less than 50 employees, compared with 25% in China (Hasan and Jandoc, 2010). Smaller firms provide less protection and training to workers. They often have greater difficulties gaining access to credit and tend to be less productive, which ultimately reduces the scope for higher wages. To promote job creation and poverty reduction, the government should reduce the administrative burden for dismissal faced by larger firms.

Restrictive labour market policies also encourage informal employment, which can impose significant costs on both firms and workers. Informal firms are less productive, smaller and so less likely to be able to take advantage of economies of scale and tend to have limited access to credit (Perry *et al*., 2007). Informal workers tend to be paid less than their formal counterparts, are less likely to receive training and more likely to lose their jobs in the event of an economic downturn (OECD, 2008). Few are covered by social protection schemes, such as unemployment insurance and pension schemes. Over a lifetime, this disadvantage can dramatically increase the risk of poverty, particularly in retirement. India's very high rate of informality also creates problems when trying to implement a comprehensive social insurance scheme.

In India, the political scope to reform labour market laws is limited. Nevertheless, a number of states have made reforms to the extent allowed by federal laws and the Constitution, and there is evidence that those that went furthest enjoyed the fastest growth in manufacturing employment (Goldar, 2011).

A conditional projection at the 2025 horizon

Over the past decade, India's GDP per capita at purchasing power parity (PPP) has risen from 7% of the OECD average to 10%. Heightened competitive pressures, related in particular to the lowering of external tariffs on manufactured goods, may have raised the growth of productivity (Kowalski and Dihel, 2008). The externalities arising from the surge in infrastructure investment over the past five years worked in the same direction. Domestic saving and investment have risen considerably, about as much as in most East Asian countries during their high-growth period (Herd *et al.*, 2011). Against this backdrop, the longer-run potential growth rate of the economy has continued to increase to around 9% (Table 3). The acceleration in the capital stock added 1.8 percentage points to the growth rate between the first and the second half of the past decade.

Table 3. Growth accounting: the past 15 years
In per cent and percentage points

	1996-2001	2001-06	2006-11
	annual average compound growth		
Contributions to potential growth			
Capital	3.7	4.5	6.3
Labour	0.6	0.6	0.5
Total factor productivity	1.7	1.7	1.9
Potential (rainfall corrected)	6.0	6.9	8.8
Rainfall input	0.0	0.1	0.1
Potential growth	6.0	7.0	8.9
Increase in spare capacity	0.0	0.0	-0.4
GDP growth (actual)	5.9	7.0	8.4

Note: The above estimates use the share of both capital and mixed income to represent the capital share in the underlying production function. While this high share is supported econometrically, it might be lower given the extent of self-employment.

Source: OECD analysis.

Total factor productivity (TFP) growth, as measured above, reflects a number of factors. One important driver is the move of labour out of agriculture into higher-productivity sectors. The proportion of labour still engaged in agriculture is high and so the prospect for productivity gains as labour moves out of the sector are good. Indeed, the percentage point decline in the share of the labour force in agriculture has been the same in India in the past decade as in China in the decade to 2001, the year in which its income level was the same as that of India in 2010. Acceleration in the movement of labour out of agriculture, as happened in China over the past decade, would help raise growth.

There are no signs that the very high and increasing growth of recent years is set to slow. In that regard, the pattern is similar to that witnessed earlier in China. Cross-country analysis suggests that three factors play an important role in sustaining such growth momentum: the transfer of labour from lower to higher-productivity sectors, improvements in human capital and an increasing saving rate (Ding and Knight, 2009). These factors can be expected to play an important role in India as well.

A simple Cobb-Douglas production function is used here to project growth through 2025, consistent with the notion that over the longer term, growth is driven mainly by supply-side factors, namely the accumulation of capital, the evolution of the quantity and quality of labour inputs, the reallocation of resources between lower- and higher-productivity sectors and technical progress. The share of capital is

relatively high, at 0.68, partly because it is difficult to apportion the share of labour income for the high proportion of the labour force that is self-employed. However, econometric estimates of a production function for the whole economy are consistent with this high share.

In the case of India, the transfer of labour from lower- to higher-productivity sectors has been relatively slow due, on the one hand, to policies (including subsidies and rural public-sector job programmes) designed to favour agriculture and boost incomes in rural areas and, on the other hand, labour market regulations that have biased growth toward capital-intensive industries. The pace of human capital accumulation has picked up and may continue to do so in the coming decades, given recent improvements in enrolments.

The increase in capital formation in the past decade has been financed by a rising saving rate, which itself can be ascribed to two factors: first, as in other emerging economies, higher real income growth has raised saving rates (Zhang and Wan, 2010); second, the large decline in the number of dependents – and especially in the number of children – relative to the number of employed (Figure 14), has been found to raise saving in a number of studies (Table 4). The precise impact of demographic variables differs considerably; nonetheless cross-country analysis by Loayza *et al*. (2000) does show a statistically and economically significant impact on the saving rate of changes in both the youth and elderly dependency rates.

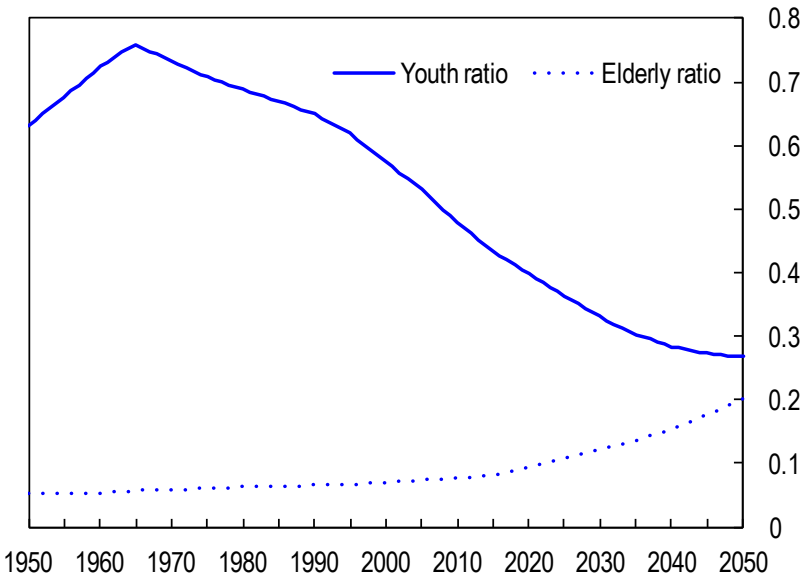
Table 4. Impact of the dependency ratio on the saving rate

Geographic coverage	Type of saving	Study	Dependency ratio	
			Youth	Aged
India	National	Zhang and Wan (2010)	-0.32	-0.01
China	National	Zhang and Wan (2010)	-0.42	0.01
China[1]	Household	Modigliani and Cao (2004)	-0.23	0.00
Chinese Taipei	Household	Athukorala and Tsai (2003)	-0.18	-4.80
Thailand	Household	Jongwanich (2010)	-0.88	-3.30
61 economies	Private	Loayza *et al.* (2000)	-0.72	-1.60

1. In this paper both the dependency ratios entered the saving rate equation as a reciprocal. The marginal impact of a change in the youth dependency ratio, at the 2010 value of the dependency ratio, is shown in the table in order to preserve comparability with the coefficients from the other papers, where the dependency ratio enters in the saving equation directly. The paper found no impact of the reciprocal of the aged dependency ratio on the saving rate and so there is no marginal effect either.

Looking forward, in the case of India, the impact of demographic change on the saving rate would appear to be positive for the next 15 years. The continued decline in the youth dependency ratio more than offsets the modest rise in the elderly dependency ratio. Beyond 2025, though, demography will start to work in the opposite direction. Current UN population projections suggest that around that time the youth dependency ratio will stabilise and the share of the elderly will start to rise significantly. The turning point in the combined dependency ratio would come between 2030 and 2040. As the negative impact on the saving rate generally outweighs the positive impact of the youth dependency ratio, the turning point in the saving ratio may occur somewhat before the demographic turning point. Such estimates, though, take no account of India-specific factors. In particular, the very high share of private financing of health care may mean that elderly people may not reduce their saving to the extent suggested by cross-country experience.

Figure 14. Demographic trends



Youth ratio = population aged 0 to 14 divided by population aged 15 to 64.
Elderly ratio = population aged over 65 divided by population aged 15 to 64.
Source: CEIC and OECD projections.

These demographic tendencies and announced government fiscal policies can be used to derive a baseline for the evolution of domestic saving over the next 15 years. Projections of saving and capital formation can then be combined with projections for labour force growth and TFP to compute an estimate of economic growth through 2025. The projection rests on a number of assumptions:

- TFP continues to grow at its recent trend rate of 1.9% per annum.
- The relationship between the gross household saving rate and the youth dependency ratio is projected to move in line with the cross-country estimates of Loayza *et al.* (2000) reported in Table 5.
- Expected income growth (measured by a moving average of past income growth) increases the household saving rate, with a one percentage point increase in income growth raising the saving rate by one percentage point, based, again, on results from Loayza *et al.* (2000).
- Government net saving rises by almost two percentage points of GDP over 2010-15, in line with government deficit reduction plans.
- Public sector enterprises increase net saving by 1% of GDP over 2010-15, assuming oil companies no longer have to finance subsidies and electricity distribution companies improve their performance.
- The labour force grows in line with the UN population projections for the 15-64 age group.
- The contribution of labour to growth increases as the education level of the working population rises and workers move out of agriculture. The labour share is projected to rise from 0.35 in 2010 to 0.50 by 2025.

- Last but not least, increased net national saving is reflected one for one in higher net fixed capital formation. On this basis, the net national saving rate rises from just under 25% of GDP in 2010 to close to 31% in 2025 at current prices (Table 5), translating into a sharp increase in the share of GDP devoted to net fixed capital investment (Figure 15).

Any projection exercise involves a number of technical uncertainties. In this case, any understatement of the labour share would tend to imply lower future growth. On the other hand, faster transfer of labour out of agriculture – or faster TFP growth for other reasons – would raise growth.

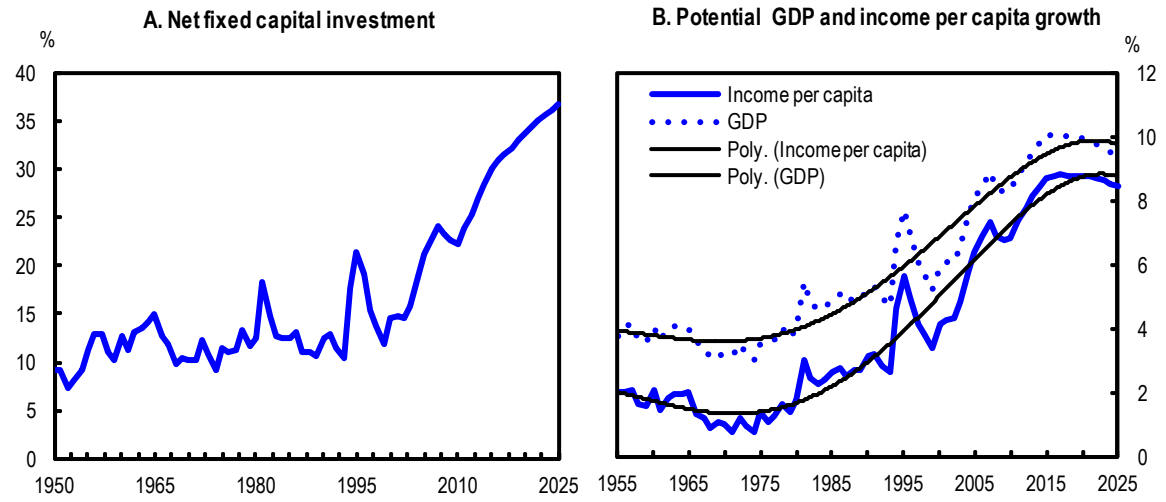
Table 5. Evolution of net national saving
Per cent of current-price GDP at market prices

	2005-10	2010	2011-15	2016-20	2021-25	2025
Net saving rates						
Households	19.9	20.4	21.2	22.4	23.5	23.9
Private companies	4.7	4.5	4.5	4.5	4.5	4.5
Government administrative departments	-2.4	-1.8	-0.7	0.0	0.0	0.0
Public sector enterprises	1.7	1.6	2.2	2.6	2.6	2.6
National	23.9	24.6	27.1	29.3	30.4	30.7

Source: National Accounts Statistics and OECD (2011b).

The overall result is that the annual potential growth rate of the economy could rise to 10% in the next five years, and that this pace could be maintained for the remainder of the decade (Figure 15). This would entail per capita income growth of around 8½ per cent, up from 7.2% in 2010. A recent private sector projection for the 20 years to 2030 put the growth of per capita income at 7¾ per cent, slightly lower than the estimate presented here (Buiter and Rahbari, 2011). The difference can be attributed to the assumption here that current government plans for fiscal consolidation and the reduction of fossil fuel subsidies are fully met. Overall, though, a key conclusion from both of these projections is that with continued reform and a favourable response of household saving to demographic changes, India can grow as fast during the next decade or two as China has done over the past decade.

Figure 15. Potential growth estimate and projection



Note: Net fixed capital investment as well as potential GDP and income per capita are measured at constant prices; panel B also shows the fourth-order polynomial trends associated with each variable.
Source: Authors' calculations.

As indicated in the *Survey*, the extent to which favourable demographic developments will actually boost growth hinges on the implementation of further reforms.[6] Major efforts are needed to facilitate infrastructure investment and to ensure that market forces play a greater role in allocating investment. The fiscal deficit needs to be brought down and government expenditure has to become more growth-friendly. This involves scaling back subsidies and replacing them by targeted payments to households, thereby cutting the deficit and raising the saving rate of government enterprises in the energy sector. Indeed, the more rigorous fiscal policy underpinning this scenario is responsible for almost half of the projected increase in the national saving rate and thus key to sustaining high growth.

The quality of growth: inclusiveness

While projections suggest that faster growth is feasible, it is important to ensure that the benefits of growth are shared sufficiently widely across society, as emphasized in India's 11th Plan (which runs through 2011-12) and in the preparatory work for the 12th Plan. While poverty has declined substantially over the past several decades, it receded less than might have been expected in light of India's growth performance and it remains high. Moreover, families deemed above the poverty line may still lack access to such essential services as education, health, clean water and sanitation. Going forward, it will therefore be important to improve the effectiveness and coverage of the social safety net.

Rapid economic growth has reduced the incidence of poverty

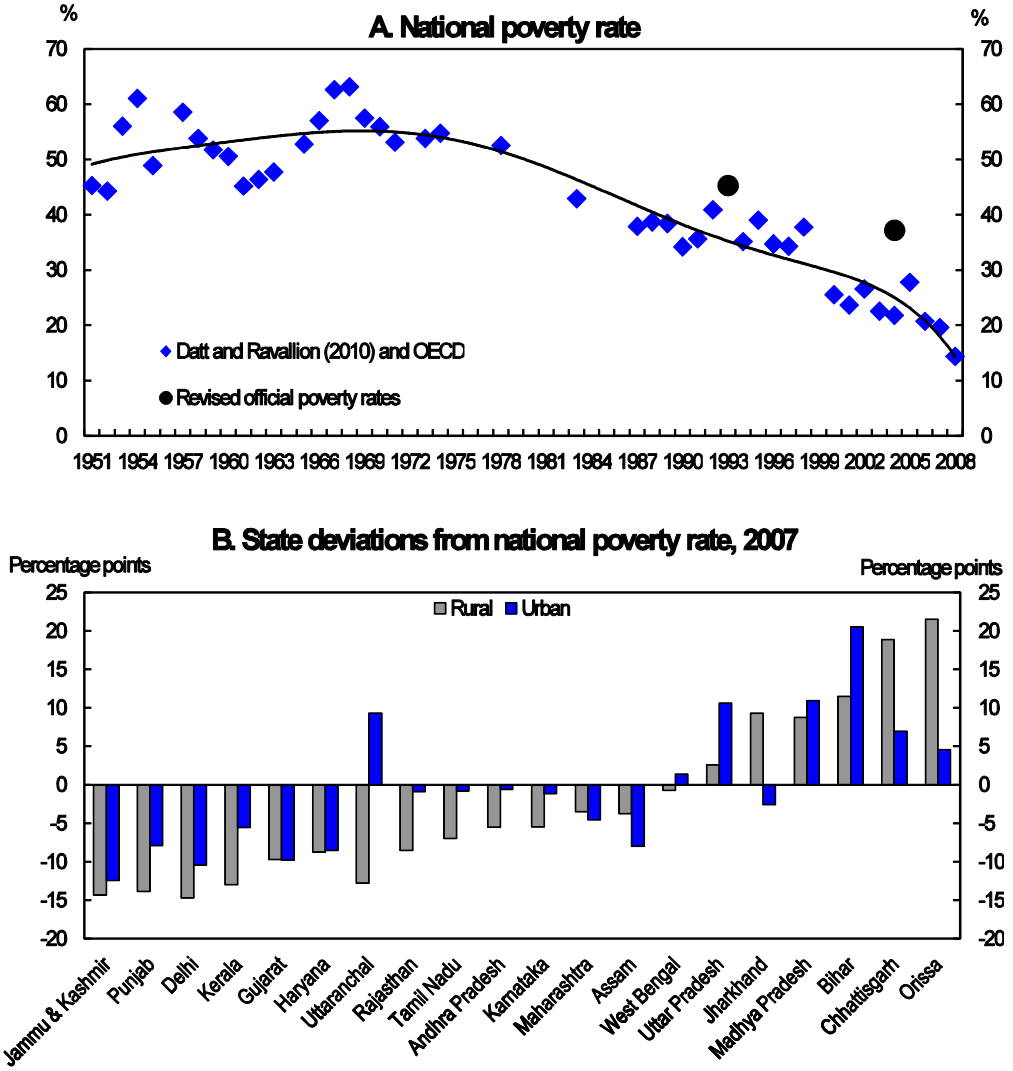
Notwithstanding relatively high population growth, sustained rapid economic growth has delivered strong gains in average per-capita incomes (Table 1) and helped lower poverty. In India, poverty is generally measured in absolute terms, as the percentage of the population living below the poverty line. It is assessed using household-level National Sample Survey (NSS) data. Until recently, the official poverty lines for rural and urban areas were based on a poverty line basket (PLB) which reflected the consumption patterns of those with a daily intake of 2 100 calories in urban areas and 2 400 calories in rural areas in 1973-74. This PLB, however, failed to reflect changing consumption patterns, notably the falling share of food and rising importance of services such as health and education. In 2009 a new PLB was introduced (Planning Commission, 2009), based on the typical consumption bundle of urban residents living on the poverty line, as defined by the old methodology, in 2004-05. This revision had no impact on the poverty rate in urban areas, which remained at 25.7% in 2004-05, but substantially raised the rural poverty rate for that year, from 28.3% to 41.8%.

In India, household consumption measured on a national accounts basis has been growing faster than measured by household surveys (Panagariya, 2008; Mazundar, 2010). Poverty may therefore not have declined as fast as suggested by sustained high GDP growth. Moreover, how quickly poverty falls in response to high growth depends on changes in the income distribution. Official poverty estimates using the new PLB shows that the national poverty rate has indeed declined significantly, from 45.3% in 1993-94 to 37.2% in 2004-05, with the improvement slightly larger in rural areas (Planning Commission, 2009). A longer time series, starting in the 1950s, was constructed by Datt and Ravallion (2010) using the old PLB. It also shows a sharp drop in poverty since the early 1990s (Figure 16A), when major economic reforms were undertaken. However, there is considerable variation in poverty rates across the largest states (Figure 16B). While the absolute number of people living in poverty has declined since the early 1990s, hundreds of millions of Indians still live in poverty.

6. Which may contribute to explaining why some earlier studies came up with lower potential growth projections: O'Neill and Stupnytska (2009) have Indian GDP growing at only 6½ per cent per annum during the 2010s and the 2020s; Duval and de la Maisonneuve (2009) have growth averaging 7.6% over 2006-25; and Fouré *et al.* (2010) show growth at 7% over 2015-25.

Significant progress has been made in reducing malnutrition, with the incidence of severe child undernourishment halving over the past three decades (Deaton and Drèze, 2009). Nevertheless, it remains high by international standards. A large proportion of children have low weight relative to their height, reflecting low nutrition intake. The prevalence of stunted growth, which reflects cumulative nutritional deprivation, is also high. The adult population too suffers from widespread malnutrition with the body mass index of over one third of all women below the threshold associated with chronic energy deprivation.

Figure 16. Poverty rates nationally and by state



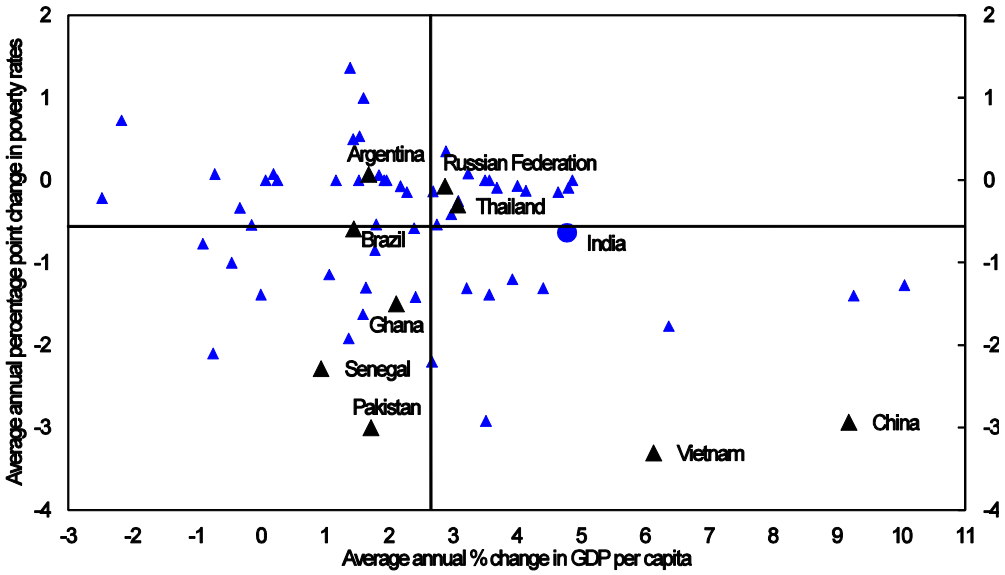
Note: The top panel shows the national poverty rate based on the new official national poverty line for 1993-94 and 2004-05 as well as higher frequency estimates using the old poverty line by Datt and Ravallion (2010) and extended for the last two observations using the latest available NSS data. The bottom panel shows state-level deviations from the national poverty rate for rural and urban areas using 2007-08 NSS data.
Source: Datt and Ravallion (2010), Planning Commission (2009) and OECD calculations.

A stronger welfare system and improved social service provision are needed

While broad poverty rates have declined, international evidence suggests that this improvement could have been greater given sustained high economic growth (Figure 17). The comparison with another large emerging economy, Brazil, over the 1990s and 2000s is particularly striking. Measured in terms of the

absolute reduction in poverty rates, the average pace of reduction there was similar to India, despite considerably slower economic growth. Measured in proportionate terms the rate of poverty reduction in Brazil was faster (Ravallion, 2011). This reflected falling inequality in Brazil underpinned by a comprehensive social security system with sizeable direct cash transfers to the poor (OECD, 2005). The relative under-performance in poverty reduction in India therefore calls into question the effectiveness of existing welfare safety nets and the provision of essential social services.

Figure 17. International comparison of changes in GDP per capita and poverty incidence



Note: GDP per capita is measured at purchasing power parity (PPP) exchange rates and poverty by the headcount index of the proportion of the population living below $1.25 in PPP terms. Changes in GDP per capita and poverty represent average annual changes occurring between the 1990s and 2000s. The two comparator points vary across countries depending on the availability of poverty headcount data. Where more than two observations for poverty rates are available for the 1990s and 2000s, the earliest observation in the 1990s and the latest in the 2000s has been selected. Only those countries where it is possible to compare poverty rates over a period of at least a decade are included. Dissecting horizontal and vertical lines reflect average changes in poverty and GDP per capita for the reported sample.

Source: World Bank, World Development Indicators.

Spending on social welfare is relatively high but the system is fragmented and coverage is often poor (Dutta *et al*., 2010; OECD, 2010a). The lack of a comprehensive safety net leaves the poor vulnerable to economic shocks and reliant on family and other networks. It also limits the effectiveness of government interventions to assist the poor during severe economic downturns as scaling up existing programmes quickly can be difficult. Spending on social programmes is skewed towards food and other subsidies, and towards employment in public works schemes. The single largest initiative is the Public Distribution Scheme, which provides subsidised food and other items. It is intended to help the neediest but there is considerable evidence of poor targeting and major delivery inefficiencies (Herd and Hill, 2011). A major recent initiative is the aforementioned NREGS, but it is aimed at the rural population and there is no national equivalent for urban residents. Although poverty rates are lower in urban areas, they remain high and urbanisation will continue to draw poor unskilled workers into the cities. Moreover, workfare schemes are ineffective as an instrument for aiding the elderly and incapacitated.

The use of conditional cash transfers (CCT) in India is generally limited, despite their growing popularity in other emerging economies and mounting evidence concerning their effectiveness. Some CCT schemes operate at the state level, including the *Apni Beti Apna Dhan* initiative, which aims to encourage girls to stay in school longer. At the national level, the *Janani Suraksha Yojana* aims to reduce the number

of maternal and neonatal deaths by encouraging women to give birth in a health facility. Since its introduction in 2005, the number of women benefiting from this initiative has expanded rapidly, reaching around 10 million by 2009 compared with 275 million live births (Ministry of Health and Family Welfare, 2010). An evaluation of the scheme by Lim *et al.* (2010) found that it increased the proportion of births in health facilities considerably, highlighting the potential benefit of expanding CCTs in India. There is also evidence from some Indian states that the old-age pension, an unconditional cash transfer, has been effective in supporting intended recipients (Dutta *et al.*, 2010). In addition to a renewed effort to reform subsidies (Herd and Hill, 2011), greater experimentation with new CCT schemes would be advisable. As with schemes operating in other emerging economies these should focus on helping to achieve key health and education objectives and focus on BPL households (Mehrotra, 2010). Administering such schemes will become easier with the introduction of a new identification system, the Unique Identity Number, which is currently being rolled out on a voluntary basis.

Reducing absolute poverty and promoting inclusive growth also requires further improvements in education and health. Wage inequality has increased, driven by rising returns to education (Azam, 2009), and differences in education attainment account for a sizeable portion of earnings variation (Bhaumik and Chakrabarty, 2009). Higher levels of education amongst parents is associated with lower infant mortality (Bhalotra, 2010). The presence of better educated adults, particularly women, in the household also reduces the incidence of child labour (Basu *et al*., 2010). Significant progress in improving basic education outcomes has been achieved, underscored by provisional results from the 2011 census. These show 74% of Indians are now literate, around 10 percentage points higher compared with a decade earlier. Enrolment rates continue to rise, expanding opportunities for younger cohorts to exit poverty. However, significant challenges remain to ensure that all children receive at least a basic education (Hill and Chalaux, 2011). High dropout rates and absenteeism endure and learning outcomes are often weak. A national CCT scheme to encourage children from disadvantaged backgrounds to attend more frequently and stay in school longer could help and should be considered. Enrolments at secondary and tertiary levels also remain low by international standards, which may present a challenge to reducing inequality in the future.

Improvements in health status have a direct impact on welfare and can also boost economic growth through higher worker productivity and by supporting capital formation (Bloom *et al*., 2010). Vast swathes of the population suffer from poor health and although average life expectancy has risen, at 63.5 years it remains more than five years below the average for middle-income countries. Public spending on health care has increased but remains low and a chronic shortage of infrastructure limits access to essential health care (Herd and Hill, 2011). This, together with dissatisfaction concerning the quality of publicly-provided care and rising incomes, has driven strong demand for private health care. The share of private spending on health care in India is high by international standards at over 70%. Though often better than the public alternative, private health care can be unreliable, particularly in rural areas, and providers are often poorly trained (Kumar *et al*., 2011). A lack of effective regulation and oversight has also given rise to problems of over-supply, particularly with regard to diagnostic testing and unnecessary procedures. Given the importance of the private sector, there is a pressing need for more comprehensive regulation of providers and for better public information disclosure.

Large out-of-pocket expenses associated with hospital stays present a barrier to the poor and raise the risk of pushing the non-poor below the poverty line. Another major issue is access to affordable medicines, which account for a high share of household health-care costs (Grover and Citro, 2011). Historically, strong competition between generic pharmaceutical manufacturers in India has kept the cost of drugs low by international standards. In 2005, intellectual property laws were modified to ensure conformity with international standards laid out under the Trade Related Aspects of Intellectual Property Rights (TRIPS) agreement. This has increased the pressure on the government to strike a balance between meeting its international obligations while ensuring continued access to cheap generic drugs. Continuing to promote competition within the large domestic pharmaceutical industry will help meet this objective.

The health insurance system is fragmented and only a small minority of households, generally those which include an employee of the government or a large firm, have comprehensive insurance (Kumar *et al*., 2011). Part of the problem is that the high degree of labour market informality precludes widespread access to employment-based schemes. A further challenge for poor households is meeting regular payments when incomes are erratic. Insurers face a potentially high cost of collecting small funds on a regular basis. In 2007 the government launched a new national insurance system, *Rashtriya Swasthya Bima Yojana*, providing free coverage, up to an annual limit, to households below the poverty line. The scheme is still being rolled out and so far covers around 23 million families. It is also being expanded to those above the poverty line and the government could consider introducing a contribution payment for more affluent households. In addition, there is a need to step up efforts to improve spending efficiency (Herd and Hill, 2011).

Conclusion: selected recommendations

In sum, faster and more inclusive growth can be achieved in India, provided reforms efforts are stepped up. Box 1 lists some of the key policy recommendations to that effect that appear in this paper and in the 2011 OECD *Economic Survey of India*.

Box 1. Summary of policy recommendations

Prudent macroeconomic policies to prolong the expansion

- Exert sufficient monetary restraint to bring inflation down to acceptable levels.
- Stay the course with planned fiscal consolidation and strengthen the fiscal framework. Rebalance the structure of public spending away from traditional, poorly targeted subsidies.
- Maintain vigilance against possible capital inflow surges and attendant risks to macroeconomic stability.

Strengthen safety nets, improve health care provision and promote job creation

- Further experiment with cash transfers, including conditional cash transfers, to provide direct assistance to the neediest.
- Improve regulation and oversight of private health providers and promote better public information disclosure. Ensure access to generic drugs while maintaining commitments to international intellectual property rights obligations.
- Encourage job creation in the formal sector by reducing the administrative burden for dismissal faced by large firms.

Step up product market regulation reform and improve infrastructure delivery

- Build on progress in privatisation by hardening the budget constraints faced by Public Sector Units and enhancing their exposure to market competition. Further reduce administrative barriers to entry for new firms to stimulate investment and innovation. Continue to reduce trade and FDI barriers, especially in services and network industries.
- Speed up the expansion of road infrastructure by streamlining land titling to reduce uncertainties with land acquisition. Strengthen efforts to improve land record management by clarifying land boundaries.
- Focus on efforts to improve the functioning of electricity distribution through privatisation or franchising to private operators. Meter electricity supply to the irrigation sector.
- Improve the regulatory set-up and pursue full or partial privatisation as needed in the other network sectors (notably aviation services and telecommunications).

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