Economic Growth Analysis of India

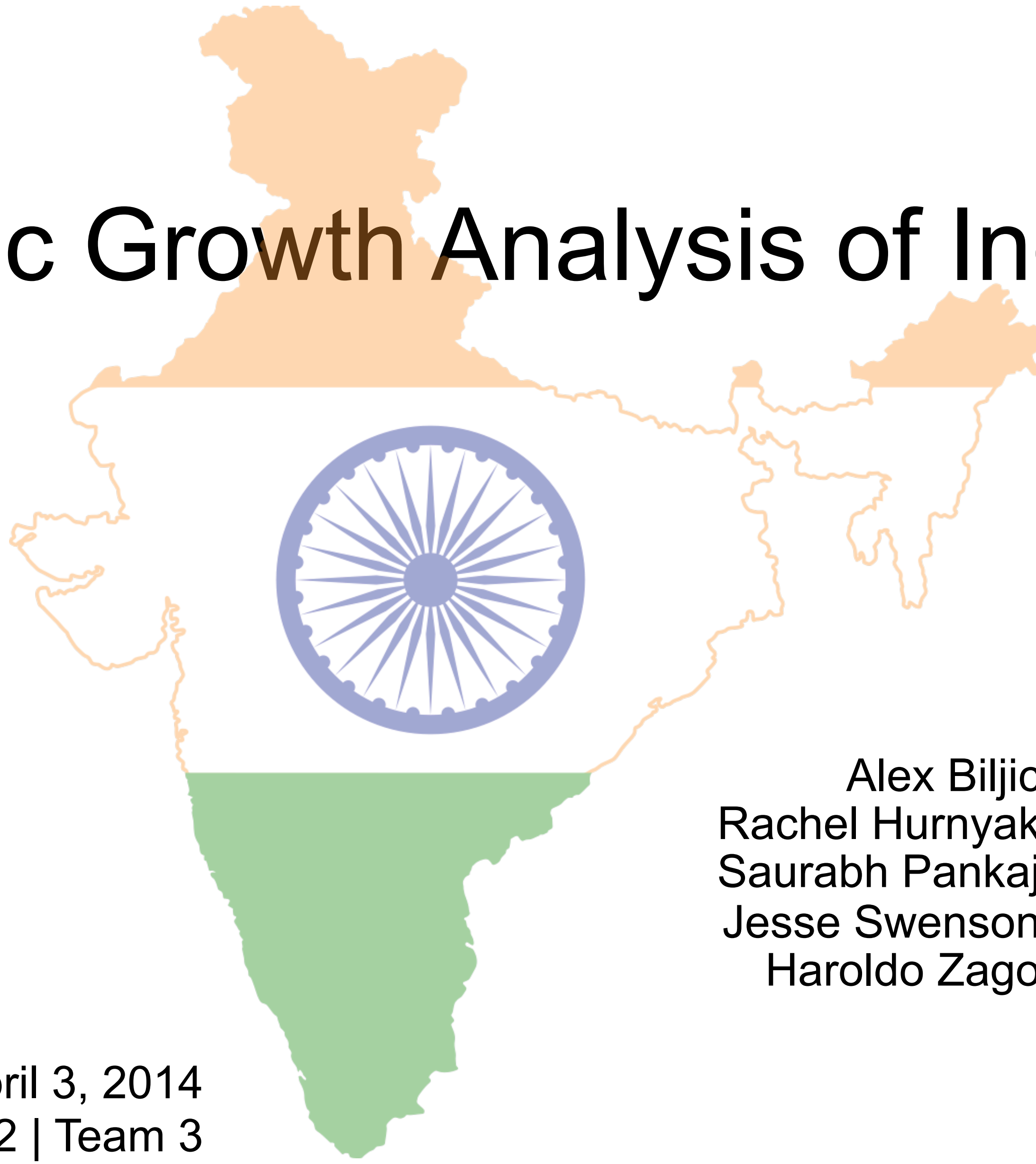

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Photo Source: http://upload.wikimedia.org/wikipedia/commons/0/05/India_geo_stub.svg

Executive Summary

In recent years, India has exhibited noteworthy GDP growth, but barriers exist that prevent a faster growth rate. Most significantly, India is plagued by bureaucratic inefficiencies, institutional burdens, poor infrastructure, growing imports, an unskilled labor force, high illiteracy, and dire health conditions.

We recommend the following changes for long term sustainable increased growth.

Institutions

- Improve the quality of institutions: effective government, time consistency in policies, an efficient legal system, control of corruption, and accountability in governance
- This will improve the impact of government spending and create an investor friendly environment

Labor

- Further invest in improving human capital by providing better health services and quality education
- Government supported training to prepare the unskilled farm labor force to engage in more productive economic activities

Capital

- Invest in infrastructure: increase energy production, improve transportation, link farm production to retail markets through supply chain reforms
- These investments will create jobs and provide employment avenues for unskilled farm labor

Trade

- Exploit the comparative advantage in the services sector to export information and communication technology services. Move up the value chain to provide more technical services
- Increase competitiveness in manufacturing and cheap labor to further strengthen exports

Source: World Bank's World Development Indicators

Overview

Country Facts: The Republic of India is located in South Asia. It is the second most populous country and democracy in the world with 1.237 billion people. It is the 11th largest economy ranked by nominal GDP and the third largest economy by purchasing power parity. These rankings drop precipitously when taken on a per capita basis, 140th and 129th, respectively.

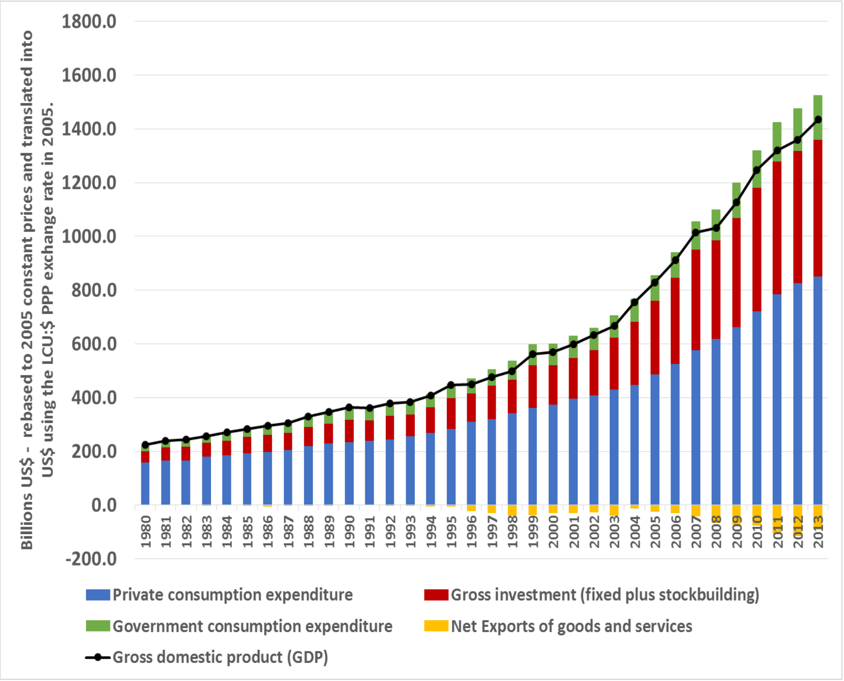
Brief History: India, at one time, was a British colony and gained its independence in 1947. It is a federation with a parliamentary system that is guided by a constitution. Perhaps due to fear of foreign influence on domestic issues, India was a closed economy that restricted any foreign investment on its soil until the 1990s. This economic liberalization has allowed India to become one of the fastest growing economies in the world.

Gross Domestic Product

- For the past 33 years, India has sustained an impressive GDP rate of growth with an average rate of 5.4% per year.
- By analyzing the components of the expenditure identity, participation growth of private investment in GDP is observable at 19%-35% of GDP.
- During that time, India also shifted from an exporter to an importer, which is indicated by the change in negative to positive net exports.

TFP growth rate (1985-2011).................... 2.73%
Capital / Labor growth rate (1985-2011).. 2.06%
Inflation (2014)..................................... 8.1%
Unemployment (2013)............................ 3.7%

Real Expenditure on GDP



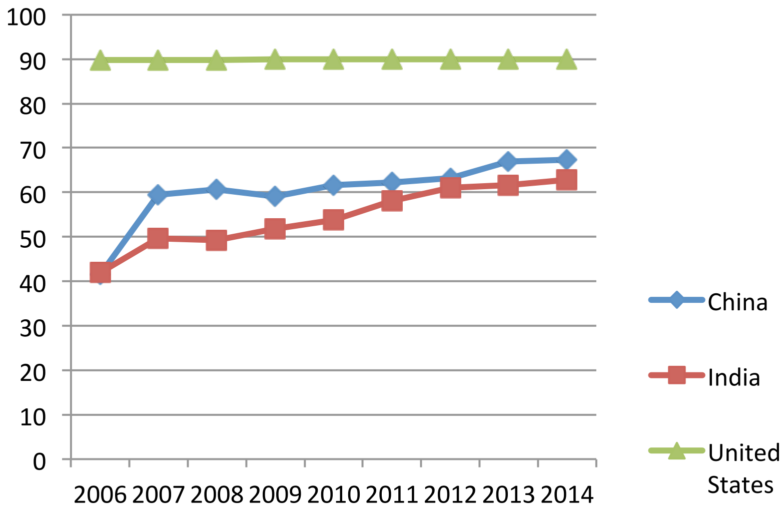
Data: http://www.doingbusiness.org/data/exploreeconomies/india | Chart: *The Economist*, Intelligence Unit's Country Intelligence
Inflation: http://www.tradingeconomics.com/india/inflation-cpi
Unemployment:http://articles.economictimes.indiatimes.com/2014-01-27/news/46684891_1_ilo-report-international-labour-organisation-unemployment-rate

Institutions

- Institutions are a critical variable that deeply affects GDP and its growth in the future. Institutions affect *time consistency* and people's perception of a government's willingness to keep promises that they make in the present; Institutions can increase or decrease transactions costs while doing business, which can help or hinder GDP growth

- According to the *Doing Business* website:
  - India ranks 134th out of 189 countries for "ease of doing business"
  - It takes 1,420 days to enforce a contract in India; In OECD countries the average is 529 days
  - Claimants in bankruptcy suits recover approx. 25.6 cents on the dollar; In OECD countries the average is 70.6 cents
  - In dealing with construction permits, India ranks 182nd out of 189 countries; to build a warehouse, including permits, connecting to utilities, inspections, etc., costs 2,640% of per capita income; In OECD countries the average is 84%

Distance To Frontier* for Doing Business



Source: http://www.doingbusiness.org/data/exploretopics/starting-a-business/frontier
*This is the number of percentage points a country is from the frontier, or number 1. In this case, Singapore is ranked number 1 (score of 100).

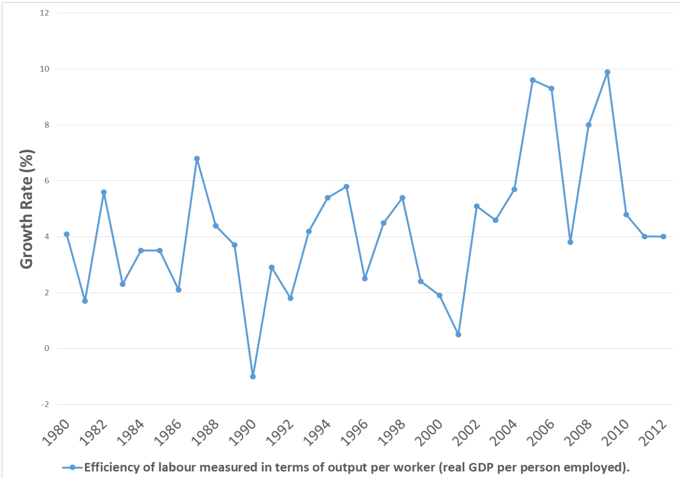
- Although India has steadily decreased its distance to frontier, many challenges remain in making India a business-friendly environment

- The rankings identified above illustrate obstacles while conducting business within India's borders; these transactions costs directly impede output by discouraging people from attempting to start a business (the costs are too high) or decreasing entities' willingness to loan to businesses (the cost of financing increases because there's not enough transparency)

- The consequences of these institutions are an inefficient environment, in which to conduct business, that does not encourage open and contestable markets

Human Capital and Labor

Growth in Efficiency of Labor



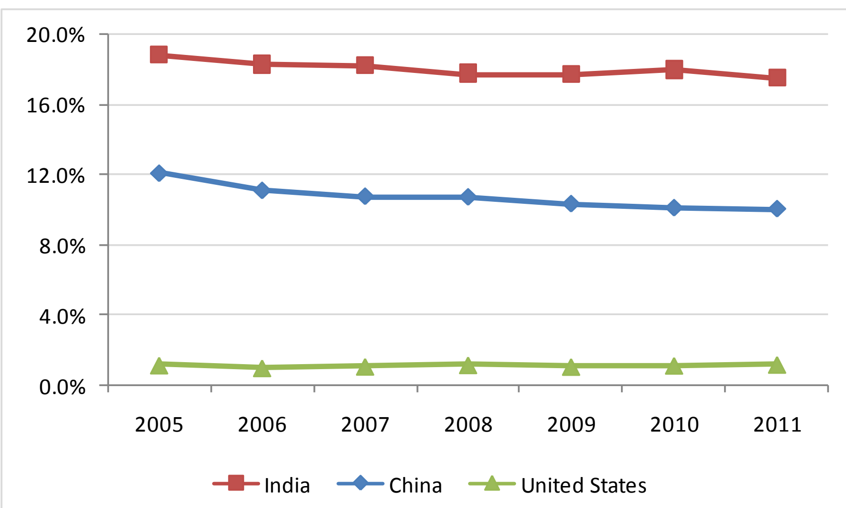
Source: Economist Intelligence Unit's Country Intelligence

Human Development Indicators

- **India spends ~ 4% of GDP on Health and ~3% on education** (Compared to ~17% and ~5% in US)
- **Infant mortality rate**: 43.19 deaths/1,000 births (50th place)
- **Life expectancy at birth**: 67.8 years (163th place)
- **Literacy** (age 15+ that can read and write): 62.8% (>90% for BRICS)
- **School life expectancy**: 12 years

Source: World Bank's World Development Indicators

Agriculture, value added (% of GDP)

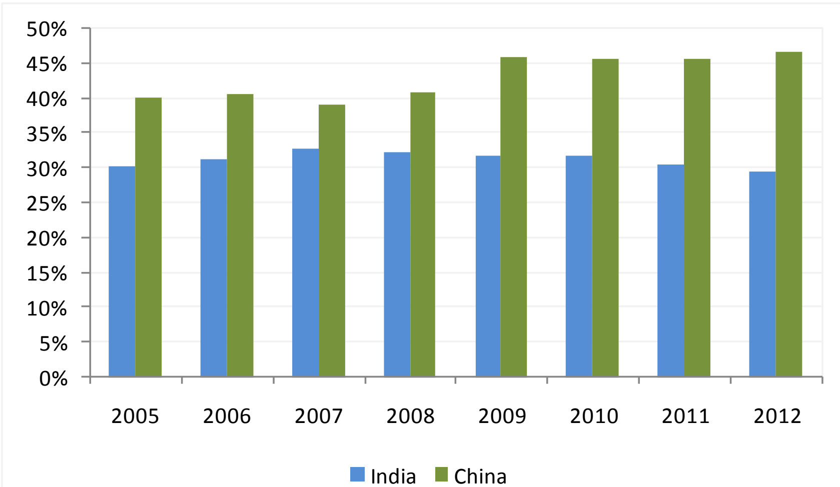


Source: CIA World Factbook

- In comparison to the other BRICs and G7 countries, India lags in terms of reach of basic education and healthcare, which leads to a low quality labor force.
- The majority of the Indian population is rural, roughly 50% of the employed are engaged in farming. Despite this, agriculture only adds approximately 17% value to GDP. A similarly large proportion is engaged in unorganized sectors. These activities are less productive and account for a small impact in GDP.
- As a result, the growth of the productivity of the labor force displays volatile behavior, with no clear indication of sustainable growth and a mean of only 4.3% over the past three decades.

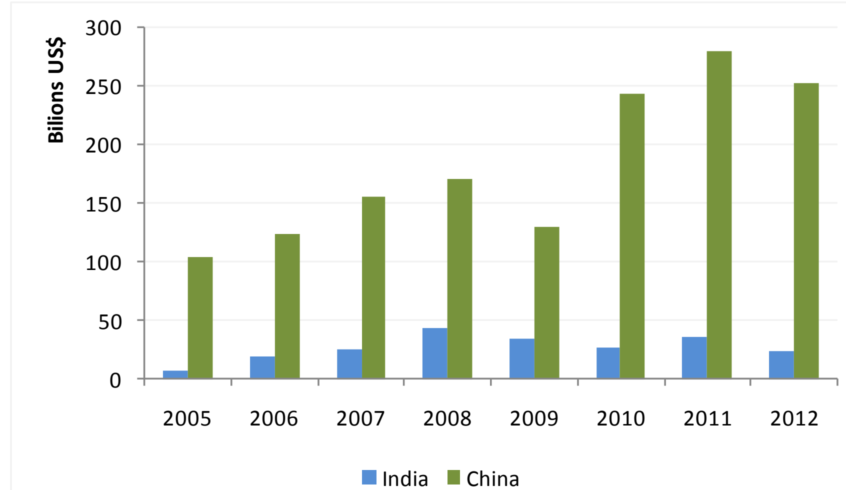
Capital and Investments

Gross Fixed Capital Formation (% of GDP)



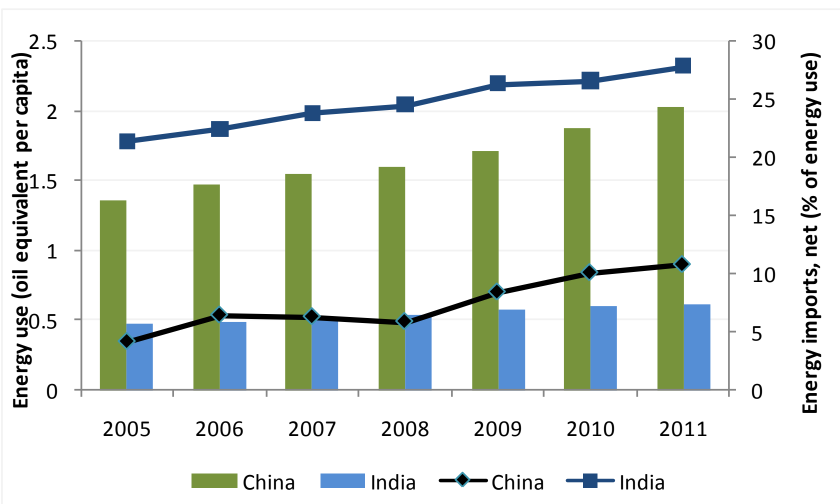
Source: World Bank's World Development Indicators

FDI Flows



Source: World Bank's World Development Indicators

Energy Consumption vs. Imports

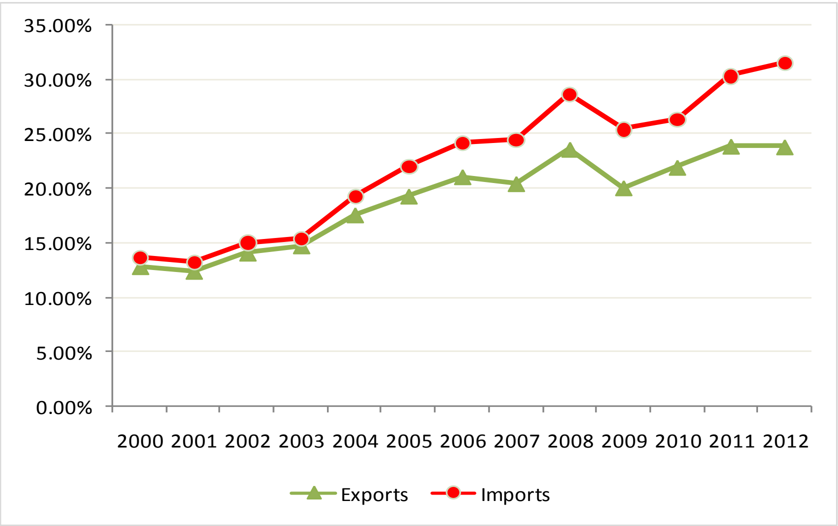


Source: World Bank's World Development Indicators

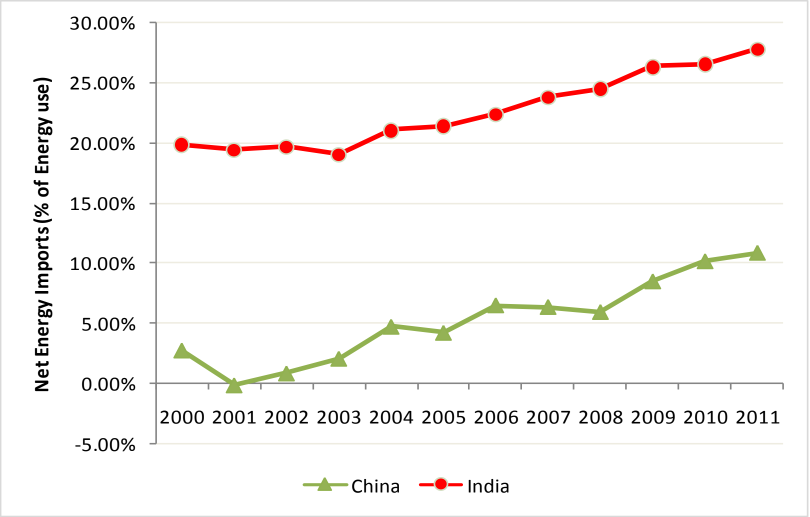
- Capital formation is a consequence of Investment. Current state of capital in India's GDP can be understood by level of investments in infrastructure: energy, transportation, telecom, etc.
- Infrastructure investments are one of the major capital intensive sectors and it seems capital formation in India has declined recently. China receives a much higher share of FDI in comparison.
- India has growing demand for energy; its current per capita usage is much less than China and other developed countries.
- India imports: 30% of its energy needs even though per capita usage of energy is very low. This reflects a demand for more investment to, in turn, make India more energy reliant.

Trade

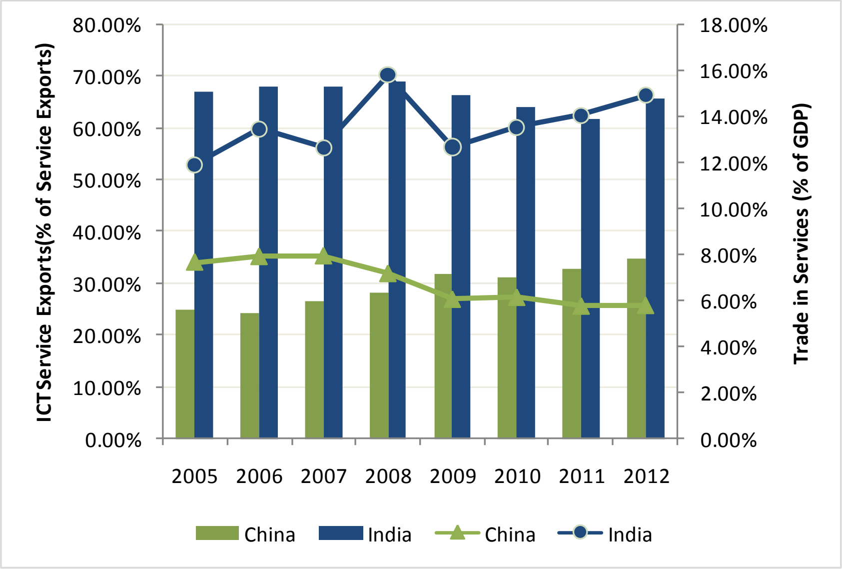
Exports vs. Imports



Energy Imports



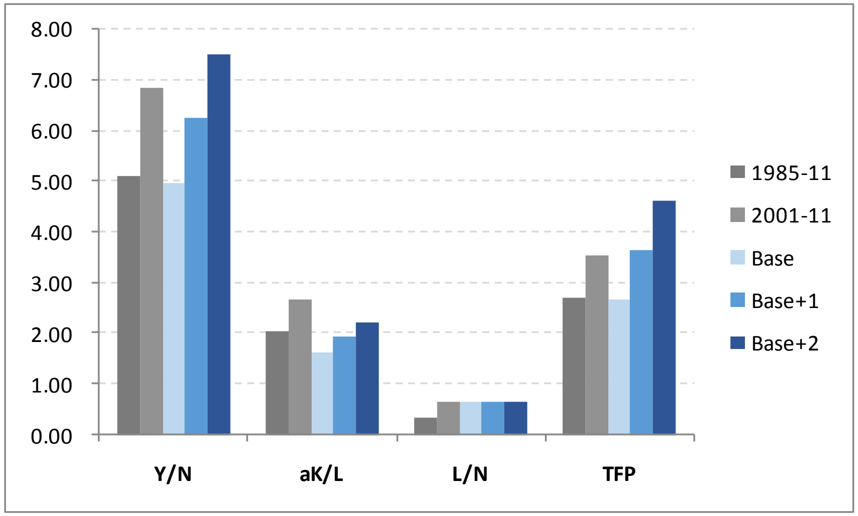
Services Exports

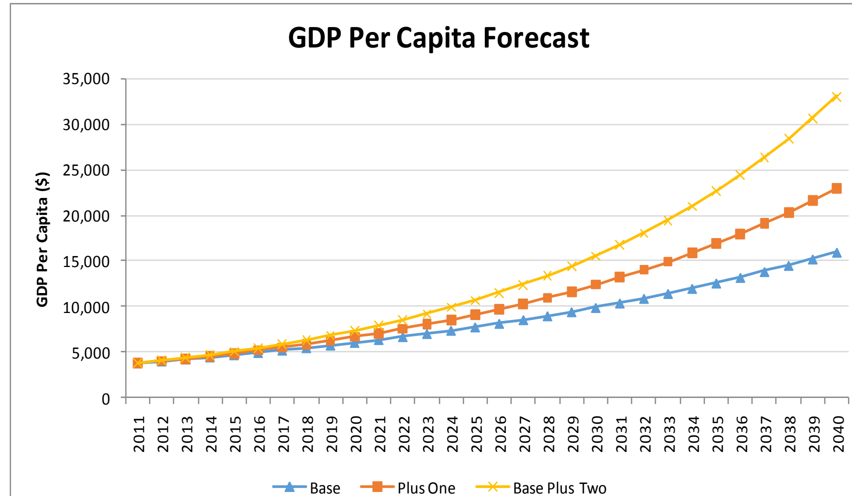


Source: World Bank's World Development Indicators

- Over time India has increasingly become a net Importer of goods and services and that gap is widening. This is partly to do with complex procedures that India maintains as well as growing energy demands.
- A large proportion of India's imports are energy products which when compared to China form a significantly higher component. As a result, growth in economic activity is limited by the ability of India to be self reliant in energy needs.
- India does have comparative advantage in the services sector, specifically in Information & Communication technology services (ICT).

GDP Forecast 2011-2040

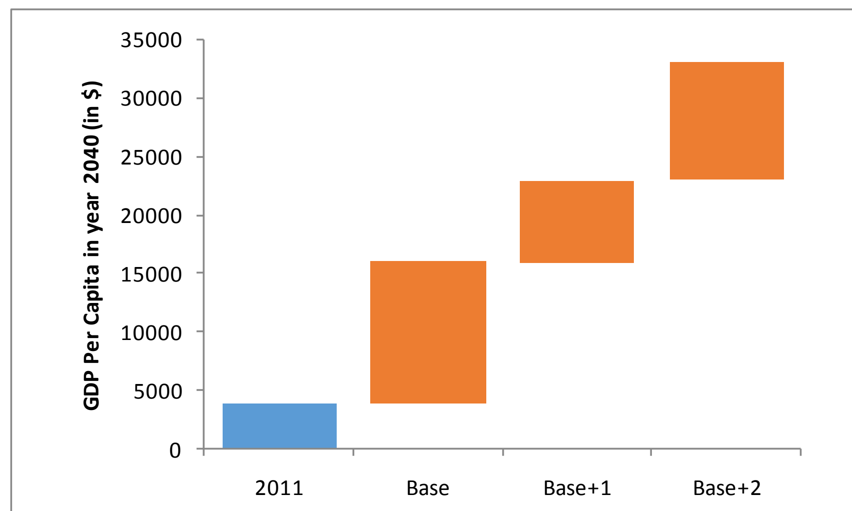




Note: Solow model projection with investment rate of 30%, alpha = 1/3, and historical observed growth rates in TFP, population and employment.

Based on observed historical growth rates between 1985-2011 and 2001-2011, we projected three possible scenarios depending on the level of implementation of the suggested policy changes:

1. Base: same TFP growth as observed from 1985-2011 with the same labor participation growth as observed in the last decade.
2. Base + Plus One: increase TFP growth by 1% over the base scenario.
3. Base + Plus Two: increase TFP growth by 2% over the base scenario.



Future Policy Changes & Growth Prospects

Making Government Work

- First and foremost, government effectiveness must improve in order to make any policy changes effective.
- Investor sentiment will improve by implementing 1.) a robust framework to combat corruption, 2.) time consistency policies (taxation, FDI policies), and 3.) a revamped legal framework.
- Utilizing technology in governance will improve revenue collection and counterattack any leakage in the system, particularly if taxation laws are harmonized and if the public distribution system is streamlined.

Better institutions lead to Increased productivity (A)

Increased Investments in Infrastructure

- Public and private spending must increase in order to improve basic infrastructures, including energy production and transportation. Energy self reliance would also reduce India's imports bill, which is a major component of imports.
- Government policies should be enacted to facilitate retail investment and to establish a logistics supply chain to better link farm production to the market.
- Then, investments should be made to improve farm productivity, which would free labor to engage in more productive activities. India should also invest in manufacturing facilities to utilize unskilled farm labor

Higher Investments leading to higher Capital (K)

Increase quality and skill of Labor

- Increase public spending in healthcare to improve the quality of human capital. Increase the literacy rate and strengthen the quality of primary and secondary education.
- Provide training to unskilled farm labor so they may be employable in more productive areas such as manufacturing, construction, etc.
- Emphasize high quality technical education in order to move up the value chain in services exports and maintain the comparative advantage in information technology services exports.

Higher quality Human capital (L)

Growth Prospects

- As forecasted, the majority of the growth in GDP per capita would be accounted by growth in TFP.
- Depending on the extent to which these policies are implemented, GDP per capita can range from approximately $16,000-$33,000 in 2040.
- The Base plus one case (GDP per capita at approximately $23K) seems reasonable to achieve as its GDP per capita growth rate is in between the observed historical growth rate in Y/N over 1985-2011 and 2001-2011.

Source: World Bank's World Development Indicators