

March 2017

Economy Watch

Monitoring India's macro-fiscal performance

Contents

Foreword: farm loan waivers – decentralizing fiscal indiscipline	3
Highlights.....	3
1 Growth: PMI reflects post-demonetization recovery	4
2 Inflation: rising food and fuel prices push CPI inflation upward.....	5
3 Fiscal performance: cumulated fiscal deficit up to February 2017 exceeds the annual revised target	6
4 In focus: robotics and artificial intelligence – western concerns; India’s challenges.....	8
5 Money and finance: MPC maintains status quo on repo rate.....	11
6 External sector: sharp growth in merchandise exports	13
7 Global economy: US Fed raises interest rate by 25 basis points	14
8 Index of macro imbalance: macro balance improved in 3QFY17	15
9 Appendix: capturing macro-fiscal trends.....	16

List of abbreviations:

Sr. no	Indicator	Description
1	AI	Artificial intelligence
2	bbl.	barrel
3	CAB	Current account balance
4	CPI	Consumer Price Index
5	CSO	Central Statistical Organization
6	disc.	Discrepancies
7	EMDEs	Emerging market and developing economies
8	FII	Foreign investment inflows
9	FPI	Foreign portfolio investment
10	FRBM	Fiscal Responsibility and Budget Management
11	FY	Fiscal year (April–March)
12	GFCE	Government final consumption expenditure
13	GFCF	Gross fixed capital formation
14	GST	Goods and Services Tax
15	GVA	Gross value added
16	IDS	Income Declaration Scheme
17	IEA	International Energy Agency
18	IIP	Index of industrial production
19	IMI	Index of Macro Imbalance
20	MCLR	Marginal cost of funds based lending rate
21	MGI	McKinsey Global Institute
22	m-o-m	Month-on-month
23	MPC	Monetary Policy Committee
24	NDU	Non-departmental undertaking
25	NEXP	Net exports (exports minus imports of goods and services)
26	OECD	Organization for Economic Co-operation and Development
27	OPEC	Organization of Petroleum Exporting Countries
28	PFCE	Private final consumption expenditure
29	PMI	Purchasing Managers’ Index (reference value = 50)
30	PSU	Public sector undertaking
31	WPI	Wholesale Price Index
32	y-o-y	Year on year

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Foreword: farm loan waivers – decentralizing fiscal indiscipline



The recently elected Uttar Pradesh government has announced a substantive farm loan waiver program, amounting to INR 36,359 crore, which is to be financed by floating state-level Krishi Rahat bonds. This may have a domino effect because farmers in several other states including Tamil Nadu, Punjab, Madhya Pradesh and Maharashtra are also demanding similar loan waivers. UP has undertaken this initiative at the state level as the Central Government must have indicated that its own fiscal position would not warrant undertaking such a farm loan waiver at the national level. Such a stance of the Center is only to be lauded in the context of previous large-scale loan waiver programs, which significantly eroded the Center's fiscal discipline. However, other states may find it difficult to resist the pressure from farmers in the light of UP's example. This might put pressure on the fiscal balance sheet of the state governments. The adoption of the UDAY scheme by many of the states in the last fiscal year and the subdued performance of state taxes in FY17, which may partly have been due to demonetization, had already adversely impacted states' fiscal deficit profiles. A wave of farm loan waivers might only lead to further deterioration.

The shift of the cycle of farm loan waivers being financed by the state governments from the Central Government represents a major and healthy shift in the Center's adherence to fiscal discipline. The last time such a farm loan waiver was given by the Central Government, preceding the 2009 general elections, the Center's fiscal deficit deteriorated sharply to 6.5% in 2009–10. In the context of states' receiving 42% of the Center's sharable gross tax revenues, a new era in the working of fiscal federalism has been ushered in, in which the political economy compulsions of waiving agricultural loans have logically been shifted to the state governments. The RBI Governor has also warned about erosion of fiscal discipline from this move.

The RBI, in its first Monetary Review of the new fiscal year, has retained the repo rate at 6.25% but increased the reverse repo rate to 6%. The RBI's macro assessment indicates a positive growth outlook but an upside risk to inflation due to likely pressure on food and fuel prices. The action on the reverse repo rate is aimed at squeezing out some of the excess liquidity from the banking system. The report of the FRBM Review Committee, which was submitted prior to the Union Budget of FY18, was made public on 12 April 2017. The Committee has recommended a revised glide path to reduce Centre's fiscal deficit to 2.5% by FY23. It has also recommended the constitution of a Fiscal Council and focusing on debt rather than deficit relative to GDP as the policy target.

While different sectors are recovering from the adverse impact of demonetization at different speeds, the investment cycle does not show signs of recovery yet. Monetary policy may not provide any tangible stimulus in the near future. The chances of fiscal stimulus are also limited since the transition to GST may involve short-term revenue sacrifice for the Central Government.

On the external front, India has been receiving strong foreign investment inflows and the rupee has also been appreciating recently. An appreciating rupee may not auger well for India's export competitiveness. The global export growth, although positive, has still not gathered momentum. Uncertainties due to policy shifts in the US and the UK's Brexit will continue to create an atmosphere of uncertainty, affecting emerging economies, including China and India, adversely.

The presentation of the Union Budget for FY18 one month ahead of its normal presentation time followed by the completion of all the relevant parliamentary discussions and procedures has enabled the Central Government to activate the approved budgetary expenditures right from the first day of the financial year. Growth in the first quarter of FY18 would benefit from the support to aggregate demand by this initiative of the Government. In particular, launching of the infrastructure expansion programs well ahead of the monsoon might help support the post-demonetization recovery process.

D.K. Srivastava, Chief Policy Advisor, EY India

Highlights

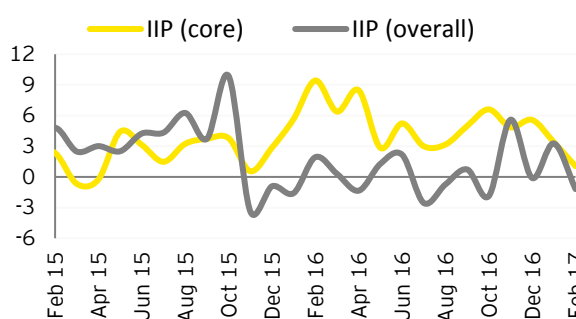
1. The RBI has left the repo rate undisturbed, maintaining its neutral stance in its April 2017 Review, but allowed the reverse repo rate to inch up to 6% so as to partially suck out the excess liquidity in the system.
2. The RBI projects slight upward movement in CPI inflation at 4.5% in 1HFY18 and 5% in 2HFY18.
3. It projects a strengthening of GVA growth at 7.4% in FY18 from 6.7% in FY17.
4. Annual CPI inflation increased to 3.7% in February and further to 3.8% in March 2017 due to a rise in consumer food and fuel inflation.
5. March PMI signals the start of post-demonetization recovery in both manufacturing and services.
6. Cumulated fiscal deficit up to February 2017 is 113.4% and cumulated revenue deficit is 142.8% of the corresponding annual revised estimates for FY17. The fiscal deficit target of 3.2% may be met, but the revenue deficit target of 2.1% is likely to be missed.
7. Credit growth remained tepid at 4.8% in February 2017. Fortnightly data up to 17 March 2017 showing y-o-y growth of 4.4% indicates that the turnaround has not gathered momentum yet.
8. FIIs data shows significant increase in inflows, which is also reflected in the rupee appreciating to 64.8 per US\$ (average) in the first week of April 2017.
9. Merchandise exports grew at 17.5% in February 2017, the highest rate in the last five years, as compared to 4.3% in the previous month.
10. The OECD projected the global growth at 3.3% in 2017 and 3.6% in 2018, which is below the historical average of around 4% in the two decades prior to the 2009 crisis.

1 Growth: PMI reflects post-demonetization recovery

A. Industrial growth: core sector output as well as IIP in February 2017 signal continued slowdown

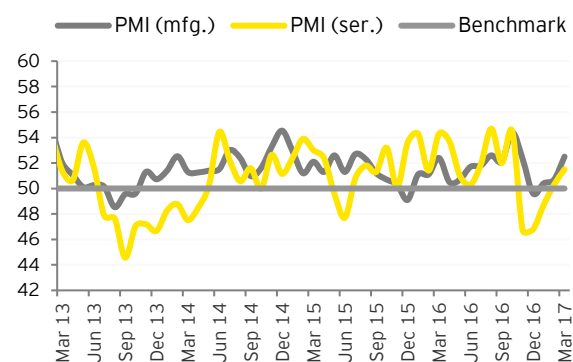
- ▶ IIP grew by 2.7% (y-o-y) in January but contracted by (-) 1.2% in February 2017.
- ▶ The manufacturing sector, which accounts for over 75% of the overall IIP, declined by (-) 2.0% in February 2017.
- ▶ As per use-based industrial classification, growth in the capital goods industry became negative at (-) 3.4% in February 2017 whereas output of consumer durables contracted by (-) 5.6%.
- ▶ Growth in the output of eight core infrastructure industries slowed to a 15-month low of 1.0% (y-o-y) in February 2017 as compared to 3.4% in January 2017. This was on account of moderation in the growth of key industries including electricity (1.5%) and steel (8.7%) and contraction in the output of petroleum refineries ((-) 2.3%), crude oil ((-) 3.4%) and cement ((-) 15.8%).

Chart 1: IIP and core IIP growth (% y-o-y)



Source: Office of the Economic Adviser, Ministry of Commerce and Industry

Chart 2: NIKKEI PMI



Source: NIKKEI PMI, Markit Economics

Growth in core sector output, having a weight of 38% in the overall IIP, fell for the second straight month to 1.0% in February 2017, pointing toward the underlying weakness in the industrial sector. IIP growth also became negative with consumer goods sector contracting by (-) 5.6%.

B. PMI: recovery in manufacturing and services in March 2017

PMI signals recovery in manufacturing as well as services, which increased to 52.5 and 51.5, respectively, in March 2017.

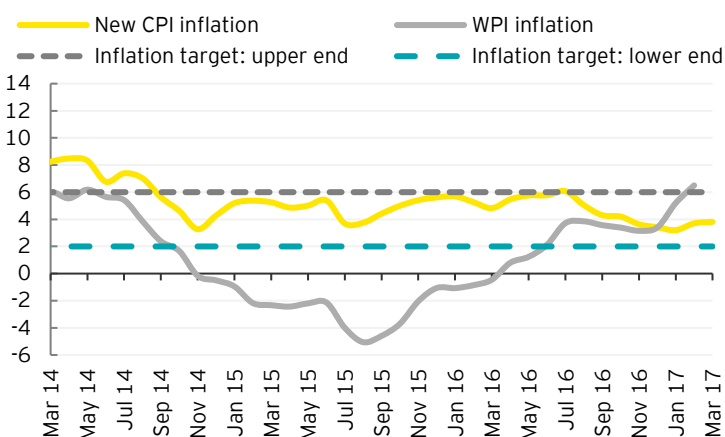
- ▶ Headline manufacturing PMI (sa) increased to a 5-month high of 52.5 in March 2017 from 50.7 in February (Chart 2). However, as for 4QFY17, the PMI average at 51.2 was the lowest since 1QFY17.
- ▶ Headline services PMI (sa) also increased to 51.5 in March 2017 from 50.3 in February. The average reading for 4QFY17 was higher at 50.2 as compared to 49.3 in 3QFY17.
- ▶ Driven by recovering activity in manufacturing and services, composite PMI Output Index (sa) increased to 52.3 in March 2017 as compared to 50.7 in February 2017.

2 Inflation: rising food and fuel prices push CPI inflation upward

Annual CPI inflation increased to 3.7% in February and 3.8% in March 2017 due to a rise in consumer food and fuel inflation.

- ▶ After declining for seven consecutive months to a historic low of 3.2% in January 2017, CPI-based inflation (Chart 3) increased to 3.7% in February and further to 3.8% in March 2017.
- ▶ Core CPI inflation (excluding food and fuel) declined to a 7-month low of 4.8% in February 2017 as compared to 5.1% in the previous month. It then rose to 4.9% in March.
- ▶ CPI-based consumer food inflation was 2.0% in February and 1.9% in March 2017 as compared to a 5-year low of 0.5% in January.
- ▶ Fuel and lighting inflation increased to 3.9% in February and further to 5.6% in March 2017 due to continuous hardening of global crude prices.
- ▶ According to the RBI, factors posing upside risks to inflation in the coming few months are the possible adverse outcome of the south west monsoon in view of the rising probability of an El Niño event around July-August, awarding of the increase in house rent allowance as recommended by the 7th CPC, one-off effects of the GST, the general government deficit, including the effect of farm loan waiver, and hardening commodity prices.

Chart 3: inflation (y-o-y; %)



According to the Monetary Policy Review on 6 March 2017, inflation in 4QFY17 would undershoot the target of 5%. It is projected to average 4.5% in 1HFY18 and 5% in 2HFY18.

Source: Ministry Of Statistics and Programme Implementation (MOSPI)

WPI inflation increased to a 39-month high of 6.5% in February 2017 from 5.2% (y-o-y) in January 2017 because of a sharp rise in the price of primary articles.

- ▶ WPI inflation for primary articles increased substantially to 5.0% in February 2017 from 1.3% in January 2017. Inflation in food articles, including vegetables, increased to 2.7% as compared to (-) 0.6% in the previous month. Inflation in non-food articles increased to a 6-month high of 6.5% while inflation in minerals reached a 59-month peak of 31.0%.
- ▶ WPI inflation for fuel and power climbed to an 8-year high of 21.0% in February 2017 as compared to 18.1% in January 2017 due to hardening global crude prices. Inflation in diesel prices reached an 11-year high of 33.1% in February 2017.
- ▶ WPI core inflation declined marginally to 2.4% in February 2017 as compared to 2.7% in January 2017.
- ▶ The divergence between CPI and WPI reached a peak of 9% points in September 2015. After that, they started to converge gradually. In January 2017, WPI crossed CPI for the first time in five years. As Chart 3 shows, the divergence has now reversed and increased to 2.8% points

3 Fiscal performance: cumulated fiscal deficit up to February 2017 exceeds the annual revised target

A. Tax and non-tax revenues

The Center’s gross tax revenues grew by 17.6% during April–February FY17, driven by robust growth in revenues from income tax, Union excise duties and service tax. Non-tax revenues contracted by (-) 1.1% during this period.

- ▶ The Center’s revenue receipts during April–February FY17 were 76.9% of the annual revised target as compared to 78.5% during the same period of FY16.
- ▶ Growth in cumulated gross tax revenues was lower at 17.6% during April–February FY17 compared to 20.7% during the corresponding period of FY16 (Chart 4). Growth in indirect taxes was at 23.4% during April–February FY17 while that in direct taxes was at 10.5%.
- ▶ Within direct taxes, income tax revenues grew by 20.9% during April–February FY17 (Chart5) as compared to 11.3% during the same period of FY16. On the other hand, growth in corporation tax revenues remained sluggish at 3.5% during April–February FY17 as compared to the corresponding value of 10.1% in FY16. For realizing the revised estimates of revenues from income tax and corporation tax for FY17, growth of 29.2% and 24%, respectively, is required in the remaining one month of this fiscal over the corresponding period of FY16.
- ▶ Among indirect taxes, Union excise duties witnessed a strong growth of 40.3% during April–February FY17, although the pace of expansion has slowed as the favorable impact of the hikes in excise duty on fuels undertaken from November 2015 to January 2016 has started to wane. Growth in service tax revenues was 21.3% during April–February FY17.
- ▶ Growth in customs duties remained subdued at 5.2% during April–February FY17 as compared to 15.7% in the corresponding period of FY16.

Chart 4: growth in cumulated gross tax revenues up to February 2017

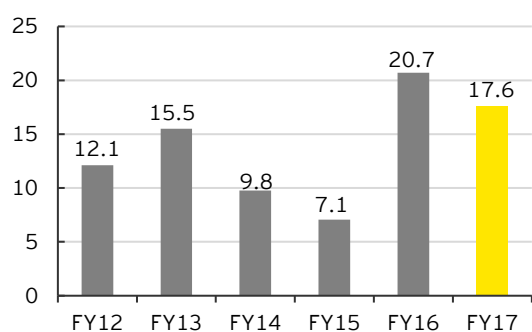
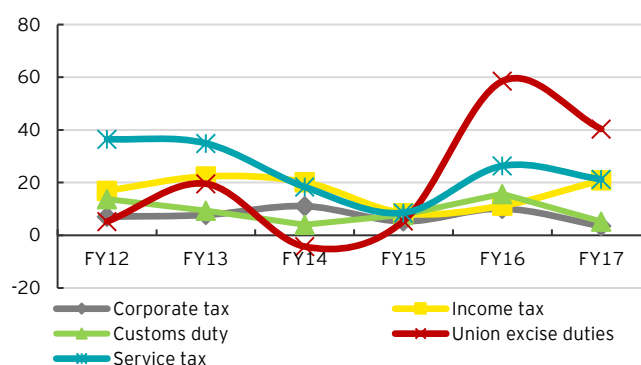


Chart 5: growth in cumulated tax revenues up to February 2017



Source: Monthly Accounts, Controller General of Accounts, Government of India

- ▶ Non-tax revenues contracted by (-) 1.1% during April–February FY17 as compared to a growth of 28.2% in the corresponding period of FY16. As a proportion of the annual revised estimate, non-tax revenues stood at 62.4% during this period as compared to 81.7% in the corresponding period of FY16.
- ▶ Disinvestment receipts stood at INR46, 246.5 crore for FY17. Thus, the revised estimate of INR45, 500 crore for FY17 as given in the Union Budget FY18 has been met.

B. Expenditures: revenue and capital

- ▶ Total expenditure grew by 12.7% during April–February FY17 as compared to the corresponding value of 6.6% in FY16.
- ▶ Growth in revenue expenditure was 15% during April–February FY17 as compared to 3% during the same period in FY16 (Chart 6). This largely reflects the impact of salary and pension revisions based on the recommendations of the 7th Pay Commission.
- ▶ The Center’s capital expenditure contracted by (-) 1.5% during April–February as compared to a growth of 36.2% in the corresponding period of FY16 (Chart 7). For realizing the revised estimates for FY17, capital expenditure must increase by 85.8% during the last month of FY17 over the corresponding period of FY16.

The Center’s revenue expenditure grew by 15% during April–February FY17, while capital expenditure contracted by (-) 1.5%.

Chart 6: growth in cumulated revenue expenditure up to February 2017

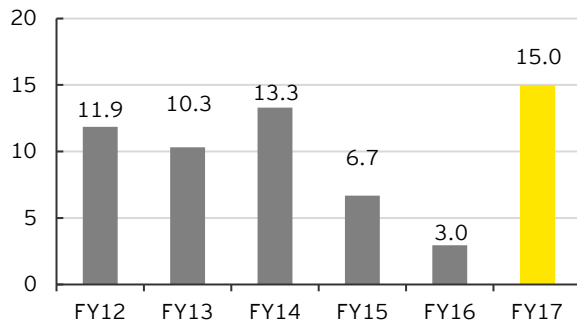
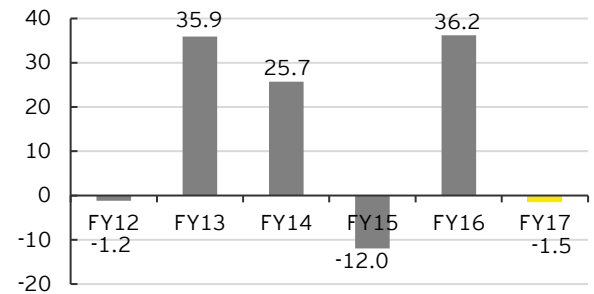


Chart 7: growth in cumulated capital expenditure up to February 2017



Source: Monthly Accounts, Controller General of Accounts, Government of India

C. Fiscal imbalance

- ▶ The Center’s fiscal deficit stood at 113.4% of the annual revised target during April–February FY17 as compared to 107.1% in the corresponding period of FY16 (Chart 8).
- ▶ The Center’s revenue deficit increased to 142.8% of the annual revised target during April–February FY17 as compared to 114.4% during the same period in FY16 (Chart 9). This marks the highest share of revenue deficit in the first 11 months of a fiscal year since FY01.

As per the revised estimates for FY17 given in Budget FY18, the fiscal deficit target of 3.5% of GDP is expected to be met. However, the revenue deficit target of 2.1% for FY17 is likely to be missed.

Chart 8: cumulated fiscal deficit up to February 2017 as a % of annual revised estimates for FY17

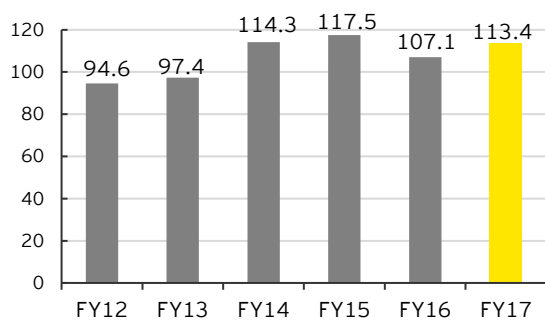
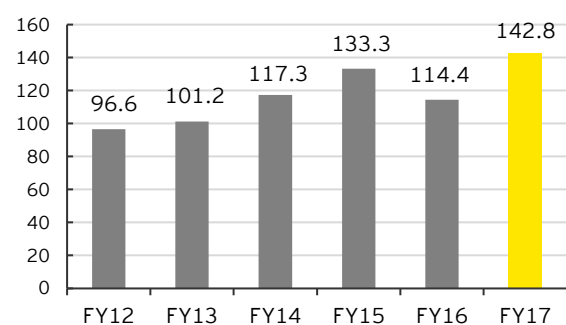


Chart 9: cumulated revenue deficit up to February 2017 as a % of annual revised estimates for FY17



Source: Monthly Accounts, Controller General of Accounts, Government of India

4 In focus: robotics and artificial intelligence – western concerns; India's challenges

There has been a sudden spurt in discussions and scholarly articles on the role of robotics¹ and AI in the developed world, voicing concerns about large job losses to new generations of robots in these economies, which are otherwise slowing down. A January 2017 McKinsey Global Institute (MGI) study titled "*A Future that Works: Automation, Employment and Productivity*" asserts that advances in robotics, AI and machine learning are ushering in a new age of automation as machines match/outperform human performance in a range of activities. It estimates that almost half the activities for which people are paid about US\$16 trillion in wages in the global economy have the potential to be automated by adapting currently demonstrated technologies, covering more than 2,000 work activities across 800 occupations. Activities most susceptible to automation involve physical activities in highly structured and predictable environments as well as the collection and processing of data. In the US, these activities make up 51% of the total activities in the economy. While such automation clearly has productivity-enhancing effects for businesses, they pose major policy challenges for finding work for humans replaced by such automation.

Advances in automation also imply that emerging economies may lose their advantage of low-cost labor as costs of automation fall. Populations in a good part of the western world as well as China have started aging. The MGI paper cited above argues that the aging and shrinking of the workforce is unprecedented in modern history. It would imply that the number of retirees may grow more than twice as fast as the employed, leaving fewer workers to support the elderly. Automation could help fill up the gap. Countries experiencing population decline/stagnation may make use of robots to help maintain living standards. On the other hand, countries with high working age population growth, including India, may have to worry about new jobs in the new machine age.

Development's history lessons: paradigm shift

Starting in the 1880s in Japan, country after country around the world including South Korea, Taiwan and China have followed a familiar pattern of development. Shifting labor from low-wage agriculture to manufacturing created jobs, leading to an increase in household incomes. Rural population urbanized at a fast pace and workers in the urbanized centers with large disposable incomes enabled an upsurge in the saving rate. This model of development based on an investment-led and export-led strategy may be rendered irrelevant by automation.

However, automation may create new opportunities for higher value manufacturing and services. Some countries could leapfrog to become active in high value-added industries and selected service sectors where robots have a low probability of replacing the human workforce.

What jobs are under threat?

A widely cited study by Carl Benedikt Frey and Michael Osborne of Oxford University published in 2013 found that 47% of jobs in America were at high risk of being "substituted by computer capital" soon. A recent Bank of America Merrill Lynch prediction says that by 2025, "the annual creative disruption impact could amount to US\$14 trillion to US\$33 trillion, including a US\$9 trillion reduction in employment cost, thanks to the AI-enabled automaton of knowledge work, cost reduction of US\$8 trillion in manufacturing and healthcare, and US\$2 trillion from efficiency gains from the deployment of self-driving cars and drones." Table 1 shows the threat to groups of jobs according to ranges of probability of their replacement by robots and AI. Jobs with the highest risk of replacement include salespersons, auditors and accountants, postal service clerks, cooks and insurance agents.

Jobs that would face the least threat from automation include healthcare social workers, dieticians and nutritionists, physicians and surgeons, medical and health services managers, nurses and pharmacists, which are all health-related services. Many others relate to education, information research scientists, multimedia artists, and animators and editors. These mostly relate to education.

The concern with machinery displacing workers is an old one. It arose first at the time of the industrial revolution. David Ricardo, in 1821, referred to it as the machinery question. But this time round, the dimensions have been significantly scaled up. The MGI study observes that AI is 300 times the scale and roughly 3,000 times the impact of the industrial revolution. The question being raised is: Will smarter machines cause mass unemployment? (The Economist, 25 June 2015, Special Report)

¹ The Czech writer Karel Capek coined the word "robot" almost a century ago in a 1920 play about factory androids that each do the work of two and a half humans at a fraction of the cost.

Table 1: group of jobs according to ranges of probability of their replacement by robots and AI

Probability range	Selected occupation
0 - 0.1	Healthcare Social Workers, Dietitians and Nutritionists, Physicians and Surgeons, Dentists, General, Human Resources Managers, Medical and Health Services Managers, Clergy, Educational, Guidance, School, and Vocational Counsellors, Registered Nurses, Mechanical Engineers, Pharmacists, Marketing Managers, Engineers, Biological Scientists, All Other, Multimedia Artists and Animators, Computer and Information Research Scientists, Chief Executives, Civil Engineers, Photographers, Interior Designers, Industrial Engineers, Database Administrators, Purchasing Managers, Lawyers, Veterinarians, Writers and Authors, Political Scientists, Editors, Financial Managers, Electrical Engineers, Chemists
> 0.1 - 0.2	Software Developers, Systems Software, Electricians, Desktop Publishers, Public Relations Specialists, Commercial Divers
> 0.2 - 0.3	Actuaries, Statisticians, Survey Researchers
> 0.3 - 0.4	Plumbers, Pipefitters, Steamfitters, Mechanical Engineering Technicians
> 0.4 - 0.5	Economists, Historians, Computer Programmers
> 0.5 - 0.6	Massage Therapists, Commercial Pilots, Chemical Technicians
> 0.6 - 0.7	Librarians, Statistical Assistants, Bus Drivers, Transit and Intercity
> 0.7 - 0.8	Carpenters, Painters, Construction and Maintenance, Bartenders
> 0.8 - 0.9	Word Processors and Typists, Printing Press Operators, Tool and Die Makers, Security Guards, Power Plant Operators, Real Estate Sales Agents, Construction Laborers, Bakers, Medical Transcriptionists, Technical Writers, Taxi Drivers, Chauffeurs
> 0.9 - 1	Insurance Sales Agents, Retail Salespersons, Accountants and Auditors, Waiters and Waitresses, Budget Analysts, Cement Masons and Concrete Finishers, Bicycle Repairers, Electrical and Electronic Equipment Assemblers, Postal Service Clerks, Cooks, Restaurant, Cashiers, Real Estate Brokers, Tellers, Umpires, Referees, and Other Sports Officials, Insurance Claims and Policy Processing Clerks, Data Entry Keyers, Telemarketers

Source: Based on Frey and Osborne (September 2013), 'The Future of Employment: How Susceptible are Jobs to Computerization'

Taxing robots

EU lawmakers had considered a proposal to tax robots, although the idea was finally rejected by the legislators. Taxing robots is an idea endorsed by Bill Gates. Coming from a person who benefited considerably from the use of advanced technology, this idea is attracting more and more attention. Since robots increase productivity and profits, the income tax on corporate profits would in any case tax the contribution of the robots to those profits. But the idea seems to advocate an extra tax on the use of robots itself so that the funds can be used for compensating or training the workers who would be displaced. Those opposed to the idea argue that such a tax would impede growth and constrain increase in productivity in developed countries where growth would otherwise be slowing down. In any case, robots may only be replacing the aging and falling populations that is not available for work. Furthermore, the use of AI may come in many forms other than robots.

Recent slowdown of global growth and productivity

Over the past decade, there have been sharp slowdowns in measured output per worker and total factor productivity – which can be seen as a measure of innovation. In advanced economies, for example, productivity growth has dropped to 0.3%, down from a pre-crisis average of about 1%. This trend has also affected many emerging and developing countries, including China.

Table 2: global economy – prospects of long-term growth			
Sources of growth	Performance (1964 to 2014)	Prospects (next 50 years)	
	% points		
Employment growth	1.7	0.3*	
Productivity growth	1.8	?	3.2**
Global GDP growth	3.5		3.5
* due to ageing population			
** productivity needs to increase by 80% over past achievement to achieve a 3.5% growth			

Source: McKinsey Report titled 'Global growth: Can productivity save the day in an aging world', January 2015

Table 2 shows that growth performance averaging 3.5% during the past 50 years (1964 to 2014) was due to employment and productivity growth at 1.7% and 1.8% points, respectively. If the contribution of employment in the next 50 years falls to 0.3% points and productivity also falls, there will be a considerable erosion of global growth prospects.

Another decade of weak productivity growth would seriously erode the rise in global living standards. Slower growth could also make reducing excessive inequality and sustaining private debt and public expenditures more difficult.

In a recent speech by Christine Lagarde, IMF (3 April 2017) titled *“Reinvigorating Productivity Growth,”* she pointed to three major reasons for the productivity growth slowdown:

“One is population aging in most advanced economies. Research suggests that worker skills tend to increase until a certain age and then to decline – with negative effects on innovation and productivity, although this remains an issue still subject to debate. A second headwind is the slowdown in global trade. We know from well-established research that trade encourages firms to invest in new technologies and more efficient business practices. It also encourages the sharing of new technologies across borders. The lack of global demand and the gradual increase in trade restrictions have led to a slowdown in trade growth in recent years. This, in turn, has hurt the productivity and living standards of all citizens. A third productivity headwind is the unresolved legacy of the global financial crisis in some major economies.”

The combination of aging population, low productivity growth and displacement of human labor can lead to a substantial fall in consumption growth. Growth in developed economies may then be constrained by growth of consumption. Since robots may increase the profitability of businesses, they may further accentuate inequalities in the economy. Robots can themselves consume only energy and not the general basket of goods and services consumed by the humans. As such, the future of the developed world may well be characterized by slow growing economies with high income inequalities. Trade in goods is also likely to come down as a result of the advancement of AI and 3D printing. Normally where goods used to be exported, only information would need to travel and the goods would be produced in the destination country. Overall export growth would also come down, although services export growth would remain significantly higher than that of goods.

India: re-strategizing growth

In such a scenario, India will have to re-align its growth strategy as it continues to reap the benefit of its demographic dividend and its working age population will continue to grow at a fast pace. India will find a global economy where export growth would have significantly slowed down and the potential of exporting services would be available in only a limited number of sectors. The sectors that would still grow at a fast pace would generally relate to services such as IT, management, healthcare services, education and entertainment. In particular, jobs listed with low probability of replacement in Table 1 are the jobs for which India should prepare its explosively growing working-age population; they would need to be trained and educated. A massive investment in health and education now will pay off in the next few decades. This will be a challenge unless India’s tax-GDP ratio increases significantly and soon.

Chart 10: share of working age population in total population – India and China (%)

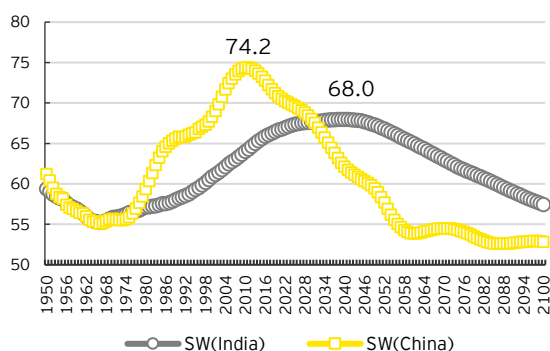
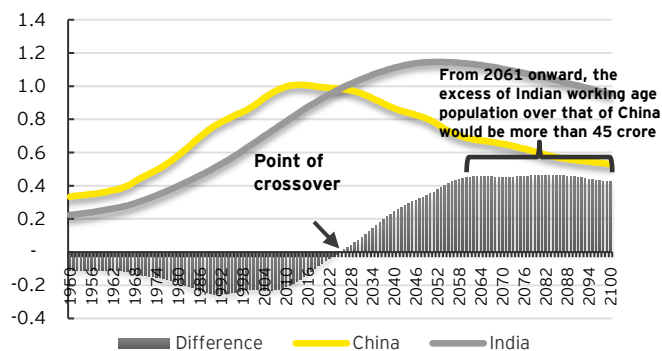


Chart 11: working age population in total population – India and China (billion)



Source: World Population Prospects, United Nations, 2015

As indicated by Chart 10, the share of working population (15-65 years) in total population in India is expected to peak at 68% around 2040 while in China it peaked at 74% around 2010. From 2023 onward, India will have, in absolute numbers, a larger number of working age people than China. The absolute number of working age people in India will exceed that of China at its peak by margins close to 0.5 billion. This excess will last up to 2100 and beyond. Without massive investment and skill training, the potential asset of fast growing working age population could well become a large liability of social unrest.

5 Money and finance: MPC maintains status quo on repo rate

A. Monetary sector

i. Monetary policy

- ▶ In the monetary policy review held on 6 April 2017, the RBI's Monetary Policy Committee unanimously voted to retain the policy repo rate at 6.25% (Chart 12). Heightened risk to India's inflation trajectory, both from domestic as well as external sources, persuaded the MPC to keep the repo rate unchanged in this review while maintaining a neutral stance.
- ▶ The RBI, however, increased its reverse repo rate to 6.0% from 5.75% consequently narrowing the gap between the repo and reverse repo rates to 25 basis points. This move is expected to absorb excess liquidity from the system.

Chart 12: movements in repo rate

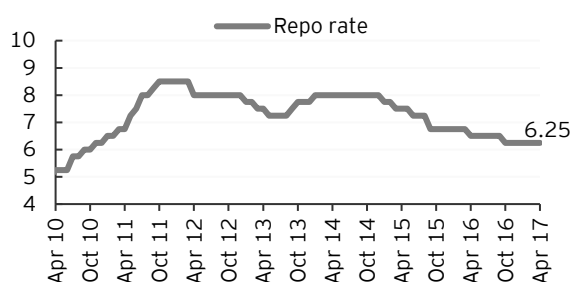
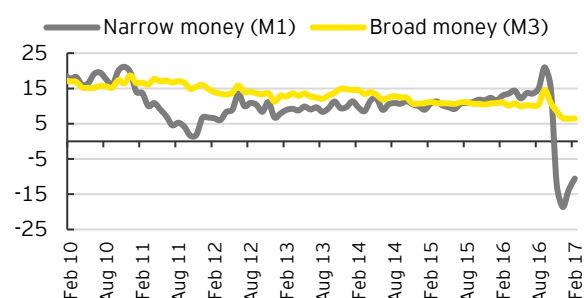


Chart 13: growth in narrow and broad money



Source: Data Base on Indian Economy, RBI

The RBI maintained its policy repo rate unchanged at 6.25% in its April 2017 policy review as risks to inflation persisted. The reverse repo rate was increased to 6.0% to absorb excess liquidity from the system.

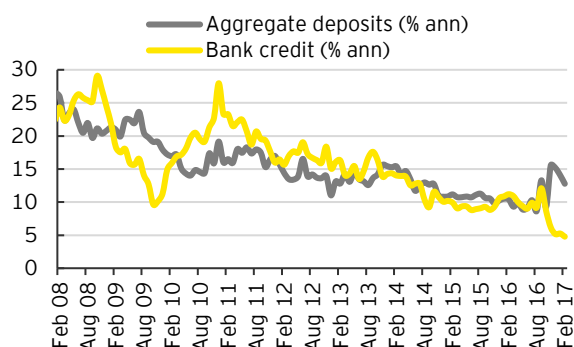
ii. Money stock

- ▶ Broad money (M_3) grew by 6.5% in February 2017, marginally up from 6.4% (y-o-y) in January 2017 (Table A4). Growth in time deposits, accounting for over 76% of the broad money stock, slowed to 11.2% in February 2017 from 11.9% in January 2017.
- ▶ Narrow money (M_1) contracted at a slower pace of (-) 10.6% in February 2017 as compared to (-) 13.7% in January 2017 (Chart 13). Growth in currency continued to contract for the fourth consecutive month as it fell to (-) 30.3% in February 2017. It is evident that the pace of re-monetization is rather slow as approximately only 57% of the total demonetized currency had been re-monetized by the end of February 2017.

iii. Aggregate credit and deposits

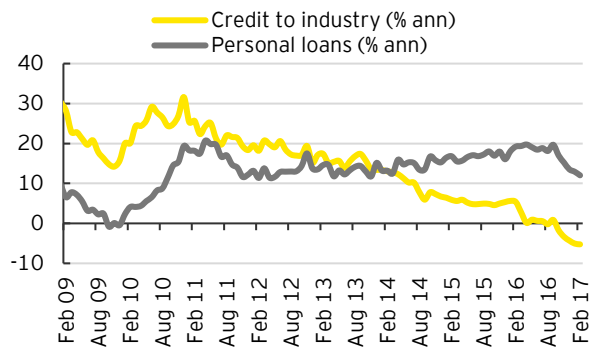
- ▶ Growth in bank credit fell to a historic low of 4.8% in February 2017 from 5.3% in January 2017 (Chart 14). Non-food credit grew at a slower pace of 4.9% in February 2017 as compared to 5.3% in January 2017, while food credit contracted to (-) 2.1% from 2.3% in January 2017.
- ▶ The y-o-y growth of personal loans, a key driver of non-food credit growth, continued to slide further as it fell to a 39-month low of 12.0% in February 2017 from 12.9% in January 2017 (Chart 15). Credit to industries continued its contractionary trend for the fifth straight month as it fell to (-) 5.2% in February 2017 from (-) 5.1% in January 2017.
- ▶ Growth in aggregate bank deposits slowed further to 12.8% in February 2017 from 14.1% (y-o-y) in January 2017.

Chart 14: growth in credit and deposits



Source: Data Base on Indian Economy, RBI

Chart 15: growth in industrial and personal loans



Source: Data Base on Indian Economy, RBI

B. Financial sector

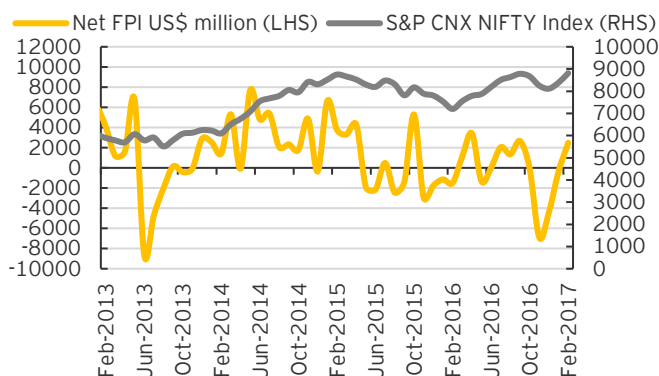
i. Interest rates

- ▶ The MCLR was maintained at 7.75% in February 2017. It had been lowered in January 2017 from 8.65% in December 2016. Since its introduction in April 2016, the MCLR rate has been cut down by a total of 1.20 basis points.
- ▶ Banks continued to maintain the interest rates on term deposits (>1 year) at 6.75% in both January and February 2017 as compared to 6.79% in December 2016.
- ▶ The average yield on 10-year Government bonds increased for the second consecutive month. Reaching to 6.98% in February 2017 from 6.79% in January, it inched closer to the 7% mark. Bond yields were influenced by heightened risks to India's inflation trajectory as pointed out by the RBI in its April 2017 Monetary Policy Review.

ii. FPI and stock market

- ▶ The benchmark S&P NIFTY increased for the second straight month to 8,813 points in February 2017 gaining nearly 427 points as compared to the average index value of 8,386 points in January 2017 (Chart 16). Improvement in the stock market performance was largely driven by positive foreign portfolio inflows.
- ▶ As per provisional data, overall FII inflows stood at US\$3.4 billion in February similar to the inflows seen in January 2017. After three consecutive months of outflows, net FPIs turned positive as the inflows reached US\$2.5 billion in February 2017. This was primarily on account of reduced global risk aversion, better-than-expected corporate earnings in 3QFY17 and clarity on FPI taxation provided by the Union Budget FY18. Meanwhile, net FDI inflows moderated to US\$0.9 billion in February 2017 from US\$3.8 billion in January 2017.

Chart 16: Stock market movement



6 External sector: sharp growth in merchandise exports

A. Current account balance

The CAB as a percentage of GDP deteriorated to (-) 1.4% in 3QFY17 (Table 3, Chart 18) from (-) 0.6% in the previous quarter. Merchandise trade balance worsened to (-) US\$33.3 billion in 3QFY17 as compared to (-) US\$25.6 billion in 2QFY17. Services balance improved marginally to US\$17.6 billion as compared to US\$16.3 billion in the previous quarter. According to the RBI, the current account deficit for FY17 is likely to remain muted at less than 1% of GDP.

Table 3: current account balance (US\$ billion)

	CAB (- deficit/+surplus) (US\$ billion)	CAB as a % of nominal GDP	Goods account net (US\$ billion)	Services account net (US\$ billion)	Income account net (US\$ billion)	Transfers net (US\$ billion)
FY13	-88.2	-4.8	-195.7	64.9	-21.5	64.0
FY14	-32.4	-1.7	-147.6	73.0	-23.0	65.3
FY15	-26.8	-1.3	-144.9	76.6	-24.1	65.7
FY16	-22.0	-1.0	-130.1	53.7	-17.8	47.7
4QFY16	-0.3	-0.1	-24.8	16.1	-6.6	15.1
1QFY17	-0.3	-0.1	-23.8	15.8	-6.2	14.2
2QFY17	-3.4	-0.6	-25.6	16.3	-7.9	14.0
3QFY17	-7.9	-1.4	-33.3	17.6	-6.2	14.0

Source: Database on Indian Economy, RBI

B. Merchandise trade and exchange rate

- ▶ Merchandise exports grew at 17.5% in February 2017, the highest rate in the last five years, as compared to 4.3% in the previous month (Chart 17).
- ▶ The increase (y-o-y) was primarily due to a rise in exports of engineering goods and petroleum products, which witnessed a growth of 47.3% and 27.6%, respectively, in February. These together contributed 12.8% points to growth of the overall exports. Growth in the exports of gems and jewelry turned positive at 2.3% for the first time in four months.
- ▶ Growth (y-o-y) in overall imports doubled to 21.8% in February 2017 as compared to 10.7% in January 2017.
- ▶ Growth (y-o-y) in oil imports remained at a 5-year high of 60.0% in February 2017 as compared to 61.1% in the previous month contributing 10.5% points to the overall import growth. Growth in gold imports rose sharply to 147.6% in February as compared to a contraction of (-) 29.9% in January 2017.
- ▶ Due to a sharper rise (m-o-m basis) in exports as compared to imports in absolute terms, India's merchandise trade deficit declined marginally to US\$8.9 billion as compared to US\$9.8 billion in January 2017.
- ▶ The Indian rupee strengthened to INR67.0 per US\$1 in February 2017 from INR68.1 per US\$1 in January 2017.

Chart 17: developments in merchandise trade

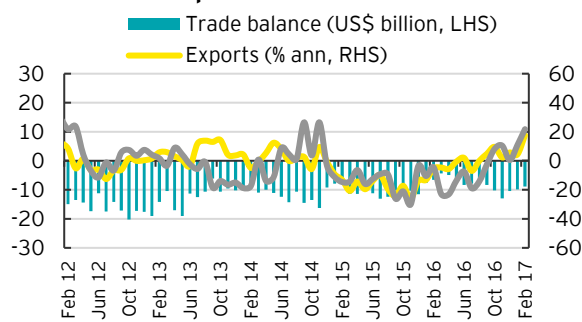
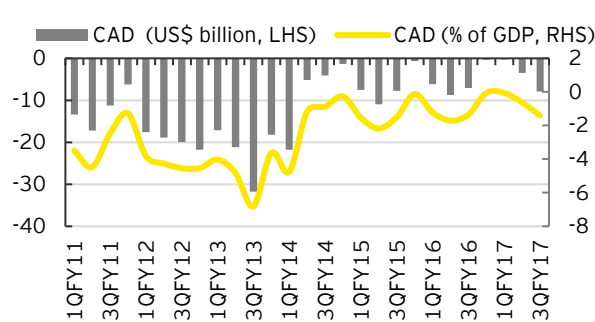


Chart 18: CAD



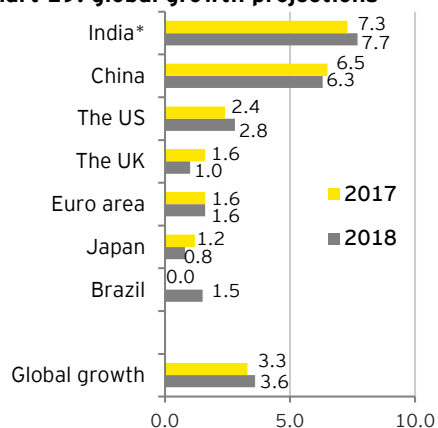
7 Global economy: US Fed raises interest rate by 25 basis points

A. Global growth outlook

- ▶ The OECD projected the global growth to increase from just under 3% in 2016, the slowest pace since 2009, to 3.3% in 2017 and 3.6% in 2018 (Chart 19). Ongoing and projected fiscal initiatives in China and the US, easier stance in the Euro area and initiatives in other economies such as Canada are expected to boost private economic activity and push up global demand. However, global growth would still be below the historical average of around 4% in the last two decades prior to the crisis.
- ▶ GDP in the US is projected to grow by 2.4% in 2017 and 2.8% in 2018 supported by anticipated fiscal expansion despite higher long-term interest rates and appreciation of the US dollar. The US Fed raised the target range for the federal funds rate to 0.75 to 1% in March 2017 as inflation moved closer to the longer-run target of 2% in recent quarters and job gains remained modest.
- ▶ Growth in the Euro area is projected at 1.6% in 2017 and 2018 supported by accommodative monetary policy and modest fiscal easing. In the UK, GDP growth is projected at 1.6% in 2017, with a decline to 1% in 2018 due to rising inflation, thereby reducing real incomes and consumption and weak business investment.
- ▶ In Japan, industrial growth and exports have strengthened due to the depreciation of yen, but consumption spending remained subdued. Fiscal easing will help GDP growth pick up to 1.2% in 2017 but with consolidation to be resumed in 2018, growth prospects will depend on the extent to which wage growth picks up from its current low rate.
- ▶ Growth in China is projected at 6.5% in 2017 and 6.3% in 2018. The Chinese authorities have recently announced a series of policy measures to curb growing financial vulnerabilities such as raising money market interest rates to mitigate capital outflows and expanding the debt-for-equity program for containing corporate debt. Higher commodity prices and easing inflation are supporting a recovery from deep recessions in Brazil and Russia.

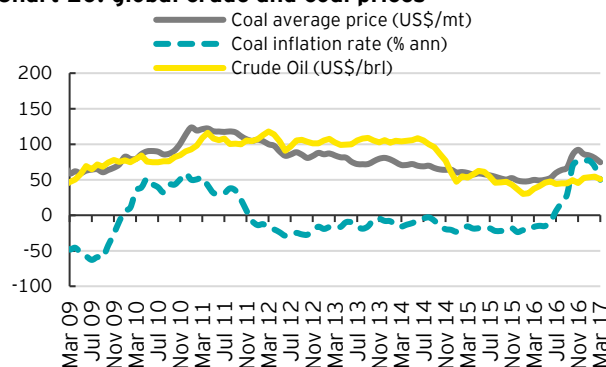
The OECD has projected global growth at 3.3% in 2017 and 3.6% in 2018, which is below the historical average of around 4% in the two decades prior to the 2009 crisis

Chart 19: global growth projections



Source: OECD Interim Economic Outlook, March 2017
*estimate/ forecast pertains to fiscal year

Chart 20: global crude and coal prices



Source: World Bank, Pinksheet

B. Global energy prices

- ▶ Global crude prices, after increasing for three consecutive months, dropped to US\$ 50.9/bbl in March 2017 from US\$ 54.4/bbl in February (Chart 20) because of the expected increase in supply by the US and the vast amount of past supply. In IEA's assessment, global oil price has been stuck in a narrow range since the conclusion of the OPEC/non-OPEC production accords in mid-December. It would take time for the full impact of the supply cuts under the output reduction agreement to be felt.
- ▶ Average global coal prices declined for the fourth successive month to US\$74.5/mt in March 2017 from US\$81.2/mt in February. After reaching a peak of US\$92/mt in November 2016, average coal prices declined by 23.5% till March 2017.

8 Index of macro imbalance: macro balance improved in 3QFY17

India's macro imbalance reduced in 3QFY17 as two components of the index, namely, the Center's fiscal deficit and CPI inflation, were lower than their respective benchmarks.

- ▶ This IMI is obtained by adding the percentage deviation of inflation rate (based on new CPI 2011-12=100), fiscal deficit (as a percentage of GDP) and current account deficit (as a percentage of GDP) from their respective benchmarks of 4% of GDP, 3% of GDP and 1.3% of GDP². All three components of IMI have been given equal weight (33.33%).
- ▶ The state of "balance" is judged by a value of "0." An index value >0 indicates the presence of imbalance in the economy. In considering the percentage deviation of each of the indicators from its selected norm, only the positive deviations are taken. Negative deviations are equated to zero to ensure that negative and positive deviations across indices are not canceled out.
- ▶ The data for new CPI is available from 4QFY11. The IMI has been constructed from 4QFY12. The IMI broadly remained high from 4QFY12 to 2QFY15. It reached a peak of 156.3 during 1QFY14 as the percentage deviation of all the three components was significantly high. Since 2QFY14, the current account deficit has not contributed to the imbalance as the CAD relative to GDP has stayed below the benchmark level. The seasonality of the index, especially during the first quarter of each year, is largely on account of seasonality in the Center's fiscal deficit. Given this seasonality, it is relevant to consider changes on a quarterly basis, year-on-year.
- ▶ On comparison of quarterly y-o-y change in the index of macro imbalance, there is a sharp fall in 3QFY17 as compared to 3QFY16 largely on account of CPI inflation and the Center's fiscal deficit, which remained below their respective benchmarks (Chart 21). In 3QFY17, the fiscal deficit sharply narrowed to 1.4% of GDP and CPI inflation was at 3.7%. However, the CAD widened to 1.4% of GDP, staying above its benchmark level. (Chart 22)

Chart 21: IMI (Quarterly)

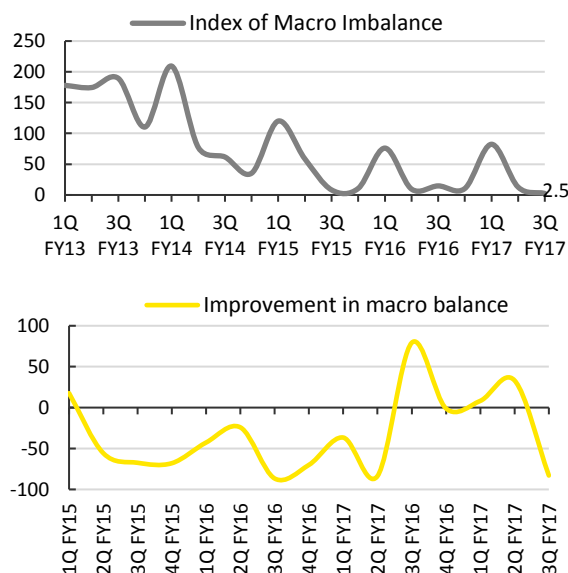
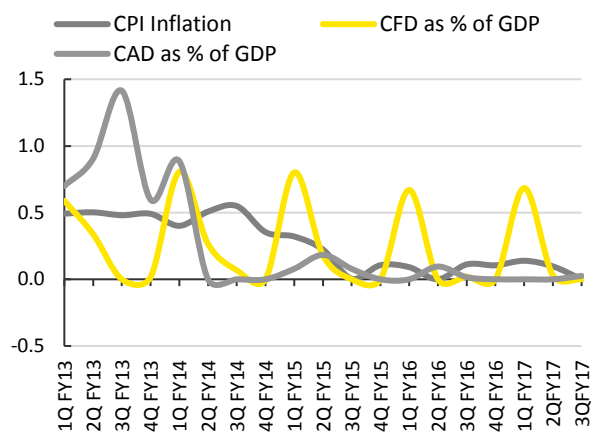


Chart 22: CAD as % of GDP, CFD as % of GDP and CPI inflation



Source (Basic data): RBI, MOSPI and EY estimates

² Rangarajan, C (2016): "Can India grow at 8 to 9 per cent?" The Hindu, <http://www.thehindu.com/opinion/lead/can-india-grow-at-8-to-9-per-cent/article8596824.ece>, Accessed on 17 May 2016.

9 Appendix: capturing macro-fiscal trends

Table A1: industrial growth indicators (annual, quarterly and monthly growth rates, y-o-y)

Fiscal year/quarter/month	IIP	Mining	Manufacturing	Electricity	Core sector IIP	Fiscal year/quarter/month	PMI mfg.	PMI ser.
	% change y-o-y							
FY14	-0.1	-0.6	-0.8	6.1	4.2	FY14	50.5	48.5
FY15	2.8	1.5	2.3	8.4	4.5	FY15	52.2	51.7
FY16	2.4	2.2	2.0	5.7	3.4	FY16	51.3	51.7
FY16	2.4	2.2	2.0	5.7	3.4	FY17	51.6	51.0
4Q FY16	0.2	2.2	-1.1	9.3	5.9	1QFY17	51.0	51.7
1Q FY17	0.7	2.5	-0.6	9.0	5.4	2QFY17	52.2	52.9
2Q FY17	-0.9	-2.9	-1.0	1.4	3.7	3QFY17	52.1	49.3
3Q FY17	1.0	2.8	0.2	5.2	5.7	4QFY17	51.2	50.2
Nov-16	5.6	4.0	5.4	8.9	4.9	Dec-16	49.6	46.8
Dec-16	-0.1	5.5	-1.7	6.3	5.6	Jan-17	50.4	48.7
Jan-17	3.3	5.3	2.9	3.9	3.4	Feb-17	50.7	50.3
Feb-17	-1.2	3.3	-2.0	0.3	1.0	Mar-17	52.5	51.5

Source: Office of the Economic Adviser- Ministry of Commerce and Industry and NIKKEI PMI-Markit Economics

Table A2: inflation indicators (annual, quarterly and monthly growth rates, y-o-y)

Fiscal year/quarter/month	CPI	Food & beverage	Fuel & lighting	WPI	Food articles	Mfg. products	Fuel & power
	% change y-o-y			% change y-o-y			
FY13	9.9	11.2	9.7	7.4	9.9	5.4	10.3
FY14	9.4	11.9	7.7	6.0	12.8	3.0	10.2
FY15	5.9	6.5	4.2	2.0	6.1	2.4	-0.9
FY16	4.9	5.1	5.3	-2.5	3.3	-1.1	-11.6
4QFY16	5.3	5.8	4.4	-0.8	4.8	-0.5	-8.4
1QFY17	5.7	7.0	2.9	1.1	6.9	1.0	-4.9
2QFY17	5.1	6.0	2.8	3.8	9.3	2.3	2.0
3QFY17	3.7	2.8	3.1	3.5	2.8	3.2	6.7
Nov-16	3.6	2.6	2.8	3.2	1.5	3.2	7.1
Dec-16	3.4	2.4	3.8	3.4	-0.7	3.7	8.7
Jan-17	3.2	1.3	3.4	5.2	-0.6	4.0	18.1
Feb-17	3.7	2.5	3.9	6.5	2.7	3.7	21.0

Source: Office of the Economic Adviser, Ministry of Commerce and Industry and MOSPI

Table A3: fiscal indicators (annual growth rates, cumulated monthly growth rates, y-o-y)

Fiscal year/month	Gross tax revenue	Corporate tax	Income tax	Custom duty	Excise duty	Service tax	Fiscal deficit	Revenue deficit
	% change y-o-y						% of GDP	% of GDP
FY15	9.3	8.7	8.7	9.2	11.6	8.6	4.0	2.9
FY16	17.0	6.0	8.5	11.9	51.9	25.8	3.9	2.5
FY17 (RE)	17.0	9.0	22.8	3.2	34.5	17.1	3.5	2.1
FY18 (BE)	12.2	9.1	24.9	12.9	5.0	11.1	3.2	1.9
Cumulated growth (% y-o-y)							% of budget target	
Jul-16	26.7	1.1	48.2	8.7	55.6	26.1	73.7	93.1
Aug-16	21.9	-1.4	31.9	6.5	50.8	24.4	76.4	91.8
Sep-16	16.6	2.3	17.8	5.3	47.9	22.8	83.9	92.1
Oct-16	18.0	4.5	19.3	4.9	46.4	24.5	79.3	92.6
Nov-16	21.5	9.0	20.9	6.8	46.0	27.1	85.8	98.4
Dec-16	18.3	4.8	20.5	4.9	43.7	25.0	93.8 (RE)	113.9 (RE)
Jan-17	17.7	3.2	19.7	5.2	42.9	23.3	105.6 (RE)	130.2 (RE)
Feb-17	17.6	3.5	20.9	5.2	40.3	21.3	113.4 (RE)	142.8 (RE)

Source: Monthly Accounts, Controller General of Accounts-Government of India, Union Budget Documents

Table A4: monetary and financial indicators (annual, quarterly and monthly growth rates, y-o-y)

Fiscal year/month	Repo rate (end of period)	Fiscal year/quarter/month	M1	M3	Bank credit	Agg. deposits	10 yr. Govt. B Yield	Net FDI	Net FPI	FX reserves
	%		% change y-o-y				%	US\$ billion	US\$ billion	US\$ billion
FY14	8.00	FY14	8.5	13.4	14.9	14.2	8.4	19.8	26.9	292.0
FY15	7.50	FY15	11.3	10.9	11.0	12.1	8.3	21.6	4.8	304.2
FY16	6.75	FY16	13.5	10.1	9.7	10.5	7.7	31.3	42.2	341.6
FY17	6.25	FY16	13.5	10.1	9.7	10.5	7.7	36.0	-4.1	355.6
Sep-16	6.50	4Q FY16	13.5	10.1	11.0	10.1	7.6	8.8	-1.5	355.6
Oct-16	6.25	1Q FY17	13.7	10.3	9.5	9.3	7.5	4.1	2.1	360.8
Nov-16	6.25	2Q FY17	21.0	14.6	10.4	10.7	7.0	17.2	6.1	372.0
Dec-16	6.25	3Q FY17	-18.6	6.6	6.7	13.3	6.6	9.6	-11.4	360.3
Jan-17	6.25	Nov-16	-12.3	8.5	6.2	15.6	6.6	3.6	-6.9	365.3
Feb-17	6.25	Dec-16	-18.6	6.6	5.1	15.2	6.5	2.0	-4.4	360.3
Mar-17	6.25	Jan-17	-13.7	6.4	5.3	14.1	6.8	3.8	-0.4	361.6
Apr-17	6.25	Feb-17	-10.6	6.5	4.8	12.8	7.0	0.9	2.5	362.8

Source: Database on Indian Economy-RBI

Table A5: external trade and global growth

Fiscal year/quarter/month	External trade indicators (annual, quarterly and monthly growth rates)						Calendar year	Global growth (annual)		
	Exports	Imports	Trade balance	Ex. rate (avg.)	Crude prices (avg.)	Coal prices (avg.)		World GDP	Adv. econ.	Emer. econ.
	% change y-o-y		US\$ billion	INR/US\$	US\$/mt			% change y-o-y		
FY13	-1.8	0.3	-190.3	54.5	103.2	86.6	2008	3.0	0.1	5.8
FY14	4.7	-8.3	-135.8	60.9	103.7	76.1	2009	-0.1	-3.4	2.9
FY15	-1.3	-0.5	-137.7	61.2	83.2	65.9	2010	5.4	3.1	7.5
FY16	-15.8	-15.4	-117.7	65.5	46.0	52.7	2011	4.2	1.7	6.3
4QFY16	-7.8	-13.3	-19.2	66.9	32.7	48.4	2012	3.5	1.2	5.3
1QFY17	-1.4	-14.7	-19.1	67.0	44.8	50.4	2013	3.3	1.2	5.0
2QFY17	-0.9	-12.2	-23.7	67.5	44.7	63.5	2014	3.4	1.9	4.6
3QFY17	1.0	-1.4	-33.5	68.1	49.1	87.7	2015	3.2	2.1	4.0
Nov-16	2.3	10.4	-13.0	67.6	49.3	85.2	2016*	3.1	1.6	4.1
Dec-16	5.7	0.5	-10.4	67.9	45.3	92.0	2017*	3.4	1.9	4.5
Jan-17	4.3	10.7	-9.8	68.1	52.6	86.0	2018*	3.6	2.0	4.8
Feb-17	17.5	21.8	-8.9	67.0	53.6	84.2	2019	3.7	1.8	5.0

Source: Database on Indian Economy- RBI, Pink Sheet-World Bank and IMF World Economic Outlook October 2016; * Indicates forecasted data (IMF-WEO Update January 2017)

Table A6: macroeconomic aggregates (annual and quarterly growth rates, % change y-o-y)

Fiscal year/quarter	Expenditure components						Output: aggregate and selected sectors			
	GDP (Real)	PCE	GCE	GFCF	EX	IM	GVA	Agri.	Ind.	Serv.
FY14 (3rd RE)	6.5	7.4	0.6	1.8	7.8	-8.1	6.2	5.6	4.2	7.7
FY15 (2nd RE)	7.2	6.8	9.4	4.1	1.7	0.8	6.9	-0.3	6.9	9.5
FY16 (1st RE)	7.9	7.3	2.9	6.1	-5.4	-5.9	7.8	0.8	8.2	9.8
FY17 (2nd AE)	7.1	7.2	17.0	0.6	2.3	-1.2	6.7	4.4	5.8	7.9
3QFY15	6.1	2.7	29.5	1.3	2.0	5.7	6.3	-1.7	3.6	11.9
4QFY15	6.7	6.6	-3.3	5.4	-6.3	-6.1	6.2	-1.7	5.7	9.3
1QFY16	7.8	4.9	0.5	9.6	-5.7	-5.2	7.8	2.6	7.4	9.5
2QFY16	8.4	6.7	3.9	12.4	-4.3	-3.6	8.4	2.3	7.4	10.4
3QFY16	6.9	6.8	3.7	3.2	-9.0	-10.2	7.0	-2.2	9.5	9.4
4QFY16	7.9	8.3	2.9	-1.9	-1.9	-1.6	7.4	2.3	7.9	8.7
1QFY17	7.2	7.2	15.5	-2.2	2.1	-2.7	6.9	1.9	6.1	8.8
2QFY17	7.4	5.1	15.2	-5.3	-0.9	-7.4	6.7	3.8	5.1	8.2
3QFY17	7.0	10.1	19.9	3.5	3.4	4.5	6.6	6.0	6.6	6.8

Source: National Accounts Statistics, MOSPI

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