FICCI

Translating Aspirations into Reality

India@2022
भारत@२०२२

Knowledge Paper

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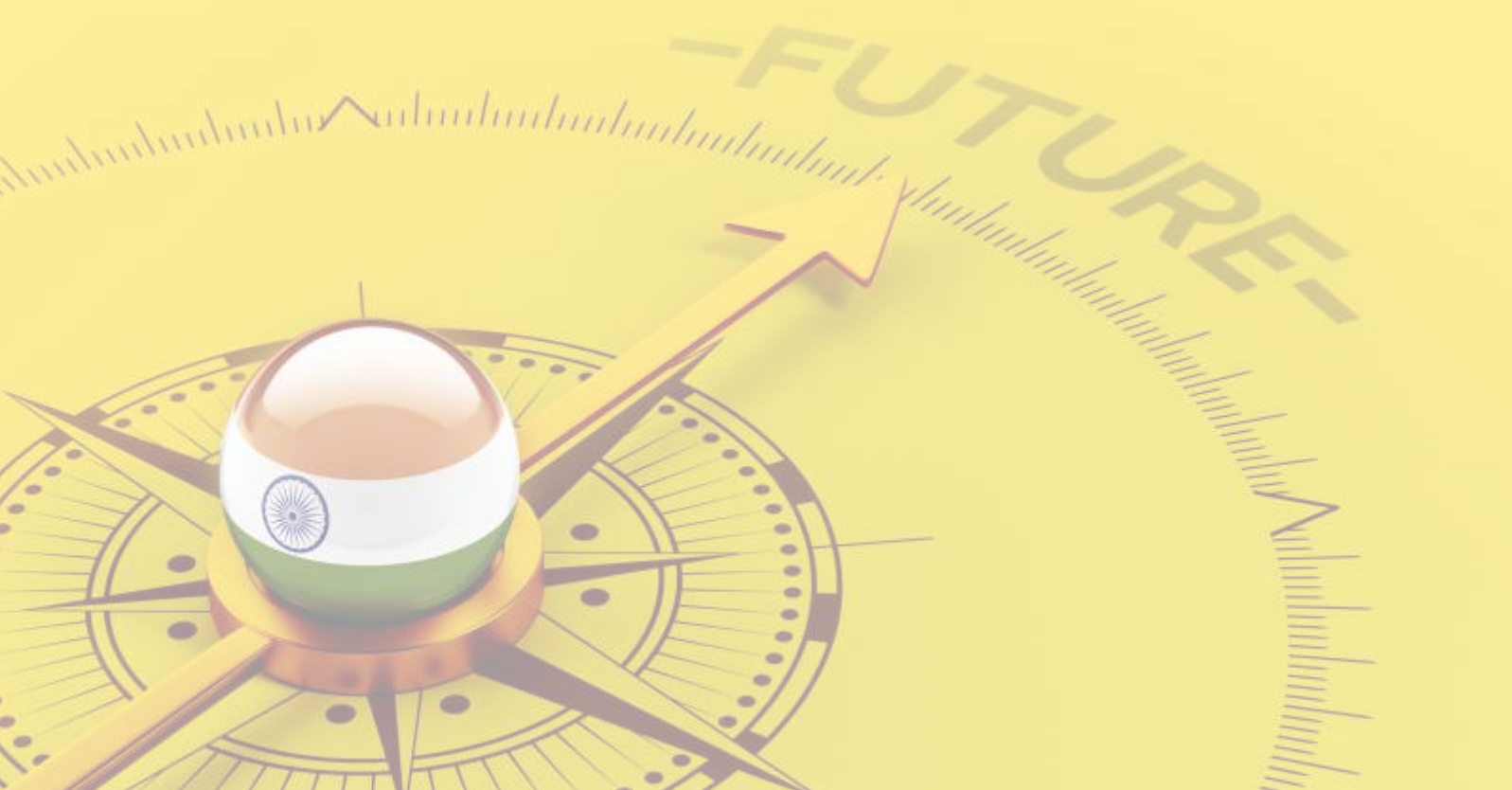

Foreword

India today stands at the cusp of a historic transformation. Our economic growth is on a recovery course after a prolonged period of moderation. This is an encouraging sign. Over the past year and a half, the momentum that has been built on reforms is refreshing and government's commitment towards re-energizing the economy and making growth more inclusive is heartening.

As we approach India's 75th year of independence, our collective efforts should be geared towards taking the nation into the league of developed nations by 2022. Our government, under the leadership of Hon'ble Prime Minister Shri Narendra Modi, has already set targets both in the social and economic spheres that we must endeavor to achieve. While the task may seem difficult, given the time frame at hand, yet, as a nation we possess the wherewithal to deliver on these provided there is a unified effort and we move in a mission mode approach.

This study titled **'Translating Aspirations into Reality: India at 2022'** envisages India achieving a growth rate of 9.4 percent by the year 2022 under a *'Prospering India'* scenario. The analysis shows that this growth will be driven by significant improvement in the economy's total factor productivity (TFP). There are a whole host of factors that have a bearing on TFP and going ahead, it would be imperative that both policies and institutional frameworks that govern the socio-economic spheres of our nation's life are geared towards bringing in greater efficiency and raising productivity in all areas.

We have in this study attempted to prioritize some of the challenges that we may encounter in our journey towards a *'Prospering India'* by 2022. The study also outlines some of the policy suggestions for dealing with such challenges. We hope this report will prove to be an important contribution towards the building blocks needed to realize India's development aspirations.

A Didar Singh
Secretary General, FICCI

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Chapter 5

Executive Summary

As India moves towards 75 years of Independence in 2022, it should reach at the development stage, where dreams and aspirations of billions of Indians can translate into reality. The path of reforms to transform, which Hon'ble Prime Minister Modi envisions is built on the bedrock of economic, financial, and institutional reforms, and would be the fulcrum for realising the dream of a *strong, developed and inclusive India*.

The paper envisages two alternative pathways to India's growth up to the year 2022 and estimates the quantum of accelerators including policy interventions needed to enable the leap to realise the potential of the country. Several growth drivers and enablers have been considered in designing an econometric model to generate the two plausible growth trajectories for India.

Present Continuum

In this scenario, India can expect moderate gains in various sectors and incremental improvement in its socio-economic conditions helped by low global commodity prices and increased domestic consumption of its vast population; however, this trajectory may fall short in terms of significantly improving the lives of its citizens.

Gross Domestic Product (GDP) will continue to grow at an average annual rate of 7.4%; however, growth and development will be incremental and distributed unevenly across the country. Sectoral composition will change a little - share of agriculture sector will continue to decline, the share of industry will remain more or less stable at around 18%-19% while share of services will go up to over 68%.

Prospering India

Alternatively, India can take a big leap towards prosperity by actively re-drawing existing parameters, working on natural advantages and seizing opportunities for growth.

Annual Gross Domestic Product (GDP) is expected to reach 9.4%, which will ensure that aspirations of citizens will be met by enabling them to meet livelihood requirements and improve their living conditions.

The push to higher GDP growth rate will be accompanied by increase in share of industry to 21.4%, marginal fall in services to 66.2% and decline in agriculture to 12.5%.

Growth Paths: At a Glance

Variables	Present Continuum	Prospering India
GDP growth (%)	7.4	9.4
Agriculture GDP (% share)	12.57	12.46
Industry GDP (% share)	19.27	21.38
Services GDP (% share)	68.16	66.15
TFP Growth (%)	1.2	5.2
Livelihood Opportunities (in millions)	567.0	605.5
Investment (% GDP)	35.2	38.0
Private Consumption (% GDP)	59.1	58.5
Savings (% GDP)	32.2	34.0

Source: GDP_{MP} data from DBIE, RBI. TFP growth calculated by authors by using RBI KLEMS data

Growth Drivers and Enablers

To achieve a 9.4% GDP growth, the paper identifies **Total Factor Productivity (TFP)** as the key growth driver for India for the next decade, more than input accumulation (that is, *quality and intangibles*, not merely *quantity* of factors of production). In order to achieve higher GDP growth, TFP has to rise from 1.0% (2016) to 5.2% in 2022. This will be brought about by improved skills, education, health, innovation, technology and lower transaction costs.

One of the key factors for TFP growth will be improvement in Ease of Doing Business and India should break into the top 50 in Doing Business Ranking. This will open various options of capital and reduce cost of doing business.

In order to spur growth, total investment - both private and public - has to rise from 33.7% of GDP to 38.0% of GDP.

The other major driver of economic growth will be **livelihood generation**. As livelihood opportunities grow, underemployment will reduce and quality of jobs will improve leading to higher income and consumption, thus enhancing aggregate demand.

In the next seven years till 2022, additional 91 million people will enter the workforce, who would need avenues for livelihood. Of this, 85.5 million additional livelihood opportunities can be generated under the *Prospering India* scenario with a growth of 9.4%. This will be facilitated by enhanced share of industry (to 21.4% of GDP), which will create jobs not only in manufacturing and construction, buoyed by public and private spend but also in allied services ancillary to

manufacturing and other industries. MSME industries will become a part of higher value and global supply chains, creating better returns on investments and higher quality of labour and jobs.

Livelihood share of agriculture will be 41%, manufacturing 14%, construction 13% and services 31%, which is a structural change from the high dependence today on low skilled jobs created by agriculture to more productive jobs in services and industry. Entrepreneurship and increase in number of start-ups will drive livelihood in manufacturing and services, including high technology, e-commerce and other services.

Social Dimension

However, higher economic growth does not necessarily mean equitable growth and hence it is important to keep in mind the social dimensions of growth. Public health expenditure (both central and state governments) needs to go up from 1.3% of GDP to 3.5% of GDP and education expenditure (both central and state governments) from 3.9% of GDP to 5.2% of GDP to improve the quality of human capital and reap the demographic dividend. The investments will be through both government and private outlays with a goal to increase the average school years across India, focused tertiary education and improved access to quality higher education. The higher spend in health and education will have an induced effect on the skills and quality of workforce that improves quality of life and productivity.

Female labour force participation rate (FLFP) will increase from 27.6% (2011) to 30.6% in 2022 due to formalisation of informal jobs stemming from labour reforms, change in demographics, better education and change in social structure due to urbanization and nuclear families.

Financing the growth

Greater investments - public as well as private will finance the economic growth of 9.4%. In the *Prospering India* scenario, domestic investment, FDI, FII investment will significantly go up because of improvement in governance, better investment environment and ease of doing business.

There will be a much higher social expenditure as compared to *Present Continuum* as India will try to catch up with other economies on HDI, along with economic development. Overall Tax to GDP ratio will go up to 27.0% from nearly 17.0% (2013) brought about by higher prosperity, financial deepening, better governance, tax reforms and efficient tax administration.

Government consumption expenditure will go up to 14.9%, while public capital expenditure will rise to 6.3% of GDP. Government expenditure is expected to be focused, planned, efficient and outcome based.

Domestic savings will continue to be a driver of growth for India given the changing demographics, higher disposable income, changing consumption patterns and conversion of physical assets to

monetary assets. Savings are expected to rise up to 34% of GDP from 32.3% (2016), providing capital for investment in private and public projects.

Towards a Prospering India: Three Imperatives

A *Prospering India* will have three major imperatives: a) Achieve a growth rate of 9.4% to meet the expectations of the aspiring population; b) Create enough livelihood opportunities to make such a growth inclusive and equitable and c) Improve wellbeing of the billion plus Indians.

The paper puts forth the following key suggestions to achieve these objectives:

A. Boosting growth to 9.4% and above

i. *Enhancing Total Factor Productivity (TFP)*: Higher TFP can be achieved by improving labour and capital productivity and higher investment. Some of the other suggestions include:

- Ease of Doing Business: This calls reforms in areas of 'Enforcing Contracts', 'Dealing with Construction Permits', 'Starting a Business', 'System of Inspections' and 'Regulatory Review Processes'.
- Infrastructure: Set up a single quasi-judicial regulatory authority for time-bound dispute resolution in case of infrastructure projects. Further,
  - ❖ Accelerate development of logistics infrastructure for greater economic integration and improving civic infrastructure to handle rapid urbanisation
  - ❖ Launch Long Term Funds for infrastructure with other countries as co-investors, which can be managed by professional fund managers and leveraged multiple times by providing equity for large projects across sectors.
- Innovation, Technology and Research: Introduce a comprehensive innovation policy to provide support and incentives to business-led technology innovation. This could include rebated tax rate for income from patents / innovations for a specified number of years. Further,
  - ❖ Implement IPR regime through cohesive legal framework without overlap, conflict or inconsistencies among the different ministries.

ii. *Energy security*: Adopt a principles-based natural resource allocation plan and rationalise pricing mechanism. Additionally,

- Attract domestic and international players in bids for domestic oil and gas blocks by incentivizing exploration & production in oil and gas sector.
- Further strengthen the Ujjwal DISCOM Assurance Yojana (UDAY) to facilitate financial turnaround of power distribution enterprises by reorganising financially weak DISCOMS into

smaller units, facilitating new corporate structures of DISCOMS and introducing performance yardsticks.

- Encourage investments in solar power by creating visibility on annual capacity allocations for solar projects in the next five years as well as for creating demand visibility for solar manufacturing in the country.

iii. *Investment*: Drive investments up from 32.7% to 38% of GDP by deepening financial inclusion, diluting government stakes in public sector banks from 51% to 26% and expedite bankruptcy law to free 'dead' assets. Additionally,

- Step up efforts to implement Goods and Services Tax, increase tax to GDP ratio by widening tax base and take steps to ensure effective transmission of policy rate reduction in lending rates.

- Provide green channel priority to investors bringing cutting edge technology, export oriented FDI.

B. Creating Livelihood Opportunities

- Promote entrepreneurship, self-employment and start-up businesses through a mix of financial incentives and availability of low cost finance.

- Introduce a rebated income tax scheme called START (Start Up Rebate Tax) wherein tax benefits should be linked to direct employment by the start-up businesses and tax benefit can be given for a defined rebate proportion (say 50%) and for a limited period (say 5 years).

- Support MSMEs through better coordination among the departments of local, state and central governments for creating an enabling environment for growth and their transition to the organised sector.

- Support sectors with high employment potential like travel and tourism as these create more jobs per million Rupees of investment than any other sector of the economy. The government should consider setting targets for attracting tourist traffic to at least 50 million tourists annually.

C. Creating Wealth and Wellbeing

- Integrate Education with Skills Development which needs to be facilitated by structural implementation of National Skills Qualification Framework (NSQF).

- All entry and operational barriers for private providers should be streamlined to encourage credible private providers to invest in the sector.

- Legislations related to healthcare services across states should converge in sync with the Clinical Establishment Act, 2010 to ensure minimum quality of healthcare facilities.

Way Forward

India today has reached a platform from where it can go into a much higher growth trajectory, but stagnation in growth can get it stuck in what many economists describe as 'the middle income trap'. The immediate imperative is a big push in the form of policy interventions.

As the experience of several transitioning economies shows, reforms are a continuous process as an economy absorbs gains from one level of policy changes and moves to the next level. In the last one and a half years, the government has taken many new policy initiatives to break free from a period of slow growth which is showing a positive change. India is well poised to take a structured and articulated path to enable the country to move into prosperity with sustained and conscious policy push in different dimensions.

Chapter 1

Transforming India: Pathways to Prosperity

This chapter sets the context, in broad strokes, in which India is looking ahead at 2022, the year when it completes 75 years of its independence. It talks about the gaps in its growth story and the key differentiators and accelerators- both domestic and external - which may prevent it from achieving its full growth potential. These differentiators relate to productivity in the key sectors of economy; livelihood opportunities, absence of which might turn the demographic advantage into a demographic cross; changing sectoral composition; fiscal and monetary issues and changing global trade paradigm. This section also sets the stage for the following chapter which focuses on what will propel growth drivers and related issues.

As India moves towards 75 years of Independence in 2022, it should reach at the development stage, where dreams and aspirations of billions of Indians can translate into reality. The path of reforms to transform, which Hon'ble Prime Minister Modi envisions, is built on the bedrock of economic, financial, and institutional reforms, and would be the fulcrum for realising the dream of a *strong, developed and inclusive India*.

India has come a long way from its socialist past towards a market and competition driven economy. In recent years, its growth has been amongst the fastest in a world where growth has turned anaemic across geographies. Recent assessments of multilateral funding institutions and international rating agencies project India's growth rate to be higher than that of rest of the world, including China, and are optimistic about its future prospects.

The winds of change in the sails of India reverberated in Hon'ble Prime Minister Narendra Modi's address in Singapore on November 23, 2015[1]: *"I do not judge the success of our efforts from the cold statistics of numbers, but from the warm glow of smile on human faces. So, one set of our policies are to empower our people. The other set to create the conditions in which enterprises flourish, opportunities expand and the potential of our citizens are unlocked.*

So, we are investing in our people through skills and education; special focus on the girl child; financial inclusion; sustainable habitats; clean rivers and smart cities; and, access to basic needs of all our citizens - from water and sanitation to power and housing.

[1] *Text of 37th Singapore Lecture 'India's Singapore Story' by Prime Minister on November 23, 2015, available at: http://pib.nic.in/newsite/PrintRelease.aspx?relid=131821*

Together with this software of change, we are also building the hardware of progress - next generation infrastructure, revived manufacturing, improved agriculture, easier trade and smarter services. That is why we are moving on."

It is argued that economic growth is the most powerful tool for reducing poverty and improving the quality of life. India has a large internal market which can generate sustained domestic demand. Further, about 800 million people are below the age of 35 years and with the average age of our population expected to be 29 years in 2020, we will be the youngest in the world. Though India's per capita GDP at USD 1,595.7[2] at current US Dollar is low, it is increasing at a healthy rate of 5.9% (2014-15).[3]

According to a study,[4] if India continues its high growth, 91 million urban households will be in the middle class category by 2030, up from 22 million in 2010, and urban India will drive a near four-fold increase in average national income by then.

However, as of now, India continues to have one of the largest concentrations of poor in the world. The challenge for India comes from rise in population leading to increasing pressure on employment in a rigid labour market. Though in absolute terms poverty is declining, the poverty ratio at 21.9% is still very high.[5] Moreover, even during the period of sustained high growth between 2003 and 2008, when economic growth reached near double-digit, India achieved an average annual growth of only 1.5% (between 2000-2012)[6] in human development indicators such as access to health, education, water, sanitation, housing etc. Thus, growth has to be more inclusive and the inequality in pattern of consumption needs to be reduced.

The National Sample Survey Office (NSSO), 66th round (2009-10) reveals a widening unequal consumption across the country and various strata of the society. Economists have widely held that inequality of consumption is positively correlated to inequality of income distribution.

The above NSSO data reveals that a person in the top 5.0% in rural India spends 3.5 times more on pulses and pulse products than those in the bottom 5.0%, 14.5 times more for milk, 18.8 times more for milk products and 29.6 times more for fresh fruits. This gets more startling when one compares education and health expenses, which are the force multipliers for human development, where the quantum of difference reaches over 40 times between the top and bottom 5.0%, in both urban and rural population.

This wide chasm of inequality is one of the greatest developmental challenges for India and also a priority that successive governments have tried to bridge with varying degrees of success.

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[2] *World Bank data base, 2014 figure, available at: http://data.worldbank.org/indicator/NY.GDP.PCAP.CD*

[3] *http://pib.nic.in/newsite/PrintRelease.aspx?relid=122126*

[4] *India's urban awakening: Building inclusive cities, sustaining economic growth, McKinsey, 2010*

[5] *World Bank (using national poverty line), 2011, available at: http://data.worldbank.org/country/india*

[6] *Economic Survey of India, 2013-14, Chapter 13, Page 231, available at: http://indiabudget.nic.in/budget2014-2015/es2013-14/echap-13.pdf*

In recent years, India has made remarkable progress in redesigning its economy to ensure growth with equity. The business environment and sentiment has improved, leading to over 30.0% jump in gross FDI inflows in January-June 2015 against the corresponding period of 2014. The World Bank Ease of Doing Business ranking for India has improved by 12 places and IMF ranking in Competition Index by 16 places. India is working to be amongst the top 50 in the world in terms of Ease of Doing Business and its actions are aligned to reach this goal.

FDI is now allowed in key sectors including insurance, defence and railways, most of which have been put on automatic route. The defence licensing regime has been liberalized which includes putting 60.0% of defence items out of the licensing process; retrospective taxation has ended; GST has been introduced in parliament for passage and a host of programmes like Make in India, Digital India, Skill India, Start-up India Stand-up India have been announced. Several social campaigns/schemes like Swachch Bharat Abhiyan, Pradhan Mantri Jan Dhan Yojna, Atal Pension Yojana, Pradhan Matri Jyoti Jeevan Yojana have also been launched. Besides, India intends to bring in a new bankruptcy code, new financial code and a comprehensive national IPR policy regime.

This paper identifies some of the differentiators – both domestic and external – and seeks to answer certain key questions, such as: How will India transition to a higher growth? What would be the nature of this transition? What are the imperatives for achieving a sustained growth with minimal volatility? What are the possible sources of funding the growth path?

What are the differentiators and accelerators that need to be considered? Here we look at productivity of various factors of production, the demographic surge which might turn from an advantage into a demographic cross if certain issues are not addressed, changing sectoral composition, effect of fiscal and monetary issues and global trade outlook as some of the key factors that will shape India's destiny.

Productivity as the Growth Engine

The biggest differentiator between the advanced and the emerging economies lies in the productivity of key assets such as labour and capital. Several studies[7] have argued that economic growth in Asia was driven by accumulation of inputs in the production process rather than by increases in productivity. In other words, the Asian economic miracle is largely attributable to an increase in the *quantity* and not the *quality* of factors of production. As countries become more developed and move closer to the limits of factor accumulation, they rely more and more on increasing *productivity* to sustain the economic growth process.

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[7] *Young, Alwyn. 1992. "A Tale of Two Cities," NBER Macroeconomics Annual 1992, Oliver J. Blanchard and Stanley Fischer, eds. Cambridge, MA: MIT Press, pp 13-54; Young, Alwyn. 1995. "The Tyranny of Numbers: Confronting the Statistical Realities of the East Asian Growth Experience," Quarterly Journal of Economics, 110: 641-680 and Krugman, Paul. 1994. "The Myth of Asia's Miracle," Foreign Affairs, 73: 62-78. Available at: http://www.apo-tokyo.org/productivity/016_prod.htm*

Productivity is the ratio of output to the most limited or critical inputs. Total Factor Productivity (TFP), on the other hand, attempts to construct a productivity measure for an aggregation of factors. TFP is commonly understood as the portion of output not explained by the amount of inputs used in production. As such, its level is determined by how efficiently and intensely the inputs are utilized in production.[8]

Statistics show that for India when the *TFP growth was positive, GDP growth rate was higher, and vice versa*. When TFP grew between 1.8% and 4.5% between 1992 and 1999, the corresponding GDP growth was between 5.5% and 8.9%. Similarly, when TFP growth rate was between 2.8% and 3.5% between 2003 and 2007, the corresponding growth in GDP was in the range of 7.9% to 9.8%. But when TFP growth went into the negative zone, as in 1991, 2000 or 2008, GDP growth fell to 1.1%, 3.8% and 3.9%, respectively.[9]

TFP is driven not only by technological change, but also includes the impact of policy environment, institutional infrastructure, transaction costs, level of financial intermediation, terms-of-trade etc. In fact, much of the impact of the reform agenda pursued since 1991 has manifested itself through an increase in TFP.

There is room for the overall productivity of all sectors to rise; such a change, however, calls for a massive skilling drive, employment of technology and innovation to improve TFP in all the three sectors for enhancing India's growth. The elements that can create tectonic transformation of India hinge on raising the TFP of the economy, which is discussed in greater detail in the following chapters.

Demographic Cross

India faces a strange paradox riddled with conflicting choices. On one hand, it is blessed with a huge demographic advantage which creates high domestic demand and consumption to boost growth. On the other, about 91 million youth are estimated to enter the labour force between 2015 and 2022,[10] creating an equally huge challenge in terms of providing livelihood.

There is a real threat that this advantage may become a demographic cross, more so after India went through a period of 'jobless growth' when the economy was growing at more than 8.0% average annual rate between 2004-05 and 2009-10. According to Census of India, the number of people seeking jobs grew annually at 2.2% between 2001 and 2011, but growth in actual employment was only 1.4% during the same period, leaving a huge gap.[11]

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[8] *Diego Comin, Total Factor Productivity, New York University and NBER, August 2006, available at: http://www.people.hbs.edu/dcomin/def.pdf*

[9] *Calculation based on RBI KLEMS data and DBIE, RBI and use of Solow residual method*

[10] *OECD Economic Surveys: India, November 2014 (Page 31), says 130 million youth are estimated to join labour force between 2010 and 2020, which implies 13 million additions every year*

[11] *Economic Survey of India, 2014-15, (Vol.1, Page 11)*

Even now, when about 13 million people are, on an average, joining the labour force every year, job creation is very low. A Ministry of Labour and Employment report[12] shows that in eight key industries, job creation was less than one million annually during the first four years of the decade starting 2010. This, of course, does not reflect the total job creation in the economy and yet the trend is disconcerting and a small fraction of what is needed.

The real challenge is the large number of 'working poor' and under-employed engaged in low-productivity activities in the unorganized sectors. By the current poverty line (equivalent to about USD 1.25 per day in terms of purchasing power parity or PPP in 2014), one-fourth of all workers – about 118 million - are poor in India. They are largely either casual workers or own-account workers.

If the current poverty line is raised to about USD 2 per day (in terms of PPP), the percentage of working poor will increase to nearly 58% and the number of such workers would be around 276 million. Overcoming the low productivity and poor income streams of this large group is indeed a gigantic task.[13] This huge level of working poor, who are also vulnerable due to lack of social security and poor working conditions depress the level of unemployment data. If the chasm of inequality is to be addressed, livelihood that sustains basic human aspirations needs to be met. This is a daunting challenge for assuring inclusive growth.

India would soon have a huge population of the unemployed and underemployed - a potentially high risk proposition that can cause long term unrest.

Shift in Sectoral Composition

No less paradoxical is the condition of agriculture, which has been the mainstay of India's workforce. In 2013-14, it employed 50% of India's workforce but contributed only 14.0% (at constant price) to the national income. Given its historically decline share, it is highly unlikely that a large number of future jobs will be created in agriculture. One definite sign is that more than 36 million people migrated from agriculture to non-agriculture jobs between 2004-05 and 2011-12.[14] There are signs that this trend will continue.

World Bank data reveals that the average land holding in India shrunk from 0.33 hectare per capita in 1961 to 0.13 hectare per capita in 2012, thereby, increasing the burden on land and lowering productivity and income. Mechanization of agriculture, at present is about 40%-45% and is increasing. This will chip away more labour from farming. The landlessness in rural areas too is growing.

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[12] *Quarterly Report on Changes in Employment in Selected Sectors (Oct, 2014 to Dec, 2014), Ministry of Labour and Employment, Labour Bureau, Chandigarh, available at: http://labourbureau.nic.in/QES_24th_final.pdf*

[13] *India: Labour and Employment Report 2014: Workers in the Era of Globalisation, (Page 5) available at: http://www.ihdindia.org/ILERpdf/Highlights%20of%20the%20Report.pdf*

[14] *Economic Survey of India 2013-14, Chapter 1, Page 5, available at: http://indiabudget.nic.in/budget2014-2015/es2013-14/echap-01.pdf*

A report published by the Ministry of Rural Development states that landlessness increased phenomenally from 40% in 1991 to 52% in 2004-05 in rural areas.[15] These factors have led to a situation in which agriculture, which has been providing livelihood to most of the population, will not be able to sustain the growing population. Hence, greater livelihood opportunities need to come from other sectors.

The construction sector is the second largest employer after agriculture and an assured bread-earner for millions of low/semi-skilled workers. The industry has grown at a compounded annual growth rate (CAGR) of 9.4% between 2003-04 and 2012-13[16] on the back of massive infrastructure investment and rapid rise in housing demand; of the total estimated 15.2 million short duration out-migrants, more than 36.2% are employed in the construction industry alone. It is expected to be the largest absorber of migrants from the agriculture sector.

However, estimates[17] suggest that there could be a skill shortfall of as much as 33 million people in the building and construction industry by 2022 and skill development is crucial to make this sector the driving force of growth and social development. If we look at the contributions of the manufacturing and service sectors in the year 2013-14, manufacturing contributed 15% to income and employed about the same percentage of workforce; services contributed 67.3% to income but employed only 27.0% of the working population.[18] These two sectors are not adding too many jobs either, which is a big concern but the state of agriculture leaves no choice but to bank on them for raising employment rates.

The greater demographic shift towards manufacturing and services poses another challenge. The education and skill levels of Indian workforce are very low. Only 10.0% of them have any formal (2.0%) or informal (8.0%) training and 38.0% of the workforce is illiterate.[19] The comparative data regarding training for developed economies is: Korea (96.0%), Germany (75.0%), Japan (80.0%) and United Kingdom (68.0%).[20] As per the National Skill Development Corporation (NSDC) India's capacity to train is only 3.1 million a year, as against 13.0 million new entrants entering into the labour force every year. Therefore, the capacity for skilling has to be dramatically augmented.

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[15] *Committee On State Agrarian Relations, and Unfinished Task of Land Reforms, MoRD, 2009, available at: http://www.rd.ap.gov.in/ikpland/mrd_committee_report_v_01_mar_09.pdf*

[16] *Human Resource and Skill Requirements in the Building Construction and Real Estate Sector, Ministry of Skill Development and Entrepreneurship and NSDC, Vol 5, Page ii, available at:*

http://www.nsdcindia.org/sites/default/files/files/Building-Construction-Real-Estate.pdf

[17] *Estimating the Skill Gap on a Realistic Basis for 2012, IMAR Occasional Paper No. 1/2013, available at: http://iamrindia.gov.in/epw.pdf*

[18] *RBI data base, available athttp://dbie.rbi.org.in/DBIE/dbie.rbi?site=publications, https://rbi.org.in/Scripts/PublicationReportDetails.aspx?ID=785*

[19] *eSkill Development, National Council on Skill Development, 2012, available at: http://lokbharti.com/wp-content/themes/LokBharti/pdf/e%20Skill%20Development.pdf*

[20] *Ibid*

Fiscal and Monetary Issues

A key benign factor that has stepped in is the process of fiscal consolidation. High current account deficit (CAD) and fiscal deficit, along with high spending on subsidies had played a role in reducing investment in the recent low growth period. But there has been a marked change in the current fiscal situation due to policy measures and also due to a fall in oil and commodity prices, *though the effect of latter will be transitory.*

India is committed to pursue fiscal consolidation by reducing fiscal deficit to 3.0% of GDP by 2017-18. The current account deficit (CAD) dipped to 1.2% of GDP in the first quarter of 2015-16, as against 1.6% in the corresponding quarter of 2014-15[21] and 4.6% in first quarter of 2013-14. These are good signs. The level of inflation has also gone down because of which RBI has cut down interest rates. High inflation had, in the recent past, led to a tightening of interest rate, discouraging investments.

Simultaneously, it is necessary to improve India's tax to GDP ratio, which is still very low amongst the BRICS and other emerging countries. Only about 3.0% of Indians are subject to income tax, as against 20.0% of Chinese citizens, according to a study.[22] Total tax revenue as a percentage of GDP is nearly 17.0% (2013) in India (centre plus state governments), among the lowest in emerging economies. *On the expenditure side*, high subsidies for food, fertilizer and fuel, which are often poorly designed and consequently leaky, have been a cause of concern.

Global Outlook

One of the major concerns is the slowdown in global growth which has led to a slump in India's exports. WTO has cut down the growth forecast for global trade in 2015 to 2.8%, from its own previous forecast of 3.3%. It has also said that volatile financial markets and the forthcoming US monetary policy cloud the outlook.[23] If the projections hold up, it would be the fourth consecutive year of below 3.0% growth in world trade.

An IMF policy paper says there is a risk that the world could get stuck for some time with a 'mediocre' level of growth.[24]

There are other issues too. Two mega trade agreements –Trans Pacific Partnership (TPP) and Trans-Atlantic Trade and Investment Partnership (TTIP) – are on the way, which have the potential to alter the global trading mechanism. When implemented, these could limit market access to many

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[21] *http://pib.nic.in/newsite/PrintRelease.aspx?relid=126841*

[22] *http://blogs.wsj.com/indiarealtime/2015/02/27/inside-india-focusing-on-the-fiscal-deficit-is-bad-for-indias-economy/*

[23] *https://www.wto.org/english/news_e/pres15_e/pr752_e.htm*

[24] *IMF Working Paper: Pressing the Indian Growth Accelerator: Policy Imperatives, March 2015*

important markets for developing countries. India is presently not a part of these agreements but will have to respond to these developments to continue to play an important role on the global economic landscape. India is a member of the Regional Comprehensive Economic Partnership (RCEP). Additionally India should firm up its efforts for joining the Asia Pacific Economic Coorperation (APEC). This would help in reducing transaction cost, lead to greater harmonization and mutual recognition of standards, boost India's investment prospects and will help establish links with global supply chains.

The slowdown of China's economy is perceived as one of the most important factor affecting global economy. For India this slowdown in Chinese economy is both an opportunity and a threat - an opportunity because falling commodity prices will benefit a net importer like India and a threat because the very same falling commodity prices can send several large economies (such as Australia, countries of South East Asia, Latin America and Sub-Sahara Africa) exporting to China into a deflationary shock, affecting the entire world.

The Road Ahead

The Indian economy has to intensify its upward trajectory through 'rising by its bootstrap' syndrome. It doesn't mean a return to the autarkic model of development practiced from the 1950s to the 1970s but a recognition that force multipliers for the economy will come from domestic sources.

Despite the availability of huge labour force both manufacturing and the services sectors have focused on deployment of capital, which may not be a useful strategy. Instead the economy has to build upon the strength of its overall and distinctive productivity.

This, in turn, means skilling and retooling of the human capital as well as changing the rules under which it is deployed (flexible labour laws). India will have the advantage of creating a larger middle class which will in turn create a deeper market for the products and services of the industrial economy.

So two major elements of the macro strategy are to develop human capital and sharpen the availability of infrastructure to make it more productive. This includes setting up of both hard infrastructure (better roads and rail for movement of labour and goods, availability of power for optimal working) and soft infrastructure (schools and community colleges to train workers and health facilities to make them work effectively).

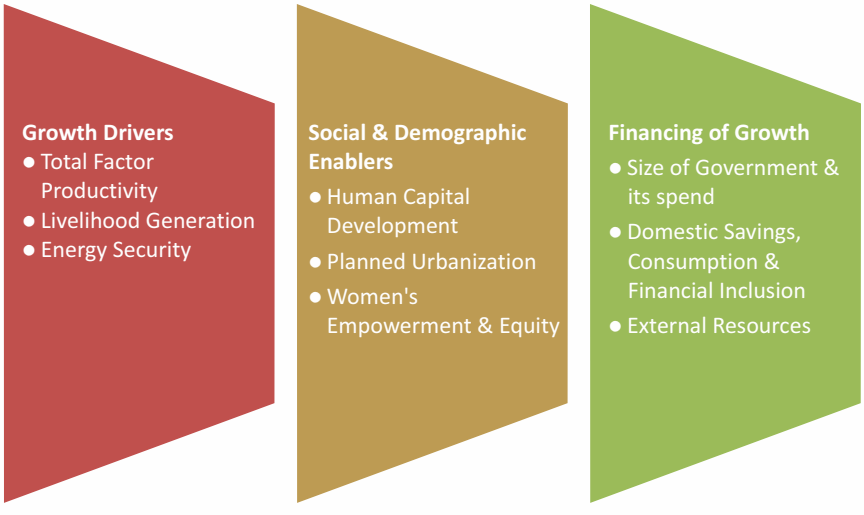
The following chapters examine these elements in greater detail and offer recommendations on how to reach the goal of taking the Indian economy on a sustained growth trajectory.

Chapter 2

Growth Drivers and Enablers

This chapter looks at factors that will drive India's growth, the social and demographic enablers and also the possible sources of financing future growth. Our study suggests that TFP will be the main growth driver for India over the next decade, more than input accumulation. Prime factors behind TFP growth will be further improvement in physical infrastructure, ease of doing business, strengthening institutions and governance, technological changes, R&D and innovation, education and training, and further development of financial system. The other drivers are livelihood generation and energy security.

Human capital development will be a critical enabler of growth. India has the advantage of a young and large workforce which needs to be nurtured through better education, health and skill levels. Planned growth of urban centres and promotion of women's participation in workforce will be significant enablers. This growth can be financed by increasing government expenditure, higher domestic savings and external funding resources like FDI, FII, ECB and inward remittances.



In the last two decades, rapidly changing demographics with a burgeoning middle class and a strong services sector-led growth have been the hallmarks of India's development story. It has, however, been a rollercoaster ride with growth reaching new highs in the first decade of the millennium, and then going down before recovering in recent times.

Review of literature on developmental alternatives and its determinants and discussions with experts have helped us in establishing the growth drivers for Indian economy, which have been appropriately tested in the subsequent chapters to determine the various growth trajectories. This chapter focuses on those drivers, social and demographic leverages for growth and possible avenues of financing this growth.

Growth Drivers: What Will Impact Long Term Growth?

TFP: How will it be a Force Multiplier?

TFP has been identified as a key driver of growth in the literature on economic growth. The overall consensus in the productivity literature is that India's rising GDP growth in the first six years of the 1990s was led mainly by a spurt in TFP growth following 1991 reforms. As the effects started to taper off, growth moderated between the late 1990s and early 2000s. Thereafter, GDP growth picked up due to a spurt in TFP and capital stock until the 2008 crisis, following which TFP growth fell, and so did GDP growth.[25]

The OECD Economic Outlook for South East Asia, China and India, 2016 states that India's manufacturing sector productivity has improved, exceeding the national average growth rates,[26] indicating a change in TFP growth for better.

Growth rates in TFP and GDP at market prices: India

Year	TFPG (%)	GDP_{MP} (%)	Year	TFPG (%)	GDP_{MP} (%)
1991	-2.53	1.06	**2000**	-0.48	3.84
1992	1.80	5.48	**2001**	0.45	4.82
1993	0.90	4.75	**2002**	-0.81	3.80
1994	3.04	6.66	**2003**	2.78	7.86
1995	3.60	7.57	**2004**	1.82	7.92
1996	3.76	7.55	**2005**	3.68	9.28
1997	0.25	4.05	**2006**	3.58	9.26
1998	2.24	6.18	**2007**	3.50	9.80
1999	4.50	8.85	**2008**	-1.28	3.89

Source: GDP_{MP} data from DBIE, RBI. TFP growth calculated by authors by using RBI KLEMS data

[25] *Decoding the 8% Growth Target, by Pranjul Bhandari, Planning Commission of India, 2013, available at: http://planningcommission.nic.in/reports/wrkpapers/wrk_grow1501.pdf*

[26] *OECD Economic Outlook for South East Asia, China and India, 2016*

TFP level is determined by how efficiently and intensely the inputs are utilized in production.[27] Major factors which influence TFP are: Ease of Doing Business, Physical Infrastructure, Innovation, Technology and Research, Education and Training, Institutions and Governance and Financial Development.

In the model, TFP is identified as the main driver of growth. Different TFP levels will generate different growth trajectories.

Some of the main components influencing TFP are discussed in the section below.

Ease of Doing Business

One of the biggest challenges that India faces is to improve the Ease of Doing Business, which is a measure of the regulatory environment to start, run and exit a firm. According to the World Bank's 2016 Doing Business Report, India currently stands at 130th position among 189 countries, which is an improvement from the rank of 142 as reported in 2015 Doing Business Report.

This jump in the rank was mainly on account of improvements in administrative ease of starting business and getting electricity connections. However, India still ranks 183 in terms of dealing with construction permits, 178 in enforcing contracts and 157 in terms of ease of paying taxes. These are important variables for creating a robust business environment and improvement in these areas along with others has the potential to significantly elevate India's ranking and break into the top 50 countries in terms of ease of doing business. In fact, FICCI in its Agenda for Economic Growth, 2014 had said that "India should build a vision of rapidly ascending to a position within Top 50 in the Doing Business Rankings. Enforcing contracts, dealing with construction permits, starting a business are areas that should be the focus of carrying out reforms."

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[27] *http://www.people.hbs.edu/dcomin/def.pdf*

TFP growth is usually measured by the Solow residual. If g_y is growth rate of aggregate output, g_k the growth rate of aggregate capital, $g_L$the growth rate of aggregate labour, α the capital share, the Solow residual is defined as $g_y - \alpha.g_k - (1 - \alpha).g_L$ The Solow residual accurately measures TFPG if (i) the production function is neo-classical, (ii) there is perfect competition in factor markets, and (iii) the growth rates of the inputs are measured accurately.

According to the Doing Business Report,[28] an improvement on all aspects of the doing business indicators to reach top quartile of countries could lead to an estimated 1.4 to 2.2 percentage point increase in annual economic growth.

A study estimates that delays and high taxes may cause a 5.0%-10.0% loss in business in India - comprising a 3.0%-4.0% loss due to delay in getting clearances including land, additional cost of 1.0%-3.0% due to higher taxes and 1.0%-3.0% cost incurred due to delay in contract enforcement.[29]

Ease of Doing Business Rankings

	Overall Rank	Start a Business	Dealing with Construction Permits	Getting Electricity	Registering Property	Getting Credit	Protecting Minority Investors	Paying Taxes	Trading Across Borders	Enforcing Contracts	Resolving Insolvency
India	130	155	183	70	138	42	8	157	133	178	136
Brazil	116	174	169	22	130	97	29	178	145	45	62
Russia	51	41	119	29	8	42	66	47	170	5	51
China	84	136	176	92	43	79	134	132	96	7	55
South Africa	73	120	90	168	101	59	14	20	130	119	41

Source: Doing Business Report, 2016, World Bank

Therefore, improving on the indicators of Ease of Doing Business parameters has the potential to increase India's growth rates by 1.2 to 1.5 percentage points and also increase TFP growth by around 1 percentage point - even by conservative estimates.

A better Ease of Doing Business ranking indicates lower cost of doing business and improves investment, which in turn will lead to enhancement in overall productivity. Therefore, in the model, Ease of Doing Business will impact TFP through investment.

Physical Infrastructure

According to a study, infrastructure is not only important for productivity growth but it even triggers such growth and hence it is important to closely monitor its management and financing.[30] Another study observed that in South Africa, 1.0% increase in infrastructure investment increases the fixed capital stock by 1.4%, while a 1.0% increase in the fixed capital increases GDP by 0.06%.[31]

In India, infrastructure endowments have a significant role towards explaining the variation in TFP and technical efficiency across industries. A study examined the effects of infrastructure on TFP and

[28] *Doing Business Report, World Bank, 2005 available at: http://www.doingbusiness.org/~/media/GIAWB/Doing%20Business/Documents/Annual-Reports/English/DB05-FullReport.pdf*

[29] *Ease of Doing Business in India, 2014. KPMG*

[30] *UNIDO (2007), "Determinants of Total Factor Productivity: A Literature Review," Staff Working Paper 02, available at: http://www.unido.org//fileadmin/user_media/Publications/Research_and_statistics/Branch_publications/Research_and_Policy/Files/Working_Papers/2007/WP022007%20-%20Determinants%20of%20total%20factor%20productivity.pdf*

[31] *Luiz de Mello (2010), "Growth and Sustainability in Brazil, China, Indonesia and South Africa," OECD*

technical efficiency of the manufacturing industries in Indian states.[32] TFP, output and technical efficiency appear to be positively affected by infrastructure.[33]

Physical infrastructure investment was about 6.8% of GDP (both public and private) in 2010, which needs to be increased to 10.2% of GDP by 2020.[34] Private sector investments, which are currently financing about 20.0% of the infrastructure spending, needs to increase significantly to over 40.0% in 2022.[35]

Investment in physical infrastructure has significant impact on TFP. Since investment in R&D, innovation, human capital, etc. also impact TFP, in the model, impact of physical infrastructure is captured through investments.

Institutions and Governance

Capital accumulation and subsequent productivity growth will not occur unless good institutions are in place. Good institutions are essentially a hallmark of good governance, and good governance should be a clear policy choice.[36]

There is a growing acceptance that economic, political, legal, and social institutions influence economic success or failure. In the context of economic growth and development, governance refers to essential parts of the broad cluster of institutions. Some of the important elements of governance would include the political institutions of a society (process of collective decision making and checks on various interest groups), state capacity (capability of state to provide public goods) and regulation of economic institutions (how state intervenes in encouraging or discouraging economic activity).

Thus, the interactions between governance and growth are intimately linked to the interactions between institutions and economic growth.[37] According to a study, poor institutional quality is estimated to lead to an annual growth rate loss between 2.4 and 6.1 percentage points.[38]

Good governance reduces corruption and improves productivity. One standard deviation improvement in corruption indices causes investment to rise by 5.0% of GDP and the annual per capita GDP growth rate to rise by half a percentage point.[39]

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[32] *Mitra, A., Varoudakis, A., and Véganzonès- Varoudakis, M-A., (2002) 'Productivity and Technical Efficiency in Indian States' Manufacturing: The Role of Infrastructure' Economic Development and Cultural Change, 50: 395-426*

[33] *Chandan Sharma, Sanjay Sehgal, (2010) "Impact of infrastructure on output, productivity and efficiency: Evidence from the Indian manufacturing industry", Indian Growth and Development Review, Vol. 3 Iss: 2, Page 100 - 121*

[34] *India 2020 – Economic outlook – D&B page 39*

[35] *http://niti.gov.in/mgov_file/NITI%20Brief5.pdf, India 2020: Economy outlook (D&B), Authors' calculation*

[36] *ibid*

[37] *Daron Acemoglu (2008), Governance, Growth and Development Decision-making, available at http://siteresources.worldbank.org/EXTPUBLICSECTORANDGOVERNANCE/Resources/governanceandgrowth.pdf*

[38] *Boulhol (2004), Technology Differences, Institutions and Economic Growth, Working Paper, CEPII, available at: http://www.cepii.fr/pdf_pub/wp/2004/wp2004-02.pdf*

[39] *Understanding the Demand and Supply Equations of Corruption and Fraud, 2013. A joint study by TARI and UNGC, available at: http://tari.co.in/wp-content/uploads/2014/02/Understanding-the-demand-supply-equations-of-corruption-fraud-final.pdf*

A study[40] has found that in India referee institutions like Supreme Court and Election Commission have witnessed rejuvenation and vibrancy, and new regulatory authorities like TRAI, SEBI and IRDA have also performed commendably. Another study indicates that contrary to the popular perception, all indicators do not point towards an overall institutional decline in India; rather the performances are mixed. But it also opined that further growth in productivity cannot be possible without institutional reforms, particularly in the market-clearing and market-regulating institutions.[41]

Institutions and governance significantly impact investment and TFP. The model will capture this relationship by taking into account capital productivity, labour productivity and investment as proxies to quantify the impact of institutions.

Innovation, Technology and Research

Strong aggregate demand stimulates investment and technological change and leads to technology adoption on a broad front and an increased TFP.[42] A study says that approximately 1.0% technical change leads to 1.0% change in TFP of a particular industry.[43]

Further, a 2014 survey[44] reports that adoption of advanced manufacturing technology in India (over the period 2001-10) continued but with a marginal increase in pace. It says Level I technologies (well established, simple, stand alone and need small/medium capital) were implemented at the highest rate in 2001. However, the tendency of companies to retain Level I technologies decreased, especially in small companies. Even though Level III technologies (newly emerged, sophisticated, needing large capital investment and may even require several technologies to work together synchronously) are not as widespread as Level II (with characteristics between Level I and Level III) and Level I technologies, but a budding tendency has been noted for their implementation in Indian companies.

R&D investment is a significant determinant of TFP growth. A study of technology intensive Indian manufacturing industries suggests that firms that engage in R&D have 8.0% to 12.0% higher TFP

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[40] *Kapur (2005), Explaining Democratic Durability and Economic Performance: The Role of India's Institutions, in Kapur and Mehta (ed), Public Institutions in India: Performance and Design, OUP, New Delhi*

[41] *Subramanian (2006), The Intriguing Relationship between Growth and Institutions in India, at http://www.isid.ac.in/~planning/arvind.pdf*

[42] *Determinants of Total Factor Productivity: A Literature Review, Staff Working Paper 02/2007, available at http://www.unido.org//fileadmin/user_media/Publications/Research_and_statistics/Branch_publications/Research_and_Policy/Files/Working_Papers/2007/WP022007%20 %20Determinants%20of%20total%20factor%20productivity.pdf*

[43] *Almas Heshmati, Subal C. Kumbhakar (2010), Technical Change and Total Factor Productivity Growth:The Case of Chinese Provinces, available at: http://ftp.iza.org/dp4784.pdf*

[44] *Advanced Technology Adoption in India: Initial ATM Comparison over Time, Lakshman S Thakur et al, University of Connecticut, 2014, available at http://ciber.business.uconn.edu/wp-content/uploads/sites/967/2014/11/Advanced-Technology-Adoption-in-India.pdf*

than other firms across the industries.[45] However, another study points out that it is important to analyze both the industry using the new technology as well as the industry creating it in order to assess the impact of R&D on technology and hence on TFP.[46]

India's expenditure on R&D is very low. The R&D expenditure was about 0.8% of GDP for India in 2013, which is substantially lower than countries like China (1.9%), Korea (3.8%), and the US (2.7%). The share of the private sector was only 0.25% of GDP compared to 1.2%-2.0% of GDP in emerging economies.[47] Inadequacy of R&D also gets reflected in a very low percentage of high-tech Indian exports, which stood at 8.1% of total manufactured exports in 2013.[48]

According to a study, India collectively needs to increase its R&D spending from a low 0.8% of GDP in 2013 to 2.4% by 2034. This amount of additional spending on R&D is expected to lead to greater innovation in Indian economy which in turn will boost growth.[49]

Innovation, along with R&D, is considered an engine of growth.[50] India's ranking in the Global Innovation Index (GII) has been falling. It ranked 81st out of 141 countries in 2015.[51] In 2014, it ranked 76 (out of 143 countries) - lowest among all the BRIC nations.[52]

In the model, investment captures the impact of innovation, technology and research on TFP.

Education and Training

Human capital, in the form of an educated and skilled workforce, has a positive effect on TFP. More education and training augment an economy's capacity to carry out technological innovation or to adopt foreign technology.[53] A study on Latin America finds out a 1.0% increase in the level of education increases TFP by around 5.0% in low R&D-intensive industries and by more than 10.0% in high R&D-intensive industries.[54]

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[45] *Chandan Sharma (2011), Imported intermediary inputs, R&D and Firm's Productivity: Evidence from Indian Manufacturing, available at http://econstor.eu/bitstream/10419/48348/1/74_sharma.pdf*

[46] *A Steven Englander et al, R&D, Innovation and the Total Factor Productivity Slowdown, available at: http://www.oecd.org/eco/growth/35257726.pdf*

[47] *The Services Sector in India, Arpita Mukherjee, ADB, 2013*

[48] *World Development Indicators, World Bank*

[49] *https://www.pwc.in/assets/pdfs/publications/2015/innovation_driven_growth_in_india_final.pdf*

[50] *Chandan Sharma (2011), Imported intermediary inputs, R&D and Firm's Productivity: Evidence from Indian Manufacturing, available at http://econstor.eu/bitstream/10419/48348/1/74_sharma.pdf*

[51] *The Global Innovation Index 2015: Effective Innovation Policies for Development, available at https://www.globalinnovationindex.org/userfiles/file/reportpdf/GII-2015-v5.pdf*

[52] *Report of the Expert Committee on Innovation and Entrepreneurship, 2015, available at http://niti.gov.in/mgov_file/report%20of%20the%20expert%20committee.pdf*

[53] *Romer (1990), Endogeneous Technological Change, Journal of Political Economy, Vol.94*

[54] *Schiff and Wang (2004) Education, Governance and Trade-Related Technology Diffusion in Latin America, available at http://ftp.iza.org/dp1028.pdf*

The level of education in Indian work force is very low. According to the National Skill Development Corporation (NSDC) report, 38.0% of Indian workforce is illiterate, 25.0% has education up to primary school level and remaining 36.0% has an education level of middle and higher level. In the age group of 15-29 years, only about 2.0% have formal vocational training and 8.0% have non-formal vocational training. The comparative data regarding vocational training for developed economies is: Korea (96.0%), Germany (75.0%), Japan (80.0%) and the UK (68.0%).[55]

An Indian study[56] also says that there is a need to spend more on education and skilling to boost industrial growth. Investment in education and human capital formation is also important for the growth catch-up process, and may contribute to faster productivity growth.

The mean years of schooling works as a proxy for human capital. In 2010 the mean years of schooling for India stood at 5.13. As per the study, this variable has been growing at an average pace of 0.088 percentage points per year.[57] To achieve a 9.0% plus growth rate, India must take the mean years of schooling to 6 or more by 2022.

Similarly, equal importance should also be given to tertiary education in the form of vocational training for developing the skill levels of India's work force and to promote on the job learning process. According to a Planning Commission paper of 2013, India had 0.35 million apprentices while Germany and Japan had 4 million and 10 million, respectively. If India had the same proportion of its labour force in apprenticeships, it would have to skill 16 million people.[58]

In the model, impact of education and training on TFP will be captured through labour productivity.

Financial Development

There is a one-to-one positive relationship between industrial growth and financial development. One study estimates the impact of financial development (in terms of indicators like availability of credit, dependence on external finance etc.) on industry level TFP growth and finds significant relationship between the two. The study says that following 1.0% increase in financial development, TFP growth can accelerate up to 0.6% per year.[59]

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[55] *eSkill Development, NSDC, 2014, available at: http://lokbharti.com/wp-content/themes/LokBharti/pdf/e%20Skill%20Development.pdf*

[56] *Goldar (2013), Sustaining a High Rate of Industrial Growth in India in the Next 10 Years, at http://iegindia.org/wshop2526july/paper2.pdf*

[57] *Decoding the 8% Growth Target, by Pranjul Bhandari, Planning Commission of India, 2013, available at: http://planningcommission.nic.in/reports/wrkpapers/wrk_grow1501.pdf*

[58] *Ibid*

[59] *Arizala et al (2009), "Financial Development and TFP Growth: Cross-Country and Industry-Level Evidence," Inter-American Development Bank*

According to another study,[60] financial markets enhance growth by mobilizing savings and transmitting them into investment, by facilitating reduction and hedging of inherent risk in individual projects and industries through primary and secondary markets, and thus by increasing the available pool of funds. Other studies also support that growth is positively related to the level of financial development.[61]

In the context of India, a study finds that financial development significantly contributes to productivity growth. However, its impact on productivity growth is quite varied across different industry groups.[62] Another study by IMF (on countries including India), argues that there is a positive and significant relationship between financial development and TFP. Yet, another study points out that effect of innovation on productivity can be mediated through financial sector development.[63]

With opening of more bank accounts through schemes like Jan Dhan Yojana, there will be an increase in financial penetration. More people will get into the habit of banking and saving leading to greater mobilization of money into the system. Increased intensity of financial penetration and development, thus, results into higher savings, which facilitates investment and hence TFP.

M3/GDP is a proxy for financial development or penetration. M3, or broad money, is defined as the sum of all time and demand deposits of banks, net bank credit to government and private commercial sector, postal deposits, and net foreign exchange assets of the banking sector. In the model, the extent of financial penetration is captured by M3/GDP ratio.

Livelihood Generation

Livelihood plays a dual role. While it is an outcome of economic growth, it also drives growth through higher consumption expenditure. As livelihood opportunities grow, underemployment reduces and quality of job improves leading to a higher income and consumption.

Democracies with an uneven distribution of income and wealth exhibit lower growth than democracies with more equally distributed resources.[64] Therefore, India needs to generate more livelihood opportunities and spread the benefit of growth as well as increase the possibility of future growth.

Another study identifies employment generation as one of the key elements to boost India's growth along with productivity improvement, public spending and effective delivery of basic services.[65]

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[60] *Valderrama (2003), Economic Letters, Federal Reserve Bank of San Francisco*
[61] *King and Levine (1993), Finance and Growth: Schumpeter Might be Right, Quarterly Journal of Economics 108 (August), pg 717-737*
[62] *http://www.igidr.ac.in/money/mfc-11/Das_Dipika.pdf*
[63] *Firm Productivity, Innovation, and Financial Development Era Dabla-Norris, Erasmus Kersting and Geneviève Verdier, 2010. IMF Working Paper-WP/10/49*
[64] *Alesina and Rodrik, 1991, Distributive Politics and Economic Growth, Working Paper No. 3668, NBER*
[65] *From poverty to empowerment: India's imperative for jobs, growth, and effective basic services, 2014. McKinsey Global Institute*

There is a long run stable relationship between employment and GDP growth in India.[66] Real GDP also has a positive significant impact on employment across all non-farm sectors in the long run and the impact is highest for manufacturing and services sectors. Though adjustment between labour market and economic growth occurs with a time lag, the positive relationship between GDP and employment holds both in the short and long run.

Livelihood opportunities determine the private consumption expenditure. Therefore, it can be inferred that employment generation is both a determinant and an outcome of growth.

In the model, growth will be driven by changes in capital stock, which results into greater output and more livelihood opportunities.

Energy Security and Growth

World Economic Forum in their paper 'Energy for Economic Growth' says, "Energy is the 'oxygen' of the economy and the life-blood of growth, particularly in the mass industrialization phase that emerging economic giants are facing today as their per capita GDP moves between approximately USD 5,000 and USD 15,000."[67]

As far as energy is concerned, contrary to other developed and developing countries, total primary commercial energy requirement in India has been falling with respect to the growth in GDP. There could be a number of reasons and one of them being the share of industry as a percentage of GDP has not been growing and hence, industry driven demand has not been strong. An RUHR study has concluded that there is a positive relationship between energy consumption and economic growth.[68] The National Integrated Energy Policy of 2005 estimated India's energy elasticity with respect to GDP to be 0.8. With this estimate, energy supply needs to increase at a rate of about 6.4% every year for 8.0% annual GDP growth in the medium-term. Hence, we use energy as one of the growth drivers.[69]

India's total commercial energy consumption will go up to 1,046 MTOE (million tonne oil equivalent) in 2022 if the economy keeps going at the current rate of over 7.0% growth. However, in a higher growth pathway of over 9.0%, India will have a total commercial energy consumption of 1438 MTOE in 2022. In either case, there will be a shift of energy source from conventional to renewable but the path and intensity will be driven by each of the growth trajectories. As the latest data from Niti Aayog[70] states, India will continue to reduce its import dependence over this period

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[66] *http://wadhwani-foundation.org/wp-content/uploads/2014/11/Employment-and-Economic-Growth-Study.pdf*
[67] *http://reports.weforum.org/energy-for-economic-growth-energy-vision-update-2012/*
[68] *Belke et al (2010): Energy Consumption and Economic Growth: New Insights into the Co-integration Relationship, RUHR Economic Papers 190, RUHR Graduate School in Economics*
[69] *M Govinda Rao, Empowering growth Perspectives on India's energy future, 2012, Economist Intelligence Unit, The Economist*
[70] *http://indianenergy.gov.in*

and create greater energy security but there will be significant imports of oil, coal, capital machinery and technology for energy.

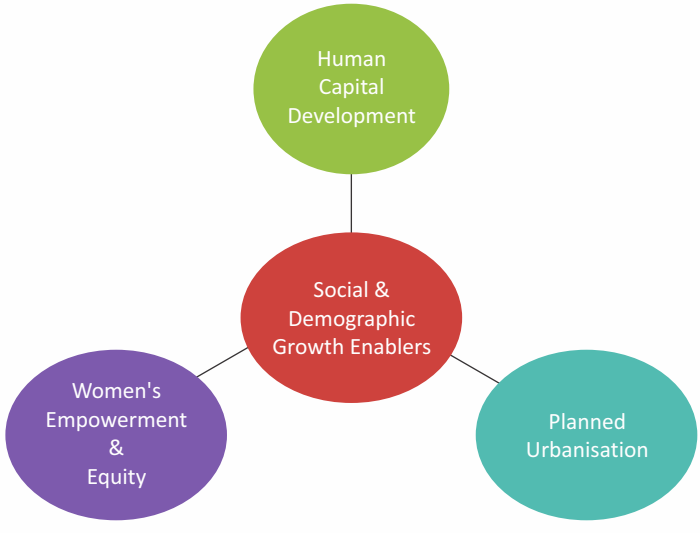
In the context of this study, we regard energy as a key determinant of India's growth but as literature review indicates,[71] international prices of natural resources and energy are always volatile, reflecting market participants' adjustments to highly frequent new information from physical energy markets and energy related financial derivative markets. Price volatility is a strong indication of uncertainty in the market, and any attempt to incorporate imported energy as input in the equation system usually disrupts the forecasting process.

Therefore, introduction of an energy variable is generally avoided in any GDP forecasting exercise. Following the same convention, in the model too status quo is assumed on the energy front and it is treated as an exogenous factor.

Social and Demographic Growth Enablers

Apart from the growth drivers we have discussed earlier, there are other factors which will act as enablers of India's growth.

It is well recognized that the size and quality of social spending can affect long-run growth and poverty reduction. The focus should be to include policies that directly address poverty and social concerns. In order to achieve those objectives, the social sector spending should be targeted at improving the education and health of the poor.[72]



[71] *Energy Information Administration (2009), Energy Price Volatility and Forecast Uncertainty, at https://www.eia.gov/forecasts/steo/special/pdf/2009_sp_05.pdf*

[72] *Social Dimensions of the IMF's Policy Dialogue, available at: https://www.imf.org/external/np/exr/facts/social.htm*

The relation between economic growth on one hand and income inequality and poverty on the other is borne out by NSSO analysis from its household surveys too. While economic growth reduces absolute poverty, it does not reduce income inequality. It is important to keep in mind that the social dimension to growth is as important as the economic factors of production.

This section focuses on such enablers discussed under three sub-heads: human capital development in terms of health and education, planned urbanisation and women's participation in work force.

Human Capital Development

Education, health and skill levels of India's population need to be dramatically improved to reap the benefits of this spurt in working age population. According to an estimate, India would constitute nearly one-fourth of world's working age population by the year 2040.[73] This will fuel growth and sustain markets.

Over decades, economic growth theories and models[74] observe that education promotes growth which has led governments of many developing countries to invest in the education sector. Even the theoretical literature provides a backing for such a policy.[75] India's public expenditure on education is about 3.9% of GDP (2012), which is low in comparison to the US (5.2%), UK (5.8%), Argentina (5.0%), Brazil (6.1%) and South Africa (6.0%).[76]

In relation to public expenditure on health, researchers carrying out longitudinal studies in India conclude that health expenditure and economic growth are co-integrated. An international study[77] analyzing data for 31 countries from 1986 to 2007 to explore the causality between an increase in health expenditure and economic growth, concludes that health expenditure growth will stimulate economic growth.

Total public and private health expenditure in 2013, as a percentage to GDP, was 17.1% in the US, 11.3% in Germany, 10.6% in Denmark, 9.7% in Brazil, 8.9% in South Africa, 7.3% in Argentina, 6.0% in Vietnam and 4.6% in Thailand. During the same year, India's total health expenditure was at 4.0% of GDP, which is lower than these countries.[78]

Education and health conditions determine labour productivity, which is closely related to employment and total factor productivity. Moreover, public spending on social sector affects

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[73] *http://articles.economictimes.indiatimes.com/2011-02-28/news/28642127_1_capita-income-poor-states-demographic-dividend*
[74] *Romer (1990) and Lucas (1988)*
[75] *Pissarides (2000)*
[76] *WDI, World Bank*
[77] *A Factsheet March 2001, Social Dimensions of the IMF's Policy Dialogue*
[78] *World Bank data base*

education and health indicators. To incorporate the impact of an improvement in education attainment and health and the role public spending plays here, labour productivity growth has been used as a factor along with center's social spending.

India is experiencing a demographic advantage, the youth if educated and skilled properly, can contribute to country's growth in a significant way. Declining dependency ratio increases overall savings by rising total income, which is the primary determinant of investment and growth. Moreover, India's growing young population is expected to spend more and boost consumption demand. Therefore, to capture the impact of young population on growth, dependency ratio is considered in the model.

Planned Urbanisation

India's urban population has increased from 285.0 million in 2001 to 377.1 million in 2011, forming 31.2% of the total population.[79] According to a 2014 UN Report, the number may go up to 814.0 million by 2050, contributing the maximum to the world's urban population and surpassing China as well. When that happens, half of India's population will be living in urban areas.

There are three important aspects of the urbanisation process in India[80]: rural-urban disparities and their relation with economic development; the relation between urbanisation and growth; and the convergence hypothesis in cities' growth. The findings of this study support the idea of a U-shaped relationship between rural-urban disparities in socio-economic indicators and the level of economic development.

A study[81] projects that by 2030 - 590 million people will live in Indian cities, 70% of net new employment will be generated in cities, 91 million urban households will be middle class (up from 22 million in 2010), and 68 cities will have 1 million plus population. Rise in urbanisation is expected to increase the demand of infrastructure and services, which will require USD 1.2 trillion capital investment.

Rising urbanisation is both an enabler and result of economic growth. Government expenditure is one of the major driving factors for urbanisation while capital formation or investment is an outcome of urbanisation. In the model, urbanisation indicators have been incorporated through government spending and investment.

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[79] *Census, 2011*

[80] *Massimiliano Cali in his background paper for the World Development Report 2009*

[81] *McKinsey (2010), India's Urban Awakening: Building Inclusive Cities, Sustaining Economic Growth*

Women's Empowerment and Equity

Gender equality, by itself, is a core development agenda. World Development Report[82] opines that no development is sustainable in the long run if half of the population's aspirations are ignored.

According to a study,[83] advancing gender equality can deliver sizeable additional economic growth and broad based prosperity to the world - nowhere more so than in India. India could boost its GDP by USD 0.7 trillion by 2025.

According to 'OECD Economic Survey: India Report 2014', even though the gender differences in health and education have narrowed in India but the gaps in economic participation remain high. It reveals that if working conditions improve, women's participation will go up from the current level of 28%. It estimates that India's GDP could be higher by 2.4 percentage points if pro-growth and pro-gender policies are followed.

There is a growing consensus that rise in Female Labour Force Participation (FLFP) contributes significantly to economic growth and the model considers it to be a key determinant of growth.

What will Finance India's Growth?

The next important question is: Where will the money for growth come from? It can come from the government spending, from domestic savings or from external sources like FDI, FII, inward remittances and external commercial borrowings.

[82] *World Development Report (2012), Gender Equality and Development, World Bank*

[83] *The Power of Parity: Advancing Women's Equality in India, McKinsey Global Institute, Nov 2015*

Size of the Government and Government Spend

The literature regarding government expenditure and economic growth has wide variations across countries and different studies. These establish a positive relationship between the two.[84] Others find a strong relationship between government expenditure and economic growth in developing countries.[85]

Size of government, in terms of tax and non-tax revenue, fiscal deficit and tax to GDP ratio, matters a great deal for growth. Higher the government expenditure higher will be the growth. To achieve 9.0% to 10.0% growth, India will need a much bigger government spending of around 30.0% of GDP.[86] In 2013-14, aggregate disbursements of central and state governments minus interest payments, which provide the government spending and capital expenditure, stood at 23.7% of GDP.[87] Going to 30.0% level from this would mean significant rise in tax revenue and non-tax revenue. At the same time, fiscal health needs to be maintained by reducing wasteful and misdirected subsidies.

Since investment is directly linked to TFP growth,[88] it is imperative that India's tax to GDP ratio, which is very low amongst the BRICS and other emerging countries, is increased. Only about 3.0% of Indians are subject to income tax, as against 20.0% of Chinese citizens.[89] Total tax revenue (central and state governments) as a percentage of GDP is nearly 17.0% in India (2013), among the lowest in the emerging economies. This needs to improve for greater government spending.

Government expenditure - both consumption and capital - are important determinants of economic growth. Public spending determines investment, labour productivity and total factor productivity, all of which are considered while estimating various variables in the model.

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[84] *Rubinson (1977), Ram (1986), Kormendi and Meguire (1986), Grossman (1988), Diamond (1989), and Carr (1989)*

[85] *Herath, S. (2012). Size of Government and Economic Growth: A Nonlinear Analysis. Economic Annals, Vol. LVII, No. 194*

Rubinson, R. (1977). Dependency, government revenue and economic growth: 1955-1970. Studies in Comparative International Development, 12, pp. 3-28

Ram, R. (1986). Government size and economic growth: a new framework and some evidence from cross-section and time series data. American Economic Review, 76, pp. 191-203

Kormendi, R. C. &Meguire, P. (1986). Government debt, government spending, and private sector behavior: reply. American Economic Review, 76, pp. 1180-1187

Grossman, P. J. (1988). Government and economic growth: a non-linear relationship. Public Choice, 56, pp. 193-200

Diamond, J. (1989). Government expenditure and economic growth: an empirical investigation. (IMF Working Papers No. 89/45)

Carr, J. L. (1989). Government size and economic growth: a new framework and some evidence from cross-section and time-series data: comment. The American Economic Review, 79, pp. 267- 271

[86] *India Development Pathways, TARI, 2015*

[87] *Data source: http://dbie.rbi.org.in/*

[88] *Factor Accumulation and the Determinants of TFP in the GCC, Oxford University, 2012*

[89] *http://blogs.wsj.com/indiarealtime/2015/02/27/inside-india-focusing-on-the-fiscal-deficit-is-bad-for-indias-economy/*

Domestic Savings, Consumption and Financial Inclusion

Domestic consumption and savings will continue to be a driver of growth for India given the changing demographics, higher disposable income, changing consumption patterns and conversion of physical assets to monetary assets.

From less than 20.0% of GDP in 1980, India's domestic saving rose to around 25.0% in the 1990s and to over 30.0% in the second half of the last decade. It reached a peak value of 36.8% in 2007-08. Correspondingly, growth jumped from 5.5% in the 8th plan to 7.8% in the 10th plan. Two factors were principally responsible for raising the domestic savings rate - one, a large improvement in government finances and two, improvement in the level of retained earnings of the private corporate sector. The same factors had caused deterioration in domestic savings after the 2008 crisis.[90] The ratio of domestic savings to GDP stood at 30.1% in 2012-13.

Larger financial penetration creates greater mobilisation of financial resources, which then can be utilised for funding the growth process. Financial inclusion creates not only equality of opportunities and services, but also efficient use of available funds.

Domestic consumption has the potential to boost GDP and it is a good indicator of a robust domestic demand. The crisis of 2008 gave an indication that external demand is volatile in nature and too much emphasis on it can make the economy vulnerable to external shocks. Similarly, domestic savings is the prime source of investment, which is central to growth. All of these factors are considered in the model.

External Resources

External finance, including FDI, FII, inward remittances and external commercial borrowing (ECB), is also an important marker which will finance investments, enable access to advanced technology and allow India to be part of the global value chain. Capital inflow will continue if the risks are managed well and high returns are expected. In recent years, a great deal of emphasis has been put on mobilizing such resources which have yielded positive results. India continues to be an attractive destination for investment which is reflected in over 30.0% y-o-y growth in gross FDI inflows in the period January-June 2015.

On comparing FDI as a percentage of GDP for multiple countries against their annual GDP growth rates, it was roughly estimated that each 1.0% increase in FDI adds about 0.4 percentage points to a country's GDP growth. So, to boost GDP growth by about 2.0 percentage points, India will need FDI of about 5.0% of GDP. In absolute terms, at the current level of GDP of almost USD 2 trillion in India, about USD 100 billion of FDI is required to boost GDP growth by 2.0 percentage points.[91]

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[90] *12th Five-Year Plan, Volume 1*

[91] *http://articles.economictimes.indiatimes.com/2014-09-23/news/54239387_1_much-fdi-foreign-direct-investment-gdp-growth*

Behaviour of household savings does not vary drastically in the short run. Therefore, public capital expenditure, along with domestic investment, may not be sufficient to boost India's GDP growth to the desired level and efforts will be needed to attract external finance.

In such a scenario, Indian economy has to look outwards to support its investment needs. FDI along with external commercial borrowing may help in that quest. In the model we have considered FDI under total investment.

To sum up, all the growth drivers and enablers discussed above have been considered in designing our econometric model to generate plausible growth trajectories for India. The next two chapters describe the two alternative pathways to India's growth - 'Present Continuum' and 'Prospering India' and the accelerators that will enable the leap into the future potential of the country.

Chapter 3

Choices for Growth

This chapter discusses two choices before India: Present Continuum and Prospering India. In the first case, India will continue to grow at the current level and there will be incremental improvement in social and economic conditions, but that will fall short of generating adequate livelihood opportunities or significantly improving the life style of people. In the second, India will grow at 9.0% plus rate to achieve its full growth potential and fulfill the aspirations of its citizens. The chapter also delves into the factors that will define the two growth scenarios.

India stands at a crossroads. It can continue to grow at the current level - let's call it the ***Present Continuum*** - which would mean incremental improvement in its socio-economic conditions. In this scenario, India can expect moderate gains in various sectors helped by low global commodity prices and increased domestic consumption of its vast population; however, this trajectory may fall short in terms of generating sufficient livelihood opportunities for the millions entering the labour force every year and significantly improving the lives of its citizens.

Alternatively, India can take a big leap towards prosperity by actively re-drawing existing parameters, working on natural advantages and seizing opportunities for growth. In this scenario, enabling conditions will be consciously created to fulfil the aspirations of all citizens to raise their standard of living and the nation as a whole will live up to the expectations of an economic superpower - let's call this scenario ***Prospering India***.

What do these two possible scenarios foretell about the prospects and prosperity of India? Traditionally, when we talk of prosperity it is a measure of macroeconomic indicators like income represented by GDP or per capita GDP. However, as we generally understand, prosperity is not just about income or wealth but also about wellbeing and an ability to build a better life in the given circumstances. Governments, academics and business are increasingly moving towards this *wealth plus wellbeing* approach to measure prosperity. This means a country not only needs rapid economic growth to raise the income level but also to improve the wellbeing of its people in terms of health, education, sanitation, gender parity, equity and so on.

This chapter will set out the expectations arising out of the two scenarios in terms of India's prospects and prosperity and what they entail for various economic indicators.

Present Continuum

This scenario envisages a picture of India aspiring to improve the living standards of its citizens by pushing for higher growth. GDP will continue to grow at an average annual rate of 7.4%; however, growth and development will be incremental and distributed unevenly across the country. The reforms initiated will be fractional and disparate, not holistic or comprehensive and therefore less effective.

Sectoral composition will change a little in that agriculture sector will continue its decline, the share of industry will remain more or less stable at around 18.0%-19.0% while services will go up to 69.0% from 67.6% (2013).

The industry will create jobs in manufacturing, construction and allied services ancillary to manufacturing and other industries. The Micro, Small and Medium Enterprises (MSMEs) sector will gradually pick up due to reforms in the financial sector (which will provide better access to capital) and also with the implementation of policy initiatives like Public Procurement Act. Growth in MSMEs will help in creating additional jobs.

The government will seek to impart skills to the young population to bring them into the work force as a result of which social spend and labour productivity will increase, yet the net gain in livelihood opportunities will be marginal because of improved capital-labour ratio and increasing use of technology which will lead to lower labour absorption.

The other important factor driving livelihood will be FLFP due to change in demographics, better education and change in social structure (urbanization and nuclear families). FLFP typically follows a 'U' shape pattern in which prosperity initially leads to a fall in women's participation but goes up again with improvement in their social and education standards and availability of better livelihood opportunities. In the scenario under discussion, FLFP will go up from 27.6% (2011) to 28.2% in 2022.

Private consumption expenditure is expected to pick up because of declining dependency ratio and rising income. There will be a surge in investments from both domestic and foreign players, supported by rise in domestic savings, public capital expenditure and FDI and remittances.

Government consumption expenditure is expected to decline on account of reduction in subsidies. Fiscal deficit is expected to stay in line with the Fiscal Responsibility Budget and Management Act (FRBMA). Tax reforms like GST will take place but with a delay and their implementation will face a few hurdles, therefore, tax to GDP ratio will increase only marginally. On the monetary front, RBI is expected to keep the inflation rate and current account deficit in check because of which real interest rate is not expected to change much.

The reduction of non-performing assets and regulatory changes with respect to merger and acquisitions will be slow. Also, financial inclusion will be staggered and dispersed due to which the intensity of financial penetration will be gradual.

Exports will increase on account of rise in services sector while imports will pick up to facilitate expansion of industrial sector.

Indian economy will continue to grow at a pace marginally higher than at present but will fall short of attaining its full potential.

Even though an annual growth rate of 7.4% is the fastest in the world at present, way ahead of China, and commendable given the slowdown of global economy and legacy issues that the Indian economy has to deal with, it is not enough to propel India on a sustained growth path in the decades ahead.

Prospering India

Unlike Present Continuum, this scenario foretells a strong policy push and structural changes that will produce high, equitable and sustainable growth over a long period of time and would enable the economy to reach its full potential. Annual GDP is expected to reach 9.4%, which will ensure that aspirations of citizens will be met by enabling them to meet livelihood requirements and improve their living conditions.

The push to higher GDP growth rate will be mainly through increase in share of industry in the sectoral composition, which is expected to rise to 21.0% from 18.9%. The share of services sector, the mainstay of the Indian economy so far, will witness a marginal fall from 67.6% to 66.2%; while the share of agriculture sector will decline from 13.2% to 12.46%.

Such a scenario will be marked by holistic policy choices sustained over a long time. The results will be measurable and demonstrable, which in turn, will gather public support for continuation of such policies.

These policies and reforms will dismantle bottlenecks in entry and running of business, quicken administrative clearances and increase efficiency of governance which will increase private sector participation in the economy and accelerate growth of jobs. Government spend will increase especially through investments in physical infrastructure like roads, ports, utilities, railways, which will itself provide jobs, besides providing an enabling infrastructure.

The business environment and sentiments will improve, accompanied with an improvement in the financial health of the banking sector and reduction in non-productive assets. Investment from both domestic and foreign sources will be higher, encouraged by strong policy support. Predictable regulatory mechanisms and judicial administration, like quick and fair resolution of disputes and effective implementation of IPR, will be hallmarks of such a scenario, leading to greater technology and knowledge transfer.

The emphasis will be more on increasing competitiveness and productivity which will further help domestic companies to find new markets and expand their businesses. Entrepreneurship will drive

livelihood generation in manufacturing and services including high technology, e-commerce and complex services. MSME industries will become a part of higher value and global supply chains, creating better returns on investments and higher quality of labor and jobs. Female Labor Force Participation will go up from 27.6% (2011) to 30.6% in 2022 due to greater opportunities brought about by economic growth both through public and private investments.

Such changes will lead to improved productivity of agriculture too. As manufacturing and services sectors are able to provide adequate livelihood opportunities and absorb far greater number of people looking for employment, the pressure on agriculture land will decrease. This will lift productivity of land and reduce rural distress. In such a scenario unproductive and misdirected subsidies will come down and total subsidies will be better targeted and marked by cash transfers.

In the services sector, financial sector will be a mainstay, buoyed by financial inclusion of India's hitherto unbanked population. Cash transfers instead of subsidies will harness the advantages of market mechanisms as firms will compete to provide goods and services to this segment of population.

Improvement in trade and business will also create tax buoyancy and revenue generation. This will allow government to spend more on improving human development indicators. In the long run, higher investment will raise the health and educational levels, improving India's performance in human development index and in turn raise economic productivity and fuel further growth.

This scenario looks and sounds utopian, given the past experience of missed opportunities. However, as the following chapter will show, it is well within the realm of possibility for the Indian economy to deliver a growth rate of 9.4% per annum with a sustained and conscious policy push in different dimensions. As the experience of several transitioning economies show, reforms are a continuous process as an economy absorbs gains from one level of policy changes and moves to the next level. India is well poised to take such a structured and articulated path to enable the country to move into the league of prosperous nations.

Chapter 4

Growth Paths: Present Continuum and Prospering India

This chapter interprets the estimates of macroeconomic variables in two growth scenarios - Present Continuum and Prospering India – along with what differentiates one from the other. It also indicates what needs to be done, in terms of productivity, investment, socio-demographic indicators like female labour force participation (FLFP), etc. to transition from the current level of growth to a significantly higher one.

Snapshot of results across two scenarios

Variables	Present Continuum	Accelerators	Prospering India
GDP growth (%)	7.4	TFP Growth Investment Industry growth Labour Productivity Capital Productivity	9.4
Agriculture GDP (% share)	12.57	TFP growth Gross Fixed Capital Formation in Agriculture	12.46
Industry GDP (% share)	19.27	TFP growth Investment Exports	21.38
Services GDP (% share)	68.16	Industry GDP growth Exports	66.15
TFP Growth (%)	1.2	Labour productivity Capital Productivity Investment Ease of doing business	5.2
Livelihood Opportunities (in millions)	567.0	FLFP Labour Productivity GDP growth	605.5
Investment (% GDP)	35.2	GDP growth Savings	38.0
Private Consumption (% GDP)	59.1	GDP growth Tax/GDP Government's social spend	58.5
Savings (% GDP)	32.2	Private Consumption M3/GDP GDP growth	34.0

Note: Intensity of exogenous accelerators is presented within the snapshot, while that of endogenous accelerators is given in Annexure.

India's tepid economic growth and development post-2012 is often linked to slowdown in reforms and policy initiatives. Therefore, it is important to identify and understand the key set of policies which creates multipliers for growth and the policies where delays in implementation can create distortions, thereby hindering growth.

India finds itself in a piquant situation today. It witnessed a period of high growth, followed by moderation due to dried up investment and decline in external demand. India has reached a platform from where it can go into a much higher growth trajectory, but stagnation in growth can get it stuck in what many economists describe as 'the middle income trap'.

India finds its higher growth path hindered by the current slowdown in the world economy. Therefore, growth needs to be domestic demand driven, supported by continuous investment/gross capital formation. As per the recent trends, the current level of investment is inadequate and will not be able to finance a growth rate of over 9.0%.

In this backdrop, a big push in the form of policy interventions is needed. In the last one and a half year, the government has taken many new policy initiatives to break free from a period of slow growth which is showing a positive change.

Essentially, good governance entails good and vibrant institutions which require dynamic and evidence-based policies, which in turn boost sustainable and inclusive economic growth.

Present Continuum and Prospering India

Methodology used for forecasts

A simultaneous equations model was developed for the study to assess the multiple relationships between and within macroeconomic fundamentals and policy variables. The forecasting is undertaken by providing appropriate shocks or accelerators to different policy variables available in the model.

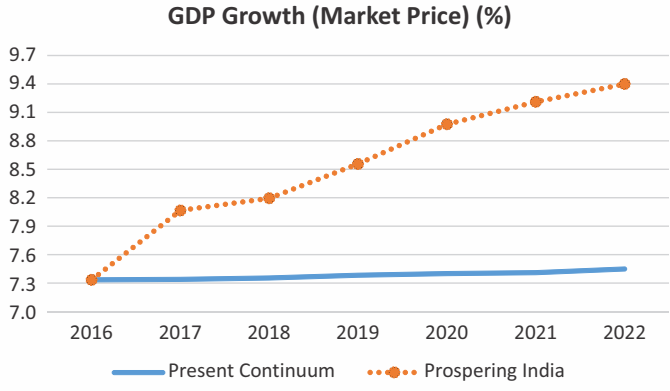
The model has been developed by taking an eclectic approach of determining the relationship among different macroeconomic variables. While the standard national income identity provides the basis for calculations and forecasting of variables like consumption, investment, government spending and net exports, other concerns like availability of comparable data for the time series also guided the entire econometric exercise for calculations of GDP at factor cost, market prices, and gross value added.

There are certain exogenous and endogenous variables which will have an impact on growth either directly or through transmission mechanism. We call these variables used in the model as 'accelerators', the details of which are given in Annexure.

For all the calculations, 2004-05 series of GDP has been used because of non-availability of relevant data for the previous years in the new series.

1. Gross Domestic Product

Growth in GDP is driven by investment in social and physical infrastructure,[92] sectoral growth, TFP,[93] private consumption, governance[94] and lower transaction cost of doing business.[95] TFP and consumption each has a one-to-one relation with overall growth.



GDP Growth (%)	2022
Present Continuum	7.4%
Prospering India	9.4%

***Present Continuum**: India to grow at the current levels of growth and attain a 7.4% growth rate by 2022*

- There will be an incremental increase in investment, which will rise from 33.7% to 35.2% because of decline in interest rates, increased profitability of private sector / PSE and increase in public capital expenditure.
- Share of services will marginally rise from 67.65% to 68.10%, mainly driven by construction, and the share of industry will remain stable at around 19.0%.
- TFP growth will show a marginal improvement and will remain stable at around 1.0%-1.2% during the period. Investment in R&D, technology and innovation will remain tepid and not significantly enhance TFP growth.
  - ❖ Capital productivity will fall, leading to an ICOR of around 4.75-5.00 due to higher capital investment per worker, driven by larger investments. This indicates growth will take place through input accumulation instead of improvement in efficiency/productivity of capital.
  - ❖ Labour productivity will improve from current level of 4.9% (2016) to 6.9% in 2022 because of the focus on skill development and rise in social expenditure.

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[92] *How much does India invest on infrastructure?http://articles.economictimes.indiatimes.com/2011-02-18/news/28615645_1_infrastructure-investment-climate-gdp*

[93] *Economic Growth and Total Factor Productivity in Niger- IMF Working Paper-WP/06/208*

[94] *http://capone.mtsu.edu/berc/working/Governance_WPS_2010_12.pdf*

[95] *http://www.doingbusiness.org/~/media/GIAWB/Doing%20Business/Documents/Annual-Reports/English/DB15-Chapters/DB15-Report-Overview.pdf*

GDP growth will be maintained at near current level and not rise significantly despite higher investments, since overall productivity is not set to improve significantly.

***Prospering India**: India will attain its potential and grow at 9.4%*

- The key contributors will be tax reforms, improvement in banking sector performance, effective implementation of programmes like Make in India, Skill India, Digital India, Start up India, Swachch Bharat Abhiyan and deeper financial penetration aided by financial inclusion drive and direct benefit transfers
- Growth will be investment-led, which will rise from 33.7% to 38.0% in 2022 because of increase in domestic savings, public and private capital due to higher levels of prosperity.
- Government expenditure as percent of GDP will rise from 13.46% (2016) to 14.5% in 2022 due to spending on social and economic development. There will be reduction in non-plan and non-productive government expenditure.
- TFP will rise from 1.0% to 5.2% due to increase in R&D expenditure, innovation, better management practices and technological advancement.
- ICOR will go down from current 6.8 (2014) to 4.0 (2022) due to rise in capital productivity arising out of improvement in banking sector performance, TFP improvements and technological advancements leading to resource optimization.
- Share of services sector will decline from 67.65% to 66.15% as a percentage of GDP, while Industry share will go up from 19.0% to 21.39% due to TFP growth and investment in the sector. The shift in manufacturing to Asia and enhanced competitiveness of India will create exports of higher value added goods from India, which will also contribute to this marginal shift.

2. Livelihood Opportunities

Livelihood opportunities will be created by increase in GDP,[96] sectoral growth,[97] growth in entrepreneurship and MSME, and improvement in education and skills and social factors.[98] Apart from these factors, women's participation in economic activity is identified as another important factor. As per UNESCAP (2007), a 10% increase in FLFP in India may increase GDP by 0.3%,[99] indicating a direct relationship between the two.

In the next seven years till 2022, additional 91 million people will enter the workforce, who would need avenues for livelihood.

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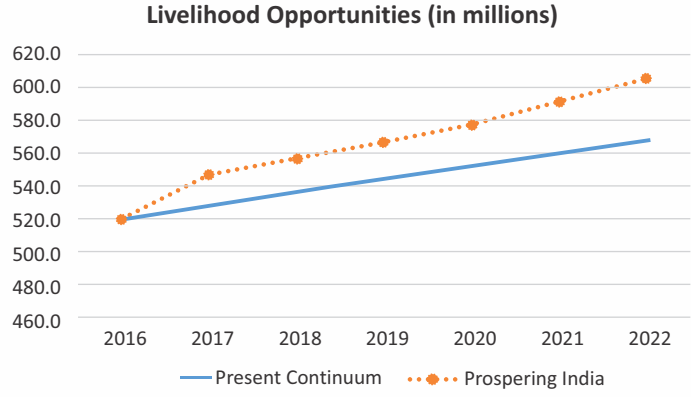
[96] *Okun's law.https://www.kansascityfed.org/publicat/econrev/pdf/4q07knotek.pdf*

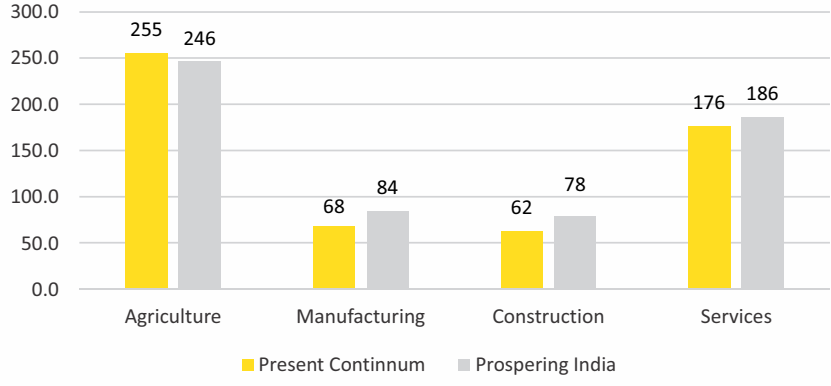
[97] *http://www.worldbank.org/depweb/beyond/beyondco/beg_09.pdf*

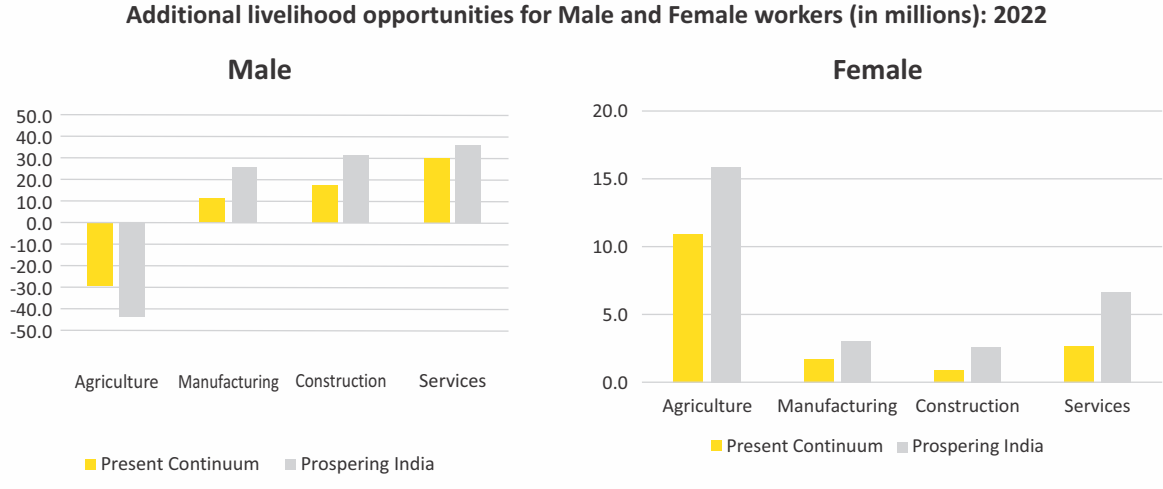
[98] *http://www.oecd.org/employment/emp/34846890.pdf*

[99] *http://www.unescap.org/sites/default/files/Survey_2007.pdf*



Livelihood Opportunities	2022
Present Continuum	567.0 million
Prospering India	605.5 million





***Present Continuum**: Employment gap of 44 million*

- Livelihood share of agriculture will be 45.0%, manufacturing 12.0%, construction 11.0% and services 31.0%.
- Additional livelihood opportunities for male will be 30.57 million (as compared to 2016) and for females, 16.43 million.
- FLFP will increase marginally from 27.6% (2011) to 28.1% in 2022 due to change in demographics, better education and change in social structure due to urbanization and nuclear families.
- In agriculture, both male and female participation will decline. FLFP in agriculture will decline from 68.4% (2016) to 68.2% (2022).
- In manufacturing, male participation will increase from 10.93% (2016) to 12.8% (2022) and female participation will increase from 9.8% (2016) to 9.9% (2022). This will be facilitated by creation of new manufacturing facilities, modernisation of railways, enhanced generation of energy, including renewables, etc. Defence production by private enterprises will increase and create over 1 million direct and indirect jobs every year.[100]
- In construction, male participation will increase from 9.42% (2016) to 12.8% (2022) due to increased spend on infrastructure, housing and rural road construction under MGNREGS etc.Female participation will remain stable at 5.6%.
- In services, male participation will increase from 31.26% (2016) to 36.13% (2022) and female participation from 15.8% to 15.9%.

In this scenario, there will be a huge employment gap, of 44 million, as only 47 million additional opportunities will be created, against 91 million who would have joined the workforce by 2022. The problem of livelihood opportunities gets accentuated as this level of growth will not address the current levels of under-employment in agriculture, construction and self-employment etc.

***Prospering India**: 85.5 million livelihood opportunities to be created by 2022*

There will be a rise in the share of industry to 21.38% of GDP, which will create jobs mainly in manufacturing and construction, also in allied services ancillary to manufacturing and other industries.[101] Public and private investments will create jobs, supplemented by increased production capacities as the share of manufacturing will increase substantially over the period. Higher investments in physical infrastructure like roads, ports, utilities, railways will also create new jobs. Entrepreneurship and increase in number of start-ups will drive livelihood in manufacturing and services, including high technology, e-commerce and other services.

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[100] *Creating a Vibrant Domestic Defence Manufacturing Sector (2012)*

[101] *http://iegindia.org/wshop2526july/paper2.pdf*

- Total livelihood opportunities will be around 605.5 million, as against existing 520.0 million in 2016 - an addition of 85.5 million.
- Livelihood share of agriculture will be 41.0%, manufacturing 14.0%, construction 13.0% and services 31.0%.
- MSME industries will become a part of higher value and global supply chains, creating higher quality of labour and jobs of 5.1 million.
- Additional livelihood opportunities for males will be 57.1 million (as compared to 2016) and for females 28.4 million. This does not take into account additional employment in MSME sector.
- FLFP will increase from 27.6% (2011) to 30.6% in 2022 due to formalisation of informal jobs due to labour reforms, change in demographics, better education and change in social structure due to urbanization and nuclear families.
- FLFP in agriculture will decline from 68.4% (2016) to 66.0% (2022). However, due to the availability of more female workers, absolute female employment in agriculture will rise as compared to Present Continuum.
- In manufacturing, both male and female participation will increase by 15.5 % (from 10.9% in 2016) and 10.0% (from 9.8% in 2016) in 2022, respectively.
- In construction, male participation will increase to 15.4% (from 9.4% in 2016) and female participation to 6.3% (from 5.6% in 2016).
- In services, male participation will be around 36.0% (from 31.3% in 2016) and female participation around 17.3% (from 15.8% in 2016).

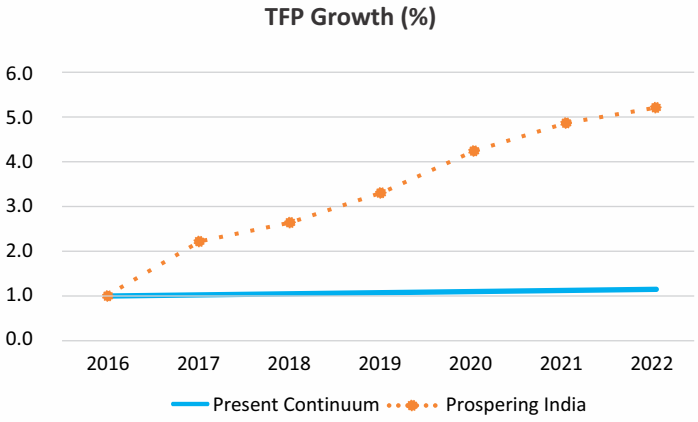
In this scenario, the employment gap will be 5.5 million as 85.5 million additional opportunities will be created, against 91.0 million required by 2022.

3. Total Factor Productivity Growth

Studies show that ease of doing business, governance and institutions are complementary to each other and their improvements lead to growth in TFP and GDP (Dawson and Seater, 2013, Nicolo et al, 2006).

As per neo-classical growth theories, technological advancement leading to rise in TFP is the engine of growth. In the model, labor productivity, capital intensity and investment are taken as the main drivers of TFP growth.[102] As per Endogenous Growth Theory (Romer), investment embeds technological improvements. Moreover, there is a direct relationship between investment in R&D and innovations, TFP growth and economic growth.

[102] *http://www.oxcarre.ox.ac.uk/files/OxCarreRP201294.pdf*



TFP (%)	2022
Present Continuum	1.2%
Prospering India	5.2%

***Present Continuum**: TFP will see only marginal improvement*

Improvement in TFP will be aided through infrastructure development, technological advancement and higher R&Dexpenditure; however, this will not be substantial. There will be improvements in governance and India's ranking in Ease of Doing Business Index but such increase will not sufficiently channelize local or global capital towards India to enhance TFP in a significant manner.

- Overall investment will go up from 33.7% of GDP to 35.2% of GDP.
- Capital productivity will improve only marginally because of slower financial sector reforms and inefficient use of resources. Real capital stock in machinery and equipment will go up from 16.1 Rupee/worker to 22.5 Rupee/worker, indicating growth from capital stock accumulation and rise in ICOR.
- Social spending by central government will increase by 1.9% annually as per the Fourteenth Finance Commission, driving up labour productivity growth from 3.9% (2016) to 6.9% in 2022.
- Intensity of financial penetration (M3/GDP) will increase from 90.5 (2016) to 108.4 in 2022, which would bring more funds to capital market.

***Prospering India**: Significant improvement in TFP*

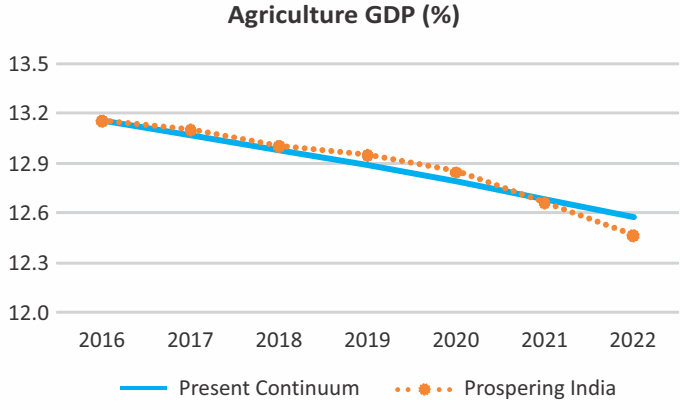
TFP growth will be the main factor to help India achieve its potential growth. In this scenario, TFP growth will see significant improvement to 5.2% in 2022, which will lead to a GDP growth of 9.4%.

India will see significant improvement in Ease of Doing Business Index by 2022, which will help it to improve its TFP substantially and open various options of capital and reduce transaction costs. Continuous technological advancement and investment flow comparable with developed economies, along with optimum resource utilisation, will also improve TFP growth significantly. Also, timely completion of infrastructure projects, due to land reforms and availability of funds, will further drive TFP.

- Total investment will go up from 33.7% of GDP in 2016 to 38% of GDP in 2022, leading to jump in TFP from 1.0% in 2016 to 5.2%.
- Intensity of financial penetration (M3/GDP) will go up from 90.5 in 2016 to 141.5 in 2022, which will lead to channelization of domestic savings to investment and consequent improvement in TFP.
- Central governments' social spending will increase by 2%-2.5% annually, leading to a jump in labour productivity through better health and education outcomes.
- This TFP growth will help industry to increase its share of GDP to 21.38% in 2022 from 19.0% in 2016.
- Though share of agriculture will decline, overall productivity of agriculture will increase because of mechanisation, use of technology and increased share of non-farm income.

4. Agriculture GDP

Monsoon, MSP, investment[103] and productivity are the main factors in our model which will be affecting agriculture GDP. Monsoon remains the most significant driver, along with TFP. Agriculture GDP will rise in absolute terms because of rising mechanization, research and technology in farm and non-farm activities. Moreover, farm mechanization in India is currently at 40.0% as compared to 90.0% in developed economies which is expected to change substantially leading to higher realization.[104]



Agriculture Share (%)	2022
Present Continuum	12.57%
Prospering India	12.46%

Present Continuum and Prospering India: No significant change is expected in the two scenarios; the share of agriculture to GDP will remain similar but the per capita income will be significantly different in these pathways.

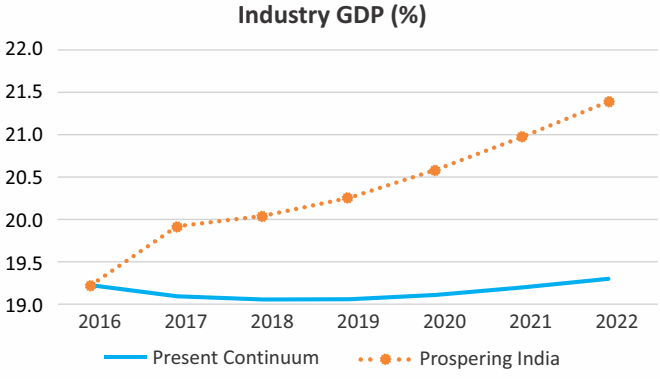
[103] *Targeting Debt and Deficit in India: A Structural Macro-econometric Approach by N R Bhanumurthy, Sukanya Bose and Parma Devi Adhikari, 2015*

[104] *Economic Survey of India, 2015-16, Vol 2, Page 81*

- Rainfall and productivity are identified as the most important factors that will impact agriculture sector performance.
- The sector will witness higher productivity and realisation due to continuous improvement in processes and inputs.
- The share of agriculture in GDP will continue to decline, mainly due to shift in resources to manufacturing and services sector. This is in line with the economic theory of growth which says as economies advance a shift in activity from primary to secondary and tertiary takes place.
- Migration of labour from agriculture to non-agriculture sector will continue.

5. Industry GDP

There is a direct relationship between rise in the industry share, investment[105] and TFP growth.[106] The industry base is shifting from advanced economies to Asian economies which will play a key role in industrial development of India.[107] Increase in FDI inflows will not only augment investments but will also lead to greater technology transfers.[108]



Industry Share (%)	2022
Present Continuum	19.27%
Prospering India	21.38%

***Present Continuum**: Share of industry in GDP will be 19.27% in 2022, around the same as current level.*

- The share of industry output in GDP will not witness much change because of low capital productivity and a marginal improvement in TFP. Further, India's share in export of value added technological products is not expected to change much, as there will not be a significant shift in its competitive advantage.

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[105] *Economic Survey, 2013-14*
[106] *Productivity in Indian manufacturing- B.N. Goldar, EPW Article*
[107] *The Shifting Economics of Global Manufacturing; How Cost Competitiveness Is Changing Worldwide: BCG Perspectives*
[108] *Foreign Direct Investment and Growth: Does the Sector Matter? * Laura Alfaro- http://www.people.hbs.edu/lalfaro/fdisectorial.pdf*

- Increase in investments will be utilised for input accumulation in existing facilities. Investments, as such, will not be utilized for adoption of new technologies or for creation of new manufacturing facilities.
- MSMEs will continue to have a significant presence but will continue to operate at the current levels of technology, scale and processes. They will operate at significantly lower productivity levels than the larger players.
- Domestic investment and FDI will increase, but there will be a considerable lag between regulatory approval processes and inflows on account of uncertainties in policy.

***Prospering India**: Share of industry in GDP will increase to 21.38% in 2022.*

- Industry's share in GDP will rise because of greater investment in R&D, adoption of advanced technology, innovation and increase in overall productivity.
- Domestic investment and FDI inflow will increase substantially under a defined policy framework. Greater FDI inflows will also enable greater technology transfers.
- India will be able to gain competitive advantage due to significant advancements in technology. This will lead to an increase in exports of high value added products.
- Focus will remain on assuring an enabling environment for the manufacturing sector.
- MSMEs will grow significantly on back of government initiatives like Public Procurement Policy (2012), better access to capital, encouragement to entrepreneurship & start-ups and enhanced productivity due to increase in exposure to technology. Further, MSMEs will be able to imbibe improved processes as they become partners of global value chains.

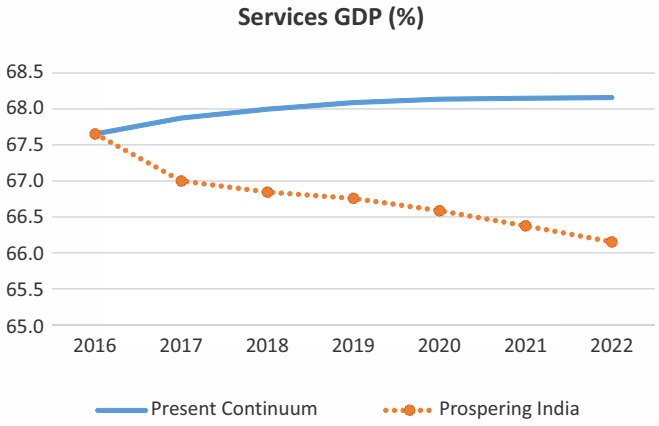
6. Services (including construction) GDP

Population,[109] industry GDP[110] and export[111] are the three main factors considered for explaining variations in the GDP share of services. There is a strong backward linkage between industry and services but it is not a linear relationship, which is the case with population.

[109] *http://www.oecd.org/general/34749412.pdf http://www.oecd.org/general/34749412.pdf*

[110] *http://iegindia.org/wshop2526july/paper2.pdf*

[111] *Targeting Debt and Deficit in India: A Structural Macro-econometric Approach by N R Bhanumurthy, Sukanya Bose and Parma Devi Adhikari, 2015*



Service Share (%)	2022
Present Continuum	68.16%
Prospering India	66.15%

***Present Continuum**: Share of services sector in GDP will be 68.16% in 2022.*

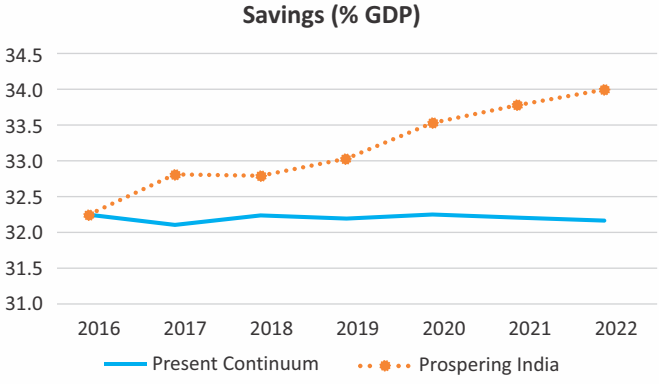
- Focus on infrastructure development, construction activities will drive services directly.
- Export of traditional services like IT, ITES as a percentage of GDP will remain at the current level. This is because global export markets will not improve substantially and cost arbitrage will not be a continuing competitive advantage for India.
- Technology based services like e-commerce etc. and its allied services in logistics, warehousing, finance etc. will increase significantly under this scenario.

***Prospering India**: Share of services sector in GDP will be 66.15% in 2022.*

- Productivity growth will be substantial in industry which will attract more investment towards industry rather than services. Hence, the share of services will decline.
- Increased innovation, research and development will help India improve its export potential from knowledge enabled services.
- Other services sectors like financial services, banking and tourism will also benefit from technological improvement and innovation.
- Shift of global manufacturing base towards Asian economies will help India to gain comparative advantage and high value added exports will go up. As a result, share of services in total exports may decline.

7. Domestic Savings

There is a direct relationship between GDP and savings while consumption and savings have an inverse relationship. Interest rate, GDP, intensity of financial penetration (M3/GDP) and private consumption have been used to estimate domestic savings.[112] Although declining dependency ratio is expected to drive up savings but changing social aspiration and consumption basket among the young population are increasing private consumption expenditure at the cost of saving. Rise in urbanization will further change consumption pattern leading to a decline in savings.[113]



Savings (%GDP)	2022
Present Continuum	32.2%
Prospering India	34.0%

Present Continuum

- The consumption pattern from basic goods to discretionary goods will change and discretionary spend is expected to be up to 67.0% by 2020 from 59.0% (2010), leading to higher consumption expenditure and lower savings.[114]
- Urbanisation and social changes are adding to this phenomenon of high consumption.
- Intensity of financial penetration will continue to be low at 108, as compared to China (193 at 2014 level)[115] because of delays in improvement in banking sector performance in terms of NPAs, high transaction costs and limited success in financial inclusion.
- On Account of lower interest rate return on investment in bank deposits will slow down, discouraging such savings.
- CAD will rise to 2.2% in 2022 of GDP from 1.8% of GDP in 2016 and reliance on private and foreign savings/investment to fund the deficit will increase.

[112] *http://www.oecd.org/eco/outlook/35527853.pdf*

[113] *India development pathways-http://tari.co.in/wp-content/uploads/2015/04/india-development-story-web-pdf.pdf*

[114] *India 2020 – Economic outlook – D&B page 37. Share of discretionary spending (rent, fuel and power, furniture, medical care, transport and communication, recreation and education is expected to increase from 59% in FY11 to around 67% in FY20.*

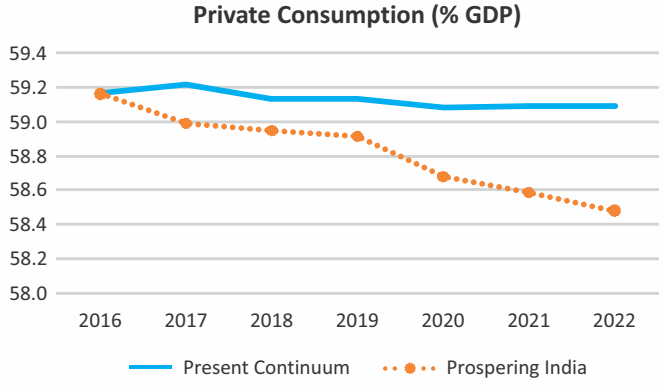
[115] *World Development Indicator, World Bank*

Prospering India

- With declining dependency ratio there will be addition of 85.5 million young people being absorbed in the workforce, leading to higher savings despite higher consumption.
- Savings will be converted from physical assets to monetary assets at a higher rate, spurring investments.
- CAD will remain in a comfortable zone of below 2.0% of GDP and reliance on external funding will be relatively lower.
- Financial penetration will be high, allowing savings to be channelized towards economic growth.

8. Private Consumption

Private consumption is an important component of GDP because growth of this component signifies domestic demand generation. In the light of weak recovery worldwide, all economies are looking to generate demand internally. If people consume more, then production will increase and it will keep on feeding into the future demand. Therefore, consumption growth is a necessary condition for GDP growth. Since tax to GDP ratio, higher per capita disposable income, conversion of physical assets to monetary assets, social spend and dependency have a direct bearing on consumption these have been considered to assess future private consumption under the two scenarios.[116]



Pvt. Consumption (% GDP)	2022
Present Continuum	59.1%
Prospering India	58.5%

[116] *Determinants of China's Private Consumption: An International Perspective https://www.imf.org/external/pubs/ft/wp/2010/wp1093.pdf*

Present Continuum:

Higher income, rising urbanisation, rising social aspirations and younger population will drive consumption. Direct Benefit Transfers (DBT), better transmission of rural programmes like rural road programmes and MGNREGA will drive rural consumption.

- Total consumption is estimated to go up to Rs 71,808.44 billion in 2022.
- Private consumption will move from basic goods to discretionary spend, which will be about 68.0% of total consumption - up from 62.0% in 2016.[117]

Prospering India:

Significantly higher income, inclusive growth, and effective redistribution will drive up the consumption.

- Total consumption will increase to Rs 78,964 billion in 2022, which is Rs 7 trillion more than the Present Continuum scenario.
- A better tax to GDP ratio of 27.0% will expand the base along with better redistribution mechanism, resulting in bigger base of consumers.

9. Investment

Interest rates affect both the cost of government debt servicing and investment through the cost of capital. Moreover, there is a circular relationship between savings, interest rates and investment. Shortage of savings pushes up interest rate which dries up investment.[118]

Other key determinant of investment is GDP. Slower growth of private investment in the mid-1970s triggered stagnation trends in Europe's developed economies caused mainly by inadequate aggregate demand (GDP).[119] Level and volatility of exchange rate play a vital role in determining the flow of foreign funds and overall investment.[120] These three factors: GDP, interest rate and exchange rate have been considered in the model toestimate investment.

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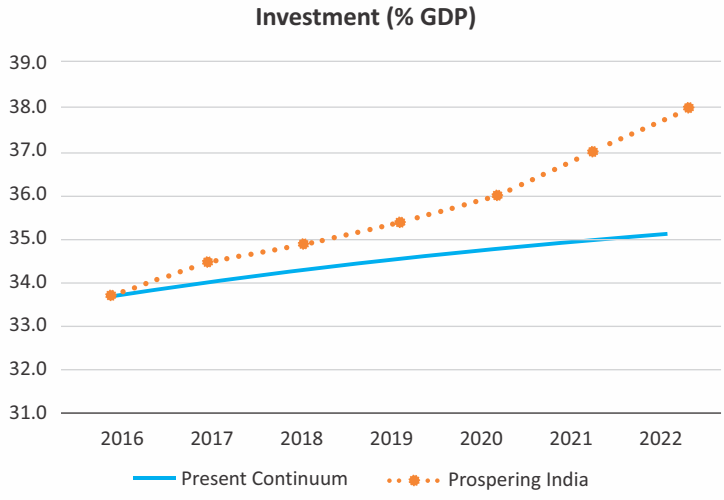
[117] *Source D&B- India Outlook 2020 and authors calculations*

[118] *OECD, Economic Outlook, 2012 &Targeting Debt and Deficit in India: A Structural Macro-econometric Approach by N R Bhanumurthy, Sukanya Bose and Parma Devi Adhikari, 2015*

[119] *Do Increased Private Savings Rate spurs Economic Growth?- wiiw 45th working paper*

[120] *Exchange rate and Foreign Direct Investment, by Linda S. Goldberg, https://www.newyorkfed.org/medialibrary/media/research/economists/goldberg/ERandFDIArticleGoldberg.pdf*



Investment (% GDP)	2022
Present Continuum	35.2%
Prospering India	38.0%

***Present Continuum**: Investments will rise to 35.2% of GDP*

Current challenges in infrastructure projects will be addressed and private investment will follow the public spend. Increase in social spend by the government will spread into other sectors of economy and will cascade investment in areas of education, health, water etc. Interest rates are expected to decline leading to higher investments.

- Investment will rise from 33.7% in 2016 to 35.2% in 2022.
- Public capital expenditure as percent of GDP will rise to about 5.8% in 2022 this is in line with the 14th Finance Commission estimates.[121]
- Economy will see rise in investment, because of higher ICOR, from domestic private sector and FDI and maintain the expected rate of GDP growth.

***Prospering India**: Investments will rise to 38.0% of GDP*

Domestic investment, FDI, FII investment will significantly go up because of improvement in governance, better investment atmosphere and ease of doing business.

- Public capital expenditure is expected to go up to 6.3% of GDP in 2022.
- Additionally, there will be investment in agriculture, research and productivity which will increase average farm yield per hectare from 2.3 tonne in 2012 to 4.0 tonne in 2022.[122] These gains also accelerate transition of labour towards more productive non-farm jobs.

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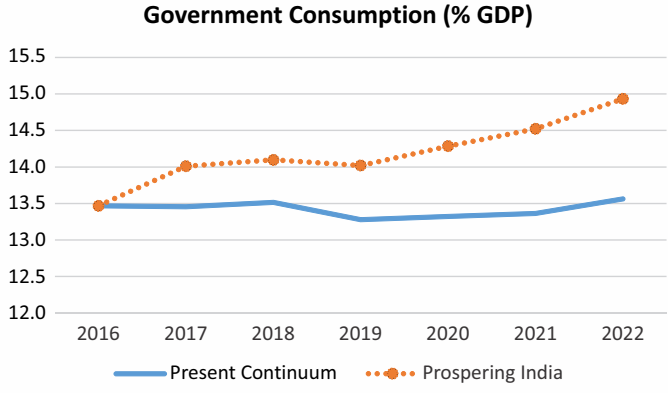
[121] *14th Finance Commission, Page 73: The capital expenditure to GDP ratio in our assessment period would increase from 1.8% in 2014-15 to 2.9% in 2019-20 (central government). Page 76: Capital expenditure has been projected to remain stagnate at around 2.7% of GDP (state governments). This takes the total to 5.6% of GDP. We are assuming 0.15% increase in capital expenditure to GDP ratio by 2022.*

[122] *Bhavya Bansal, Aishvarya Bansal, Better Governance and inclusive reforms: A key towards Rural Development in India (Challenges to Inclusive Growth in the Emerging Economies), available at: http://www.ijsrp.org/research-paper-1015/ijsrp-p4630.pdf*

- ICOR will decline to 4.0%-5.0% because of substantial rise in capital productivity and optimisation of resources.

10. Government Consumption Expenditure:

Seven variables appear repeatedly as determinants of the government expenditures functions: income, prices, population and its density and age structure, institutional factors and others, reflecting the mutual interrelation that exists between them.[123] Therefore, these factors have been considered in the model.



Govt. Cons. Expenditure (% GDP)	2022
Present Continuum	13.6%
Prospering India	14.9%

Present Continuum

- Absolute size of government spend will rise with the implementation of 7th Pay Commission and OROP.
- The higher tax to GDP ratio (21.2% - central and state governments) due to new legislations and reforms (like GST), better tax administration, higher incomes and increased tax base along with lower non-plan expenditure is expected to fund the increased spend.

Prospering India

There will be a much higher social expenditure as compared to Present Continuum as India will try to catch up with other economies on HDI, along with economic development. Tax to GDP ratio will

[123] *http://pendientedemigracion.ucm.es/info/econeuro/documentos/documentos/dt132002.pdf*

improve brought about by higher prosperity, financial deepening, better governance, tax reforms and efficient tax administration. Government will rationalise assets through effective disinvestment, auction natural resources etc. to meet financial needs.

- Public health expenditure will go up from 1.3% of GDP (2013) to 3.5% of GDP and education expenditure from 3.9% of GDP (2012) to 5.2% of GDP to improve quality of human capital and tap demographic dividend.
- Tax to GDP ratio (central and state governments) will be much higher at about 27.0%.

Chapter 5

Towards a *Prospering India*: Three Imperatives

Several policy measures have been taken over the last one year with a view to accelerate the pace of economic growth, create livelihood opportunities and facilitate social upliftment of people. However, a lot more efforts are required if India is to become prosperous and developed by 2022.

A *Prospering India* will have three major imperatives: *Achieve a growth rate of 9.4% to meet the expectations of the aspiring population; create enough livelihood opportunities to make such a growth inclusive and equitable; and improve wellbeing of the billion plus Indians*.

We have listed some key suggestions that need to be implemented to achieve these objectives.

Suggestions to achieve growth of 9.4% and above

As discussed in earlier chapters, the acceleration of economic growth is linked to improvements in Total Factor Productivity (TFP), higher investments, creation of demand through adequate livelihood opportunities and efficient utilization of energy resources.

Enhancing Total Factor Productivity (TFP)

For a Prospering India scenario, as per the growth model, TFP has to grow from 1.0% to 5.2%. For this to happen, labour productivity has to go up from 3.9% to 8.7% while capital intensity has to decline from 17.9% to 15.8%. And investment has to go up from 33.7% of GDP to 38.0% of GDP.

Ease of doing business, improved physical infrastructure, technological advancement, innovation and higher R&D expenditure will play big role in improving TFP.

Ease of Doing Business and Governance

These are the catalyst for accelerating investments and driving economic activity. Despite the recent improvement in Doing Business Rankings, India's Distance to Frontier (DTF) score needs to go up substantially for India to reach the top 50. This calls for dramatic improvement in all 10 parameters. Special focus should be laid on to reform areas where India ranks poorly in the Doing

Business rankings namely 'Enforcing Contracts', 'Dealing with Construction Permits' and ' Starting a Business'.

Some of the key suggestions to enhance the ease of doing business and have efficient governance are:

- Reforms for Enforcing Contracts:
  - Set up specialised division under High court as well as specialised courts at the district court level for settlement of commercial disputes. This requires expediting the passage of Commercial Courts, Commercial Division and Commercial Appellate Division of High Courts Bill, 2015.
  - Ensure that all vacancies in Commercial courts are filled up.
  - Publish model contract templates and guidelines that may be used for commercial contracts.
- Reforms in Construction Permits:
  - Formulate a common comprehensive formal building code at the State level.
  - Ensure that joint site inspection is carried out by various government authorities responsible for granting construction permits at all Urban Local Bodies (ULBs) and Industrial Development Corporations (IDCs).
- Review of Labour Laws and Regulations:
  - Any new labour policy/law to provide equity for workforce and employer, thereby promoting flexibility while balancing the workers' interests.
  - Consolidate and rationalise 44 central labour legislations to reduce cumbersome and bureaucratic exercises.
  - Strengthen employers' participation in initiating changes in labour legislation.
  - Encourage states to amend labour laws as done by states like Rajasthan, Madhya Pradesh and Maharashtra.
- Reforms in Land and Property Registration:
  - Ensure that land related laws and policies are practical, equitable and provide fairness and certainty to all stakeholders.
  - Create Land Bank Corporations at Centre and State levels as repositories of large unused tracts of land, which can be allocated to relevant users.

- Incentivise States to expedite digitization of land records.
- Publish model sale deed format for property registration on the department's website.

- Review the System of Inspections:
  - Differentiate compliance inspection requirements based on risk profile (such as High, Medium and Low risk) of industries under all labour laws. Exempt low risk industries with a history of satisfactory compliance from labour compliance inspections, or allow self-certification.
  - Differentiate compliance inspection requirements based on industry pollution categorization such as Red, Amber, and Green under all environment/pollution laws. Exempt Green industries with a history of satisfactory compliance from environmental compliance inspection, or allow self-certification.
  - Allow for third party certifications instead of Departmental inspections under all labour and environment/pollution laws for medium risk industries.
  - Allow for synchronized/joint- inspection under all Labour Acts.
- Work towards an all-encompassing framework for efficient Trade Facilitation Mechanism:
  - Accelerate the movement towards an integrated online system, procedural simplification and single window clearance.
  - Develop Smart Gateways (Ports / Airports / Land Borders / Inland Container Depots (ICDs)) to address the export infrastructure gaps.
- Set up a Regulatory Review Committee to review business regulations, laws and processes:
  - Do away/ amend those regulations that are no longer relevant or create multiplicity or lead to over-reach.
  - Introduce sunset clause for periodic review of any new legislation/ rule.
- Expedite passage of Real Estate Regulation Bill to bring transparency and accountability to the sector.

Infrastructure

- Accelerate development of logistics infrastructure to facilitate greater economic integration:
  - Set up a single quasi-judicial regulatory authority for time-bound dispute resolution in case of infrastructure projects.

- ❖ Promote 'Annuity Model' for transport infrastructure project, wherein private investors recover their cost in semi-annual payments from the government over the concession period.
- ❖ Initiate privatization of public sector ports; initiate by identifying one port for privatization.
- ❖ Launch Long Term Fund for infrastructure with other countries as co-investors, which can be managed by professional fund managers and leveraged multiple times by providing equity for large projects across sectors.

- Step up efforts for improving civic infrastructure to address the issue of rapid urbanisation:
  - ❖ Focus on creating affordable housing stock for masses by providing land at affordable prices.
  - ❖ Rationalise planning/building norms allowing for higher FAR/FSI.
  - ❖ Shift towards a common framework governing urban sector, ending multiplicity of agencies and promoting 'municipal bond' for mobilisation of resources.

Innovation, Technology and Research

- Introduce a comprehensive innovation policy to provide support and incentives to business led technology innovation. This could include rebated tax rate for income from patents/ innovations for a specified number of years. This can be on lines similar to the 'Patent Box' introduced in UK in 2013.
- Implement IPR regime through cohesive legal framework without overlap, conflict or inconsistencies among the different ministries.
- Set up a Technology Acquisition Fund to support manufacturing units by way of offering concessional finance for buying latest technologies.

Suggestions for Energy Sector and Growth

- Ensure Principle/ Policy based decisions for allocation of natural resources with no discretion.
- Rationalise energy pricing mechanism to balance the interests of both producers and consumers.
- Attract domestic and international players in bids for domestic oil and gas blocks by incentivizing Exploration & Production in Oil and Gas sector.
- Make coal blocks available for commercial mining outside the scope of fuel supply agreement to address the fuel constraints faced by power companies; introduce mining lease auctions of Schedule I Coal Blocks specifically earmarked for power sector.

- Further strengthen the Ujjwal DISCOM Assurance Yojana (UDAY) to facilitate financial turnaround of power distribution enterprises:
  - ❖ Reorganise financially weak Discoms into smaller units for better management.
  - ❖ Facilitate new corporate structures of Discoms with formation of subsidiaries, JV Companies, etc. as suggested under Model State Electricity Distribution Management Responsibility Bill, 2013.
  - ❖ Introduce performance yardsticks to measure performance of Discoms under UDAY.
- Leverage unconventional energy resources by supporting it with fiscal and financial incentives:
  - ❖ Encourage investments in Solar Power by creating visibility on annual capacity allocations for solar projects in the next five years as well as for creating demand visibility for solar manufacturing in the country.

Suggestions to drive Investments

To achieve a *Prospering India*, investment needs to increase from 32.7% to 38.0% of GDP. Specific suggestions to stimulate domestic as well as foreign investments are enumerated below.

- Continue efforts towards deepening of financial inclusion to enhance the overall savings and money supply in the economy, making available larger funds for investments.
- Take steps to ensure effective transmission of policy rate reduction in lending rates; expedite the review of the small savings interest rate structure in this regard.
- Dilute government stakes in public sector banks from 51.0% to 26.0% while keeping a golden share for control.
- Examine consolidation of select public sector banks to create large sized viable banks.
- Set-up government sponsored, private funded, specialised institution (National Asset Management Company) for one time resolution of stressed assets of banks, especially related to infrastructure.
- Expedite introduction of new bankruptcy law to free 'dead' assets and mobilise capital for investment.
- Strengthen corporate debt market to reduce over-dependence on banks for long term funding.
- Deepen and broaden capital markets to bring down dependence on FIIs by creating an attractive regime for domestic investors.

- Pension and insurance funds should be mobilized to meet long term financing needs of infrastructure.
- Implement Goods and Services Tax with an optimal GST framework.
- Step up efforts to increase tax to GDP ratio by widening tax base. As a start, make filing of returns mandatory for all incomes including agriculture income over a particular threshold, say Rs. 10 lakhs.
- Ensure a non-adversarial tax regime; give up the policy of setting tax collection/ revenue targets for tax officers, since tax collections vary with the economic cycle/ business conditions.
- Proactively clarify contentious tax related issues to minimise disputes.
- Provide green channel priority to investors bringing cutting edge technology, export oriented FDI.

Suggestions for Agriculture Sector

Indian agriculture sector has been reeling with issues related to low crop yields, low rate of seed replacement, variations in levels of farm mechanization across regions and crops, limited reach of government's extension services, high dependence on monsoons and weak post-harvest infrastructure.

Following measures are required to enhance agriculture output, productivity and strengthen the agri-supply chain:

- Enhancement in crop yield through use of biotechnology.
- Set a target for increasing seed replacement to 50% in next five years.
- Ensure higher production/productivity of cereals, milk, fruits and vegetables, protein-rich food to ensure true long term Food Security:
  - Plans for replicating the 'White Revolution' for milk across States.
  - Plans for launching a 'Rainbow Revolution' for fruits and vegetables across States.
  - Source global (e.g. Israel) proven technology to use arid/barren land for fruit & vegetable production.
- Encourage farmers to form producer associations and promote this concept alongside contract farming, corporate farming and co-operative farming.

- Devise an institutional framework for custom hiring of farm machinery in the country.
- Encourage states to De-list fruits and vegetables from schedule-1 of APMC Act.
- Incentivise setting up of cold chains and warehouses to bring down post-harvest losses
- Extend weather based insurance system to all states and crops.
- Promote greater engagement of private players in the extension process with specific targets for reach and outcomes for implementation of government extension services schemes.
- Encourage on-farm water conservation using technological improvements like sprinklers, laser levellers, etc.
- Make irrigation scheduling more robust by building decision support systems on real time weather forecast.
- Expedite the restructuring of Food Corporation of India to make the PDS efficient.
- Put a cap on strategic buffer stock norms. Anything over and above this should be available for active trading and off-loading in the domestic and international markets. In the home market, explore the option of off-loading grains in smaller lots over multiple locations.

Suggestions to Accelerate Industry Growth and Expansion

Make in India is a path breaking initiative and to make it truly successful, an efficient and competitive eco-system is required for the industrial sector. Specific suggestions in this regard are:

- Speed up the efforts towards improving the ease of doing business (specific recommendations are given earlier).
- Promotion of Cluster Development and greater coordination across and within clusters.
- Expedite work on industrial and freight corridors and their connectivity to ports and airport.
- Encourage setting up of affordable housing complexes near industrial areas by compulsorily allocating 20% land of industrial belt for low cost housing; fast tracking change of land use for housing purposes; and reducing land registration charges for affordable housing to 20% of the rates applicable in other cases.
- Review and take stock of existing FTAs. There must be a clear shift in balance towards providing greater market access to our companies abroad. Disseminate information amongst the domestic industry on the market access opportunities that follow any FTA India signs.

- Ensure implementation of reforms initiated in defence sector by creating an environment of equal opportunity for private sector. A second line of production may be created in the private sector by encouraging a transparent selection criteria based on capabilities and track record.

Creating Livelihood Opportunities

Central to all economic policies should be the objective of job creation. Promoting entrepreneurship and MSMEs in manufacturing and services are extremely important to achieve this. Some specific suggestions in this regard are listed below:

Suggestions to encourage entrepreneurship and start-ups eco-system

- Promote entrepreneurship, self-employment and start-up business through a mix of financial incentives and availability of low cost finance.
- Introduce a rebated income tax scheme called START (Start Up Rebate Tax) wherein tax benefits should be linked to direct employment by the startup businesses and tax benefit can be for a defined rebate proportion (say 50.0%) and for a limited period (say 5 years). Singapore offers similar schemes, which can be studied.
- Bring clarity in definition of a 'start-up'. This could be defined in terms of initial capital / revenue / employment up to certain threshold and for specified number of years.
- Provide tax incentives to the Angel investors and Venture Capitalists making investments in small start-ups. Countries like Singapore and the US provide various incentives for investments made in start-ups.

Suggestions to support and nurture MSMEs

- Support MSMEs through better coordination among the departments of local, state and central governments for creating an enabling environment for growth and their transition to the organised sector.
- Expedite the establishment of Trade Receivables Discounting System (TReDS) to address the issue of delayed payments to the MSME sector.
- Make the Government tendering process for procurement transparent and expedient; shorten the time between bid and award of the contract.
- Assist MSMEs by compiling a comprehensive list of all regulations and make them easily accessible.
- Introduce sufficiently empowered single window mechanism for MSMEs in each state with built in provisions for time bound clearances.

Support sectors with high employment potential

- Strong boost should be given to travel and tourism sector as it creates more jobs per million rupees of investment than any other sector of the economy. The government should consider setting targets for attracting tourist traffic to at least 50 million tourists annually. Based on these targets, the government should identify 10 tourist destinations each year and create/ improve the supporting infrastructure in those region.

Creating Wealth and Wellbeing

Prosperity in true sense means not just creation of income or wealth, but wealth plus well-being of the people. Therefore, due attention needs to be given to improving the quality of life of people. All citizens must have access to the basic education, health, sanitation and housing facilities.

In order to achieve the growth of 9.4% and move towards the scenario of 'Prospering India', government expenditure on health needs to go up from about 1.3% of GDP to at least 3.5% by 2022 Likewise, the education spend has to go up from about 3.9% of GDP at present to 5.2% by 2022.

Suggestions to improve education and skill development

- Industry engagement in education and skill development should be inculcated by developing strong mutual value proposition. A culture of industry apprenticeship & internship, joint research & development and innovation needs to be created in our education institutions.
- Integration of Education with Skills Development must be facilitated by structural implementation of National Skills Qualification Framework:
  - ❖ All stakeholders in the education system including different state education boards, UGC, AICTE, universities etc. must align their education programme with NSQF and provide seamless pathways for multiple entry and exit.
  - ❖ Entrepreneurship culture should be fostered from school onwards with structured industry mentoring and linkages. NSQF compliant Qualification Packs for different job roles should have at least one NOS (occupational standard) for associated entrepreneurial role.
- With 40% students in private school education and more than 60% in higher education, private sector plays a critical role in education provision in the country. All entry and operational barriers for private providers should be streamlined to encourage credible private providers to invest in the sector.
- Remove multiplicity of regulatory framework and establish an accreditation based higher education system that is outcome-based, transparent, encourages self-regulation and innovation in higher education delivery.

- Set up a National Mission for Faculty Development. India needs a special program for skill development of University teachers for administrative, academic and research activities.

Suggestions to improve healthcare

- Legislations related to healthcare services across states should converge in sync with the Clinical Establishment Act, 2010 to ensure minimum quality of healthcare facilities.
- The accreditation movement in health needs to be given a big fillip by augmenting the scope and powers of accreditation bodies like the NABH, NABL under the ambit of Quality Council of India. Incentivise roll out of staged NABH accreditation both in public and private sector healthcare facilities.
- Fast track seamless adoption of standardisation measures such as Standard Treatment Guidelines (STG) and Electronic Health Records (EHR) comprehensively across the country.
- Improve penetration of public healthcare, by creation of a pre-primary 4th layer, below the primary care level, that would be focused towards prevention & promotion of healthcare in rural & urban India.
- To reduce out-of-pocket expenditure, the government should expand the Social Health Insurance Schemes for the poor. To cover the middle and high income groups, allow private health insurance providers to innovate and develop products for primary, chronic and elderly care by providing appropriate tax incentives.

Annexure

Methodology of Estimation

The model has been estimated using annual data for the period 1991-92 to 2013-14. Since in some cases the final data was not available beyond 2008-09 at the time of estimations, in-sample is limited to 2008-09. In terms of estimation procedures, simple OLS method has been used.

Structural dummies have been introduced to capture structural breaks in the dependent variables. Structural breaks were estimated using Chow test. To correct for autocorrelation and moving average terms, autoregressive (ARi) and MA terms have been introduced.

However, in the estimated equations, there are some outliers in the errors, which could be for various unexplainable reasons and may not be explained by the theoretical variables. In order to minimise such errors and derive robust parameters that can explain the underlying macroeconomic behaviour, the outlier dummies have been introduced.

Such adjustments in outliers are largely similar to the Error Correction Mechanism models that help in deriving underlying long term behaviour after correcting for errors. The estimated equations are solved together by using Gauss-Seidel algorithm for the latest period - for 2009-2012. Depending on the extent of errors in the in-sample period, the model can be used for out of sample simulations.

In-sample TFP growth is estimated as a residual using Solow growth model and IKLEMS database. Inputs used are labour and capital stock.

Variables of Interest

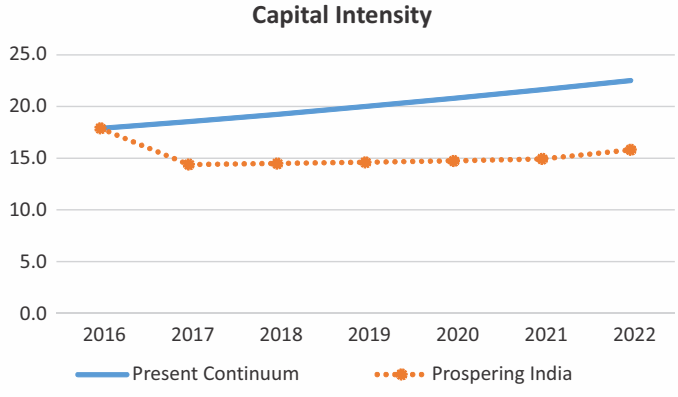
Estimated equations, along with identities, are solved together to obtain forecast results. The key policy variables in solving this model are tax to GDP ratio, social spend by central government, minimum support prices and policy interest rates. While important exogenous variables are FLFP, world GDP, exchange rate, rainfall index, intensity of financial penetration, labour productivity and capital intensity.

Two scenarios have been created by setting the value of both policy variables as well as exogenous variables. The outcome variable of interest in each scenario includes components of national income identity, sectoral GDP, TFP growth and savings.

What Changes Across Scenarios and Why?

We have given shocks to certain exogenous variables like FLFP, labour productivity, tax to GDP ratio etc. in accordance to the policy assumptions, we have considered to see the impact of policy interventions on growth drivers listed above.

1. Capital Intensity (ratio of real capital stock in machinery and equipment to labour)

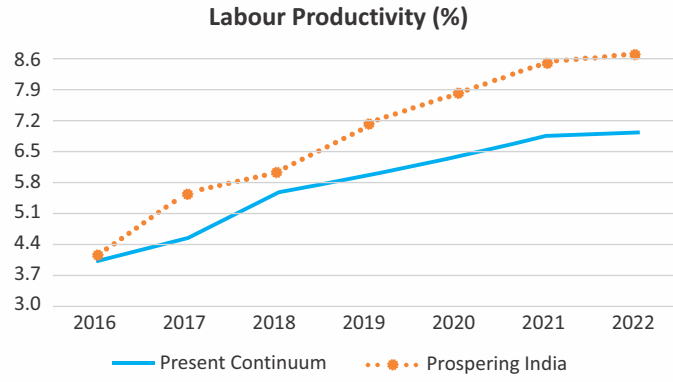


Capital Intensity	2025
Present Continuum	22.5
Prospering India	15.8

Rationale

- Because of low capital productivity and high ICOR, capital intensity will be high in *Present Continuum*.
- As a result of banking sector reforms and adoption of new and advanced technologies, ICOR will reduce which in turn will decrease capital intensity ratio in *Prospering India*.
- Rise in public spend will pick up while private investment will crowd in with a lag, this together will lead to gradual increase in production capacities in manufacturing, construction and ancillary services.
- Rise in education attainment, skills and focused schemes will improve the quality of labour leading to reduction in capital intensity and gradual improvement in TFP.
- In Prospering India, higher FDI, innovation, entrepreneurship and more productive MSME and unorganized sector will create a force multiplier.

2. Labour Productivity Growth (%)

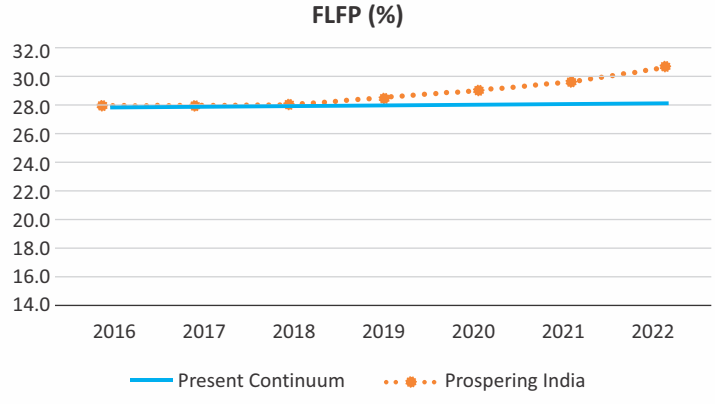


Labour Productivity (Growth %)	2022
Present Continuum	6.9%
Prospering India	8.7%

Rationale

- Higher social spend in health, education, water and sanitation will improve productivity and quality of labour.
- Changing demographics will bring younger workers who will enhance productivity together with the induced effect of government schemes on IT access and vocational linkages.
- In *Prospering India*, better skills, technology, management processes along with improved unorganized sector will improve productivity.

3. Female Labour/Work Force Participation Rate (%)



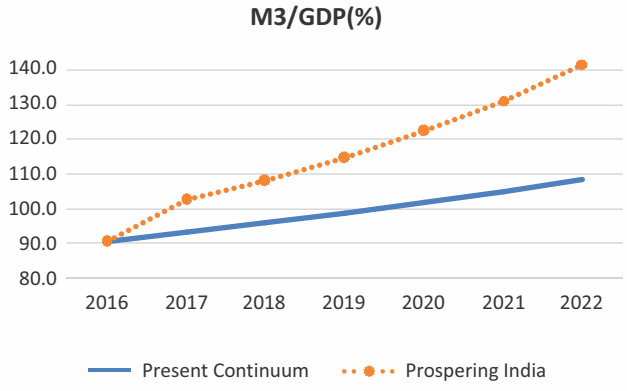
FLFP (%)	2022
Present Continuum	28.1%
Prospering India	30.6%

Rationale

- Women participation in work force will rise due to change in demographics, better education and change in social structure due to urbanization and nuclear families. FLFP in present continuum will go up from 27.6% (2011) to 28.2% in 2022.

- FLFP will go up from 27.6% (2011) to 30.6% in 2022 under the Prospering India scenario due to success of direct benefit transfer and other social schemes aimed at the girl child which will lead to greater empowerment of women. This will result in higher opportunities due to economic growth both through public and private investments.

4. Intensity of financial penetration (M3/GDP)

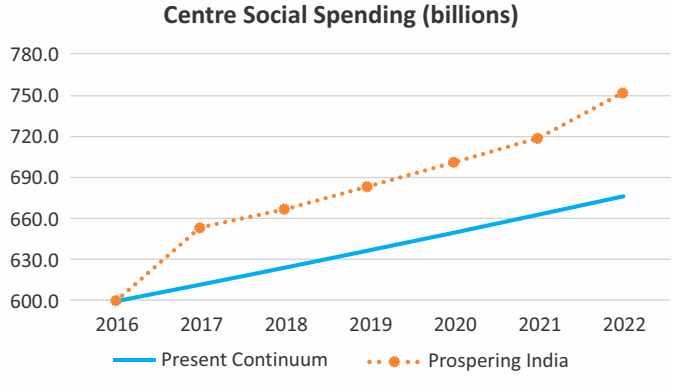


M3/GDP	2022
Present Continuum	108.41
Prospering India	141.55

Rationale

- Financial inclusion, Direct benefit transfers, Jan DhanYojna will create a transmission boom.
- Inflation rate will be in the comfort zone.
- Banking sector reforms along with resolution of stressed assets will drive up financial penetration in Present Continuum.
- In Prospering India, operationalising of the new payment and small banks together with bankruptcy laws aimed at reorganizing distressed assets will increase financial penetration.

5. Centre Social Spending (in billions)

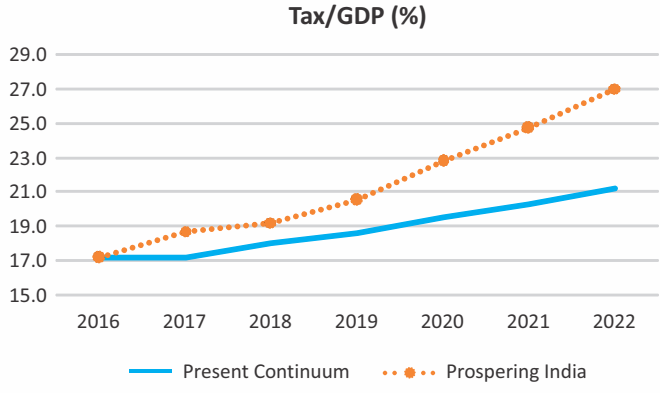


Social Spend (bn)	2022
Present Continuum	677.66
Prospering India	752.25

Rationale

- Currently, India's public expenditure (central and state governments) on health is about 1.3% of GDP, while it is about 3.9% of GDP on education, which are quite low in comparison to other comparable economies.
- Public health expenditure needs to go up 3.5% of GDP and education expenditure to 5.2% of GDP to improve quality of human capital and tap demographic dividend.
- Health expenditure mix - private and public - is likely to change leading to a rise in social spend.
- Prospering India will see a higher social expenditure as compared to Present Continuum as India will try to catch up with other economies on human development front, along with economic development.

6. Tax to GDP Ratio



Tax to GDP (%)	2022
Present Continuum	21.2%
Prospering India	27.0%

Rationale

- India's tax to GDP is one of the lowest in the world. With GST and other tax reforms this ratio is expected to increase.
- However, in *Present Continuum* scenario, there will be a delay in tax reforms which will lead to only a marginal increase in tax to GDP ratio.
- In *Prospering India* scenario, tax reforms will be faster and tax to GDP ratio will increase substantially.
- Redistributive mechanism will be effective in *Prospering India* scenario bringing in inclusive growth.

What Stays Constant and Why

The following set of exogenous variables (which are determined outside the equation system) is assumed to remain the same for both *Present Continuum* and *Prospering India* forecasting scenarios.

Exogenous Variables	Future Value	Comments
Minimum Support Prices (weighted average of paddy and wheat)	MSP is supposed to grow at 4.0% annually and reach from current (2014) Rs 1402.59 to Rs 1996.32 in 2022.	FRBMA will force government to keep in check its expenditure, including subsidies. However, declining productivity in agriculture warrants price support. Keeping rise in annual price and input costs in mind, MSP is assumed to grow at a constant rate.
Deviation of rainfall from normal	Last available value (2012) is taken.	As weather forecasting is beyond the scope of this study, last available value is taken throughout.
Exchange rate	Current exchange rate (Rs 65/USD) is considered with a marginal movement.	Exchange rate can be very volatile and depends on many international factors on which India does not have control. Volatility induces instability in forecasting and, therefore, the current exchange rate environment is assumed to persist in the long run with minor deviations.
World GDP (current prices)	IMF estimates are used.	It is not feasible to develop different data series for the variable, as forecasting world GDP is a complex exercise.
GDP deflator-factor cost	Deflator is expected to grow at 5.0% annually.	It is a proxy for inflation, which we assume to stay at 5.0%.
Population	UN Estimates are taken.	Population projections do not change across scenarios.
Interest Rate	Real interest rate is expected to stay in the band of 4.0%-5.0%.	As monetary policy at best can complement fiscal policy, we have considered mainly fiscal instruments for our policy simulation, keeping rate of interest at relatively lower levels to facilitate investment.
Dependency ratio	UN Estimates are taken.	Dependency projections do not change across scenarios.

Databases

1) Data base on Indian economy, RBI (http://dbie.rbi.org.in/).

2) National Account Statistics, Ministry of Statistics and Programme Implementation, Government of India

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6) Population Division, United Nations.

7) Estimates of Productivity Growth for Indian Economy (IKLEMS), 2014, RBI, at https://rbi.org.in/Scripts/PublicationReportDetails.aspx?ID=785

8) Agriculture Statistics at a Glance, 2014, Ministry of Agriculture, Government of India.

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About Federation of Indian Chambers of Commerce and Industry

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