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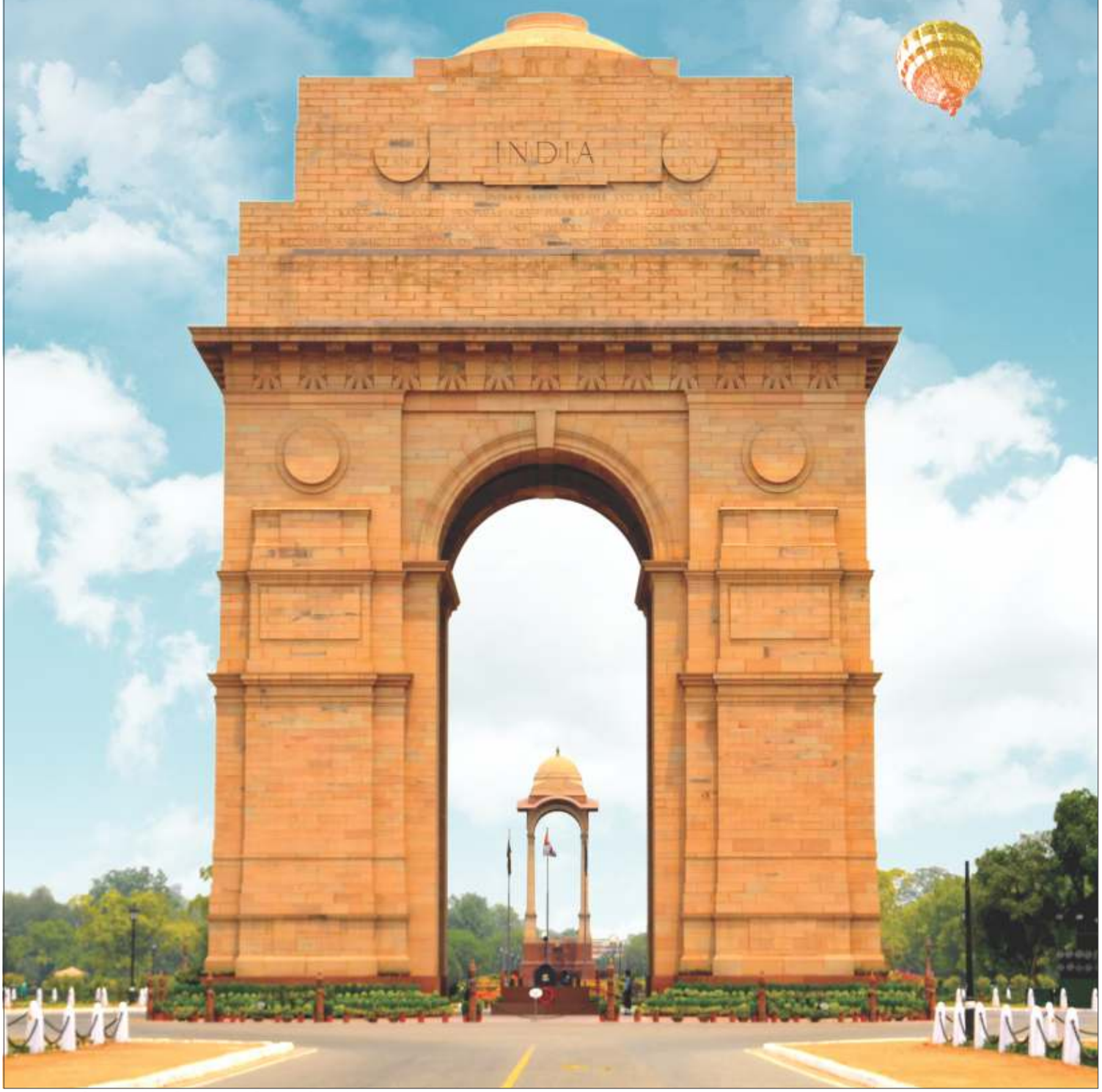
INDIAN PETROCHEMICAL INDUSTRY

COUNTRY PAPER FROM INDIA

ASIA PETROCHEMICAL INDUSTRY CONFERENCE

Raffles City Convention Centre, Singapore 19th-20th May'2016



INDIAN PETROCHEMICAL INDUSTRY

COUNTRY PAPER FROM INDIA

Review of 2015-16 & Outlook for 2016-17

CPMA

Chemicals & Petrochemicals
Manufactures' Association

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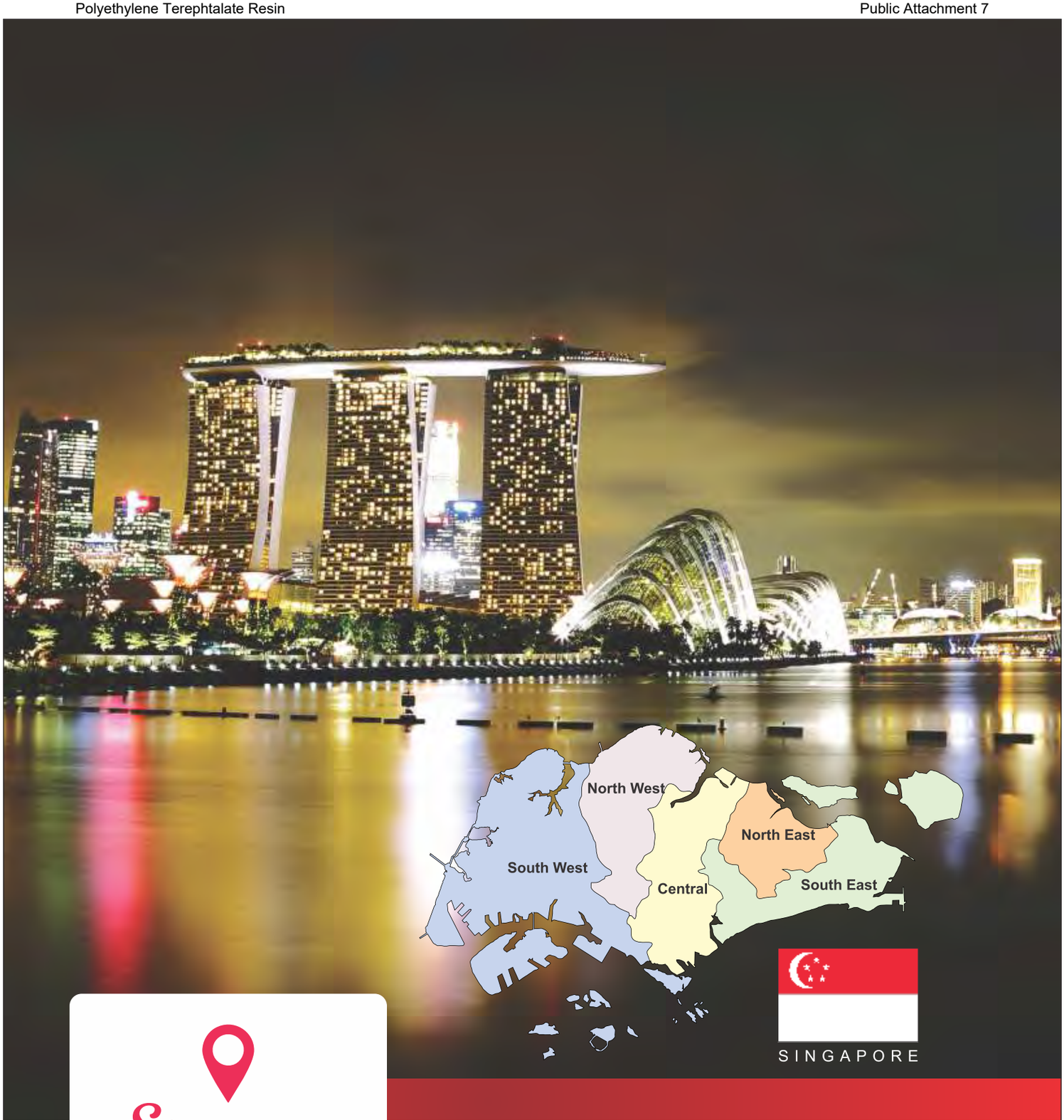

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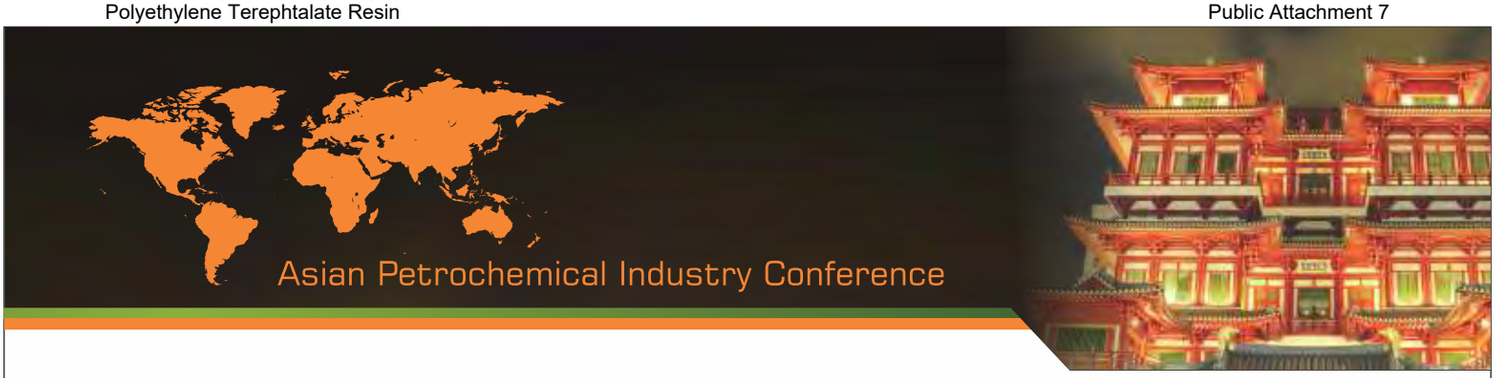

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SECTION 1

THE INDIAN ECONOMY

Review of 2015-16 & Outlook for 2016-17

The Indian Economy: Review of 2015-16

The Indian Economy Review of 2015-16

The Indian economy itself has shown resilience in the face of global downturns, and has stood up to be one of the fastest growing economies in the world. The performance of the USD2 trillion-economy at current price is being keenly observed by the world.

India remained a relatively bright spot with its growth story continuing to bloom, thanks in part to the benefit that it derived from a sharp reduction in crude oil prices, of which India is a major importer, as well as from the resilient domestic consumption. In addition, the Indian economy's domestic economic parameters like inflation and fiscal and current account deficits continued to be moderate

In 2015 buoyed by increased manufacturing output India grew by 7.2% year-on-year fastest in four years, much more than any other important emerging economy including the now relatively hesitant China which only advanced by 6.9%.

This sorpasso in growth terms has been repeated throughout 2015.The situation becomes even clearer when we compare the positive progress made by India's gross domestic product (GDP) with the recession in other emerging economies such as Russia and Brazil.

The travails of other emerging markets make this performance especially eye-catching: Russia and Brazil both shrank by more than 3% last year. And in 2016 India is likely to hold its position at the top of the table.

Clearly, the adoption of the new GDP series (with base year of 2011-12) combined with the new concept of capturing 'value added' has had a positive effect on the overall output performance.

The key driver of GDP growth in 2015 was falling oil and other commodity prices which improved corporate margins and household purchasing power, while also improving government tax collections and lowering the subsidy bill.

Growth in industrial production accelerated in 2015, boosted by robust domestic demand. Industrial production expanded by 3.2%, up from 1.9% in 2014. The PMI registered a solid reading in most months and in March driven by strong rise in business orders, leading firms to scale up output India's manufacturing growth rose to an eight-month high at 52.4.% .

The fiscal situation in India improved with the current account deficit falling to 1.3% of GDP in 2015 from 4.8% in 2013.

Despite a weak monsoon for a second consecutive year, agriculture grew by 1.1% in FY2015, mainly on strong growth in livestock.

Food grain production is estimated to have increased by 0.5% in FY2015, though there was lower production of rice, coarse cereals, oilseeds, and sugarcane.

After growing by 5.9% in FY2014, industry accelerated further to 7.3% in FY2015. Expansion in services moderated to 9.2%. Private consumption growth is estimated to have picked up to 7.6% in FY2015 from 6.2% a year earlier.

Much of the improvement in private consumption stems from a pickup in urban consumption, while rural consumption has remained subdued as a result of two consecutive weak monsoons.

Government consumption growth also stayed tepid as the central government boosted capital expenditure and curtailed current expenditure.

A 20.9% increase in capital expenditure undertaken by the central government helped investment growth improve to 5.3% from 4.9% in FY2014. However, private investment remained weakened by overcapacity and Indian corporations' debt overhang.

Lower commodity prices and anemic global demand weighed on exports, which contracted by 18.0% in FY2015.

Inflation levels continued to surprise on the downside and have printed comfortably under the Central Bank's comfort

zone. This moderation in inflation has also had an impact on interest rates as the Reserve Bank of India (RBI) announced rate cuts in 2015-16.

Foreign institutional investors' (FII) inflow in the Indian market in the month of March 2015-16 - the highest single-month investment since February 2013. By comparison, FIIs had invested $4.14 bn in February 2013. In dollar terms, this is the best-ever FII buying for the Indian markets since March 2014, when they bought $3.2 bn.

The more important and stable flows through the Foreign Direct Investment (FDI) route have also picked up and increased by 40% to $29.44 bn during April-December in 2015-16.

The year 2015 witnessed high volatility in equity markets as global headwinds in the form of the Greece Crisis, China currency devaluation, falling commodity prices and US Fed rate hike kept the markets under pressure. The benchmark Bombay Stock Exchange index reached an all-time high of above 30,000 in March 2015 but steadily declined to finish the year trading around 25,000 in March end 2015-16.

Foreign exchange reserves surged by $2.5 bn to touch an all-time high of $355.9 bn in March 2016, on account of rise in foreign currency assets (FCAs) as per the Reserve Bank.

While public investment and urban consumption were the major drivers of growth in FY2015, a revival of private investment and rural consumption is critical if growth is to remain strong in FY2016 and FY2017, given the likely sluggish recovery in the advanced economies and the anemic outlook for global trade.

There were concerns surrounding emerging market economies and the US dollar's move higher had led the Indian rupee to come under pressure this year.

However, investments into India accelerated in 2015-16, demonstrating increased investor confidence on what India has to offer. In addition, Government of India launched various ambitious national programmes that presented significant opportunities for investors to be part of one of the largest infrastructure programmes in the world.

These programmes are expected to transform not only the cities and the country as a whole, but also the way business is done in India.

Some of the infrastructure plans are trans-national and would help India economically integrate more firmly and rapidly with the regional economies.

Proactive policy reforms along with several campaigns and initiatives, such as Make in India, Digital India, Skill India, Start-up India and Swachh Bharat Abhiyan (Clean India Mission), are likely to transform the extent and the quality of rural and urban infrastructure.

These steps are expected to bring forth a number of investment opportunities. For example, the initial corpus of USD 6.2 billion by the National Investment and Infrastructure Fund (NIIF) is expected to bridge the investment gap in infrastructure, which would be addressed by FDI and private investments.

The construction of highways has reached an all-time high of 6,029 km during FY 2015-16, and the increased pace of construction is expected to continue for the coming years. Port sector witnessed capacity addition of 94 million tonnes per annum (MTPA) in FY 2015-16, which is the highest in the history of major ports.Further, the investments planned for the Indian Railways, as an example, is USD133.5 billion over the next five years ending 2019.

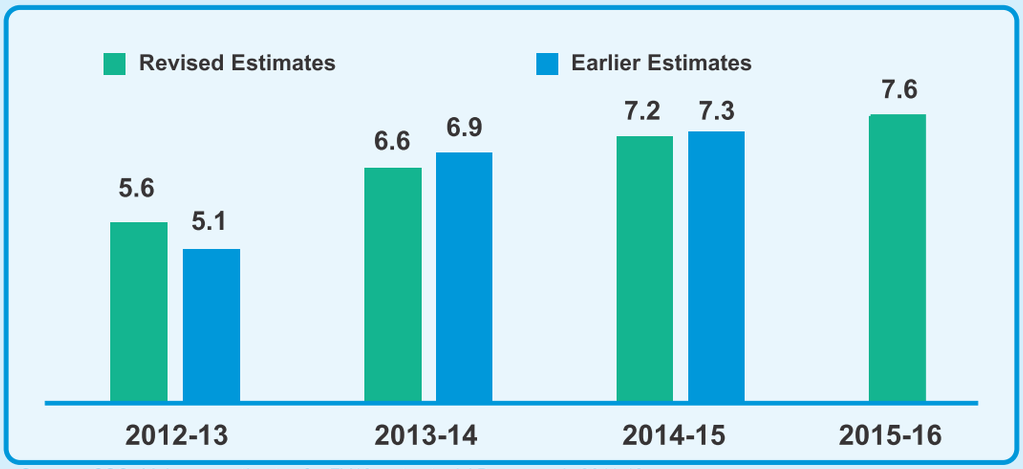
And, for roads, the investments planned is USD32.4 billion during the twelfth Five Year Plan (FYP) during 2012-17. In a scenario, where the nominal GDP is expected to reach USD3.4 trillion by FY2019-20 and further, to USD7 trillion by FY2024-25, the stakes for the return on investments is expected to be significantly high. It is certainly the right time to invest in India. This positive sentiment was reflected by the International Monetary Fund (IMF) forecast for India's economic growth at 7.3% for 2015 and 7.5% for 2016.

And now that India's GDP growth forecast for 2016 is slated to be 7.5% and as per CSO estimate 7.6% (ending 31 March 2016), India is firmly on its way to catapult into a global growth engine. This growth rate also makes India one of the fastest growing large economy in the world, overtaking a slowing China, on the back of an improvement in the manufacturing and farm sectors.

Snapshot of Key Indicators

India's economy grew a tad slower than earlier estimated in the last fiscal year, as the government revised down after factoring in latest data on agriculture and industrial output and released 'corrected' GDP data. While for FY15, growth rate was revised down from 7.3% to 7.2%, for FY14 it fell to 6.6% from 6.9%.

Figure 1:India's GDP Growth (year-on-year in per cent)



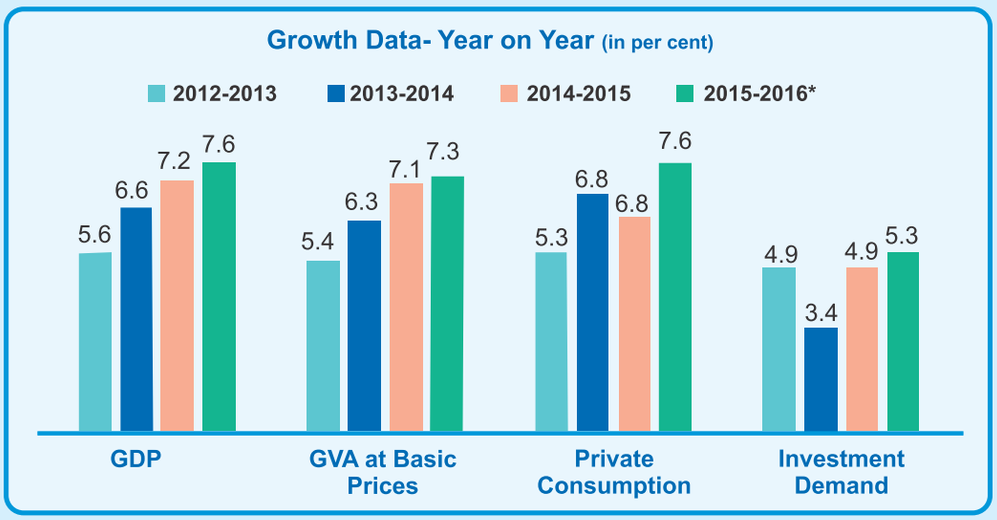
*Source : CSO, *Advance estimates for FY16, not actuals' Base year is 2011-12*

While this could marginally boost the growth rate for the current fiscal by lowering the base, a declining nominal GDP may make it difficult to achieve fiscal deficit targets.

It was in late 2014 that the government changed the GDP methodology that propelled India's growth from a sub-5% to above 6.5% inFY14. Few months later, it also helped overtake China, whose quarterly growth trailed behind at about 6% lower than India's 7.3%.

Though the downward revision in growth rate in 2014-15 is marginal, revisions of the previous two years were substantial. For 2012-13, GDP was revised up to 5.6% from 5.1% while for 2013-14, it was lowered to 6.6% from the 6.9% estimated earlier.

Figure 2: Positive Signals for Economy



***Source :** CSO, *Advance estimates for FY16, not actuals' Base year is 2011-12*

Gross value added (GVA) was also been revised on almost similar lines. According to new data, GVA for 2014-15 grew by 7.1% against previous estimates of 7.2%. Similarly, GVA for 2013-14 rose by 6.3%, lower than earlier calculation of 6.9%.

The 2014-15 GVA estimate was revised downwards as agriculture contracted 0.2% against the previous estimates of 0.2% growth. Similarly, manufacturing was shown growing at 5.5% against the earlier calculation of 7.1%.

The downward revision for 2014-15 came due to lower than expected growth in agriculture and industry while the services sector performed better than earlier estimated.

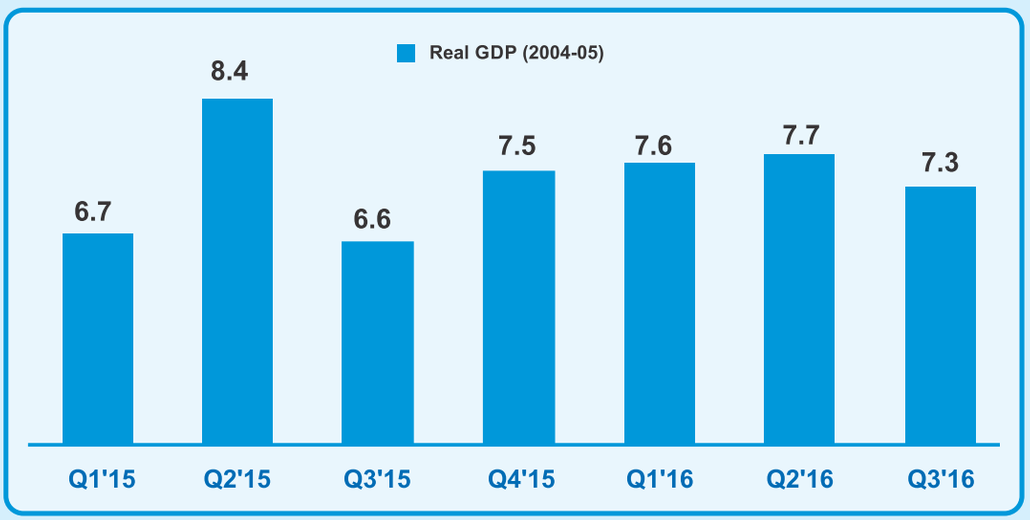
India's economic growth for the financial year 2016 has been estimated at 7.6% as compared with the revised estimate of 7.2% in the previous year, aided largely by growth in the manufacturing sector.

If the new projection materialises, India will be the fastest growing major economy in the world, overtaking China.

Investment demand remained weak, although it is estimated to pick up to grow 5.3% in 2015-16 from 4.9% in the previous year. Private consumption growth was surprisingly projected at 7.6% during the financial year from 6.2% a year ago, mostly supported by urban demand and despite a rural slump.

As per RBI, the Indian economy is currently being viewed as a beacon of stability because of the steady disinflation, a modest current account deficit and commitment to fiscal rectitude.

Figure 3: Quarterly Estimate of GDP Growth (in per cent)



Source : CSO

Economic growth of the country picked up pace in the second quarter of this fiscal year, adding some cheers to the markets and institutions. The GDP data, which measures the economic growth of the country, accelerated to 7.3% in October-December quarter from 7.7% (revised) in the July-September quarter of fiscal year 2015-16 and 6.6% in the same quarter last year.

The first quarter growth saw a substantial upward revision from 7% to 7.6%, while the growth for the second quarter from July-September was revised from 7.4% to 7.7%.

Growth was led by double digit expansion in the manufacturing and service sector segments. Following growth rates were registered by the economic activities in Q3FY16 over Q3FY15 is –'financing, insurance, real estate and business services' at 9.9% compared to 12.1% in year-ago period, 'electricity, gas and water supply' at 6% as compared to 8.8%

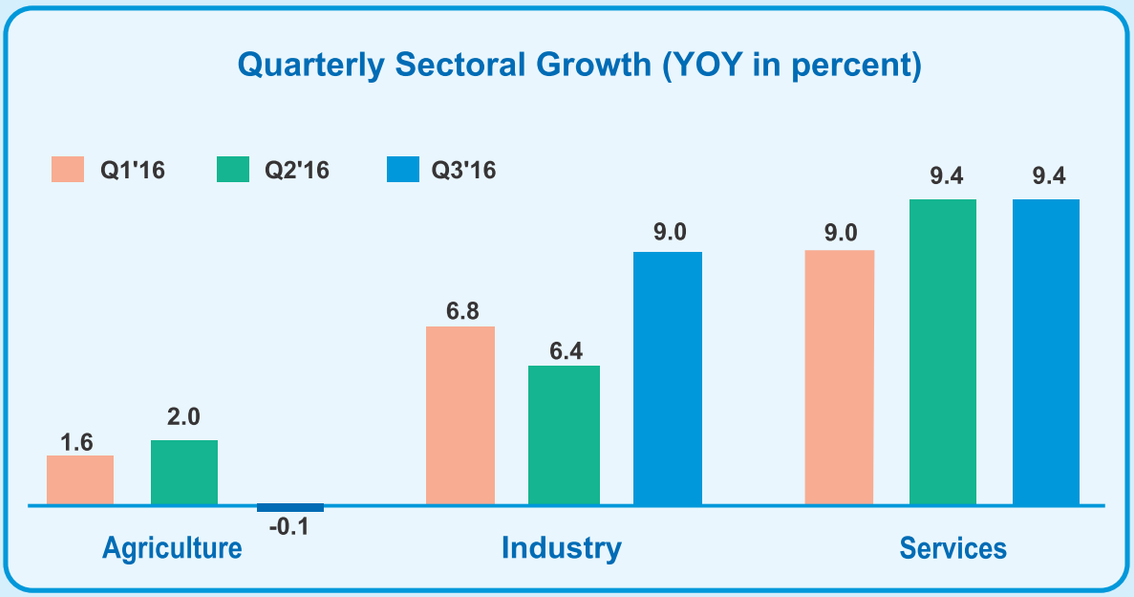
last year, 'manufacturing' at 12.6% compared to 1.7% in year-ago quarter, 'trade, hotels, transport and communication' at 10.1% compared to 6.2% a year ago, 'public administration, defence and other services' at 7.5% against 25.3% in year-ago period, 'agriculture, forestry and fishing' at (-) 1% compared to (-) 2.4% last year, 'mining and quarrying' at 6.5% Vs 9.1% a year ago and 'construction' at 4% Vs 4.9% in the third quarter last year.

While agriculture contracted 1% in the December quarter, farm production in 2015-16 is expected to grow 1.1% despite a 23% shortfall in monsoon rainfall.

While electricity generation is expected to slow down to 5.9% in 2015-16 from 8% a year ago due to lower demand from state distribution companies, the job-creating construction sector is also set to decelerate to 3.7% in FY16 from 4.4% in the previous year.

Among the services sectors which saw an overall deceleration, only financial, real estate and professional services grew in double digits at 10.3%.

Figure 4: Quarterly Growth in Sectors till Q3 2015-16



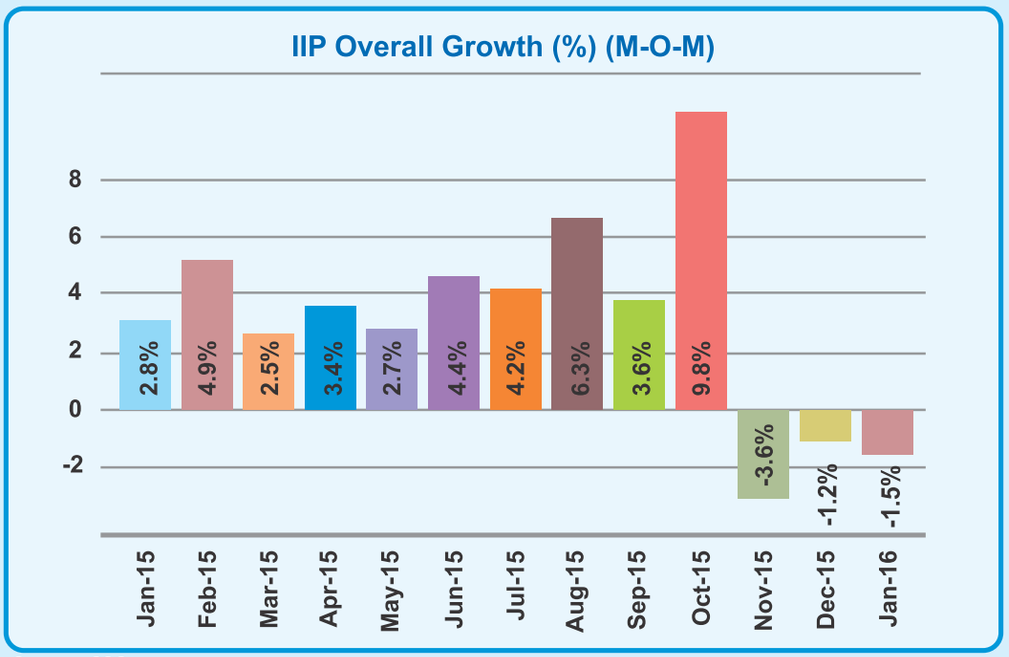
Source : CSO

i. IIP – Index of Industrial Production

India's industrial production declined for the third straight month at 1.5% in January 2016 over January 2015. The output of the manufacturing sector declined 2.8% in January 2016, contributing to the decline in industrial production. Meanwhile, the mining sector output improved 1.2%, while the electricity generation also galloped 6.6% in January 2016.

About 12 groups out of 22 industry groups increased their output in January 2016, serving the IIP growth with positive contribution. These 12 groups had a positive contribution of 212 bps together to the IIP growth. These 12 groups together carry a weight of 36.8% in the IIP.

Figure 5: Index of Industrial Production (IIP)



Source : CSO

Cumulatively, the IIP registered a growth of 2.7% during April to January, 2015-16 over corresponding period of previous year. The index of Mining, Manufacturing and Electricity sector increased by 2.1%, 2.5% and 4.7% respectively during April to January, 2015-16 over corresponding period of previous year.

Table 1: Used Based Classification of (IIP)

Trend in IIP Growth

		Sectoral			Use-Based Claasification				
	IIP	Mining	Manufacturing	Electricity	Basic	Capital	Intermediate	Durables	Non-Durables
Weight	100%	14.2%	75.5%	10.3%	45.7%	8.8%	15.7%	8.5%	21.4%
Month									
Dec-14	3.6%	-1.7%	4.1%	4.8%	5.9%	6.1%	1.1%	-9.2%	5.6%
Jan-15	2.8%	-1.8%	3.4%	3.3%	4.8%	12.4%	0.1%	-5.7%	0.3%
Dec-15	-1.2%	2.7%	-2.2%	3.2%	0.5%	-19.1%	1.3%	16.4%	-3.0%
Jan-14	-1.5%	1.2%	2.8%	6.6%	1.8%	-20.4%	2.7%	5.8%	-3.1%
Apr'14-Jan'15	**2.6%**	**1.5%**	**1.9%**	**9.4%**	**7.7%**	**5.8%**	**1.6%**	**-14.3%**	**2.1%**
Apr'15-Jan'16	**2.7%**	**2.1%**	**2.5%**	**4.7%**	**3.2%**	**-0.6%**	**2.0%**	**11.6%**	**-1.2%**

Source: Central Statistics Office (CSO)

As per the use-based classification, the basic goods output moved up 1.8% in January 2016 over a year ago. Meanwhile, the output of capital goods plunged 20.4%. The intermediate goods output improved at 2.7%, while the consumer goods output was flat in January 2016 over January 2015. Within consumer goods, the production of consumer durables increased 5.8%, but that of consumer non-durables declined 3.1% in January 2016.

Cumulatively, the index of Basic goods, Intermediate goods and Consumer Durablesregistered a growth of 3.2 %, 2.0% and 11.6% respectively during April to January, 2015-16 while the index of Capital goods and Consumer Non-durables declinedby 0.6% and1.2% respectively

ii. Core Industries Performance

The core sector contributes 38% to the overall industrial production, a parameter that RBI takes into account while framing its monetary policy.

Indicating an uptick in factory output, which had been in the red for three months, the eight core sector industries grew 5.7% in February — a 15-month high — with a sharp rise in production of fertiliser, cement and refinery products.

Electricity generation grew at 9.2% and on a reasonably good base of 5.9%. However, its performance was volatile in recent months. Crude oil grew by 0.8%, natural gas by 1.2%, refinery products by 8.1%, fertiliser by 16.3%, cement by 13.5% in February, year-on-year.

Coal production, however, dipped to 3.9% from 10.8% in February 2015. The steel sector remained hammered with negative growth of 0.5%, clearly indicating continued lack of demand and excessive competition from imports.On a cumulative basis, the eight industries expanded 2.3% between April 2015 and February 2016, against 5% in the same period a year ago.

Table 2: Core Industries Growth Rate (in percent)

Growth in Index of Core Industries	Index of Core Industries	Coal	Crude Oil	Natural Gas	Refinery Products	Fertilizers	Steel	Cement	Electricity
Weight	37.98%	4.4%	5.2%	1.7%	5.9%	1.2%	6.7%	2.4%	10.3%
Month									
Nov-14	8.5%	14.6%	-0.1%	-2.3%	8.1%	-2.8%	9.9%	10.5%	9.9%
Dec-14	3.2%	7.5%	-1.4%	-2.9%	6.1%	-1.6%	0.0%	3.8%	4.8%
Jan-15	2.3%	0.9%	-2.3%	-6.0%	4.7%	7.1%	3.4%	0.2%	3.3%
Nov-15	-1.3%	3.5%	-3.3%	-3.9%	2.5%	13.5%	-8.4%	-1.8%	0.0%
Dec-15	0.9%	6.1%	-4.1%	-6.1%	2.1%	13.1%	-4.4%	3.2%	2.7%
Jan-16	2.9%	9.1%	-4.6%	-15.3%	4.8%	6.2%	-2.5%	9.0%	6.0%
Feb-16	5.7%	3.9%	0.8%	1.2%	8.1%	16.3%	-0.5%	13.5%	9.2%
Apr'14-Feb'15	5.0%	8.6%	-1.1%	-5.3%	0.5%	-0.5%	5.9%	6.6%	9.0%
Apr'15-Feb'16	2.3%	5.0%	-1.0%	-3.6%	3.1%	10.3%	1.8%	3.9%	4.6%

Source: Index of Eight Core Industries, Central Statistics Office (CSO)

iii. Balance of Payment

India's balance of payments swung to a surplus in October-December, marking a modest upturn in its financial position that analysts believe may prove resistant to global economic fragility.

Volatile oil prices and worries about China's economy have hit foreign appetite for Indian assets and, while the European Central Bank and the Bank of Japan are providing plenty of monetary stimulus, the U.S. Federal Reserve is expected to continue raising interest rates, although only slowly.

The fourth quarter balance of payments surplus was $4.1 billion, reversing a deficit of $856 million in July-September.The CAD narrowed to $7.1 billion, or 1.3% of GDP, from $8.7 billion.

Analysts expect a balance of payments surplus of nearly $15 billion for the full fiscal year ending in March, and a similar surplus in the coming fiscal year.

Those are much healthier levels than in 2013, when anticipation of a reining-in of the Fed's then stimulus programme led to big outflows that ballooned the balance of payments deficit and sent the current account gap to a record high of 4.8% of GDP.

But India's external financial position seems unlikely to improve much from current levels. Foreign investors have dipped in and out of Indian shares and bonds in the past two quarters, and a weakening global economy is raising concerns about exports and remittances.

The trade balance stayed in deficit in the December quarter, narrowing to $34.0 billion from $37.4 billion in the previous three months. The capital account, which includes foreign direct investments and portfolio flows, registered a $10.54 billion surplus in October-December, up from $8.58 billion in the previous quarter.

Analysts expect the balance of payments to be in surplus in 2016/17 but with downside risks.

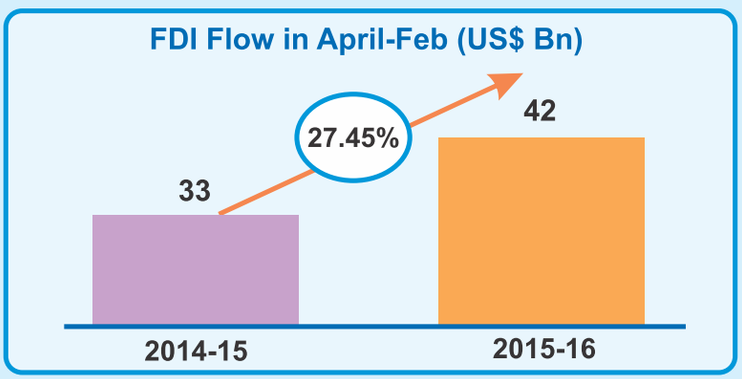
iv. FDI

Foreign direct investment (FDI) in the country increased to $42 billion during April-February in 2015-16, up 27.45% from the inflows in the corresponding period of the previous financial year as per RBI.

The inflows were $32.96 billion during April-February 2014-15.FDI in February was $3.2 billion, down from $5.14 billion in January. The foreign direct inflows were $3.48 billion in February 2015.The net FDI (minus FDI outflow) was $34.04 billion during April-February against $29.66 billion in the corresponding period of the last financial year.

According to the finance ministry, 98% of FDI is coming into India through the automatic route and, as a “positive sign”, the number of applications being routed via the Foreign Investment Promotion Board approval route has started declining.

Figure 6: FDI Inflows



Source : RBI, DIIP

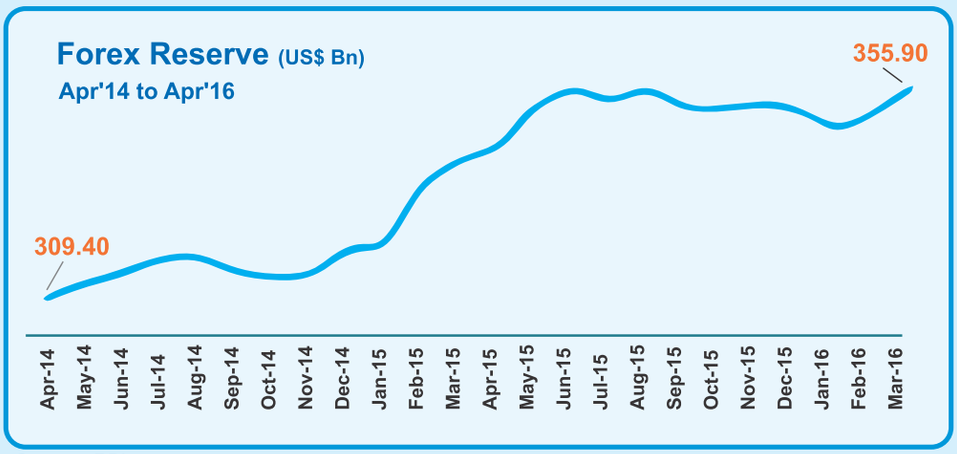
Government in Nov’15 under its FDI reforms had announced easing norms across 15 sectors including defense, banking, construction, single brand retail, broadcasting and civil aviation.

v. Forex Reserves

India's foreign exchange reserves surged by $2.5 bn to touch an all-time high of $355.9 bn in the week ending March end 15-16, on account of rise in foreign currency assets (FCAs) as per the Reserve Bank.

The reserves had touched a high of $355.5 bn in the week ended June 19 last year.The country's reserve position with the International Monetary Fund (IMF) edged up by $9.5 mn to $1.32 bn.

Figure 7: Forex Reserves increased to all time high $355.9 billion



Source : RBI

vi. FII Flow and Stock Market

Foreign institutional investors which made huge investments in the previous fiscal to the tune of ₹18.37 billion were net sellers in equities worth ₹2.28 billion till March 29, 2016.

For the first 11 months of the current financial year, FIIs were net sellers to the tune of ₹35,314.49 crore in equities. And, their previous investment pattern in the fiscal almost made it certain that they would end the year as net sellers. However, the post budget rally sparked off a hope that foreign investors might change the scenario with aggressive buying in equities.

To an extent, FIIs tried their best to buy as much as they could as the market started surging impressively post the Union Budget. With the BSE Sensex rising 10.15% post budget, FIIs pumped in US$ 2.237 billion till March 30.

Ironically, March 2016 was the month wherein FIIs have invested the most for FY16. Even on Y-o-Y basis, FIIs March-16 inflows are 62.45% invested in March-15. But that didn't change their status as net sellers in the final analysis.

FII inflow in the Indian market in the month of March 2015-16 - the highest single-month investment since February 2013. According to data from National Securities Depository and Securities and Exchange Board of India, FIIs put in $3.08 bn thus far in the Indian market till March 28'16.

By comparison, FIIs had invested $4.14 bn in February 2013. In dollar terms, this is the best-ever FII buying for the Indian markets since March 2014, when they bought $3.2 bn. (refer figure).At the global level, with the US Federal Reserve (US Fed) keeping rates steady in its last review meeting and indicating the likelihood of just two hikes going ahead in CY16, compared to the expectation of four, also aided sentiments.

Figure 8: FII Flow in 2015-16

Data compiled by BS Research Source : NSDL

Going ahead, analysts believe that India will continue to attract FII flows over the long term, as economic fundamentals remain stronger than other emerging market economies. That apart, clarity on the path that the US Fed is likely to follow should keep the current momentum in the equity markets strong, they say.

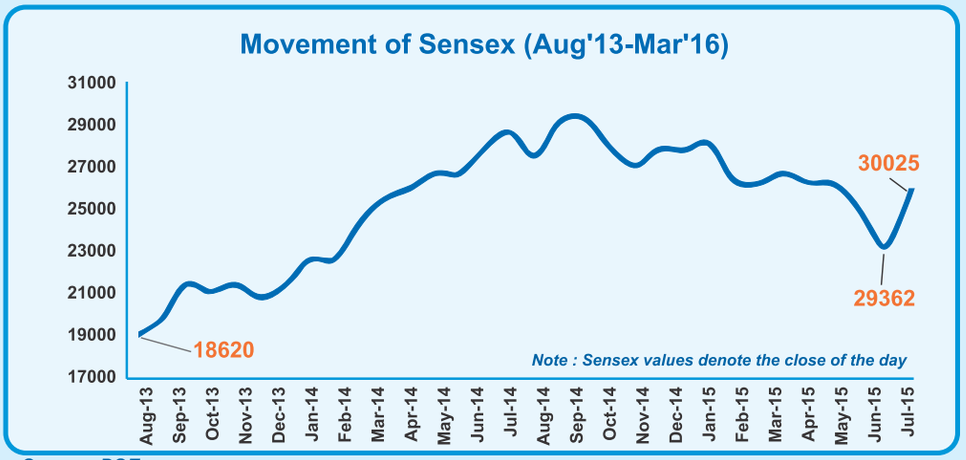
The year 2015 witnessed high volatility in equity markets as global headwinds in the form of the Greece Crisis, China currency devaluation, falling commodity prices and US Fed rate hike kept the markets under pressure.

Executive actions from the government across the infrastructure sector, defense, insurance, banking, etc. kept the market hopeful of the government's intent of improving the business scenario. The positive action from the government and falling energy prices helped the Indian economy to build stability during the year.

India is trading near all-time high valuations versus emerging markets but given the rich valuations and positioning India will likely underperform if emerging market rallies like seen in Q3.

It said the key to market performance could be a turn in the earnings cycle, which seems to have been delayed due to a combination of sluggish global growth and tight fiscal policy among other factors.

Figure 9: Stock Market Performance



Source : BSE

Going forward, the earnings expectations of FY'16 have been significantly cut. While there has been considerable improvement in macro variables, the same has not yet favourably impacted the corporate earnings owing to lower rural demand, currency headwinds and delay in the revival of investment cycle. One can expect a pick up on corporate earnings with full transmission of interest rate and impact of lower commodity prices translating to lower input costs for corporate.

A low-return world augurs well for India's outperformance, given its low-beta status, even as it means low absolute returns. One can look for a turn in earnings, more policy action, revival in consumption, style shift away from quality and continuing domestic flows into equities in 2016 as per Morgan Stanley.

Most market participants expect the new financial year to be better in the hope that corporate earnings growth will pick up. If things stay stable globally, Analyst expects the Sensex to post a 10-12% rise over the next financial year.

vii. Current Account Deficit

India's current account deficit (CAD) reduced to $7.1 bn (1.3% of GDP) in Q3 (third quarter, i.e., Oct-Dec) of fiscal 2016 from $7.7 bn (1.5% of GDP) in the corresponding period a year ago due to a substantial decline in the goods trade deficit even as the services account surplus shrank and primary and secondary income deficits expanded.

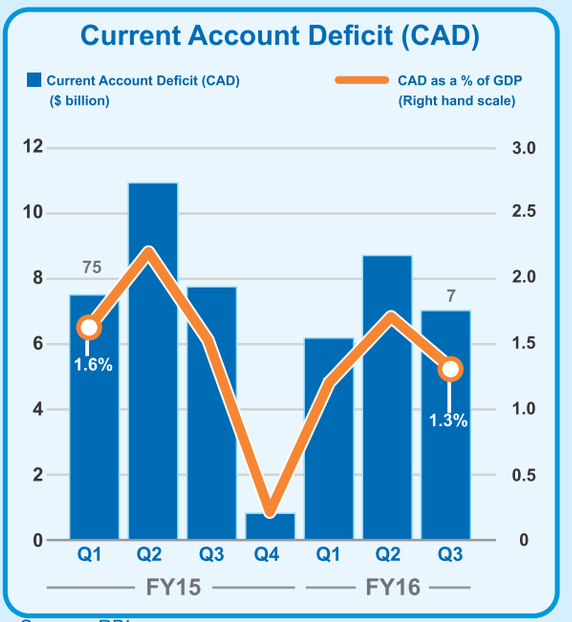
At the same time, healthy foreign direct investment inflows into the financial account were more than sufficient to cover the CAD, resulting in accretion in foreign exchange reserves during the quarter.

The reduction in CAD in Q3 of fiscal 2016 was led by a lower trade deficit ($34.1 bn compared to $38.6 bn in the same quarter last year). The major contributor to this was the oil deficit, which shrank to $12.9 bn from $19.2 bn. There was, however, second consecutive quarterly deterioration in the services trade surplus ($18.1 bn in Q3 fiscal 2016 compared to $20.1 bn in Q3 last fiscal) as services exports shrank by 4.4% on-quarter while services imports continued to grow positively.

Although net inflows into the financial and capital account combined was $6.5 billion in Q3 of fiscal 2016, lower than in Q3 of last fiscal ($9.7 billion), they were sufficient to cover the deficit in the current account and helped in accretion in foreign exchange reserves.

Outlook - Merchandise exports remain under pressure due to weak demand in major markets such as the euro zone, China, and Organisation of the Petroleum Exporting Countries. On the other hand, while oil imports are expected to remain muted on account of low crude oil prices (CRISIL forecast for Brent is $36-41/barrel in fiscal 2017 vis-à-vis an estimated $48/barrel in fiscal 2016), some pick-up is expected in core imports (non-oil, non-gold) on the back of improved domestic consumption and investment demand.

Figure 10: Q3 CAD at 1.3% of GDP at $7.1 billion



Source : RBI

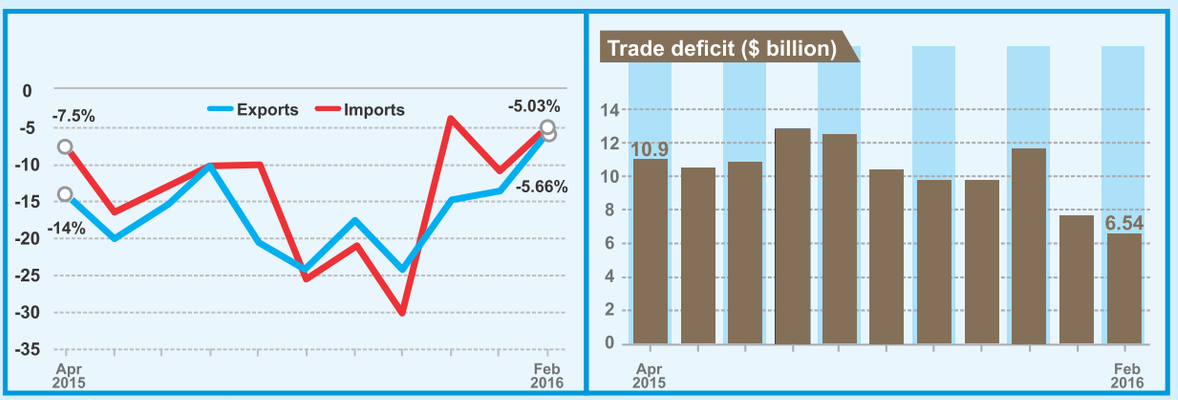
At the same time, surplus in the services account is expected to remain moderate. Accordingly, CAD may rise a tad to 1.4% of GDP in fiscal 2017 from an estimated 1.3% in fiscal 2016.

India's exports fell for the fifteenth month running in February but the smallest decline in more than a year raised hope that things may begin to look up soon.

Exports fell 5.6% in Feb'16 from a year earlier to $20.73 billion, the slowest decline since December 2014 when shipments fell 3.77%.With imports declining 5.03% y-0-y in February, the trade deficit narrowed to a year's low.

The narrowing contraction of non-oil merchandise exports to 2.7% in Feb'16 from 13% (fall) in the previous three months, offers a silver lining, noting the healthy growth in gems and jewellery, chemicals, drugs and pharmaceuticals, and electronic goods. In fact, contraction of exports to single digits, sharp decline in gold imports driving trade deficit lower, Growth in imports of machinery, machine tools, electronic shows revival in domestic demand and all add up to silver lining.

Figure 11: Trade Deficit at $6.54 billion



Source : Commerce ministry

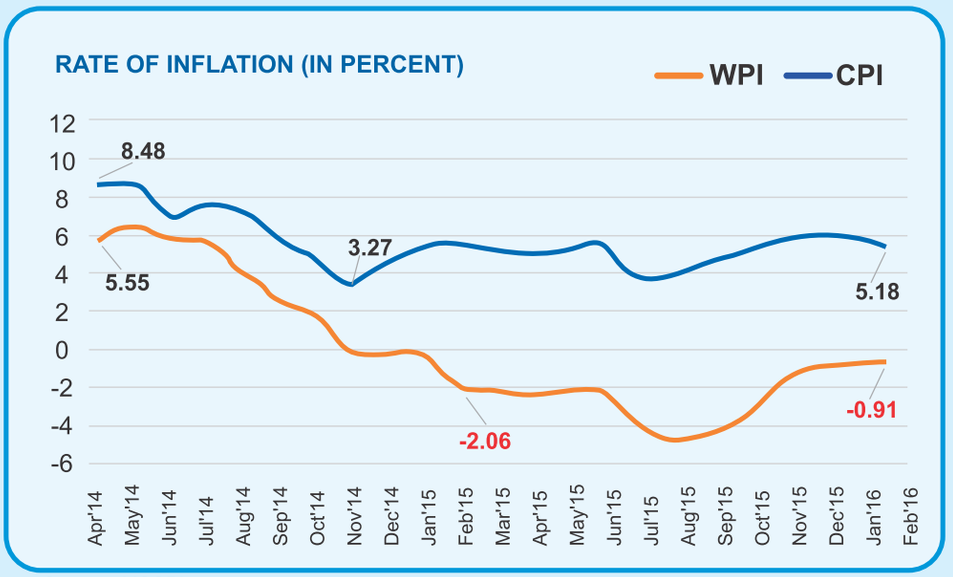
viii. Inflation

Retail inflation slowed to a four-month low in February 2016, while the wholesale price index posted a negative reading for a 16thstraight month, prompting industry groups to call on the Reserve Bank of India (RBI) to cut interest rates to spur economic growth.
Consumer price index-based inflation decelerated to 5.18% from 5.69% in the preceding month. Wholesale prices also continued to soften with official numbers for the wholesale price index (WPI) showing a 0.91% contraction in February driven down by tumbling oil prices and softening vegetable prices.

The slowing of the retail inflation rate in February was driven by lower food inflation at 5.3% in February against 6.85% in January, mostly due to decelerating vegetable price inflation at 0.7% in February against 6.39% in the previous month. Prices of pulses continue to rise at a faster pace at 38% in February despite a marginal decline from its level in the previous month. Services inflation for items including health, transport, communication, recreation, education and personal care continue to rise at 4.38% in February against 3.95% in January

Food inflation in the CPI came in at 5.5% in February compared with 6.7% in January. In the WPI, the rate of inflation in food articles also decreased to 3.35% in February from 6% in January. Primary article inflation in the WPI slowed down significantly in February to 1.6% compared to 4.6% in January.

Figure 12: Rate of Inflation (in percent)



Source : MOSPI

While the rate of inflation in manufactured products did remain negative, it moved closer to positive territory in February, coming in at -0.6% compared to -1.2% in January.

Similarly, the rate of inflation in the 'fuel & power' segment in the WPI was -6.4% in February compared to -9.2% in January. The 'fuel & light' segment in the CPI came in at 4.6% in February, down from 5.3% in January. Inflation in the housing segment of the CPI accelerated to 5.3% from 5.2% in January.

ix. Rupee (₹)

The Indian rupee, despite weakening nearly 5% against the dollar, emerged as one of the best performing currencies in 2015 as most others had fallen sharply against the dollar.

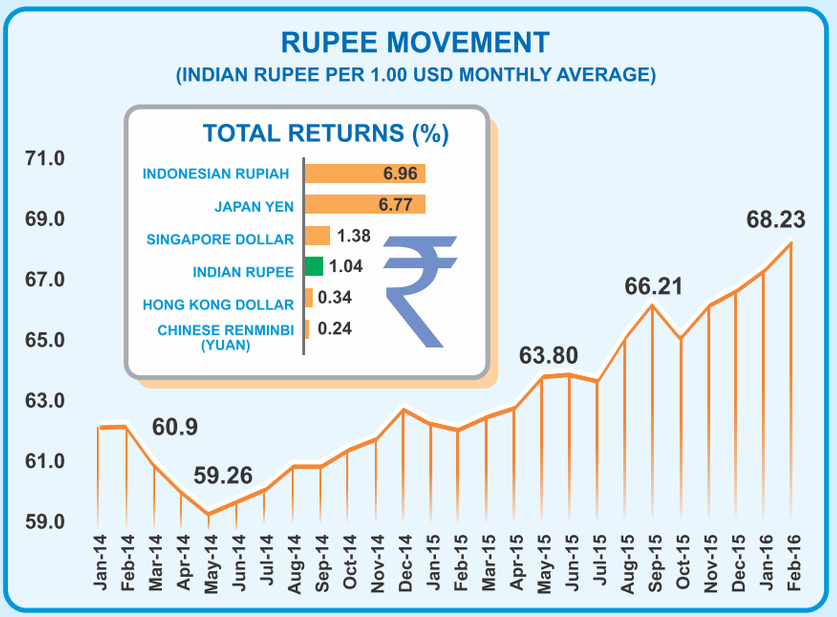
The Indian rupee, which was being seen as stabilizing in the range of 63-65 in the early part of the year, soon hit on a downward path after a devaluation of the Chinese Yuan by around 4% sent the Asian currencies into a tailspin.

In fact a highly volatile trend continued to rule the exchange rates due to global headwinds through 2015, during which the Indian currency also hit a two-year low below the ₹ 67-mark against the US greenback.

The value of rupee remained comparatively stable during first quarter of 2015-16. Average borrowings by banks had increased significantly in the immediate aftermath of US fed rate hike, resulting in appreciation of the rupee. However, subsequent to easing of liquidity conditions, the rupee started depreciating.

Having said this, rupee is one of the best performing currencies in Asia in the current financial year despite global uncertainties and has posted a total return of 1.04% in the period, ranking it fourth in Asia behind the Indonesian rupiah, the Japanese yen and Singaporean dollar. It's done better than the Chinese yuan, the sixth-best currency with a 0.24% return, according to Bloomberg data. Total returns include the spot exchange rate and interest income.

Figure 13: Rupee Movement in last one year



Source : RBI

While the rupee fell 0.6% versus the dollar this year, flows from stock investors turned positive in March'16 amid slower inflation, an improved current account and budgetary discipline. Including interest, investing in rupees is likely to earn 3.2% from end of March'16 until Dec 31 2016, according to strategists' forecasts compiled by Bloomberg, the most in emerging Asia.

Interest rates below zero in Europe and Japan are attracting investors to a nation that has the second-highest yield among key Asian markets and the fastest growth among major economies.

India's superior growth versus rest of the region alongside the central bank's commitment to inflation stability means that on a risk-adjusted basis, the carry proposition of the rupee will look quite alluring.

The rupee surged 2.8% in March 2016 to head for its biggest monthly advance in two years.The jump followed a 3.3% decline in the first two months of 2016, during which it fell to the brink of its record low of 68.845 a dollar seen in August 2013.

The rebound provided the RBI an opportunity to accumulate foreign-exchange reserves, which reached a record US$355.95 billion in the week through March 18 2016.

Mizuho Bank Singapore forecasts the rupee to end 2016 at 64.50 a dollar.ING has a year-end projection of 66.Interestingly, investing in rupees returned 3%, including interest, in the past four quarters, data compiled by Bloomberg show's, the highest in Asia.

With the Fed now taking the foot off the pedal in terms of rate hikes, high-yield emerging-market currencies would be back in vogue and the rupee is expected to be among those in demand.

Outlook for 2016-17: India

The Indian economy bucked the trend in 2015 when most of the emerging market economies witnessed significant external vulnerabilities owing to positive external balance and a stable public policy. Although the rising NPAs in the banking system and strong headwinds in the global economy did have an impact on Indian economy, it was largely stable when compared to its peers.

The Indian economy currently stands at a strong footing with the interest rate rolling downwards, key macro variables like CAD and fiscal deficit mostly under control and the governments continued push for reforms and ease of doing business.

Improvement in macro-economic variables which includes encouraging GDP number (the FY16 advance estimate ahead of expectations), revised GDP projection by IMF for India, an uptick in IIP, drop in trade deficit, supportive figures for CPI &WPI inflation and robust forex reserves and a good monsoon forecast all are supporting the uptrend at a time when many economies are in turmoil.

Broadly speaking, the revived optimism in the economy bodes well for the future. Far more important is that the economy seems to be on an increasingly stable footing. Inflation has fallen by half after floating above 10% for years. When the IMF cut its forecasts for the world economy, it largely spared India.

International agencies continue to remain positive on India with an expected growth for 2016 pegged at and around 7.5%. The year 2016 will be closely watched for the government's ability to push critical reforms and apex banks' monetary policy stance to support growth. Year 2016 could be the year for India with most macro factors in place and the result of the government's push to increase investments likely to get fructified.

India is likely to gain momentum in the year to come as the results of earlier measures are visible. The key factors which are likely to aid growth during the year are the impact of the executive action addressing systemic issues in key sectors like mining, railways, defense, banking, roads and power.

Further, the pay commission suggestion for hikes in payouts for government employees coupled with soft commodity prices are likely to result in a consumption driven growth. The continued accommodative stance and look out for emerging room for more rates easing by the Apex bank is likely to bring in positive sentiments and scope for expansion of the economy.

The prime minister's strong leadership, the recent reforms and initiatives, and the RBI's prudent monetary policies are building up confidence among investors. While credit conditions are expected to remain tight for some time, improved business sentiment likely to drive up investment, which will likely be the growth engine in coming quarters.

Nevertheless, the risk to the outlook remains primarily owing to the international market, the pace of rate hike by US Fed and China's growth slowdown, which could have a spillover deceleration effect on emerging markets.

Table 3
India's GDP Growth Projection –2016-17

Agencies	2016-17
CSO	7.60%
ADB	7.4%*
S&P	7.4%*
Fitch Ratings	7.7%*
RBI	7.40%
Moody's	7.5%*
Credit Suisse	7.3%*
Morgan Stanley	7.5%*
IMF	7.5%*
OECD	7.4%*
UN	7.5%*
World Bank	7.8%*

figures represent calendar year 2016

APIC 2016
ASIA PETROCHEMICAL INDUSTRY CONFERENCE
SINGAPORE

SECTION 2

PETROCHEMICAL INDUSTRY IN INDIA

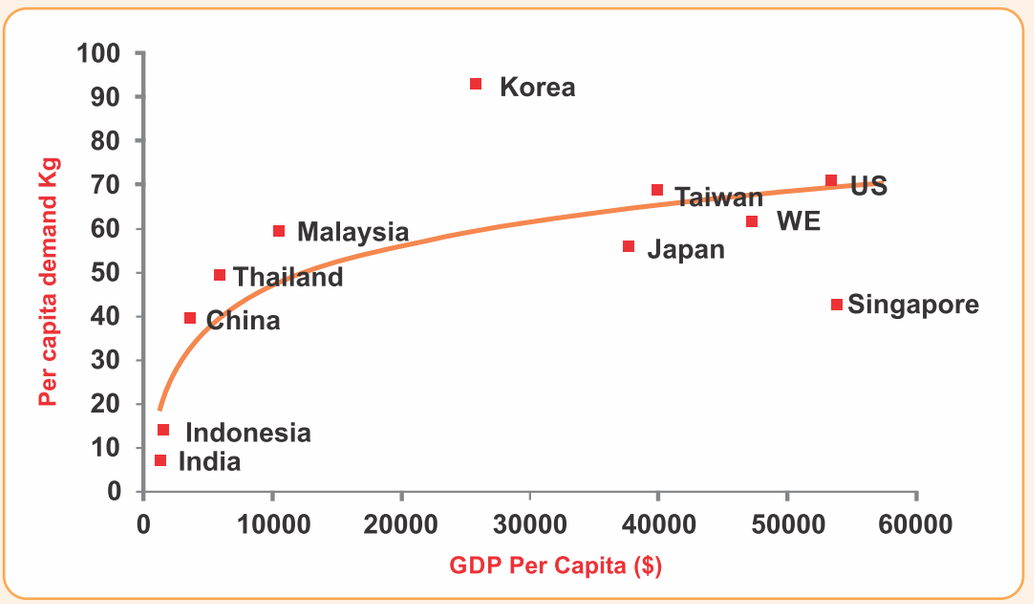
Review of 2015-16 & Outlook for 2016-17

Petrochemical Industry in India

Petrochemicals play a vital role in the functioning of virtually all key sectors of economy which includes agriculture, infrastructure, healthcare, textiles and consumer durables. Polymers provide critical inputs which enable other sector to grow. Petrochemical products cover the entire spectrum of daily use items ranging from clothing, housing, construction, furniture, automobiles, household items, toys, agriculture, horticulture, irrigation, and packaging to medical appliances.

Per capita consumption of polymer has reached saturation level in US. India has the advantage of high population and expected to maintain high economic growth. This should propel India's polymer consumption to new levels in coming year.

Figure 14: Per capita Polymer Consumption Vs per capita GDP ~ 2015



Petrochemical Industry Review of 2015 & Outlook for 2016-17

Polymers

For most of 2015, oil prices traded in the range of US$40-60/bbl. However, post-Christmas of 2015, Brent as well as WTI crude oil futures fell to levels seen in 2008-2009, as there is no end in sight for oversupply concerns. As we entered 2016, International benchmark Brent crude had twice set a new near 13-year low of below $28 a barrel, as fears over persistent oversupply reached fever pitch following the news that Iran will return to export markets in Jan 2016.

A slowdown in China that could hit demand was also exacerbating bearish sentiment. As we have entered 2016, some market observers forecasted another year of distress and bearishness for oil futures.

US naphtha exports increased in 2015, as refiners continue to seek new outlets for increased production, but growing condensate exports could impact naphtha output. The end of 2015 saw naphtha prices in Asia sink to six-and-half-year low of around US$384/ton CFR Japan, triggered by the sell-off in financial markets and steep losses in overnight crude futures. However, sustained lower oil prices continue to improve the cost competitiveness of Asian Naphtha based polymer producers.

Unlike the fluctuations in spot ethylene prices in Asia and Europe, the spot ethylene market in the US continued to fall for the most part of 2015. At the end of the year, spot ethylene hit its lowest levels seen since early 2009, widening the gap between other regions to record highs.

However, it is expected that Global Ethylene supply demand would remain tight until 2018 when US based crackers start up.

China continued to add more coal based capacity in 2015 as new plants came on stream. This was particularly evident in the PP market, which pushed domestic PP prices to the same levels with or even below import offers in China for the most part of 2015. The same factor caused PP prices to post a larger decrease than that of PE both in Asia and the Middle East in the second half of the year.

European polyolefins markets were hit by a significant number of production outages in H1-2015. In fact PE and PP buyers in Europe would be under strong pressure to accept revised conditions from their sellers in 2016 when discussing volumes and pricing, strongly influenced by the 2015 situation, when force majeures led to extreme volatility and price hikes.

A change in the euro/USD exchange rate and the collapse in crude and naphtha prices were principally responsible changes in supply, with the lack of imports exacerbated by an increase in duties. Producers are generally very confident for 2016, in spite of the arrival of material from some new production units.

Asian Propylene market is expected to remain long with new capacities being added. Delays in incremental CTO/MTO units and sub-par utilization of PDH units likely to support margins.

IHS expects near term chemical industry earnings to be flat or modestly lower with implications for capital deployment and risk aversion. After record earnings in 2014 driven by high proportion of advantaged feedstock in North America and Middle East, 2015 saw a double digit drop in earnings due to lower crude oil prices. IHS expects earnings to recover starting 2017 with earnings peak expected around 2020.

China’s unconventional coal to chemical industry competitiveness is challenged at low energy prices and investment decisions in feedstock advantaged regions have been put on hold due to high level of uncertainty. Slowdown in capital deployment could lead to supply tightening post 2020 period.

Amid uncertain energy and economic environment, India remains a bright spot with steady growth driven by investment in infrastructure and growing middle class.

In fact, Indian economy has turned the cornerstone and it’s once again on the growth path. Globally India is being looked at as the bright spot in the global economy. Consumer sentiments are high and growth expectations are reasonable well, which augers well with the petrochemical industry whose growth has a direct relation with the economic growth.

For the Indian petrochemical industry in 2015- the key application industries like packaging, construction, and automobiles actually helped pull up the demand and declining prices resulted in higher offtake by downstream converters for virtually all polymers

GOI’s initiatives like Digital India, Swachh Bharat, Start-up India and Skill development program etc. have started and will eventually a widespread multiplier effect. One can expect them to fuel petrochemical demand in India in the years to come.

A particular boon for the plastics industryis the Swachha Bharat program, which calls for an end to open defecation by 2022. This will require constructing individual cluster and community toilets, cleaning up villages through solid and liquid waste management, and laying pipelines to connect all villages to water supplies by 2019.

Plastics producers estimate that this program could add 250,000m.t./year to polymers demand at just 50% of the program'sachievement.

India witnessed a rebound in auto sales in the second half of 2015 and the trend is expected to continue in 2016 as well. Success of ‘Make in India’ programme will be a game changer and a big boost to manufacturing in the country.

Increased focus on agriculture and irrigation will boost the demand for plastics along with GOI’s thrust on infrastructure followed by a good monsoon forecast in 2016 by IMD in April 1st week in 2016.

A few of the many such initiatives that are likely to result in new opportunity for industries and positively push the demand for petrochemicals are: Rapid expansion of Metro Rail Projects across the country and electrification of existing & addition of new railway lines. Construction of national highways, estimated to cross 6,000 km annually - surpassing the previous best.The launch of Smart Cities and emphasis on Rural Development, expected to have a huge demand push for overall petrochemicals sector.

In addition to these positives, one cannot undermine the impact of soft oil prices in 2016 either. These are expected to keep the product prices low and thereby likely to bolster demand for petrochemicals besides placing a considerable sum of disposable income in the hands of end-consumers and create increased spending power for them.

Last but not the least, the likely highly anticipated roll-out of Goods and Services Tax (GST) roll-out in 2016 in future would have a very positive impact on the way business is conducted.

The opportunities are huge, and the petrochemical industry stands to benefit in a big way.These proposals and “the focus to support the start-ups will also go a long way in encouraging domestic manufacturing.

A number of Indian state-owned energy companies are making major investments to boosttheir petrochemical activities and are expected to become significant players in the sector.Capacity expansions by several other manufacturers are moving ahead and gradually fillingthe gap between domestic demand and supply.

Overall, the outlook for the petrochemicalindustry in India is somewhat more positivethan it has been recently, as growth in GDPand industrial output is expected to be higherin 2016-17 than in the prior year, and key end-useindustries like automotive, packaging,and consumer durables reflect this outlook.

The Indian domestic polymer industry (like global industry) is dominated by Polyolefin’s (PE & PP), representing about 73% of all commodity resins consumed in 2015-16. After clocking a subdued growth in 2013-14 the polymer growth in India was higher at 7% in 2014-15. Domestic demand is expected to outpace domestic production.

Table 4: Polymer Demand Supply

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
POLYMERS				
Capacity	9049	9084	9558	12017
Production	8161	7907	9181	10847
Op Rate (%)	90%	87%	96%	90%
Import	2673	3330	3611	3555
Exports	1061	797	887	1536
Net Trade	-1612	-2533	-2723	-2019
Demand	9356	10004	11378	12621
Demand Growth %	**1.3%**	**6.9%**	**13.7%**	**10.9%**

Source: Industry Estimates. A: Actual, E: Estimate

Polymer import dependency remained high at 33% in 2014-15 and is expected to come down in next two years to ~27%. PP exports was around 720KT in 2014-15. PE imports in 2014-15 stood at 1499KT and PVC imports were at 1172KT in the same period. In 2014-15 net trade deficit of total polymers stood at 2533KT which was higher than previous year which stood at 1612 KT. However, trade deficit is expected to rise to 2723KT in 2015-16 and decline to 2019KT in 2016-17.

However, the demand for polymers is expected to grow at ~7% in 2015-16 and see a double digit growth of ~13% in 2016-17.India’s petrochemical industry, like the overall economy, faces near-term challenges, but the long-term growth outlook for the industry remains positive. Capacity expansions by several other manufacturers are moving ahead.

Polyolefins

All PE registered a demand growth of 7% in2014-15. It is expected that PE will see a double digit growth in demand to ~13% in 2015-16 and again bounce back to clock a double digit growth of ~11.3% in 2016-17. PP registered a demand growth of 8% in 2014-15 and it is expected to witness a robust growth to touch 18% in 2015-16. Polyolefins registered demand growth of 7% in 2014-15. It is expected to improve to 16% in 2015-16 and dip a bit to around 12% in 2016-17.

Table 5: Polyolefin Demand in India Actual & Projected

(KT)	Actual		Projected		% Change year on year		
	2013-14	2014-15	2015-16	2016-17	2014-15	2015-16	2016-17
LDPE+EVA	575	658	737	809	14%	12%	10%
LLDPE	1236	1328	1546	1781	7%	16%	15%
HDPE	1766	1828	2029	2200	4%	11%	8%
PP	3253	3509	4148	4651	8%	18%	12%
Total PO	**6831**	**7323**	**8459**	**9441**	**7%**	**16%**	**12%**

Source: Industry Estimates.

India's ONGC Petro-Additions Ltd. (Opal) expects to start commercial output from its new polyethylene plants in the Dahej Special Economic Zone in Gujarat in 2016. Opal is building two 360,000 mt/year high density polyethylene/linear low density polyethylene swing units, and standalone HDPE and polypropylene units each with 340,000 mt/year capacity, downstream of the cracker.

The HDPE polymer grades will include injection, pipe, blow moulding, film and raffia/mono filament, and the LLDPE grades will be film, roto moulding, lamination and injection moulding.

Mangalore Refinery and Petrochemicals Ltd (MRPL), a subsidiary of Oil and Natural Gas Corporation Ltd (ONGC), began commercial production of polypropylene from its new unit as a part of its phase III expansion plan. The plant has capacity to produce 440,000 tonne per annum (TPA) of polypropylene.

Meanwhile in Assam State, in the far northeast of the country, Brahmaputra Cracker and Polymer Ltd. (BCPL), 70%.owned by Gail, commissioned a complex in November 2015 based around a 220,000- m.t./year ethylene and 60,000-m.t.lyear propylene plant. The complex will also produce 226,000 m.t./year of LLDPE-HDPE and 60,000 m.t./year of PP.

Indian Oil Corporation Ltd commissioned its 15 million tons per annum (mtpa) refinery at Paradip in Odisha. The PP project at Paradip will be designed co-produce 700,000 m.t./year. The plant, slated to be on-stream by 2017, will more than double Indian Oil's PP capacity. The company currently has 650,000 m.t./year of PP capacity at Panipat, Haryana State.

Gail is also doubling ethylene capacity at the company's gas-based petrochemicals complex at Para, Uttar Pradesh State, to 900,000 m.t./year and adding 450,000 m.t./year of LLDPE- HDPE,which will double its capacity for PE.

Meanwhile, HPCL and GAIL have carried out a pre feasibility cum configuration study for 15 million tons integrated refinery cum petrochemical complex and also a standalone petrochemical complex and short listed three sites in Andhra Pradesh.

Vinyl's: PVC

The demand for PVC increased substantially 2014-15from a subdued growth in 2013-14, however it is expected to gain and clock double digit growth of around 10% in 2015-16 and sustain to around 9% in 2016-17.

Table 6: PVC Demand Supply

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
PVC				
Capacity	1402	1402	1482	1482
Production	1293	1255.8	1354	1406
Imports	1026	1172	1326	1524
Exports	0	0	0	0
Apparent Demand	2309	2443	2678	2931
Demand Growth%	**2.0%**	**5.8%**	**9.6%**	**9.4%**

Source: Industry Estimates. A: Actual, E: Estimate

As the economy is expected to perform well with the easing of monetary policy and various PVC end use sectors performance improving, PVC demand is expected to see a sustained growth in coming years. While 2013-14 witnessed capacity addition of cPVC by DCW Ltd. Reliance Industries too is expected to increase its capacity by debottlenecking at its PVC complex at Dahej and touch a total of 750 KT capacity by 2015-16.

Total PVC capacity in India in 2014-15 was 1402 KT by adding Chemplast (emulsion grade) and DCW cPVC capacity of 30 KT and 12 KT respectively to 1360 KT which is produced by RIL, Finolex, Chemplast (suspension grade), DCW (suspension grade) and Shriram (suspension grade) which is expected to touch 1482 KT by 2015-16 with RIL adding another 80 KT capacity. Meanwhile, PVC imports are expected to increase further to 1352 KT by 2015-16 from 1048 KT in 2012-13 and touch 1407 KT in 2016-17.

Styrenics

A. Polystyrene

After witnessing a negative demand growth in 2013-14, demand for PS increased by ~7% in 2014-15 to touch 232KT, as shown in table below. Demand for PS is however expected to witness a slowdown to around 4% and 3.3% in 2015-16 and 2016-17 respectively. Total Polystyrene capacity in India is expected to increase and reach 490 KTA by 2016-17 with LG polymers planning to expand capacity in 2015-16 and 2016-17. Other major producers of polystyrene in India include Supreme Petrochem and Styrolution India.

Table 7: Polystyrene Demand Supply

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
POLYSTYRENE				
Capacity	472	472	476	490
Production	260	270	280	290
Imports	17	13	14	14
Exports	60	42	44	46
Apparent Demand	217	232	241	249
Demand Growth%	**-13.3%**	**7.0%**	**3.9%**	**3.3%**

Source: Industry Estimates. A: Actual, E: Estimate

B. Acrylonitrile-Butadiene-Styrene (ABS)

ABS, the third-largest styrene derivative, is the largest-volume engineering thermoplastic resin in the world. ABS is used in many consumer-related end-use applications including appliances, electronics/electrical, building and construction, and transportation.

ABS demand in India is expected to grow strongly at 10%, owing to the growth in the Indian middle class expenditure in home appliances and automobiles, which will drive the core demand for ABS.

The appliance sector will continue to be the largest ABS end-use market. Demand for ABS registered a healthy growth of 10% in 2014-15 and expected to continue to grow at the same rate in 2015-16 and 2016-17.

Industry capacity is expected rise in 2015-16 and touch 190 KT as Styrolution ABS Ltd and Bhansali Engineering Polymers Ltd. are expected to add capacity in that period and touch 190 KT by 2015-16.

Table 8: ABS Demand Supply

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
ABS				
Capacity	131	155	190	190
Production	99	102	112	124
Imports	55	64	71	76
Exports	3	0	0	0
Apparent Demand	151	166	183	200
Demand Growth%	**10.2%**	**9.9%**	**10.2%**	**9.3%**

Source: Industry Estimates. A: Actual, E: Estimate

C. Styrene-Acrylonitrile (SAN)

Table 9: SAN Demand Supply

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
SAN				
Capacity	130	130	150	150
Production	82	87	94	102
Imports	7	7	8	8
Exports	0	0	0	0
Apparent Demand	89	94	102	111
Demand Growth%	**6.9%**	**5.6%**	**8.5%**	**8.8%**

Source: Industry Estimates. A: Actual, E: Estimate

Demand for SAN declined a percent to 6%in 2014-15 from 7% in 2013-14. However, it is expected to grow at about ~9% in 2015-16 with capacity addition touching 150 KT in 2015-16 and demand expected to maintain the same growth going forward in 2016-17.Imports are expected to touch 8 KT in coming years to meet the domestic consumption demand.

Olefins (including Butadiene, Styrene, EDC & VCM)

A. Ethylene & Propylene

Ethylene Capacity is further going to increase from 3615 KT in 2014-15 to 5757 KT by 2015-16 and 7127 KT by 2016-17. In 2014-15, production of ethylene and propylene was 3756 KT and 4020KT respectively as shown in table below. Ethylene Production declined in 2014-15 with respect to slow down in production at Haldia plant. The capacity is however expected to touch 7127 KT in 2016-17 with the new capacity lined up by RIL, GAIL BCPL and OPAL and resumed production at Haldia Plant.

Table 10: Ethylene & Propylene Net Availability

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
ETHYLENE				
Capacity	3907	3615	5757	7127
Production	3735	3756	5500	6955
Imports	49	60	25	25
Exports	0	0	0	0
Net Availability	**3784**	**3816**	**5525**	**6980**
PROPYLENE				
Capacity	4371	4230	5126	5166
Production	4150	4020	4650	4690
Imports	0	0	0	0
Exports	0	10	10	10
Net Availability	**4150**	**4020**	**4650**	**4690**

Source: Industry Estimates. A: Actual, E: Estimate

Reliance Industries is constructing a 1.4-million m.t./year ethylene plant, expected on-stream in 2015-16which will crack refinery off-gases. Reliance will also adapt its 860,000-m.t./year ethylene plant at Hazira, originally designed to work on naphtha, to partly use gas. Technip is currently performing engineering work for the project. The new Jamnagar cracker will raise Reliance's HOPE total ethylene capacity to 3.2 million m.t./year. Separately, ONGC Petro additions Ltd. (OPaL), a JV among ONGC, Gail, and Gujarat State Petroleum Corp., is building a grassroots petrochemical complex at the Dahej PCPIR. The complex's' ethylene plant will be a dual-feed cracker with capacity for 1.1 million m.t./year of ethylene.

Propylene capacity as mentioned in the table above had witnessed a dip in 2014-15 owing to slow down at Haldia plant to 4230 KT from 4371 KT in 2013-14. It is however expected to increase to 5126 KT in 2015-16 with capacity additions lined up by RIL, HMEL, OPAL and BCPL Assam; resumed production at Haldia plant. Production in 2015-16 is also expected to touch 4650 KT from 4020 KT in 2014-15.Bharat Petroleum Corp. Ltd.'s (BPCL) board earlier in 2014approved a program to invest an estimated ₹45.9 billion to produce niche petrochemicals at the company's Kochi refinery, in the southern state of Kerala. The company is expanding the refinery and building a fluid catalytic cracker that will produce500,000 m.t./year of propylene. BPCL plans to use the propylene to produce acrylic acid, super absorbent polymers (SAP), acrylates, and oxo alcohols. BPCL would be the first company to produce SAP in India. The complex is expected on-stream in fiscal 2018-19.

B. Butadiene

Sharp decline in crude prices and continued soft demand for synthetic rubber, coupled with new capacities led to Butadiene prices under pressure in FY16 till Jan'16 before witnessing a steep climb because of turnarounds.

The demand for butadiene had registered a positive growth of 7% in 2013-14 and registered a robust growth of 43.4% in 2014-15and is expected to maintain around 40% growth in 2015-16 and improve further to around 60% in 2016-17on the back of new SBR and PBR plants of RIL coming up.

IOCL added140 KT of Butadiene capacity in 2014-15 and OPAL is expected to add 58 KT in 2016-17.Production is expected to increase in line with the new capacity addition taking place and is expected to increase from 229 KT in 2014-15 to 482 KT by 2016-17.

Table 11: Butadiene Demand Supply

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
BUTADIENE				
Capacity	295	435	435	493
Production	226	229	318	482
Imports	0	0	6	6
Exports	108	46	79	96
Apparent Demand	120	172	241	386
Demand Growth%	**6.3%**	**43.4%**	**40.1%**	**60.2%**

Source: Industry Estimates. A: Actual, E: Estimate

There was an exportable surplus of 108 KT in 2013-14, which declined to 46 KT in 2014-15 and expected to rebound in 2015-16 to 79 KT and 96 KT by 2016-17. There are few imports expected going forward in next fiscal.

C. Styrene

India does not have any capacity for styrene and is fully dependent upon imports as shown in table below. For 2014-15, India's total imports for Styrene was 617 KT and growth in styrene was at ~8%. In 2015-16, imports for Styrene are projected to increase by ~5% and expected to reach 647 KT and further to 675 KT in 2016-17.

Table 12: Styrene Demand Supply

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
STYRENE				
Imports	572	617	647	675
Exports	1	1	1	1
Apparent Demand	572	617	647	675
Demand Growth%	**3.8%**	**7.9%**	**4.9%**	**4.3%**

Source: Industry Estimates. A: Actual, E: Estimate

D. EDC & VCM

Almost the entire production of EDC and VCM in India are consumed captively by the polymer manufacturers for production of PVC and hence, PVC manufacturers who do not have facilities for captive production of EDC and VCM have to rely entirely on imports to meet their demand for PVC building blocks viz. EDC and VCM.

Table 13: EDC & VCM Import into India

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
EDC				
Capacity	190	190	190	190
Production	180	180	180	180
Imports	472	466	495	519
Exports	0	0	0	0
Apparent Demand	652	646	675	699
Growth (%)	**2.2%**	**-0.9%**	**4.5%**	**3.6%**
VCM				
Capacity	906	906	981	981
Production	880	865	935	951
Imports	412	375	398	450
Exports	0	0	0	0
Apparent Demand	1318	1281	1379	1431
Growth (%)	**3.0%**	**-2.8%**	**7.7%**	**3.8%**

Source: Industry Estimates. A: Actual, E: Estimate

While EDC registered nominal growth of 2.2% in 2013-14 it witnessed a negative growth of 0.2% in 2014-15. VCM too witnessed a negative growth of 2.8% in 2014-15.However, EDC is expected to register a positive growth of ~5% in 2015-16 and remain around that level in 2016-17. In case of EDC imports, there is once again a surge expected going forward in 2015-16 to 495 KT and 519 KT in 2016-17 from present imports of 466 KT in 2014-15. Imports in case of VCM is expected to increase from 375 in 2014-15 to 398 KT in 2015-16 and further increase to 450 KT in 2016-17.

Fibre Intermediates

In 2014-15, the combined production of fibre intermediates viz. ACN, Caprolactam, PTA and MEG reached 4677KT of which PTA and MEG constituted 69% and 27% respectively with ACN and Caprolactam together accounting for the remaining 3%.

Table 14 : Fibre Intermediate Demand Supply

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
ACN				
Capacity	40	40	40	40
Production	37	34	2	0
Imports	110	118	149	156
Exports	0	0	0	0
Demand	147	152	151	157
Demand Growth (%)	**27.7%**	**3.4%**	**-0.7%**	**4.0%**

CAPROLACTAM				
Capacity	70	70	70	70
Production	85	87	87	87
Imports	11	13	15	17
Exports	0	0	0	0
Demand	96	101	102	104
Demand Growth (%)	**2.9%**	**5.4%**	**1.0%**	**2.0%**
PTA				
Capacity	3930	3930	5652	6434
Production	3420	3596	4552	5628
Imports	978	1045	691	115
Exports	0	0	145	300
Demand	4398	4641	5098	5443
Demand Growth (%)	**7.1%**	**5.5%**	**9.8%**	**6.8%**
MEG				
Capacity	1200	1200	1200	1200
Production	1040	960	1095	1140
Imports	864	982	963	1060
Exports	64	69	70	75
Demand	1840	1882	2013	2125
Demand Growth (%)	**11.9%**	**2.3%**	**7.0%**	**5.6%**

Source: Industry Estimates. A: Actual, E: Estimate

PTA and MEG constituted 52% and 48% of the total 1963 KT fibre intermediates imported in 2013-14.Fibre intermediates exported from India in 2014-15 was 69KT and is expected to jump to 215KT in 2015-16 with the addition of new PTA capacity from RIL. ACN had witnessed a robust growth of 27.7% in 2013-14 on the back of pesticide industry doing well however the demand was subdued in 2014-15 and grew at around 4%. PTA import volumes into India (which is another big and growing polyester market in Asia) are also expected to decline after the new plant by Reliance Industries runs at full capacity and touch 115 KT by 2015-16.

IOCL, meanwhile, is taking up detailed feasibility study for 325 ktpa glycol project estimated to cost Rs 3,150 crore. The detailed feasibility report is expected by April 2016.This plant is targeted for commissioning by November 2019.

Two more projects have been planned for the petrochemical complex -- 1,200 ktpa PTA plant and petcoke gasification-based synthetic ethanol plant. Both projects are due to be commissioned by September 2021.

Caprolactam, which is used to manufacture automobile tyre cord, should benefit from an increase in discretionary spend, once the global economy returns to the growth path. To manufacture one tonne of caprolactam, about a tonne of benzene is required. In 2014-15 demand for caprolactam grew at ~5% and is expected to slow down in coming years to around 1-2%.

PET (Polyethylene Terephthalate)

Indian PET resin market is highly consolidated and dominated by three major players, Reliance Industries Limited (RIL), Dhunseri Petrochem Limited (DPTL) and JBF Industries Limited. In FY15-16, M/s Indorama Ventures Limited acquired Micro PET 210 KTA & DPTL. Reliance Industries is the largest player in the country's PET resin market and is expected to maintain its leadership position through 2016-17.

In 2015-16, Reliance Industries Limited commissioned a new PET resin facility at Dahej, Gujarat. The plant consists of two lines with a combined manufacturing capacity of 648 KTA, based on Chemtex technology for Continuous Polymerization and Buhler Technology for Solid State Polymerization.

This is one of the largest bottle grade PET resin capacity at a single location globally. This consolidates Reliance's position as a leading PET resin producer with a global capacity of 1.15 MMTPA. New capacity addition by Reliance will greatly help the downstream bottle and packaging industry in meeting the increasing demand from India and the region.

Table15: PET Demand Supply

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
PET				
Capacity	950	1140	1765	1815
Production	878	880	1280	1450
Imports	100	150	86	60
Exports	280	330	595	660
Apparent Demand	660	700	770	850
Demand Growth%	**10%**	**6%**	**10%**	**10%**

Source: Industry Estimates. A: Actual, E: Estimate

In 2014-15, the overall growth for PET industry in India was constrained by high volatility of prices and reduced liquidity with customers. Due to the above mentioned reason and concerns from pharma and liquor companies for use of PET the demand was subdued at 6% in 2014-15.

However in next two fiscals with new capacity addition and growing demand for consumer goods and government's various initiatives such as Make in India, etc to encourage domestics manufacturing the demand is expected to grow at double digits. India's PET capacity is expected to touch 1815 KT by 2016-17 from 1140 KT in 2014-15 and this will significantly reduce the imports and boost exports going forward by 2016-17.

Synthetic Fibres

In 2014-15, the combined production of synthetic fibre (PSF, ASF, PPSF, PFY, PPFY, VFY, VFS and NFY) reached 4310 KT against demand of 3958 KT. The demand growth was at 7.2% in 2013-14. It is expected that the fibre demand growth would be around 3-5% in next two years. The capacity in the 2015-16 and 2016-17 is expected to increase to 6710 KT and 6842 KT respectively from 6660 KT in 2014-15.

RIL successfully stabilized the production at its new Polyester Filament Yarn (PFY) facility at Silvassa, which had started production towards the end of the last financial year. This expansion has further strengthened RIL's position among the world's largest producers of polyester fibre and yarn. The new PFY plant at Silvassa is the most automated and one of the most environment-friendlyplants globally.

Table 16: Demand Supply Balance of Synthetic Fibre

	2013-14 A	2014-15 A	2015-16 E	2016-17 E
PSF				
Capacity	1150	1260	1260	1260
Production	936	971	958	962
Imports	28	43	51	30
Exports	168	205	118	130
Demand	812	835	876	907
Demand Growth (%)	**4.3%**	**2.8%**	**4.9%**	**3.5%**
ASF				
Capacity	166	158	98	98
Production	73.6	96.11	95.37	95.37
Imports	29	32	34	34
Exports	7	16	20	20
Demand	96	113	101	101
Demand Growth (%)	**12.0%**	**18.0%**	**-11.3%**	**0.0%**
PPSF				
Capacity	13	13	13	13
Production	4	4	4	4
Imports	1	1	1	1
Exports	2	15	11	11
Demand	4	4	5	5
Demand Growth (%)	**3.0%**	**3.0%**	**10.0%**	**0.0%**
PFY				
Capacity	3442	4499	4635	4751
Production	2385	2495	2735	2927
Imports	31	23	17	17
Exports	571	467	182	180
Demand	2330	2526	2549	2676
Demand Growth (%)	**4.2%**	**8.4%**	**0.9%**	**5.0%**
PPFY				
Capacity	18	18	18	18
Production	17	13	13	15
Imports	2	1	1	2

Exports	2	2	2	2
Demand	17	12	11	14
Demand Growth (%)	**22.1%**	**-31.5%**	**-0.3%**	**22.0%**
VSF				
Capacity	325	490	490	490
Production	337	361	364	490
Imports	15	18	25	25
Exports	100	107	108	108
Demand	257	278	268	305
Demand Growth (%)	**4.8%**	**8.1%**	**-3.5%**	**13.5%**
VFY				
Capacity	84	84	84	84
Production	43	44	45	60
Imports	10	17	16	10
Exports	6	6	6	
Demand	46	53	54	55
Demand Growth (%)	**2.7%**	**14.6%**	**2.2%**	**1.1%**
NFY				
Capacity	58	76	76	76
Production	33	50	50	50
Imports	23	23	2	2
Exports	2	2	2	2
Demand	45	45	52	52
Demand Growth (%)	**7.2%**	**0.0%**	**15.6%**	**0.0%**

Source : Industry Estimates. A: Actual, E: Estimate

Aromatics – Paraxylene

PX demand growth had declined to 1.5% in 2013-14 from 5% in 2012-13. However, in 2014-15 the demand picked up and registered a growth of 6.3%. PX demand is expected to grow at a robust pace of ~32% with lined upcoming capacities. PX capacity in 2014-15 was 2442 KT and with RIL and MRPL capacity addition it is expected to touch 3392KT in 2015-16. Further, around 383KT of capacity will be added in 2016-17making it a total 920 KT by MRPL as planned and capacity addition by RIL of 1599 KT will take India's PX capacity to 4991KT in 2016-17.PX import was at 699KT in 2014-15 and it is expected to increase to 797 KT in 2015-16and see a decline in 2016-17 to 759 KT. Meanwhile exports are expected to increase from 1066KT in 2014-15 to 1726 KT in 2016-17 before witnessing a dip in 2015-16 to 837 KT.

Table 17: Paraxylene Demand Supply

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
PARAXYLENE				
Capacity	2472	3009	3392	4991
Production	2259	2813	3341	4838
Imports	679	699	797	759
Exports	640	1066	837	1726
Apparent Demand	2298	2442	3219	3839
Demand Growth%	**1.5%**	**6.3%**	**31.8%**	**19.3%**

Source: Industry Estimates. A: Actual, E: Estimate

India's Reliance Industries will start up its 1.8m tonne/year PX unit in the second half of 2016 and likely to feed India's PTA plants. Meanwhile, Indian Oil Corp. has delayed the startup of a new 400,000 mt/year p-xylene plant at Vadodara in Gujarat state, from 2015 to 2017-2018.

Surfactants

Demand for key surfactant LAB increased by 4.3% in 2014-15 and is expected to maintain the same growth rate in this fiscal as shown in table below. LAB capacity is expected to remain unchanged till 2015-16 and witness an addition of capacity by IOC in 2016-17 taking the total capacity in India to 570 KT in that year.

LAB import is expected to decline to 127 KT in 2016-17before spiking a high of 178 KT in 2015-16. Exports are also expected to decline from 24KT in 2014-15 to about 2KT in 2015-16 – almost a 90% fall due to rising imports as a slowdown in production is expected.

Table 18: Demand & Supply of LAB & EO

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
LAB				
Capacity	530	530	530	570
Production	404	415	373	416
Imports	126	124	178	127
Exports	29	24	2	3
Demand	509	531	552	567
Demand Growth (%)	**1.8%**	**4.3%**	**4.0%**	**2.6%**
EO				
Capacity	234	253	268	268
Production	187	188	194	201
Imports	0	0	0	0
Exports	0	0	0	0
Demand	187	188	194	201
Demand Growth (%)	**8.2%**	**0.6%**	**3.3%**	**3.5%**

Source: Industry Estimates. A: Actual, E: Estimate

EO capacity increased from 253KT in 2014-15 and further is expected to touch 268KT in the next fiscal. Debottlenecking of EO capacity by RIL in 2012-13happened and in 2014-15. RIL capacity would also be enhanced from 188KTin 2014-15 to 203 KT in 2015-16.Demand for EO grew at meagre 0.6%in 2014-15 however it is expected to see an improved growth of around 3.3% in 2015-16 and further to 4% in 2016-17 touching 201 KT.

Synthetic Rubber

SBR which accounts for 40% of the total synthetic rubber demand is consumed mostly in the tyre sector.

Considering the large amount of SBR that is being consumed in the manufacture of tires and tire products, demand is very much dependent on the automotive industry and tire sectors as a whole. On a positive note, growing use of low-rolling-resistance tires to reduce fuel consumption and decrease CO2 emissions should increase SBR demand.

Table 19: Demand Supply Balance of PBR, SBR, NBR& EPDM

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
PBR				
Capacity	85	114	124	124
Production	85	101	112	123
Imports	86	70	64	73
Exports	1	2	6	10
Demand	170	171	172	186
Demand Growth (%)	**1.6%**	**0.5%**	**0.6%**	**8.1%**
SBR				
Capacity	40	140	290	290
Production	40	70	143	223
Imports	245	230	191	130
Exports	15	10	28	30
Demand	270	290	306	323
Demand Growth (%)	**17.4%**	**7.4%**	**5.5%**	**5.6%**
NBR				
Capacity	20	20	20	40
Production	20	20	20	40
Imports	18	27	32	38
Exports	0	0	0	4
Demand	38	45	50	56
Demand Growth (%)	**8.6%**	**18.4%**	**11.1%**	**12.0%**

EPDM				
Capacity	10	10	10	10
Production	0	0	0	0
Imports	35	33	40	45
Exports	0	0	0	0
Demand	35	33	40	45
Demand Growth (%)	**8.0%**	**-5.7%**	**21.2%**	**12.5%**

Source: Industry Estimates. A: Actual, E: Estimate

In 2014-15, synthetic rubber demand grew at 5% and is expected to maintain the same growth rate in 2015-16 before improving to 7% in 2016-17.

Reliance Industries Ltd. began production at its new 150,000 mt/year SBR plant at Hazira in September last year, which is the largest in India. The plant has capability to produce entire range of dry as well as oil extended grades of emulsion SBR. As shown in table below, SBR demand registered a growth of 7% in 2014-15 and expected to be around 6% in following two years. Imports are expected to significantly reduce by 2016-17 onwards with RIL new capacity coming up to full steam.

India is expected to jump three places to become the world's No.3 car market by 2018. This has fulled a domestic rush to produce more of the synthetic rubber that is mixed with natural rubber to make tyres.

EPDM demand is expected to improve by 2015-16 to a double digit growth of ~21% from a negative growth of 5.7% witnessed in 2014-15.Reliance is the only producer of PBR in India. PBR demand growth rate is expected to improve to 8% by 2016-17 from a low of ~1% in 2014-15.

Carbon Black Feedstock & Carbon Black

Carbon black is an additive for rubber products which also finds application as a key raw material in various chemical industries including inks, coatings, paints, batteries, electrical cables, plastic films, pipes and sealants etc. More than 60% of the demand for carbon black comes from tyres segment. According to ATMA (Automotive Tyre Manufacturers' Association), carbon black constitutes 11% of the raw material cost of tyre companies and forms 20-25% of volumes of the tyre.

The domestic carbon black industry continued to reel under pressure this year in 2014-15 due to deceleration in growth in automobile sector coupled with unabated dumping of carbon black in India byChina South Korea and a few other countries which affected the demand growth to drop to negative growth in from a positive 10% in 2012-13. Total import of carbon black in India during FY15 was 70 KT and import from China and South Korea accounted for 90% of total import. Due to this dumping procurement of carbon black from domestic sources was affected and carbon black companies in India had to continue with production cut during the year.

Table 20: Demand Supply Balance of CBFS & Carbon Black

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
CBFS				
Capacity	1925	1925	1925	1925
Production	1450	1430	1520	1610
Imports	800	1300	1300	1450
Exports	800	720	750	750
Demand	1450	1430	1520	1610
Demand Growth (%)	**-6.1%**	**-1.4%**	**6.3%**	**5.9%**

CARBON BLACK (KT)				
Capacity	1040	1040	1040	1040
Production	780	780	832	884
Imports	100	70	100	125
Exports	120	90	200	250
Demand	880	850	932	1009
Demand Growth (%)	**10.3%**	**-3.4%**	**9.6%**	**8.3%**

Source: Industry Estimates. A: Actual, E: Estimate

Demand for carbon black in India is expected to grow at a double digit of 10% in 2015-16 and is likely to receive significant boost when new capacity for tyre manufacturing hits the market. Meanwhile, CBFS registered a negative growth a negative growth of 1% in 2014-15 however it is expected to remain in the range of 6% in next two years.

Other Key Petrochemicals

Overall other key petrochemicals demand in 2014-15 witnessed a growth of2% and is expected to witness a robust growth of 10% in next fiscal years.

Benzene demand witnessed a negative growth of 11% in 2014-15 however is expected to grow at ~5% in 2015-16 with capacity addition lined up by MRPL, IOCL and boost in domestic sales.

Exports too are expected to further increase by 2016-17 and touch 1020 KT. Toluene demand registered growth of ~9% in 2014-15 and witness a robust demand growth 18.2% in 2015-16. MX Switnessed a robust growth in demand at 40% in 2014-15. Meanwhile, OX registered a growth rate of 3.2% in 2014-15. There is no new capacity addition lined up for OX, however, demand is expected to increase to 303 KT in 2015-16.

Table 21: Demand Supply Balance of Benzene, Toluene, MXS& OX

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
BENZENE				
Capacity	1260	1315	1492	1767
Production	1062	1075	1305	1550
Imports	0	0	0	0
Exports	495	571	775	1020
Demand	567	504	530	530
Demand Growth (%)	**-4.4%**	**-11.1%**	**5.2%**	**0.0%**
TOLUENE				
Capacity	270	270	270	270
Production	140	140	140	140
Imports	264	300	380	390
Exports	0	0	0	0
Demand	404	440	520	530
Demand Growth (%)	**-9.6%**	**8.9%**	**18.2%**	**1.9%**
MXS				
Capacity	90	90	90	90
Production	86	81	79	90
Imports	34	79	79	75
Exports	18	18	0	0

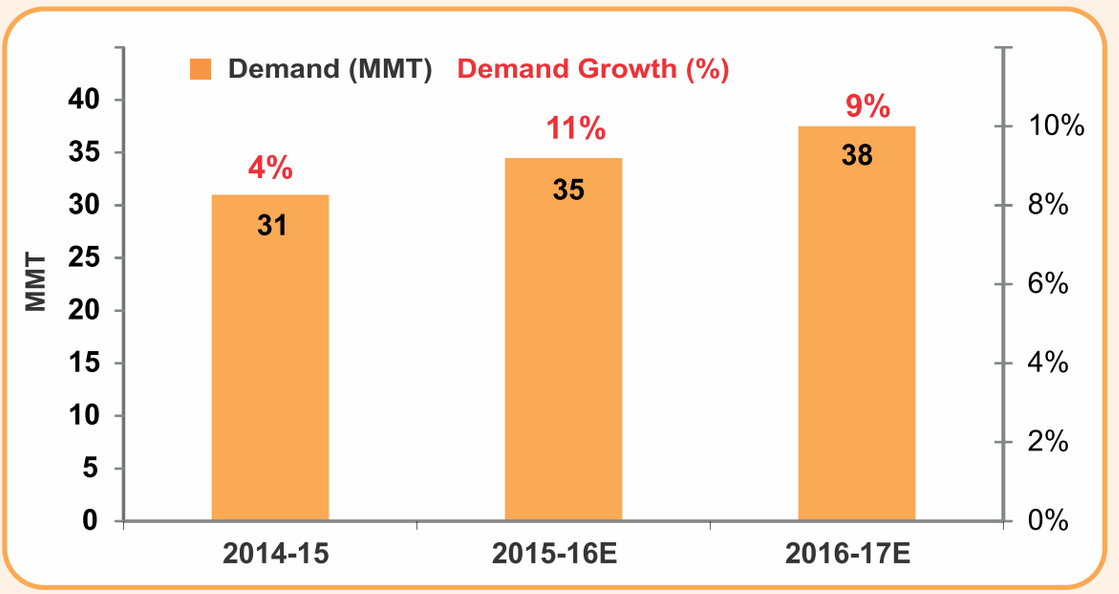
Demand	100	140	157	164
Demand Growth (%)	**20.5%**	**40.0%**	**12.1%**	**4.5%**
OX				
Capacity	420	420	420	420
Production	412	462	500	485
Imports	65	36	30	22
Exports	205	213	230	220
Demand	278	287	303	287
Demand Growth (%)	**-1.1%**	**3.2%**	**5.6%**	**-5.3%**

Source: Industry Estimates. A: Actual, E: Estimate

Outlook for the Overall Indian Petrochemical Industry

India's aggregated demand for petrochemicals increased by 5% in 2014-15. Combining the demand for all the key segments in the petrochemical industry aggregate demand for the entire petrochemical sector in India is likely to increase from 32 MMT in 2014-15 to 35 MMT in 2015-16 and further to 38 MMT in 2016-17 as depicted in figure below. At the aggregate level, therefore, demand for petrochemicals in India is expected to grow at Y-0-Y at 11% in 2015-16 and at 9% in 2016-17.

Figure 15: Aggregate Petrochemical Demand (All key segments – MMT)



- Polymers are likely to register growth rate of ~14% and 11% in 2015-16 and 2016-17 respectively.
- Polyolefins are expected to grow at 16% and 12% in 2015-16 and 2016-17 with the startup of new capacities.
- Surfactants are projected to grow at ~4% and 3% in the same period. Synthetic rubbers are expected to register demand growth in the range of 5% and 7% in 2015-16 and 2016-17 respectively.
- Other key petrochemicals expected to grow at ~11% in 2015-16.India's demand from the automobiles, packaging, and agriculture and infrastructure sector is expected to grow at healthy rate with easing of government's monetary policy.
- This optimism is based on the expectation that India's GDP would again grow at 7.5% plus in 2015-16.

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SECTION 3

STATISTICAL APPENDIX

Demand Supply Balance: Polymers (KT)

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
LDPE				
Capacity	205	205	205	415
Production	190	184	198	207
Imports	255	328	384	440
Exports	0	0	0	0
Apparent Demand	444	515	585	647
Demand Growth%	**0.2%**	**16.0%**	**13.5%**	**10.6%**
EVA				
Capacity	15	15	15	0
Production	11	8	5	0
Imports	120	135	147	162
Exports	0	0	0	0
Apparent Demand	131	143	152	162
Demand Growth%	**13.0%**	**8.9%**	**6.3%**	**6.9%**
LLDPE				
Capacity	980	980	980	1650
Production	794	744	937	1479
Imports	450	599	620	535
Exports	9	8	18	370
Apparent Demand	1236	1328	1546	1781
Demand Growth%	**-0.3%**	**7.4%**	**16.4%**	**15.2%**
HDPE				
HDPE Capacity	1795	1830	1830	2810
LLDPE Capacity	980	980	980	1650
Total Capacity	2775	2810	2810	4460
Production	1425	1269	1543	2285
Imports	404	572	569	330
Exports	99	27	112	420
Apparent Demand	1766	1828	2029	2200
Demand Growth%	**-0.8%**	**3.5%**	**11.0%**	**8.5%**
All PE				
Capacity	2980	3015	3015	4875
Production	2409	2197	2678	3971
Imports	1109	1499	1573	1305
Exports	108	35	130	790
Apparent Demand	3446	3671	4160	4628
Demand Growth%	**-0.5%**	**6.5%**	**13.3%**	**11.3%**

PP				
Capacity	4180	4180	4570	5170
Production	4188	4176	4864	5180
Imports	400	511	551	550
Exports	893	720	713	700
Apparent Demand	3253	3509	4148	4651
Demand Growth%	**3.6%**	**7.9%**	**18.2%**	**12.1%**
POLYOLEFINS				
Capacity	7175	7210	7600	10045
Production	6608	6381	7547	9151
Imports	1630	2145	2271	2017
Exports	1001	755	843	1490
Apparent Demand	6831	7323	8459	9441
Demand Growth%	**1.6%**	**7.2%**	**15.5%**	**11.6%**
PVC				
Capacity	1402	1402	1482	1482
Production	1293	1256	1354	1406
Imports	1026	1172	1326	1524
Exports				
Apparent Demand	2309	2443	2678	2931
Demand Growth%	**2.0%**	**5.8%**	**9.6%**	**9.4%**
PS				
Capacity	472	472	476	490
Production	260	270	280	290
Imports	17	13	14	14
Exports	60	42	44	46
Apparent Demand	217	238	241	249
Demand Growth%	**-13.3%**	**9.8%**	**1.3%**	**3.3%**
POLYMERS				
Capacity	9049	9084	9558	12017
Production	8161	7907	9181	10847
OR (%)	90%	87%	96%	90%
Imports	2673	3330	3611	3555
Exports	1061	797	887	1536
Net Trade	-1612	-2533	-2723	-2019
Apparent Demand	9356	10004	11378	12621
Demand Growth%	**1.3%**	**6.9%**	**13.7%**	**10.9%**

Demand Supply Balance: Olefins (KT)

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
ETHYLENE				
Capacity	3907	3615	5757	7127
Production	3735	3756	5500	6955
Imports	49	60	25	25
Exports	0	0	0	0
Net Availability	**3784**	**3816**	**5525**	**6980**
PROPYLENE				
Capacity	4371	4230	5126	5166
Production	4150	4020	4650	4690
Imports	0	0	0	0
Exports	0	10	10	10
Net Availability	**4150**	**4020**	**4650**	**4690**
BUTADIENE				
Capacity	295	435	435	493
Production	226	229	318	482
Imports	0	0	6	6
Exports	108	46	79	96
Apparent Demand	120	172	241	386
Demand Growth%	**6.3%**	**43.4%**	**40.1%**	**60.2%**
Styrene				
Imports	572	617	647	675
Exports	1	1	1	1
Net Trade	572	617	647	675
Demand Growth%	**3.8%**	**7.9%**	**4.9%**	**4.3%**
EDC				
Capacity	190	190	190	190
Production	180	180	180	180
Imports	472	466	495	519
Exports	0	0	0	0
Apparent Demand	652	646	675	699
Demand Growth%	**2.2%**	**-0.9%**	**4.5%**	**3.6%**
VCM				
Capacity	906	906	981	981
Production	880	865	935	951
Imports	412	375	398	450
Exports	0	0	0	0
Apparent Demand	1318	1281	1379	1431
Demand Growth%	**3.0%**	**-2.8%**	**7.7%**	**3.8%**

Demand Supply Balance: ABS, SAN, PX & Surfactants (KT)

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17E
ABS				
Capacity	131	155	190	190
Production	99	102	112	124
Imports	55	64	71	76
Exports	3	0	0	0
Apparent Demand	151	166	183	200
Demand Growth%	**10.2%**	**9.9%**	**10.2%**	**9.3%**
SAN				
Capacity	130	130	150	150
Production	82	87	94	102
Imports	7	7	8	8
Exports	0	0	0	0
Apparent Demand	89	94	102	111
Demand Growth%	**6.9%**	**5.6%**	**8.5%**	**8.8%**
PX				
Capacity	2472	3009	3392	4991
Production	2259	2813	3341	4838
Imports	679	699	797	759
Exports	640	1066	837	1726
Apparent Demand	2298	2442	3219	3839
Demand Growth%	**1.5%**	**6.3%**	**31.8%**	**19.3%**
LAB				
Capacity	530	530	530	570
Production	404	415	373	416
Imports	126	124	178	127
Exports	29	24	2	3
Apparent Demand	509	531	552	567
Demand Growth%	**1.8%**	**4.3%**	**4.0%**	**2.6%**
EO				
Capacity	234	253	268	268
Production	187	188	194	201
Imports	0	0	0	0
Exports	0	0	0	0
Apparent Demand	187	188	194	201
Demand Growth%	**8.2%**	**0.6%**	**3.3%**	**3.5%**

Demand Supply Balance: Fibre Intermediates (KT)

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
ACN				
Capacity	40	40	40	40
Production	37	34	2	0
Imports	110	118	149	156
Exports	0	0	0	0
Apparent Demand	147	152	151	157
Demand Growth%	**27.7%**	**3.4%**	**-0.7%**	**4.0%**
CAPROLACTAM				
Capacity	70	70	70	70
Production	85	87	87	87
Imports	11	13	15	17
Exports	0	0	0	0
Apparent Demand	96	101	102	104
Demand Growth%	**2.9%**	**5.4%**	**1.0%**	**2.0%**
PTA				
Capacity	3930	3930	5652	6434
Production	3420	3596	4552	5628
Imports	978	1045	691	115
Exports	0	0	145	300
Apparent Demand	4398	4641	5098	5443
Demand Growth%	**7.1%**	**5.5%**	**9.8%**	**6.8%**
MEG				
Capacity	1200	1200	1200	1200
Production	1040	960	1095	1140
Imports	864	982	963	1060
Exports	64	69	70	75
Apparent Demand	1840	1882	2013	2125
Demand Growth%	**11.9%**	**2.3%**	**7.0%**	**5.6%**

Demand Supply Balance: PET (KT)

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
PET				
Capacity	950	1140	1765	1815
Production	878	880	1280	1450
Imports	100	150	86	60
Exports	280	330	595	660
Demand	660	700	770	850
Demand Growth (%)	**10.0%**	**6.0%**	**10.0%**	**10.0%**

Demand Supply Balance: Synthetic Fibres (KT)

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
PSF				
Capacity	1260	1260	1260	1260
Production	971	977	981	989
Imports	43	45	55	45
Exports	205	216	222	208
Demand	835	851	869	871
Demand Growth (%)	**2.8%**	**1.9%**	**2.1%**	**0.2%**
ASF				
Capacity	158	98	98	98
Production	96	95	95	95
Imports	32	34	34	34
Exports	16	20	20	20
Demand	113	101	101	101
Demand Growth (%)	**18.0%**	**-11.3%**	**0.0%**	**0.3%**
PPSF				
Capacity	13	13	13	13
Production	4	4	4	4
Imports	1	1	1	1
Exports	15	11	11	11
Demand	4	5	5	5
Demand Growth (%)	**3.0%**	**10.0%**	**0.0%**	**0.0%**
PFY				
Capacity	4250	4572	4622	4754
Production	2595	2759	2760	2948
Imports	6	26	18	18
Exports	161	164	113	100
Demand	2451	2615	2691	2855
Demand Growth (%)	**5.2%**	**6.7%**	**2.9%**	**6.1%**
PPFY				
Capacity	18	18	18	18
Production	13	13	15	15
Imports	1	1	2	2
Exports	2	2	2	2
Demand	12	11	14	14
Demand Growth (%)	**-31.5%**	**-0.3%**	**22.0%**	**0.0%**

VSF				
Capacity	490	490	490	490
Production	361	364	490	490
Imports	18	25	25	25
Exports	107	108	108	108
Demand	278	268	305	339
Demand Growth (%)	**8.1%**	**-3.5%**	**13.5%**	**11.1%**
VFY				
Capacity	84	84	84	84
Production	44	45	60	60
Imports	17	16	10	10
Exports	6	6		
Demand	53	54	55	55
Demand Growth (%)	**14.6%**	**2.2%**	**1.1%**	**0.0%**
NFY				
Capacity	76	76	76	76
Production	50	50	50	50
Imports	23	2	2	2
Exports	2	2	2	2
Demand	45	52	52	52
Demand Growth (%)	**0.0%**	**15.6%**	**0.0%**	**0.0%**

Demand Supply Balance: Elastomers (KT)

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
PBR				
Capacity	85	114	124	124
Production	85	101	112	123
Imports	86	70	64	73
Exports	1	2	6	10
Apparent Demand	170	171	172	186
Demand Growth%	**1.6%**	**0.5%**	**0.6%**	**8.1%**
SBR				
Capacity	40	140	290	290
Production	40	70	143	223
Imports	245	230	191	130
Exports	15	10	28	30
Apparent Demand	270	290	306	323
Demand Growth%	**17.4%**	**7.4%**	**5.5%**	**5.6%**

NBR				
Capacity	20	20	20	40
Production	20	20	20	40
Imports	18	27	32	38
Exports	0	0	0	4
Apparent Demand	38	45	50	56
Demand Growth%	**8.6%**	**18.4%**	**11.1%**	**12.0%**
EPDM				
Capacity	10	10	10	10
Production	0	0	0	0
Imports	35	33	40	45
Exports	0	0	0	0
Apparent Demand	35	33	40	45
Demand Growth%	**8.0%**	**-5.7%**	**21.2%**	**12.5%**

Demand Supply Balance: Carbon Black and CBSF (KT)

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
CBSF				
Capacity	1925	1925	1925	1925
Production	1450	1430	1520	1610
Imports	800	1300	1300	1450
Exports	800	720	750	750
Demand	1450	1430	1520	1610
Demand Growth (%)	**-6.1%**	**-1.4%**	**6.3%**	**5.9%**
CARBON BLACK				
Capacity	1040	1040	1040	1040
Production	780	780	832	884
Imports	100	70	100	125
Exports	120	90	200	250
Demand	880	850	932	1009
Demand Growth (%)	**10.3%**	**-3.4%**	**9.6%**	**8.3%**

Demand Supply Balance: Other Key Petrochemicals (KT)

(KT)	2013-14 A	2014-15 A	2015-16 E	2016-17 E
BENZENE				
Capacity	1260	1315	1492	1767
Production	1062	1075	1305	1550
Imports	0	0	0	0
Exports	495	571	775	1020
Apparent Demand	567	504	530	530
Demand Growth%	**-4.4%**	**-11.1%**	**5.2%**	**0.0%**
TOLUENE				
Capacity	270	270	270	270
Production	140	140	140	140
Imports	264	300	380	390
Exports	0	0	0	0
Apparent Demand	404	440	520	530
Demand Growth%	**-9.6%**	**8.9%**	**18.2%**	**1.9%**
MXS				
Capacity	90	90	90	90
Production	86	81	79	90
Imports	34	79	79	75
Exports	18	18	0	0
Apparent Demand	100	140	157	164
Demand Growth%	**20.5%**	**40.0%**	**12.1%**	**4.5%**
OX				
Capacity	420	420	420	420
Production	412	462	500	485
Imports	65	36	30	22
Exports	205	213	230	220
Apparent Demand	278	287	303	287
Demand Growth%	**-1.1%**	**3.2%**	**5.6%**	**-5.3%**

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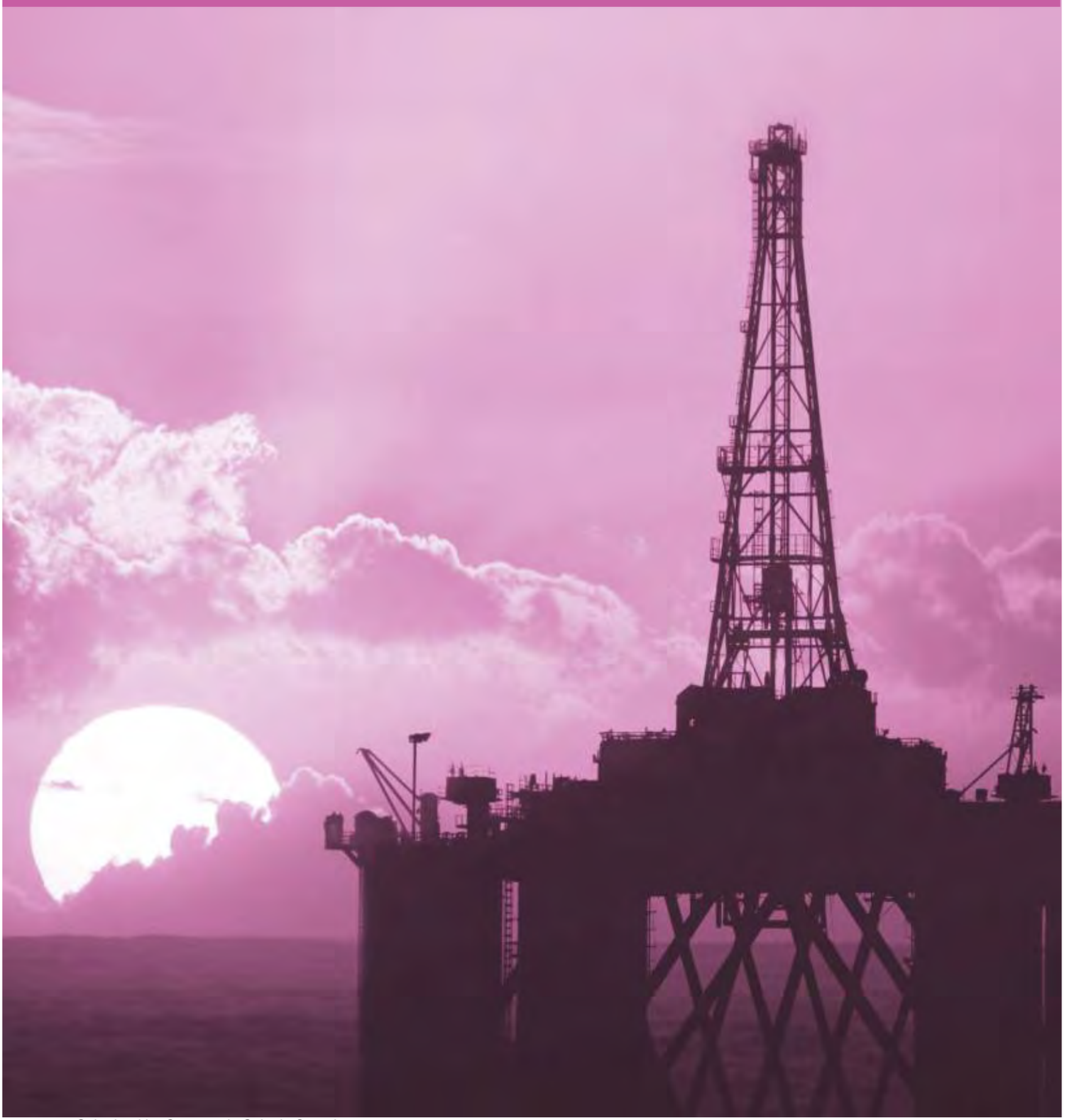
INDIAN COUNTRY REPORT

PRESENTATIONS FOR COMMITTEE MEETINGS APIC-2016

CPMA

Chemicals & Petrochemicals Manufacturers' Association, India



INDIAN PETROCHEMICAL INDUSTRY

REVIEW & FUTURE PROSPECTS
MAY 2016

REVIEW & OUTLOOK OF INDIAN ECONOMY

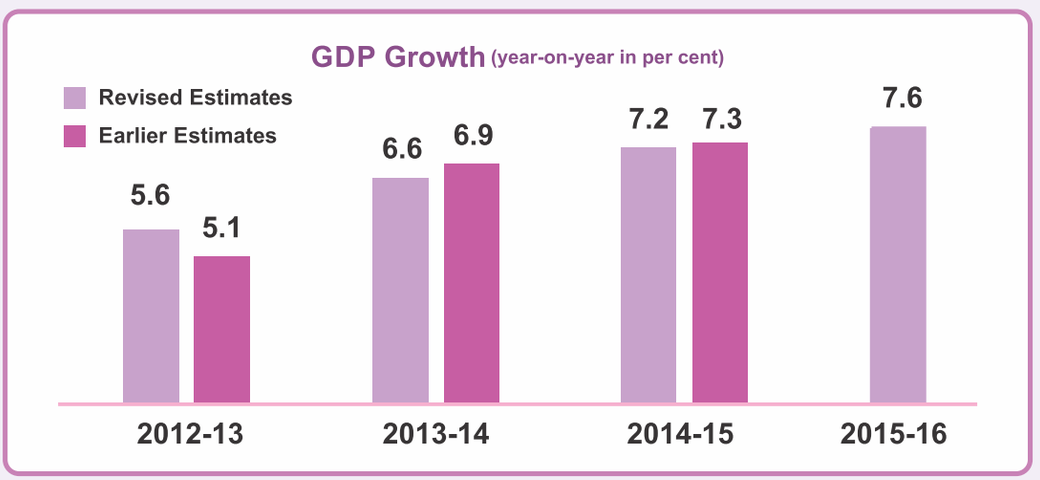
CPMA

Chemicals & Petrochemicals Manufacturers' Association, India

Triggers fueling growth in Indian Economy

- Fast Growing Economy
- Youngest Population
- Infrastructure Investment
- Urban Population Growth
- Thriving Organized Retail
- 100 Smart Cities
- Make in India Program
- Mobile Growth
- Rural Consumption to go up

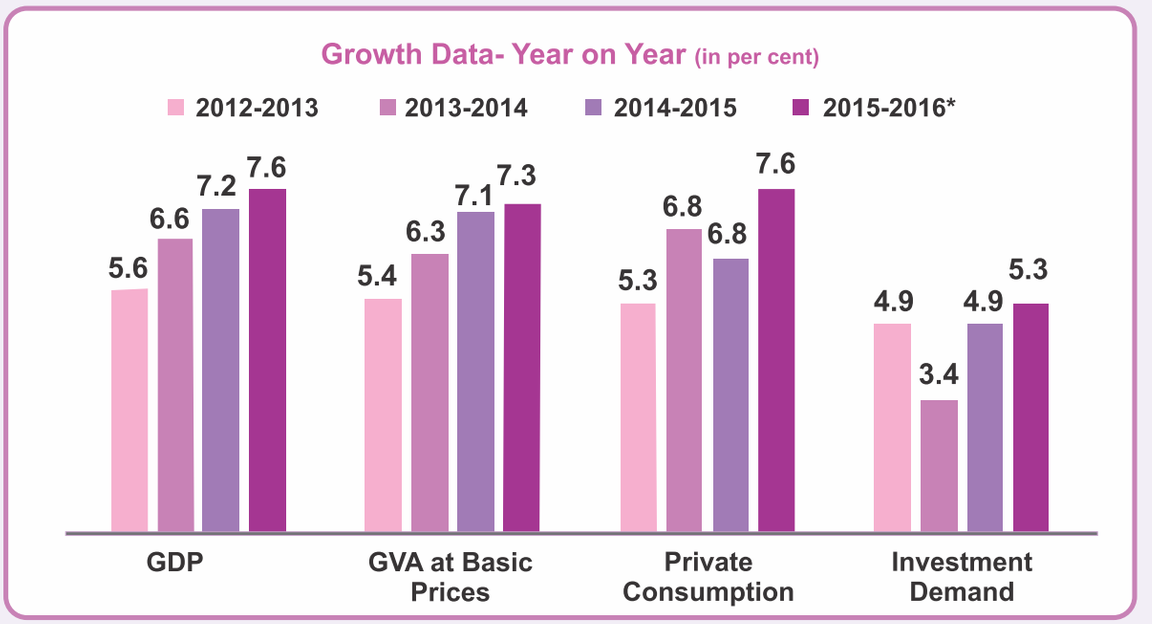
India's GDP Growth (year-on-year in per cent)



Source : *CSO, *Advance estimates for FY16, not actuals' Base year is 2011-12*

- GDP data cements India's position as fastest growing major economy
- India's economic growth this financial year expected at 7.6% in 2015-16
- IMF, ADB and OCED have revised their growth projections for 2016-17

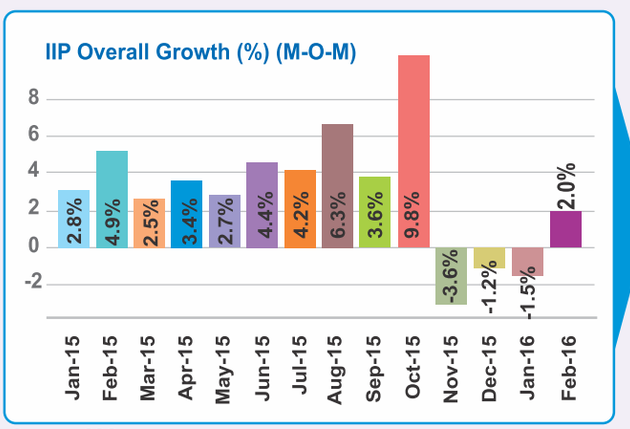
Consumption & investment growth revived



Source : *CSO, *Advance estimates for FY16, not actuals' Base year is 2011-12*

- A spike in industrial activity and higher investment demand paced the faster growth.
- Manufacturing growth remains an important growth driver.

IIP Gearing Toward The Right And +ve Direction



Source : CSO

		Sectoral			Use-Based Claasification				
	IIP	Mining	Manufacturing	Electricity	Basic	Capital	Intermediate	Durables	Non-Durables
Weight	100%	14.2%	75.5%	10.3%	45.7%	8.8%	15.7%	8.5%	21.4%
Month									
Dec-14	3.6%	-1.7%	4.1%	4.8%	5.9%	6.1%	1.1%	-9.2%	5.6%
Jan-15	2.8%	-1.8%	3.4%	3.3%	4.8%	12.4%	0.1%	-5.7%	0.3%
Dec-15	-1.2%	2.7%	-2.2%	3.2%	0.5%	-19.1%	1.3%	16.4%	-3.0%
Jan-16	-1.5%	1.2%	-2.8%	6.6%	1.8%	-20.4%	2.7%	5.8%	-3.1%
Apr'14-Jan'15	**2.6%**	**1.5%**	**1.9%**	**9.4%**	**7.7%**	**5.8%**	**1.6%**	**-14.3%**	**2.1%**
Apr'15-Jan'16	**2.7%**	**2.1%**	**2.5%**	**4.7%**	**3.2%**	**-0.6%**	**2.0%**	**11.6%**	**-1.2%**

Source: Central Statistics Office (CSO)

- Cumulative IIP strengthened 2.6% for the period of April to February 2016.
- Urban demand driven consumer durables did well growing at 9.7% in Feb'16.
- Although there are small positive changes in IIP, heavy positive changes are expected due to key reforms under approval and increasing investment in infrastructure.

Core sector industries grew 5.7% in February - a 15-month high

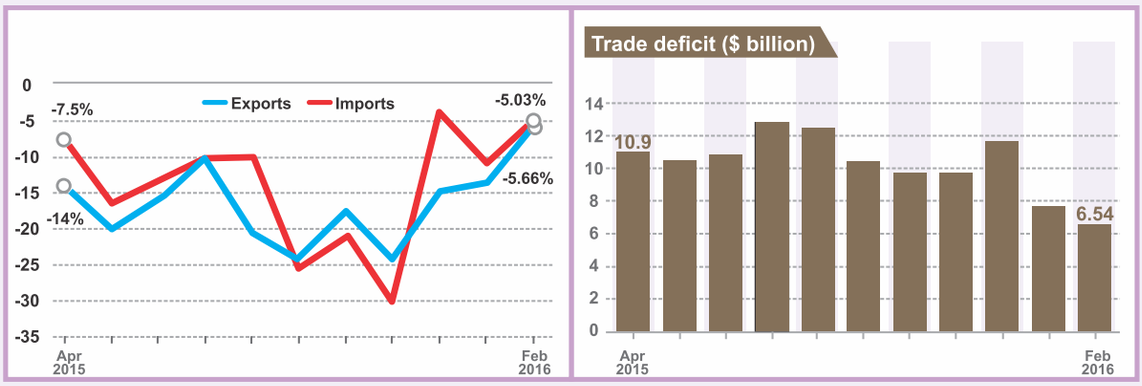
Core Industries Growth Rate (in percent)

Growth in Index of Core Industries	Index of Core Industries	Coal	Crude Oil	Natural Gas	Refinery Products	Fertilizers	Steel	Cement	Electricity
Weight	37.98%	4.4%	5.2%	1.7%	5.9%	1.2%	6.7%	2.4%	10.3%
Month									
Nov-14	8.5%	14.6%	-0.1%	-2.3%	8.1%	-2.8%	9.9%	10.5%	9.9%
Dec-14	3.2%	7.5%	-1.4%	-2.9%	6.1%	-1.6%	0.0%	3.8%	4.8%
Jan-15	2.3%	0.9%	-2.3%	-6.0%	4.7%	7.1%	3.4%	0.2%	3.3%
Nov-15	-1.3%	3.5%	-3.3%	-3.9%	2.5%	13.5%	-8.4%	-1.8%	0.0%
Dec-15	0.9%	6.1%	-4.1%	-6.1%	2.1%	13.1%	-4.4%	3.2%	2.7%
Jan-16	2.9%	9.1%	-4.6%	-15.3%	4.8%	6.2%	-2.5%	9.0%	6.0%
Feb-16	5.7%	3.9%	0.8%	1.2%	8.1%	16.3%	-0.5%	13.5%	9.2%
Apr'14-Feb'15	5.0%	8.6%	-1.1%	-5.3%	0.5%	-0.5%	5.9%	6.6%	9.0%
Apr'15-Feb'16	2.3%	5.0%	-1.0%	-3.6%	3.1%	10.3%	1.8%	3.9%	4.6%

Source: Index of Eight Core Industries, Central Statistics Office (CSO)

- On a cumulative basis, the eight industries expanded 2.3% between Apr'15 and Feb'16, against 5% in the same period a year ago.
- Two of the eight industries — fertiliser and cement — expanded by double-digits.
- The former grew 16.3% and the latter by 13.5%.

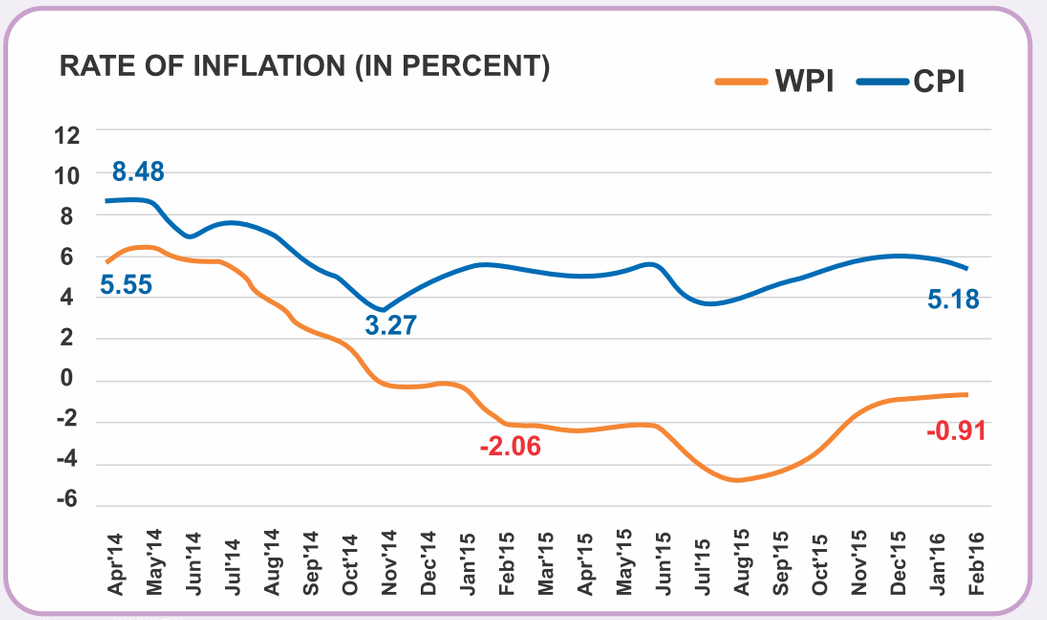
India's trade deficit at record low of $5 billion in March'16



Source : Commerce ministry

- India's exports fell 15.9% to $261.1 bn in 2015-16 while imports contracted by 15.3% to $379.6 bn.
- The trade deficit for the year was $118.5 bn.
- A sharp decline in the gold imports helped narrow India's trade deficit to a record low, as merchandise imports contracted faster than exports in March amid tepid global demand.

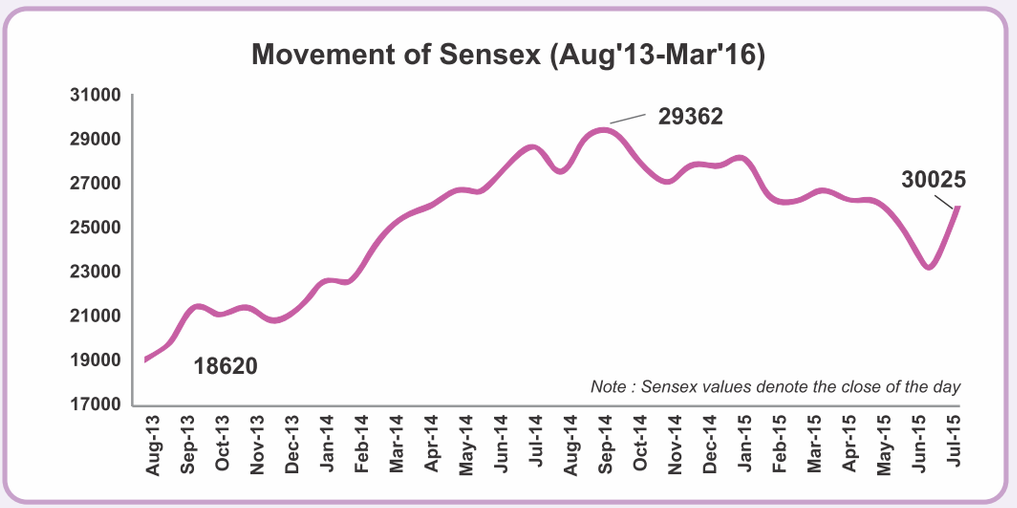
Inflation on a decline



Source : MOSPI

- Retail inflation slowed to a four-month low in February 2016, while the wholesale price index posted a negative reading for a 16th straight month.
- Food inflation to remain under check on better rain forecast.

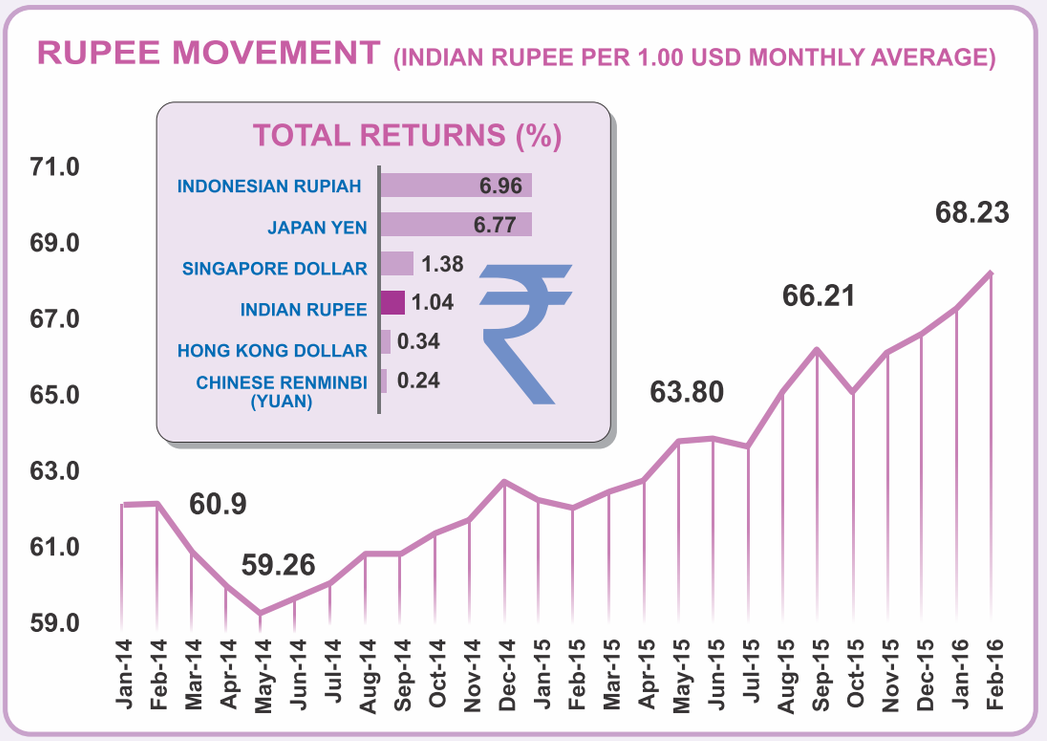
The year 2015 witnessed high volatility in equity markets but rebounded before year end



Source : BSE

- Sensex is expected to scale new highs in the year 2016.

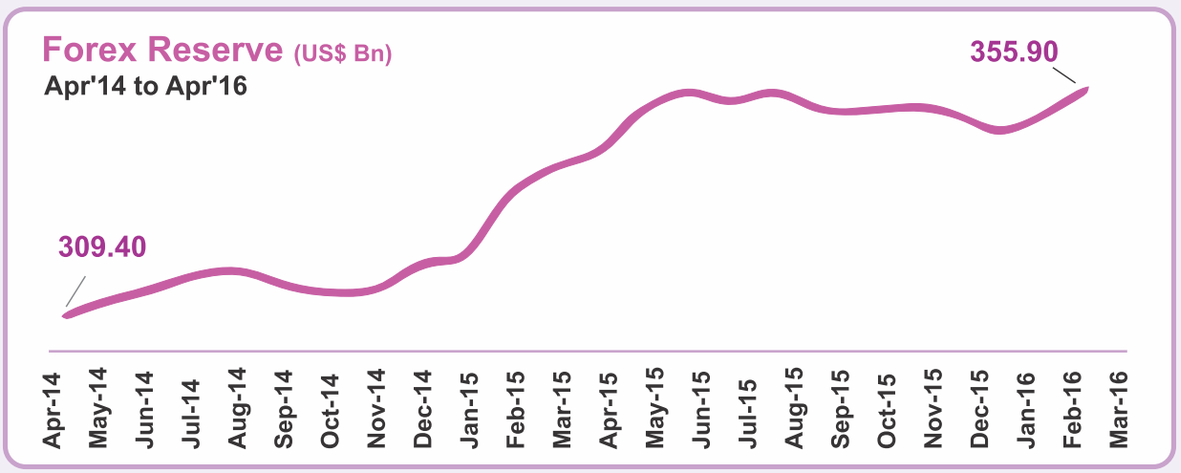
Indian rupee despite weakening in 2015 emerged as best performing currencies



Source : RBI

- With the Fed now taking the foot off the pedal in terms of rate hikes, high-yield emerging-market currencies would be back in vogue and the rupee is expected to be among those in demand.

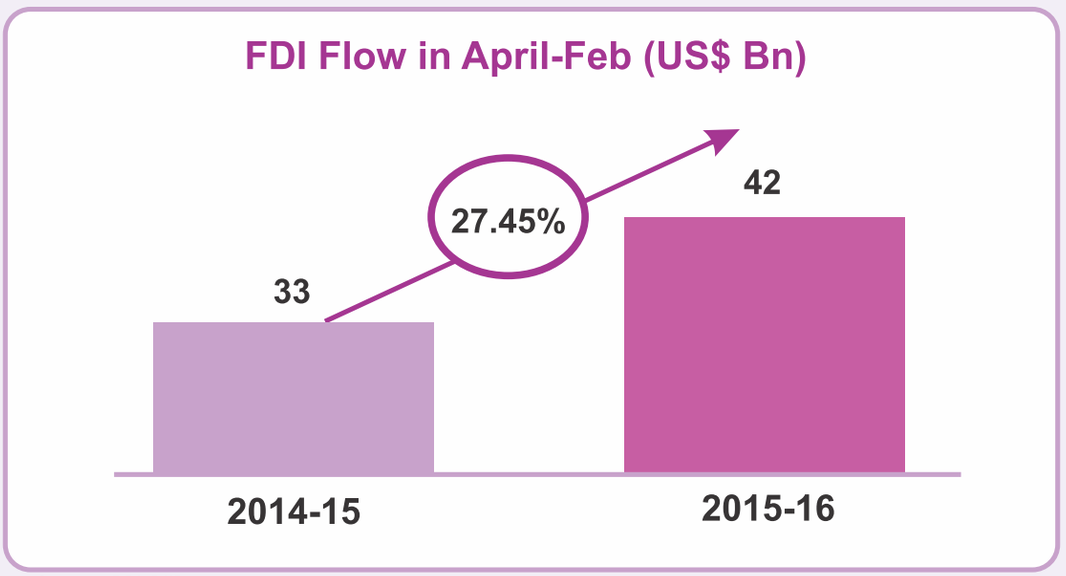
Foreign exchange reserve registered a new high



Source : RBI. Note : Apr'16 data refers to 2nd week of April

- India's foreign exchange reserves surged by a whopping USD 4.2 bn to touch a record high of USD 359.90 bn in the week ended April 1 2016

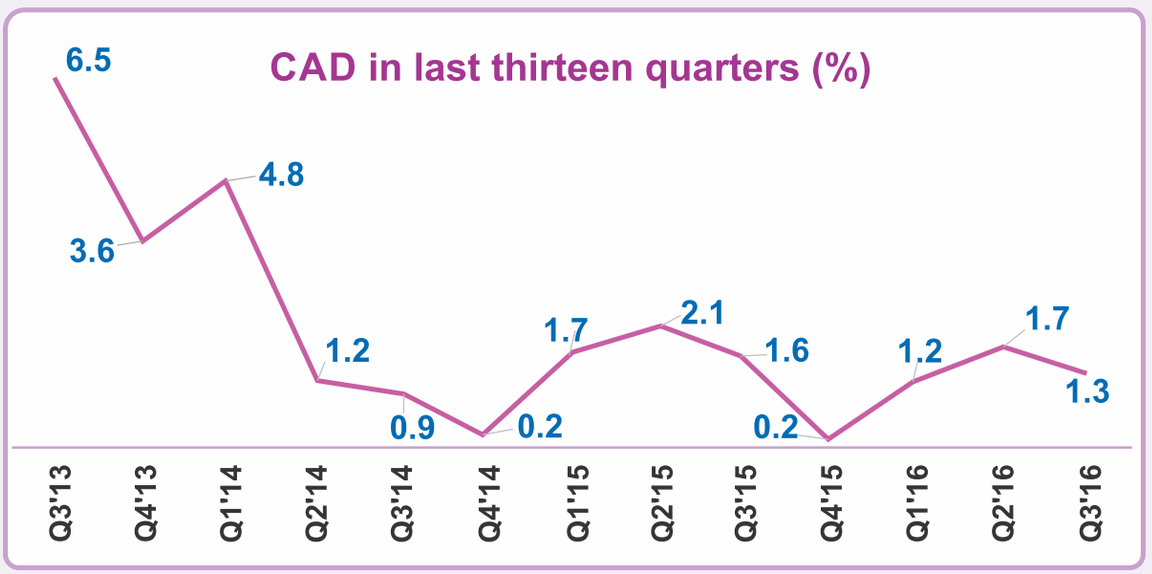
India replaced China in 2015 as the top FDI Destination



Source : RBI, DIIP

- In 2015, India was for the first time the leading country in the world for FDI, overtaking the US (which had $59.6 billion of greenfield FDI) and China ($56.6 billion)

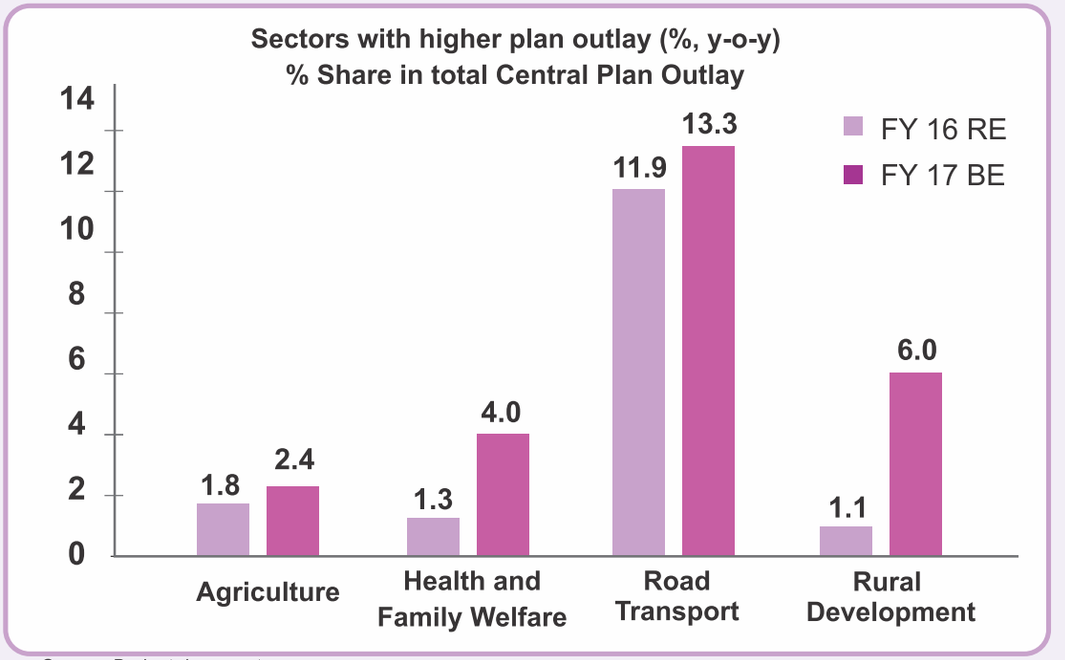
CAD fell to 1.3% of GDP in Q3'16



Source : CSO

- CAD may rise a tad to 1.4% of GDP in fiscal 2017 from an estimated 1.3% in fiscal 2016

Budget planned increase in capital expenditure



Source: Budget documents

- Govt to spend ₹ 2.18 trillion on roads, railways
- The central Plan outlay for power, new and renewable energy and transport sector was collectively increased by 50% for 2016-17
- The highest increase in allocation recorded for rural development, followed by roads, shipping, railways
- Focus on these sectors is important again because of the multiplier impact on output

Government taking Leaps ahead

Regulatory Improvements

- 'Single window' alongwith easy and simple clearance procedures.
- Rolling out of much anticipated GST

Manufacturing Thrust

- 'Make in India' initiative to strengthen the manufacturing base in India
- Country specific investment regions and industrial parks on PPP; Infra driven Industrial corridors

Connectivity Push

- Roads - 10,000 kms of National Highways planned in 2016-17,
- Ports – Develop new greenfield ports ; New Airports developed, 10 existing to be upgraded
- Outlay of US$ 31.9 bn for Roads and Railways in Budget 2016-17

Make in India

Offer for Foreign Co.'s to invest $2 Bn get residency permits and special rates for utilities

India attracted investments of US$ 221Bn during Make in India week Mumbai Feb'15

Boost share of manufacturing in GDP
Higher growth, higher exports and job creation

With a market of >1Bn consumers with increasing purchasing power, local manufacturing is a compelling idea

USA	• Bilateral trade of US$100b expected from bilateral investment treaty • US$42b over the next two to three years
China	• Plans to invest over US$20b in India's infrastructure over the next five years
Japan	• US$35b in Indian infrastructure • US$4.5b in Delhi Mumbai Industrial Corridor
France	• France to Invest $10bn in 5 years • Commitment >US$2.2Bn for 3 smart cities
S. Korea	• Plans to invest US$10b in India for infrastructure-related projects
UAE	• Propose to invest US$75 Bn in India

Source: News, industry reports

US companies like Boeing, Bombardier, Cummins, 3M, Foxconn ,GE, General Motors, MV Agusta, Stanadyne, and Trina already part of Make

There has never been a better time to invest in India

- ST AMONGST THE WORLD'S FASTEST GROWING ECONOMIES – Source IMF
- ST AMONG 100 COUNTRIES ON THE GROWTH, INNOVATION AND LEADERSHIP INDEX – Source Frost & Sullivan
- ST AMONG THE WORLD'S MOST ATTRACTIVE INVESTMENT DESTINATIONS – Source E&Y
- ST AMONG THE WORLD'S FASTEST GROWING ECONOMIES IN BOTH 2016 & 2017 – Source WESP Report'16,United Nations
- ST CHOICE FOR TECH MNCs TO SETUP R&D CENTRES OUTSIDE THEIR HOME COUNTRIES – Source ZINNOV MAGT CONSULTING
- ST AMONG THE TOPMOST GREENFIELD FDI DESTINATIONS, JAN-JUN'15 Source – FINANCIAL TIMES – FDI MARKETS
- ST AMONG 110 INVESTMENT DESITINATIONS POLLED GLOBALLY – Source FOREIGN POLICY MAGAZINE – BASELINE PROFITABILITY INDEX 2015

India's GDP growth projections

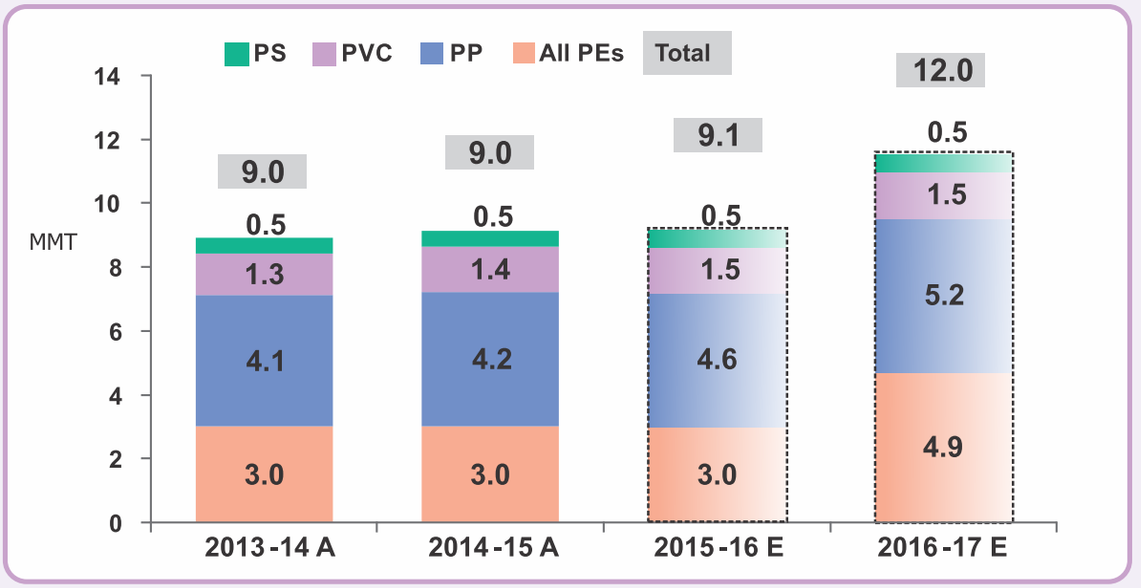
Agencies	2016-17
CSO	7.6%
ADB	7.4%*
S&P	7.4%*
Fitch Ratings	7.7%*
RBI	7.4%
Moody's	7.5%*
Credit Suisse	7.3%*
Morgan Stanley	7.5%*
IMF	7.5%*

*figures represent calendar year 2016

International agencies continue to remain positive on India with an expected growth for 2016 pegged at and around 7.5%

REVIEW & OUTLOOK OF PETROCHEMICAL INDUSTRY

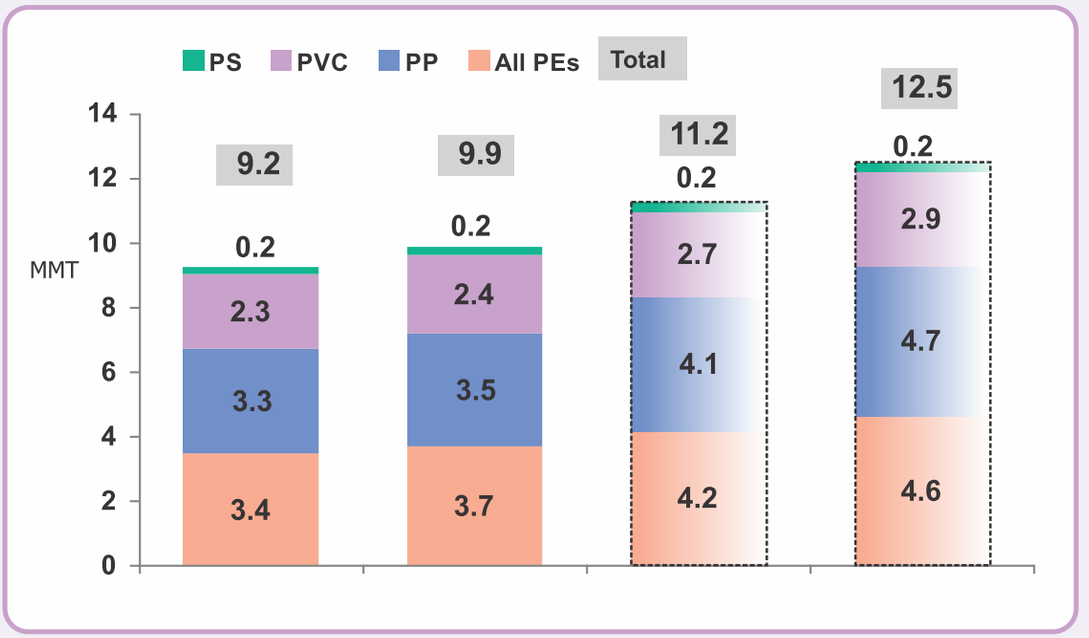
Capacity for polymers to go up significantly by 2016



Source: Industry Estimates. A: Actual, E: Estimate

In case of PP, capacity addition of 330 KT is expected by MRPL and 60 KT by RIL in 2015-16 and going forward in 2016-17 340 kT by OPAL, 110 by MRPL, 60 KT by BPCL-Assam and 90KT by RIL

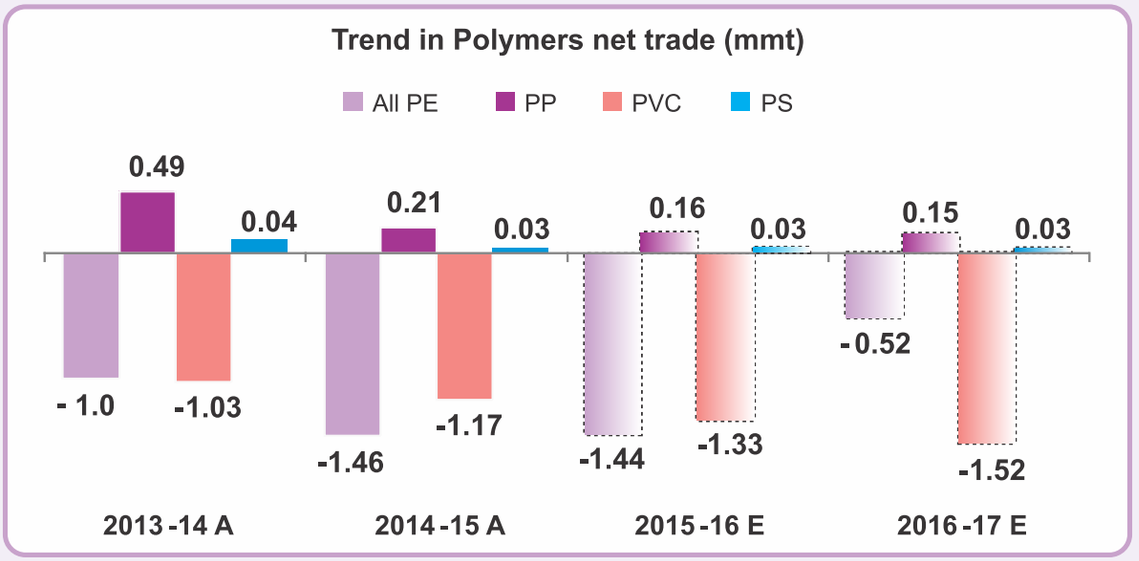
Polymer demand grew at 7% in 2014-15



Source: Industry Estimates. A: Actual, E: Estimate

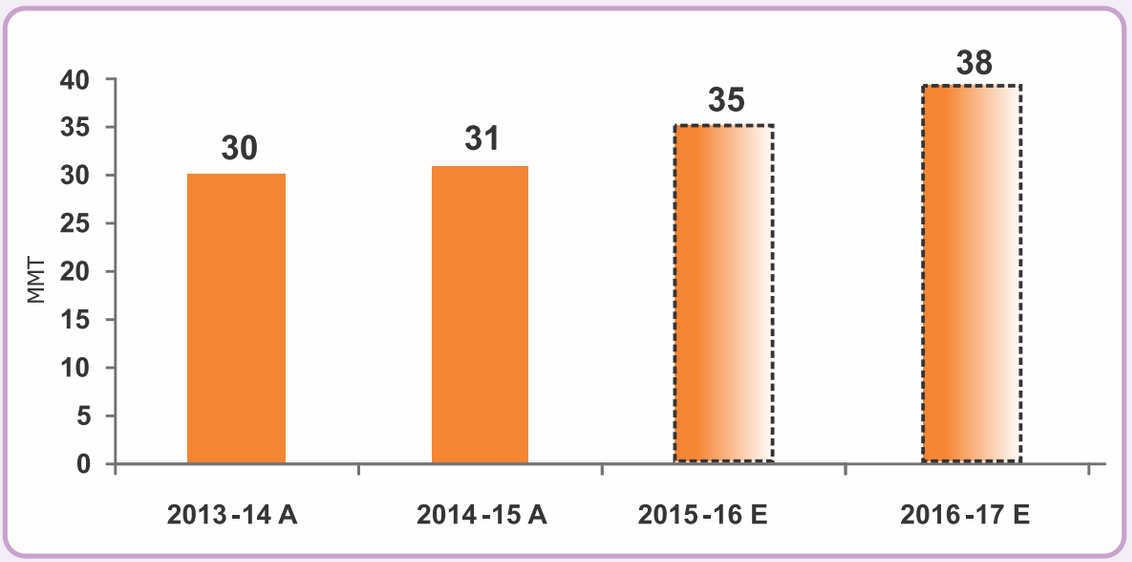
Demand for PE & PP is expected to witness a double digit growth of 13% and 18% in 2015-16 respectively

Net Trade: Polymers



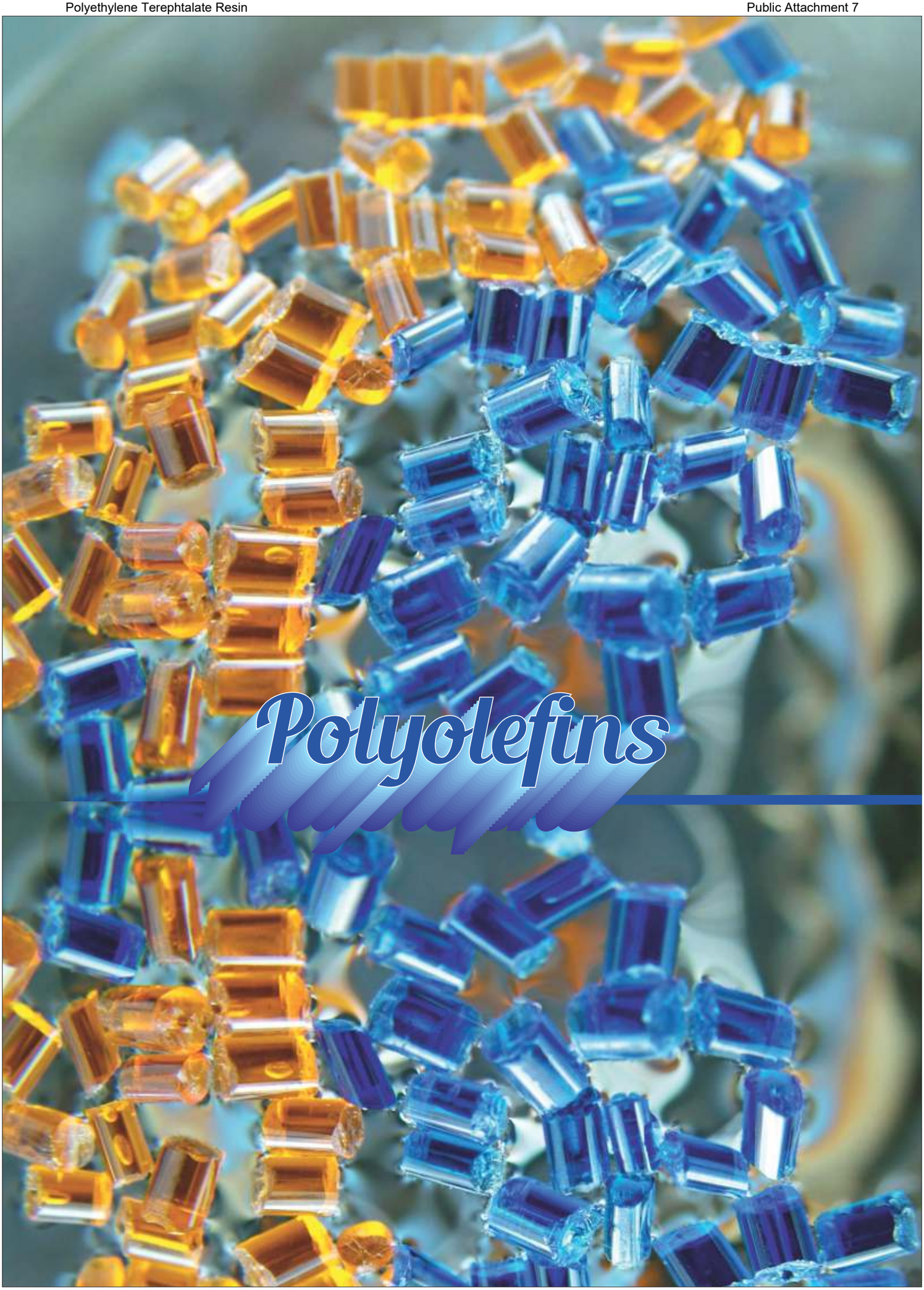
Source: Industry Estimates. A: Actual, E: Estimate

Aggregate petrochemicals demand combining all the key sector



Source: Industry Estimates. A: Actual, E: Estimate

….and is expected to touch 38 mmt by 2016-17


Polyolefins

INDIAN POLYOLEFINS INDUSTRY

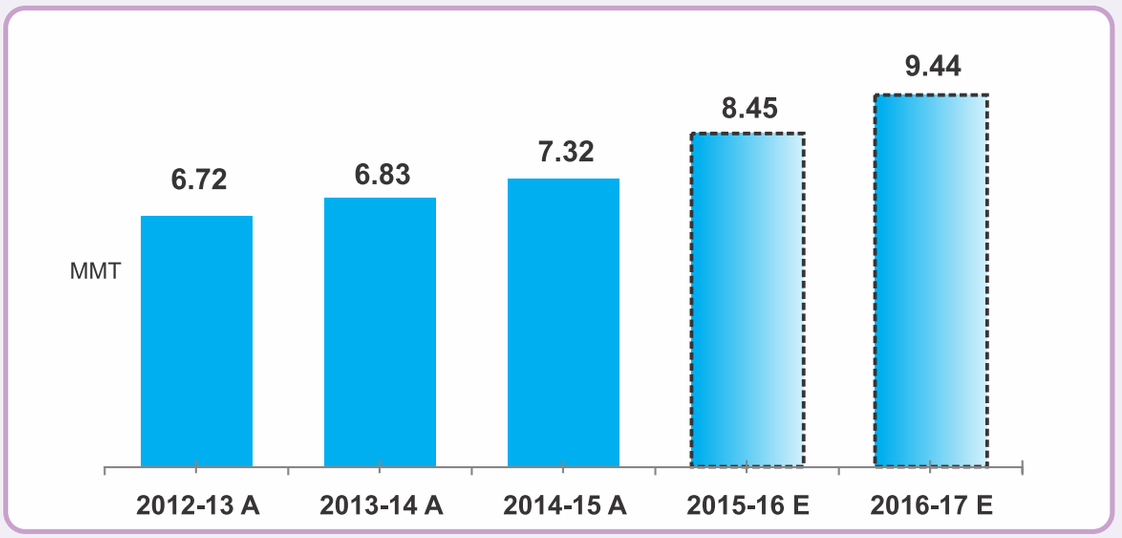
REVIEW & FUTURE PROSPECTS
MAY 2016

REVIEW OF POLYOLEFINS SECTOR

CPMA

Chemicals & Petrochemicals Manufacturers' Association, India

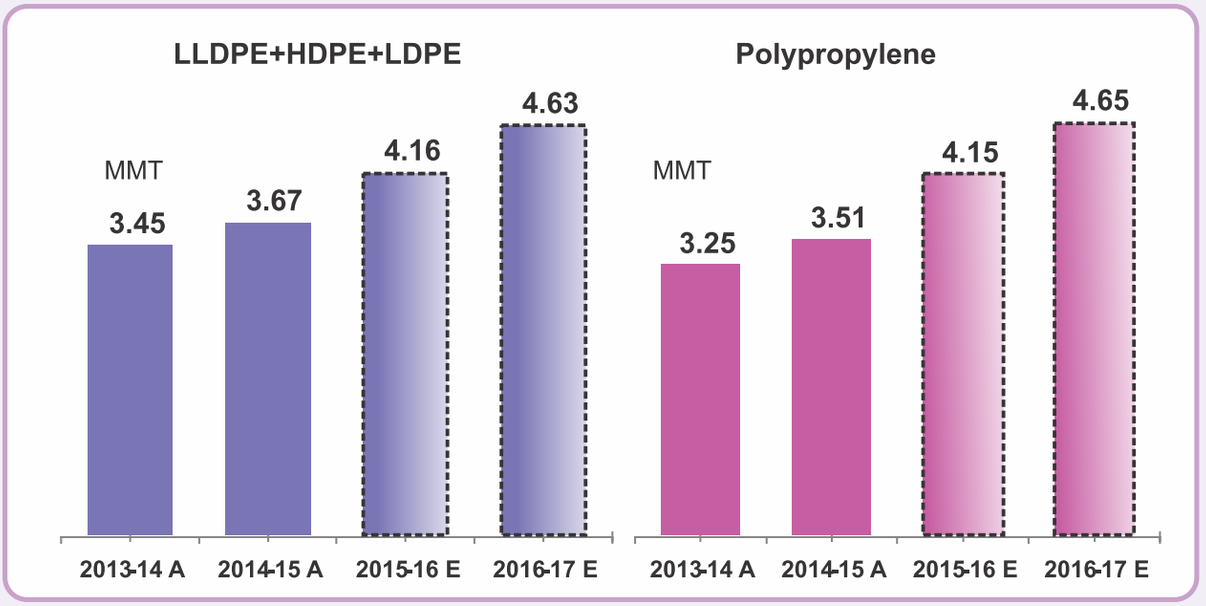
Polyolefins demand grew at ~7% in 2014-15



Source: Industry Estimates. A: Actual, E: Estimate

Expected to register a healthy growth of 16% and
12% in 2015-16 and 2016-17 respectively

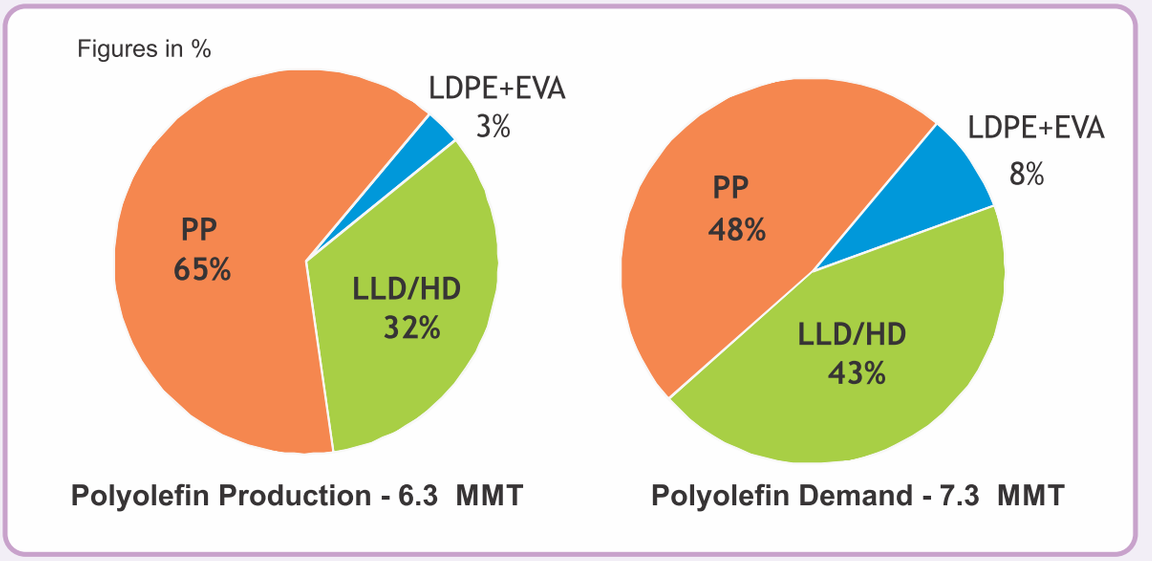
Demand of Polyolefins in 2014-15



Source: Industry Estimates. A: Actual, E: Estimate

PE & PP demand grew at ~7% and 8% respectively in 2014-15;
expected to show healthy growth trend in next two years

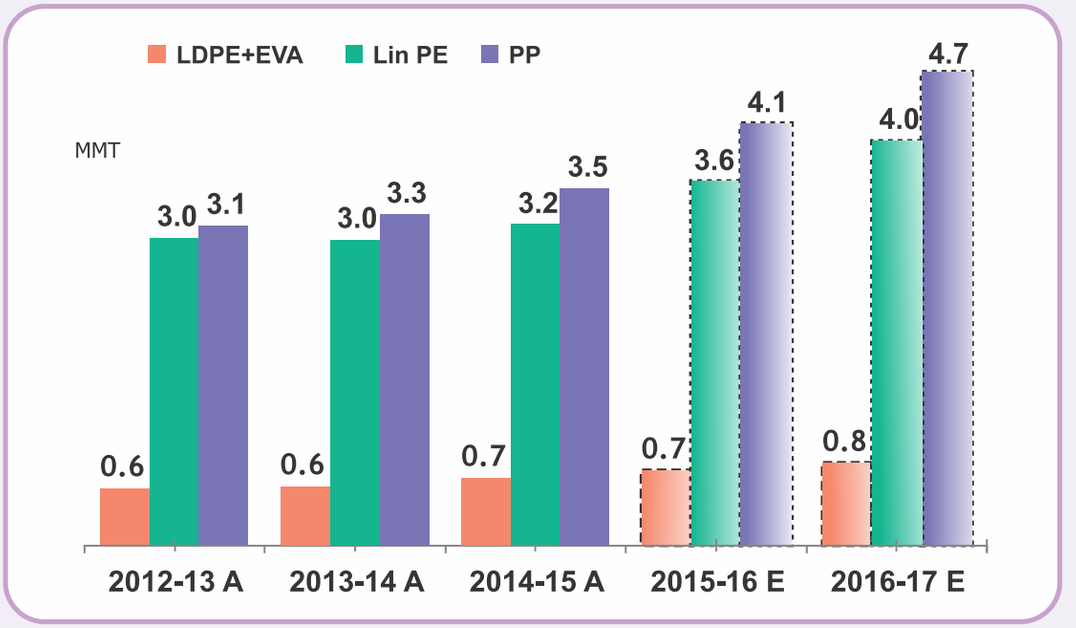
Polyolefin production dip by -3.4% in 2014-15



Source: Industry Estimates. A: Actual, E: Estimate

Polyolefin consumption is dominated by Lin PE & PP demand

PE & PP Demand Trend



Source: Industry Estimates. A: Actual, E: Estimate

Line PE and PP demand growth expected to rise from 2014-15 onwards

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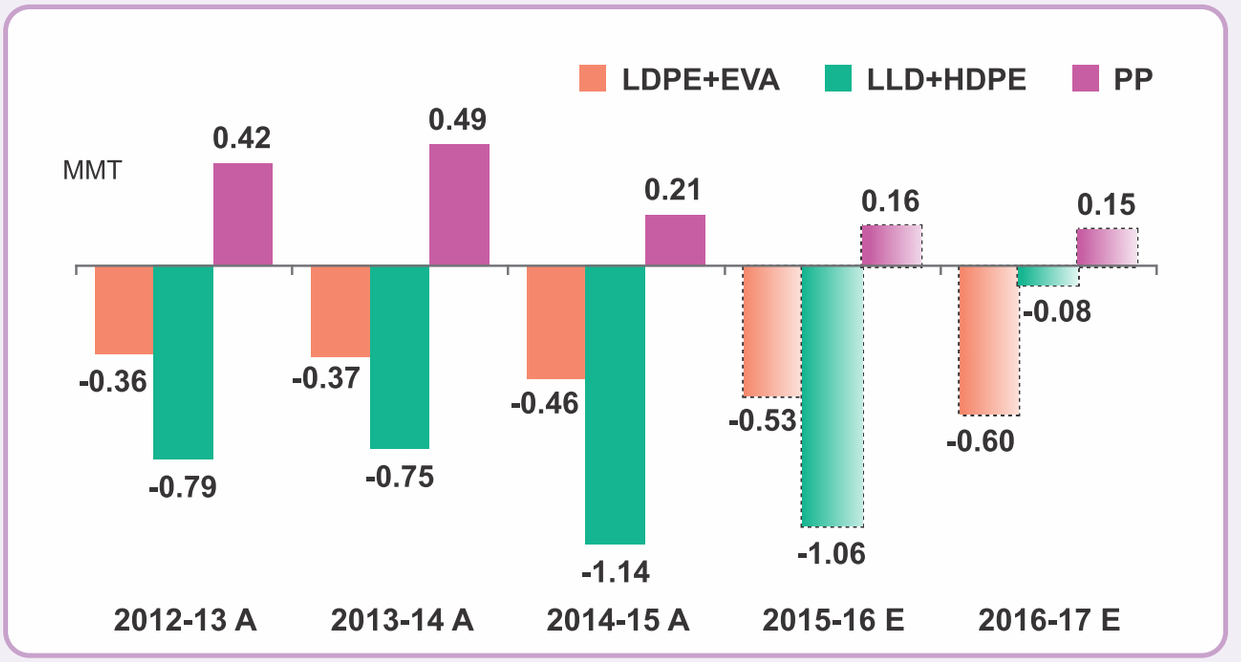
ASIA PETROCHEMICAL INDUSTRY CONFERENCE
SINGAPORE

INDIAN PETROCHEMICAL INDUSTRY

Polyolefins net trade deficit in 2014-15 was higher compared to 2013-14



Source: Industry Estimates. A: Actual, E: Estimate

LLD + HDPE registered net trade deficit of 1.14 MMT and
PP registered trade surplus of 0.21 MMT in 2014-15

OUTLOOK FOR POLYOLEFINS SECTOR

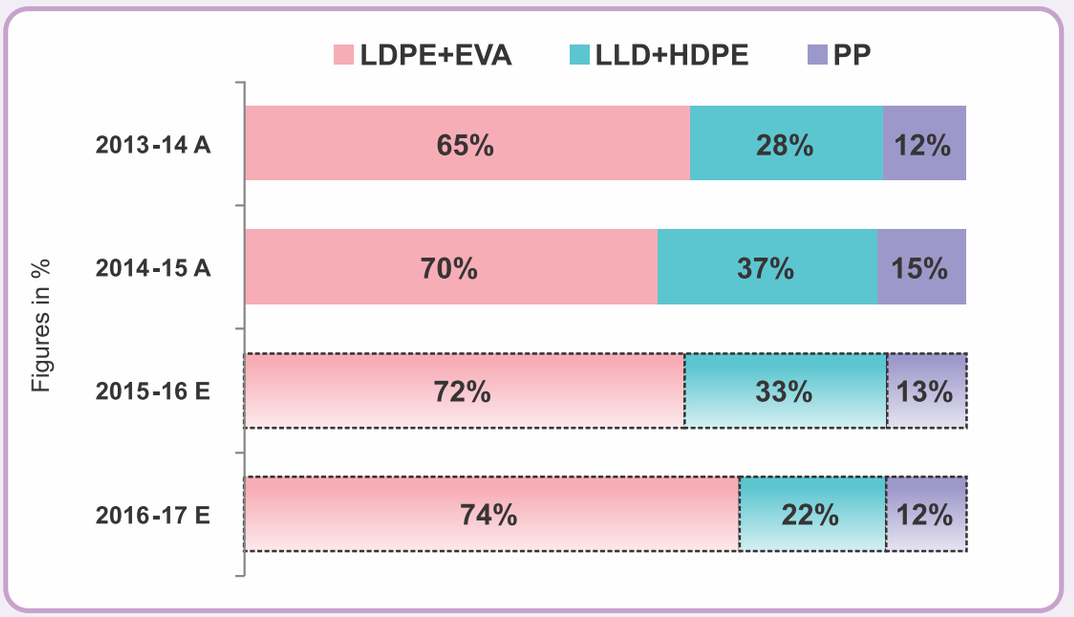
Projected demand for Polyolefins in India

(KTA)	Actual		Projected		% Change Y-O-Y		
	2013-14	2014-15	2015-16	2016-17	2014-15	2015-16	2016-17
LDPE+EVA	575	658	737	809	14%	12%	10%
LLDPE	1236	1328	1546	1781	7%	16%	15%
HDPE	1766	1828	2029	2200	4%	11%	8%
PP	3253	3509	4148	4651	8%	18%	12%
Polyolefins	6831	7323	8459	9441	7%	16%	12%

Source: Industry Estimates

Robust demand growth is expected for polyolefins in next two years

PE import dependency to reduce by 2016-17 except LDPE+EVA



Source: Industry Estimates. A: Actual, E: Estimate

Net exportable surplus for PP expected to increase with new capacities coming on stream in 2015-16;while Liner PE import dependency to reduce by 2016-17

THANK YOU!

VINYL SECTOR

VINYLS IN INDIA

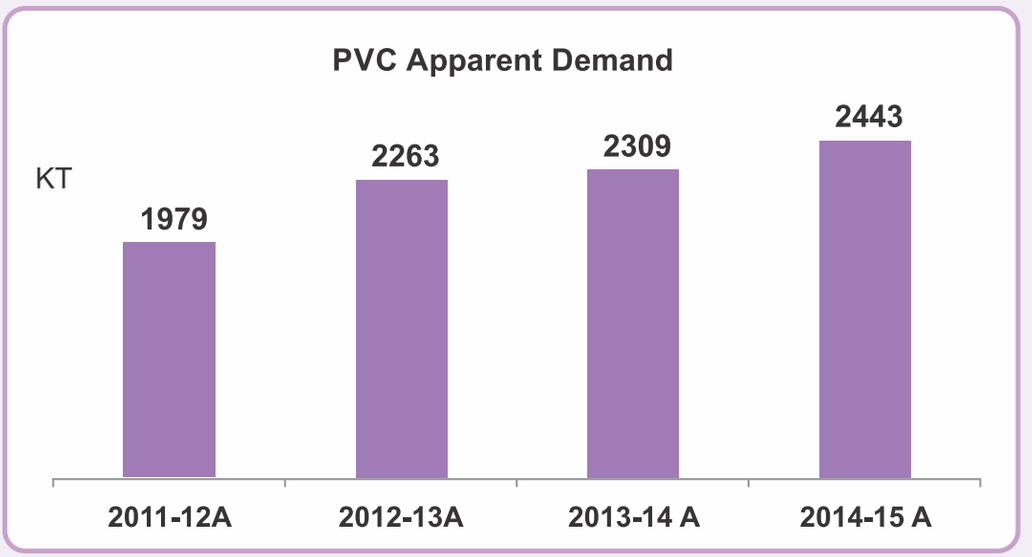
REVIEW & FUTURE PROSPECTS
MAY 2016

REVIEW OF VINYL SECTOR

CPMA

Chemicals & Petrochemicals
Manufacturers' Association, India

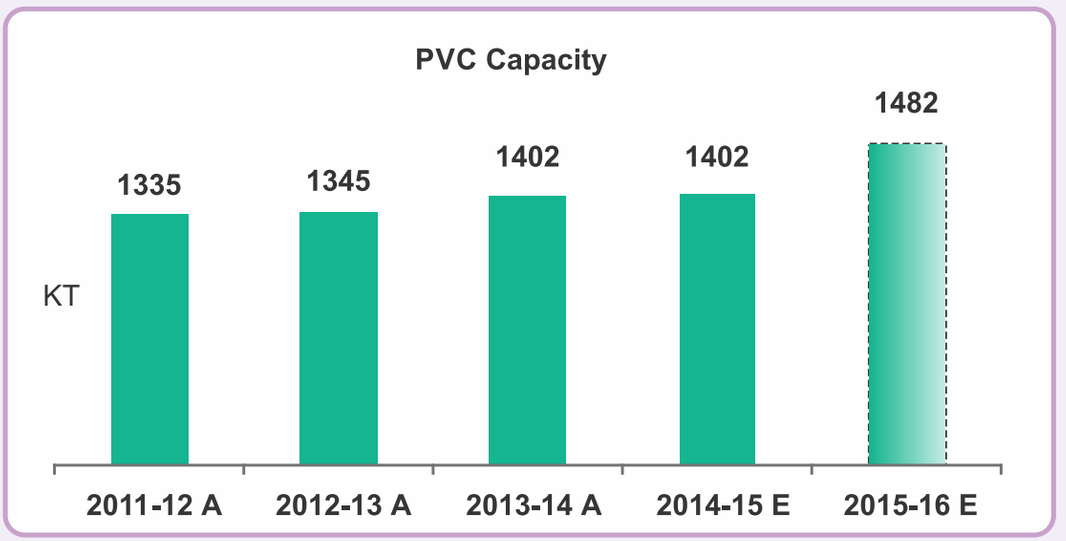
PVC witnessed a growth of 6% in 2014-15



Source: Industry Estimates. A: Actual, E: Estimate

Demand has gone up from 1979 KT in 2011-12 to 2443 KT in 2014-15

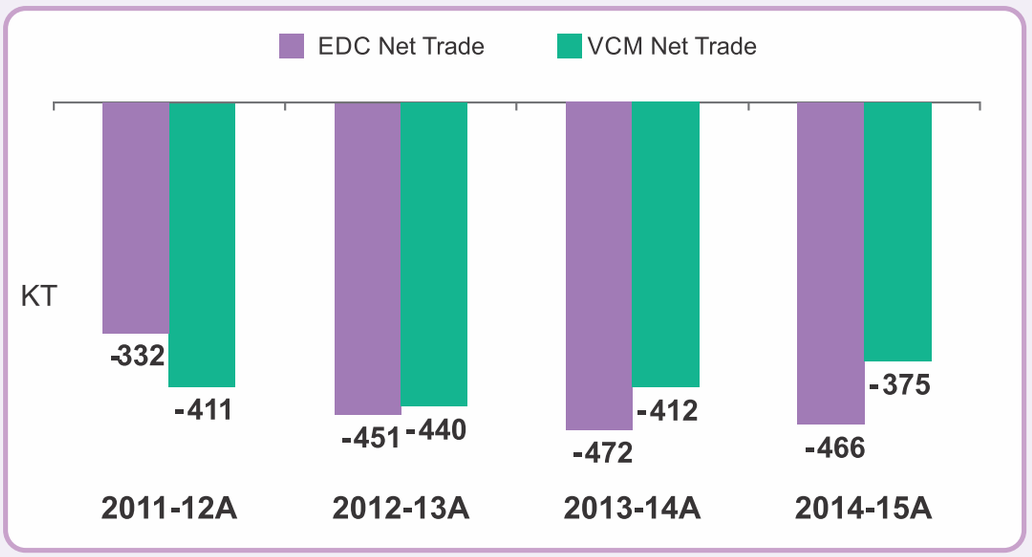
PVC Capacity addition in 2015-16



Source: Industry Estimates. A: Actual, E: Estimate

2013-14 saw capacity addition by DCW in cPVC and by RIL by debottlenecking; Capacity addition is expected by RIL in 2015-16

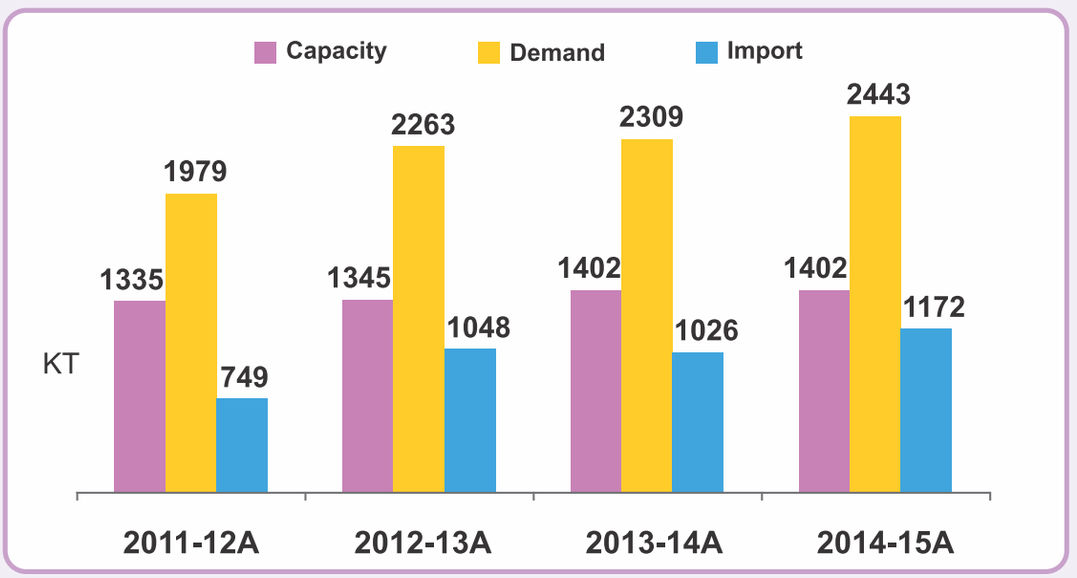
Net trade of EDC & VCM



Source: Industry Estimates. A: Actual, E: Estimate

Imports dependency marginally declined in 2014-15 in case of EDC and VCM

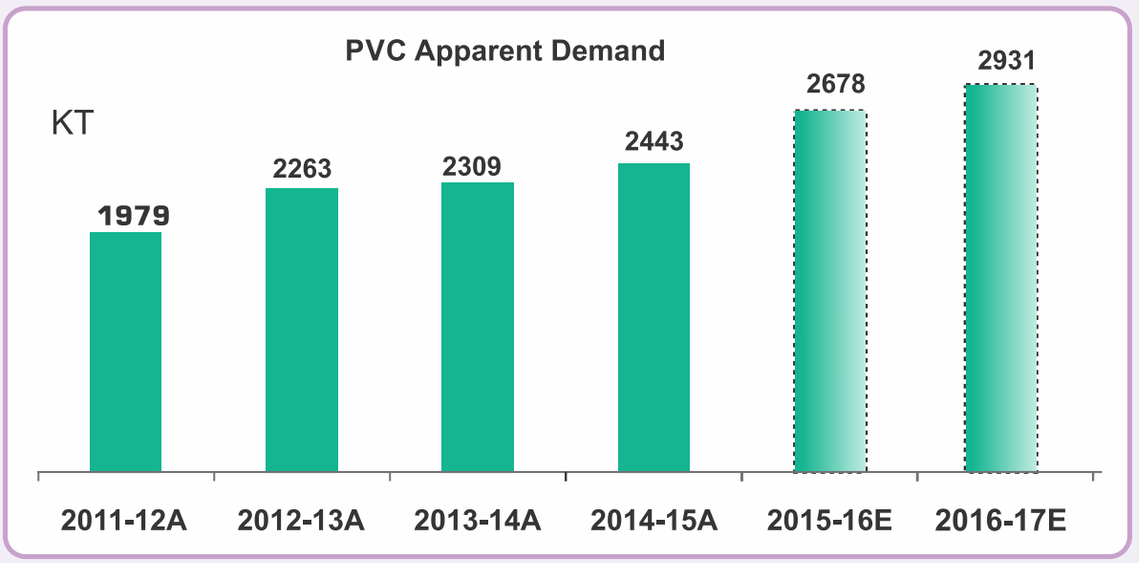
PVC demand supply balance in India



Source: Industry Estimates. A: Actual, E: Estimate

PVC deficit has increased from 644 KT in 2011-12 to 1041 KT in 2014-15

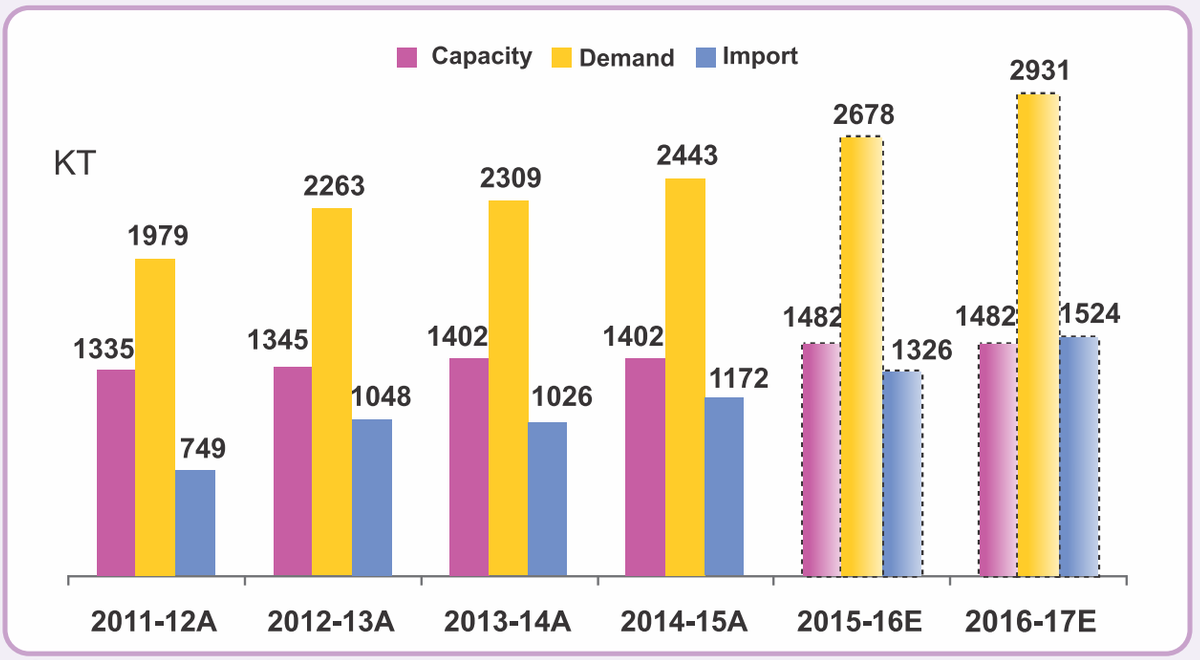
PVC demand expected to register strong growth



Source: Industry Estimates. A: Actual, E: Estimate

Demand to touch 2931 KT in 2016-17

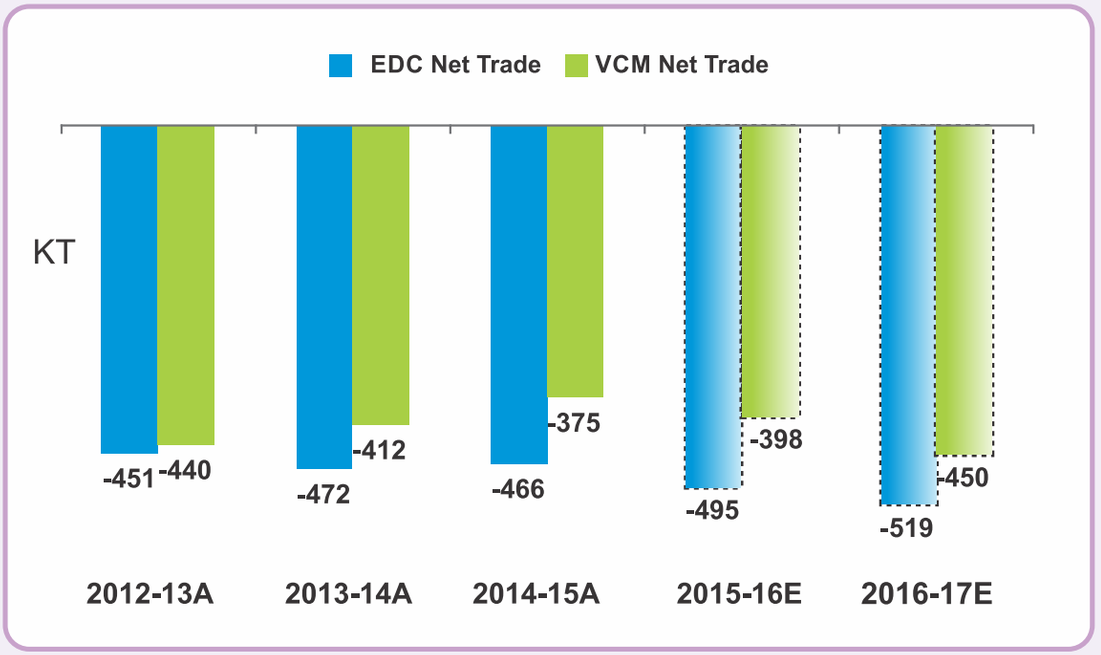
PVC deficit to increase in future



Source: Industry Estimates. A: Actual, E: Estimate

No new capacity coming on-stream to meet the rising domestic consumption; capacity addition in 2015-16 by RIL

EDC & VCM Net Trade



Source: Industry Estimates. A: Actual, E: Estimate

Import dependency to increase!

THANK YOU!

INDIAN STYRENICS INDUSTRY

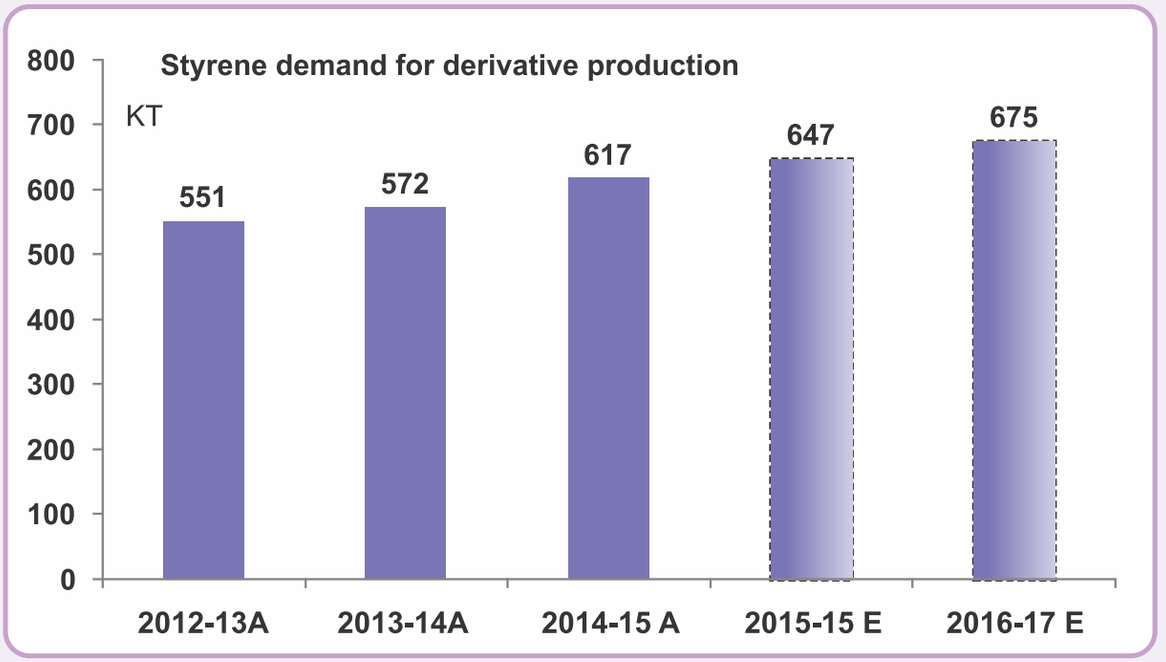
REVIEW & FUTURE PROSPECTS
MAY 2016

REVIEW OF STYRENICS SECTOR

CPMA

**Chemicals & Petrochemicals
Manufacturers' Association, India**

Styrene Demand Trend



Source: Industry Estimates. A: Actual, E: Estimate

Styrene derivative demand to register around 5% in next two years

Styrene derivatives : Demand

Demand for Styrenics in India

(kT)	2011-12	2012-13	2013-14	2014-15	2015-16E	2016-17E	CAGR 2011-12 to 2016-17
PS	248	250	217	232	241	249	**0.1%**
EPS	78	83	82	84	88	93	**3.6%**
ABS	120	137	151	166	183	200	**10.8%**
SBR	197	239	270	290	306	323	**10.4%**
SAN	81	83	89	94	102	111	**6.4%**

Source: CPMA, E- Estimated
Note: Other minor applications of Styrene is estimated to constitute as a whole 59KT on consumption

SBR is expected to grow over 10% CAGR in 2011-16 period

OUTLOOK FOR STYRENICS SECTOR

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SINGAPORE

INDIAN PETROCHEMICAL INDUSTRY

Projected demand for Styrenics in next two years

Projected demand for Styrenics in India

(kT)	Actual		Projected		% change year on year		
	2013 -14	2014 -15	2015 -16	2016 -17	2014 -15	2015 -16	2016 -17
PS	217	232	241	249	7.0%	3.9%	3.3%
EPS	82	84	88	93	2.4%	4.8%	5.7%
ABS	151	166	183	200	9.9%	10.2%	9.3%
SBR	270	290	306	323	7.4%	5.5%	5.6%
SAN	89	94	102	111	5.6%	8.5%	8.8%

Source: CPMA

ABS, SBR and SAN to grow at ~10%, ~6% and ~9% in 2015-16 respectively


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THANK YOU!


ELASTOMERS

INDIAN ELASTOMERS INDUSTRY

REVIEW & FUTURE PROSPECTS

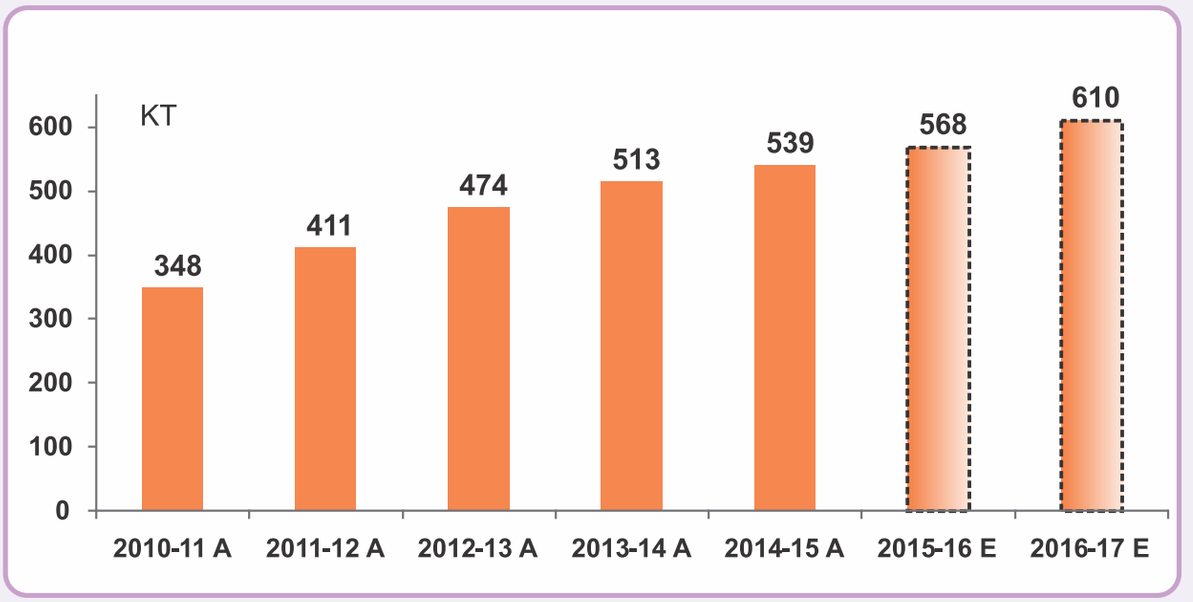
MAY 2016

REVIEW OF ELASTOMERS

CPMA

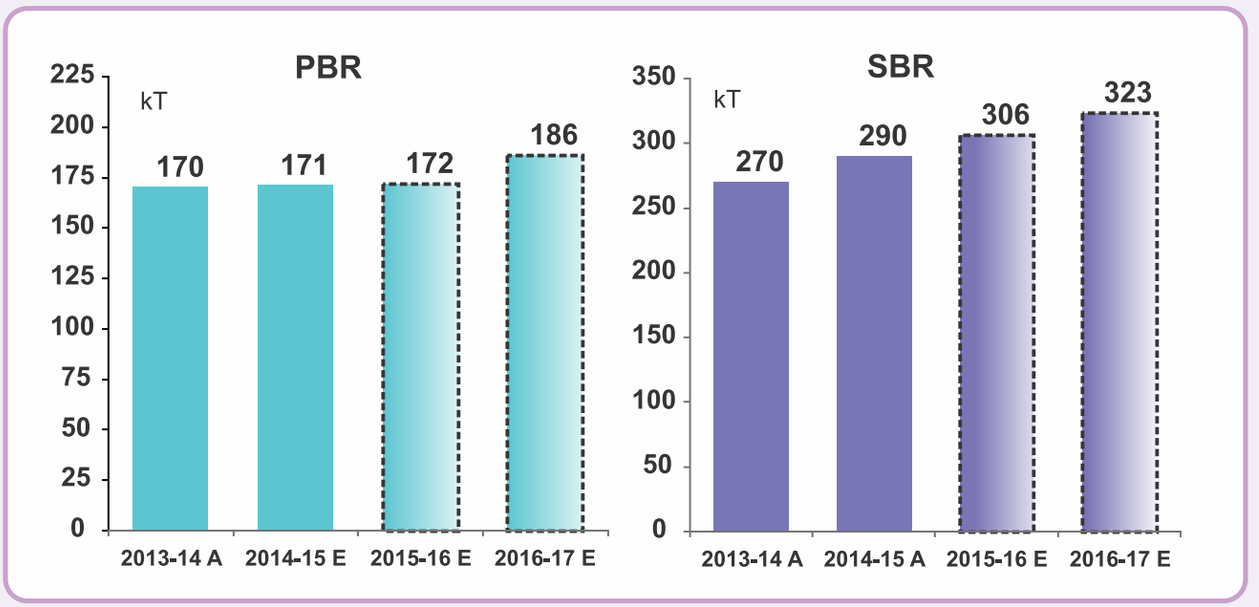
Chemicals & Petrochemicals Manufacturers' Association, India

Elastomers demand expected to grow around 6% in next two years



Source: Industry Estimates. A: Actual, E: Estimate

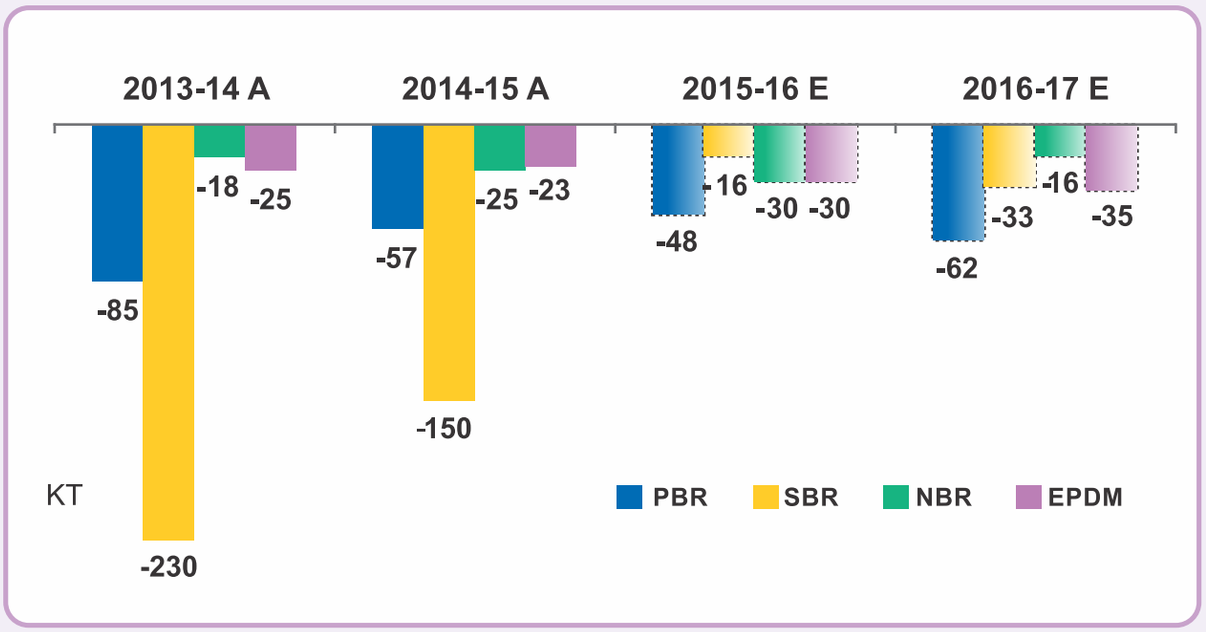
PBR demand increased by 0.5%; SBR by 7% in 2015



Source: Industry Estimates. A: Actual, E: Estimate

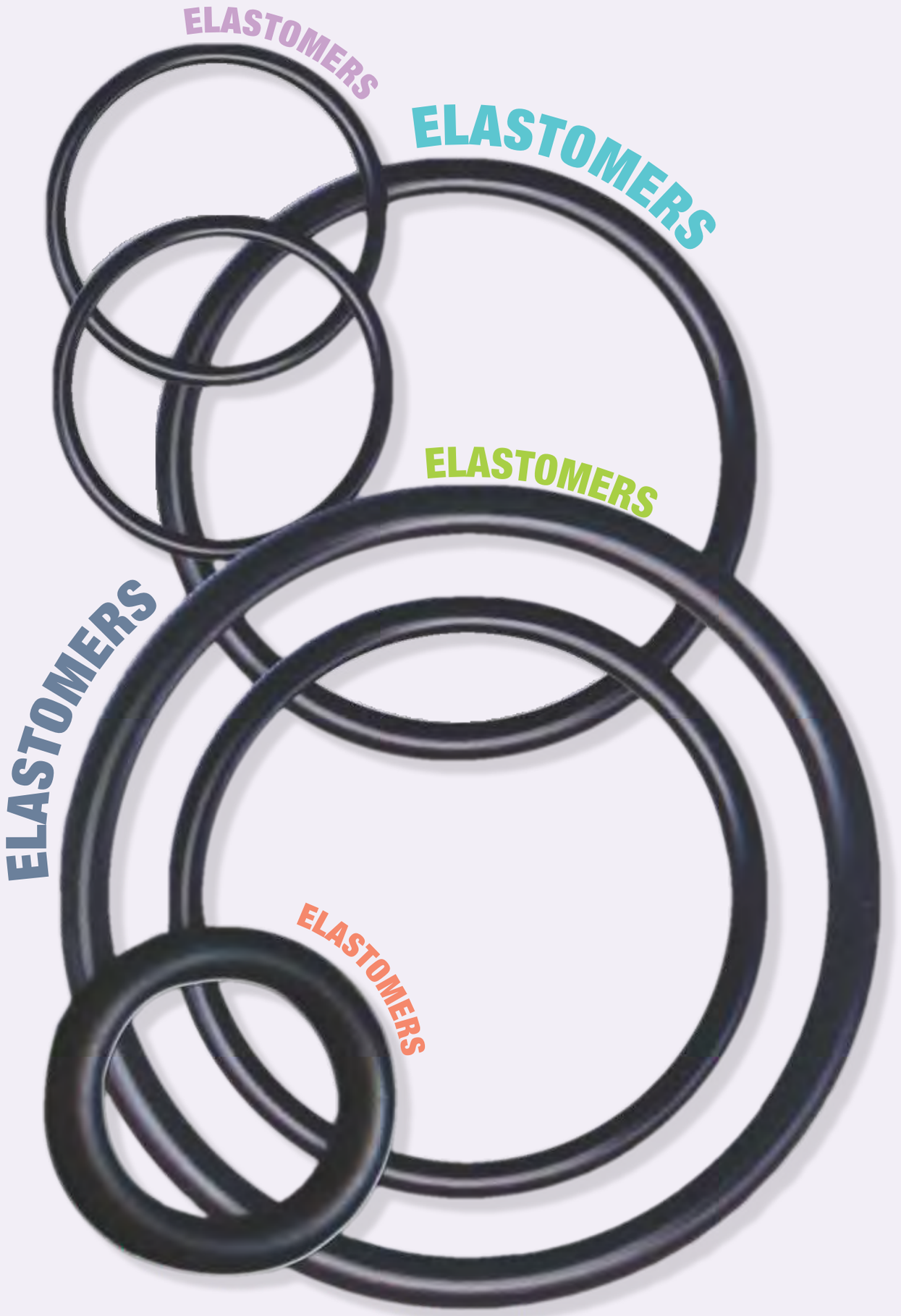
Demand for PBR to remain flat while SBR is expected to grow at ~6% in 2015-16

Elastomers imports stood at 360 kT in 2014-15



SBR deficit stood at 150 kT in 2014-15;expected
to reduce substantially to 16 KT in 2015-16

THANK YOU!


ELASTOMERS
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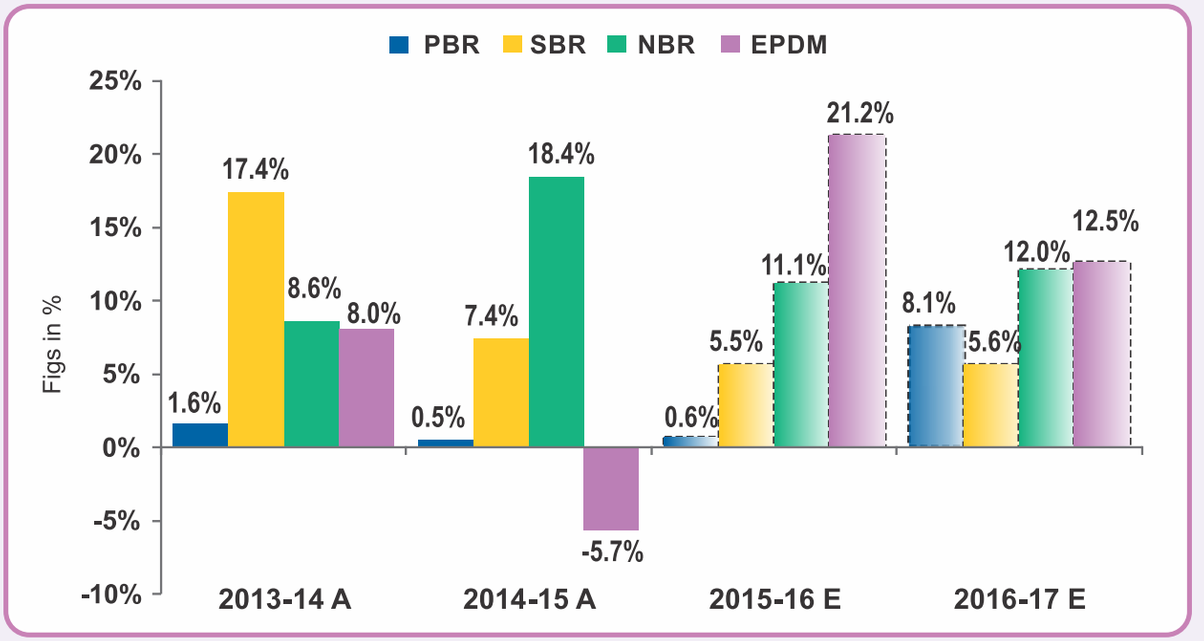
OUTLOOK ELASTOMERS

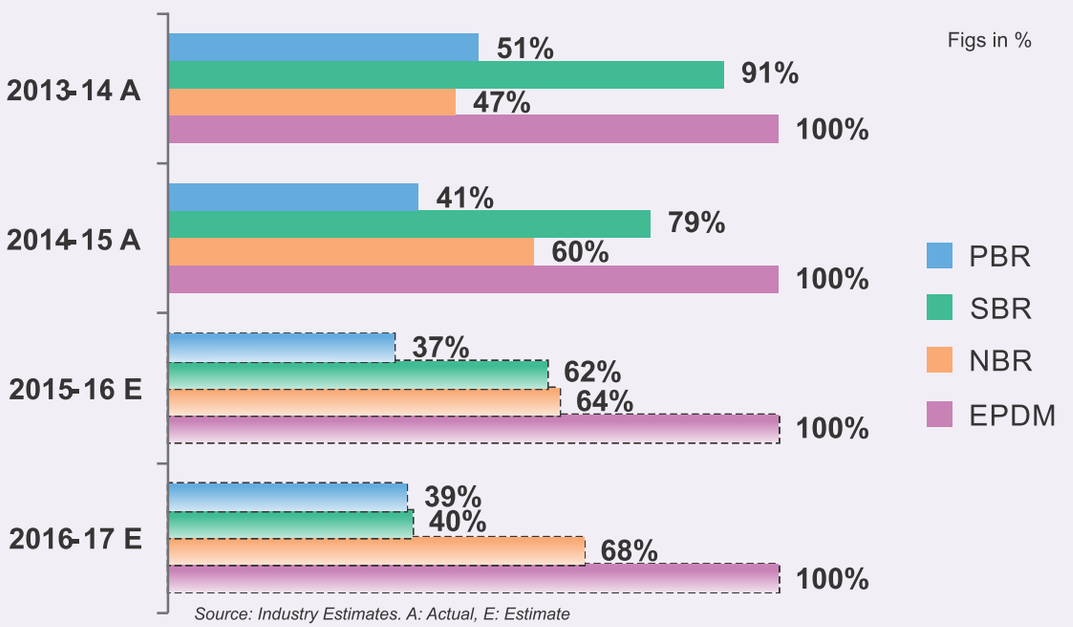
Outlook for 2015-16 and 2016-17 is positive



Source: Industry Estimates. A: Actual, E: Estimate

Elastomers to register growth rate around 6% in next two fiscal years

Elastomers import dependency to decrease by



Source: Industry Estimates. A: Actual, E: Estimate

New capacity being added in next two years in SBR and PBR

THANK YOU!

FIBRE INTERMEDIATE

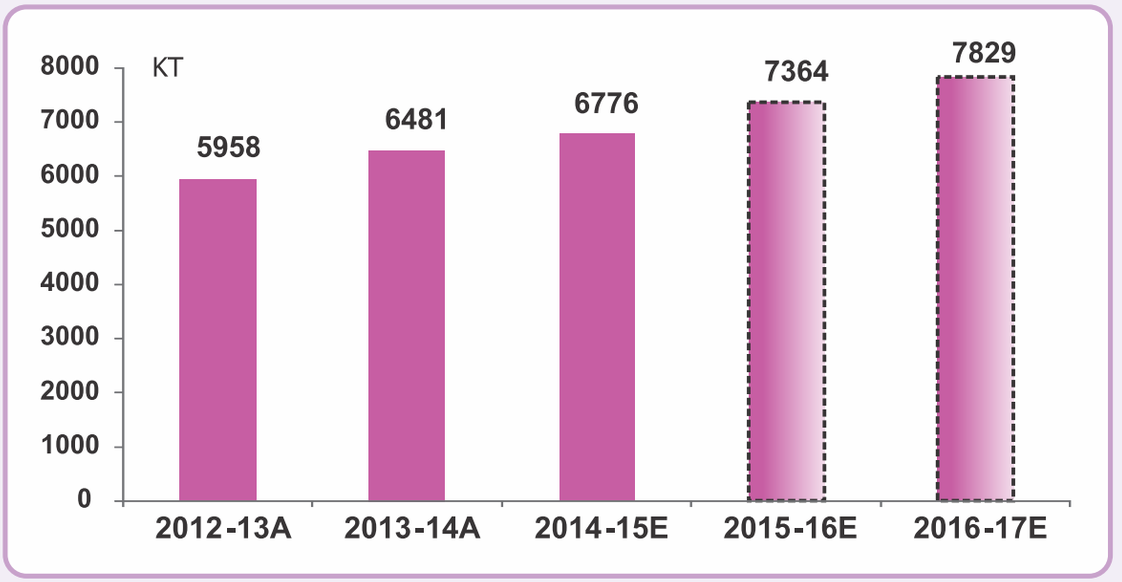
REVIEW & FUTURE PROSPECTS
MAY 2016

REVIEW OF FIBRE INTERMEDIATE SECTOR

CPMA

Chemicals & Petrochemicals Manufacturers' Association, India

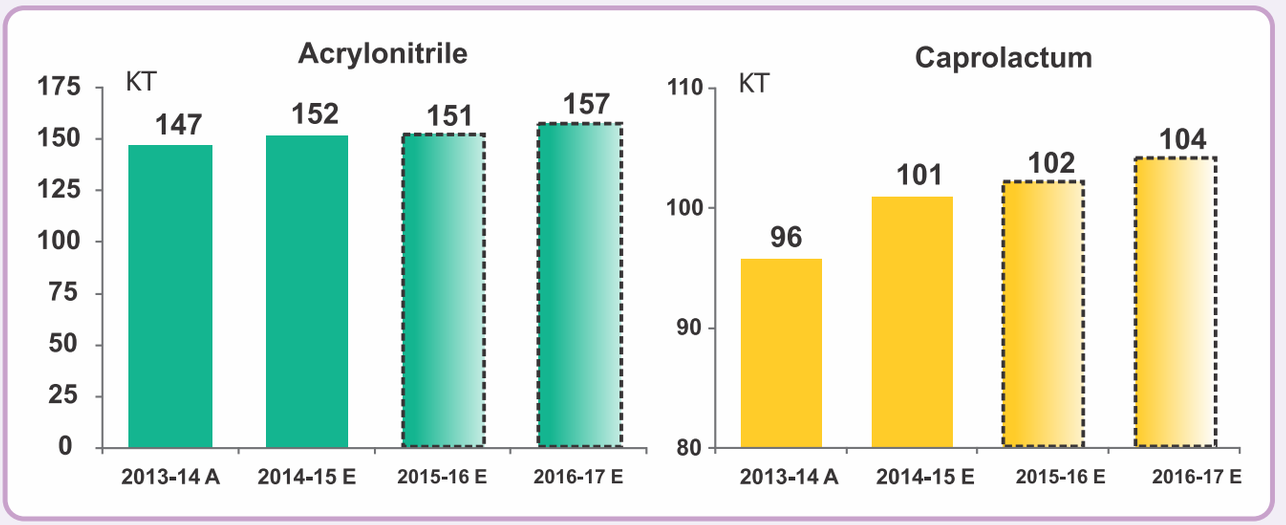
Fibre Intermediate witnessed a 5% growth in 2014-15



Source: Industry Estimates. A: Actual, E: Estimate

and is expected to grow at ~7% in next two years

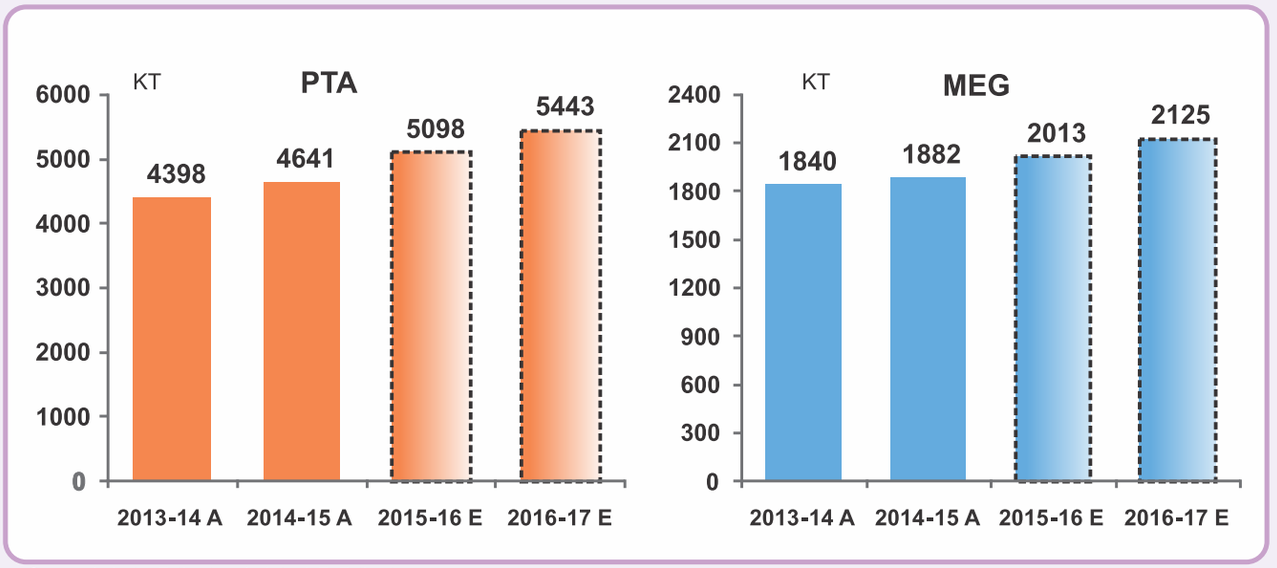
Acrylonitrile demand grew by 3.4% in 2014-15



Source: Industry Estimates. A: Actual, E: Estimate

Acrylonitrile demand expected to marginally dip in next fiscal
while caprolactum expected to grow remain almost flat

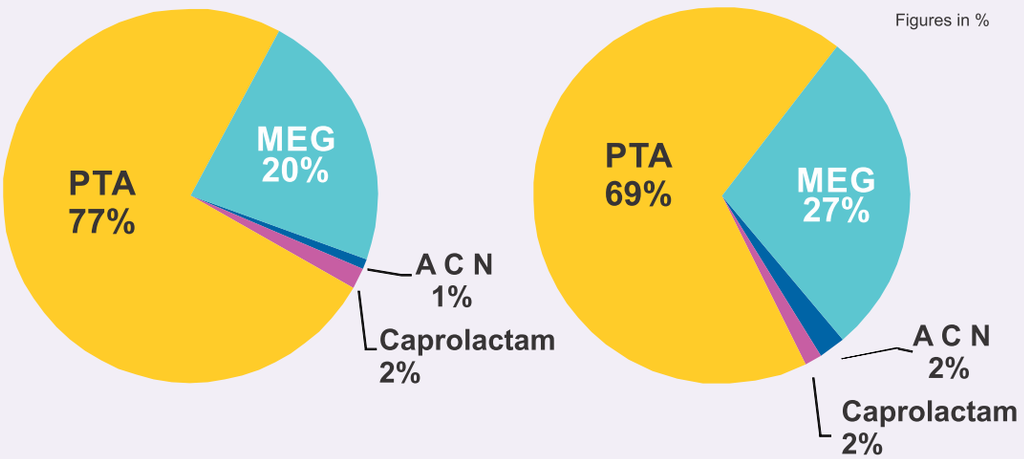
Demand 2014-15: PTA ~6% & MEG ~2%



Source: Industry Estimates. A: Actual, E: Estimate

In next two fiscal years demand for PTA expected to grow at ~8% on an average

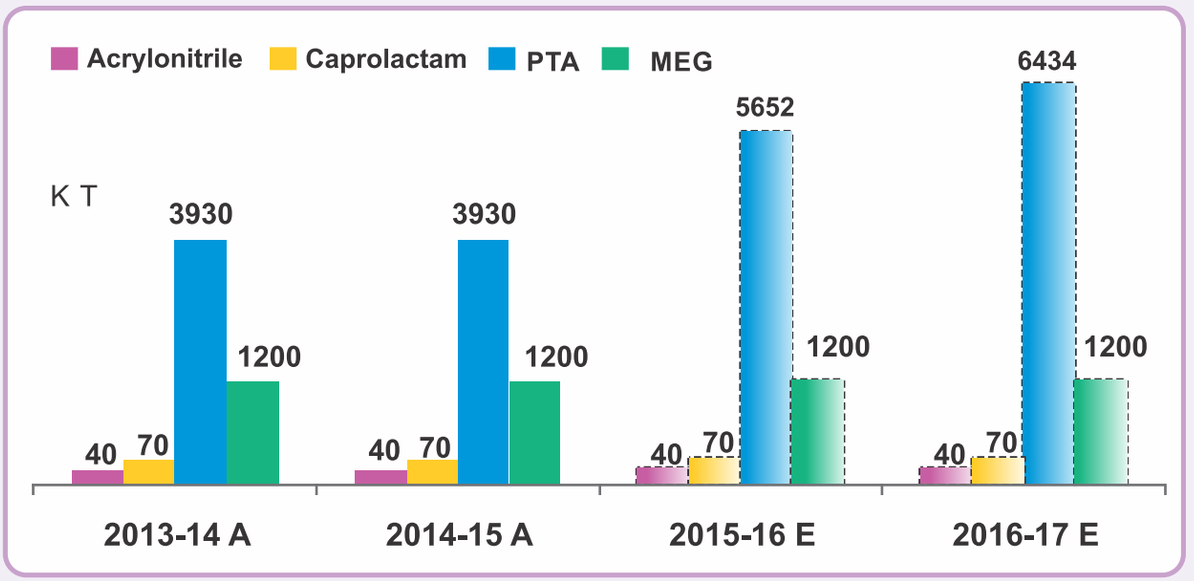
Fibre intermediate Demand supply : 2014-15



Fibre Intermediate Production 4677 KT **Fibre intermediate Demand 67364 KT**

Fibre intermediate production was dominated by PTA & MEG,
97% share in total production in 2014-15

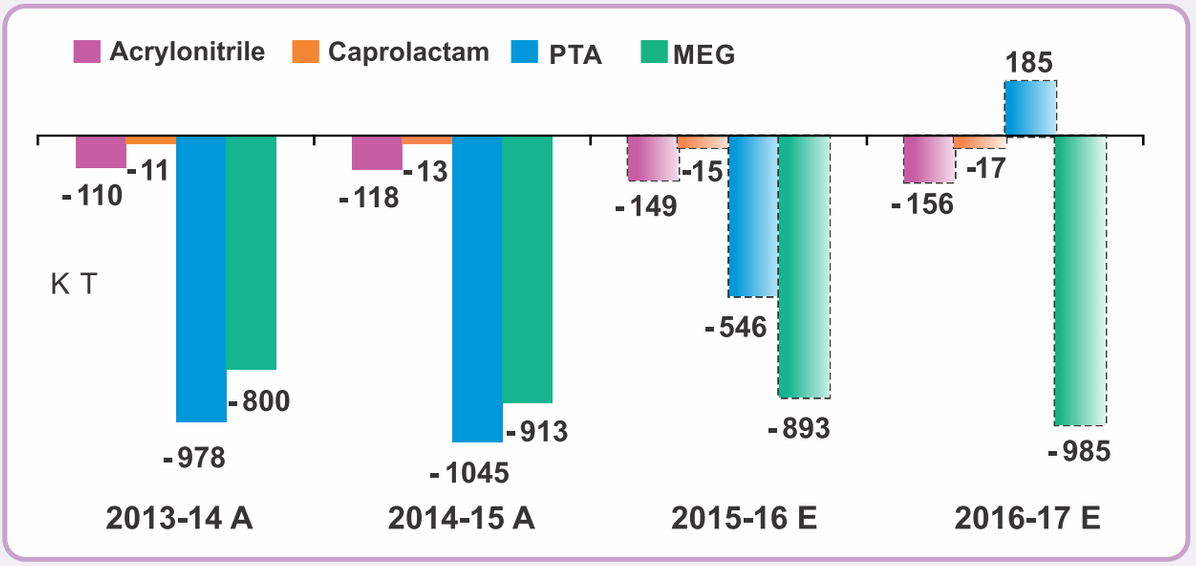
Fibre Intermediate Total capacity @5240KT : 2014-15



Source: Industry Estimates. A: Actual, E: Estimate

PTA capacity addition to take place over next two fiscal years

Fibre Intermediates trade deficit at 2089 KT in 2014-15

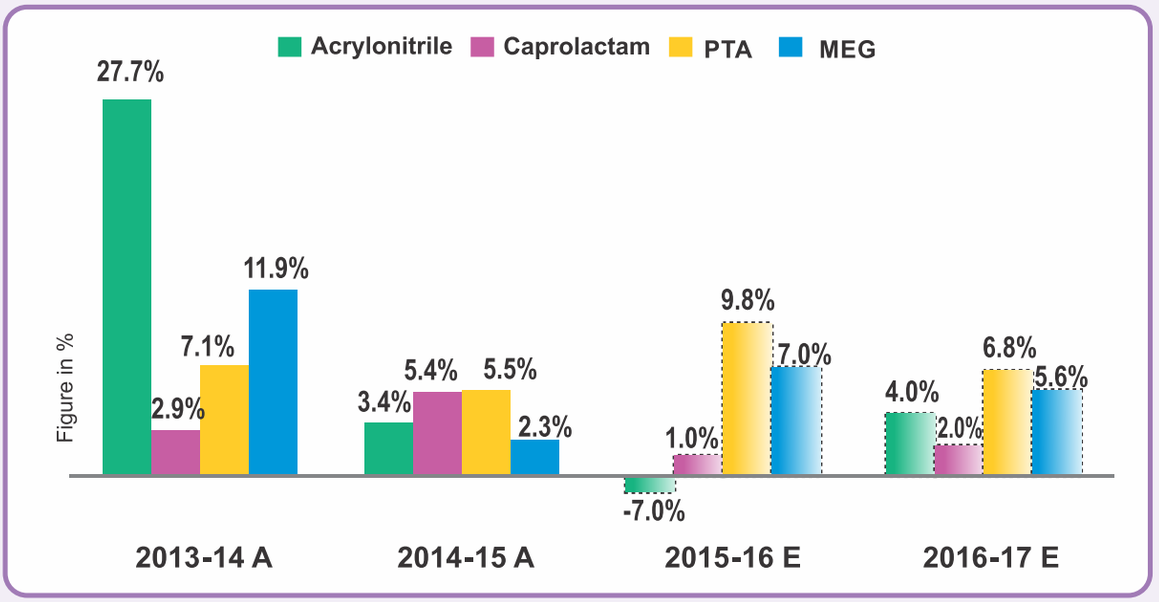


Source: Industry Estimates. A: Actual, E: Estimate

Trade Deficit expected to reduce significantly by 2016-17 to 973 KT with PTA exports rising

OUTLOOK FOR FIBRE INTERMEDIATE SECTOR

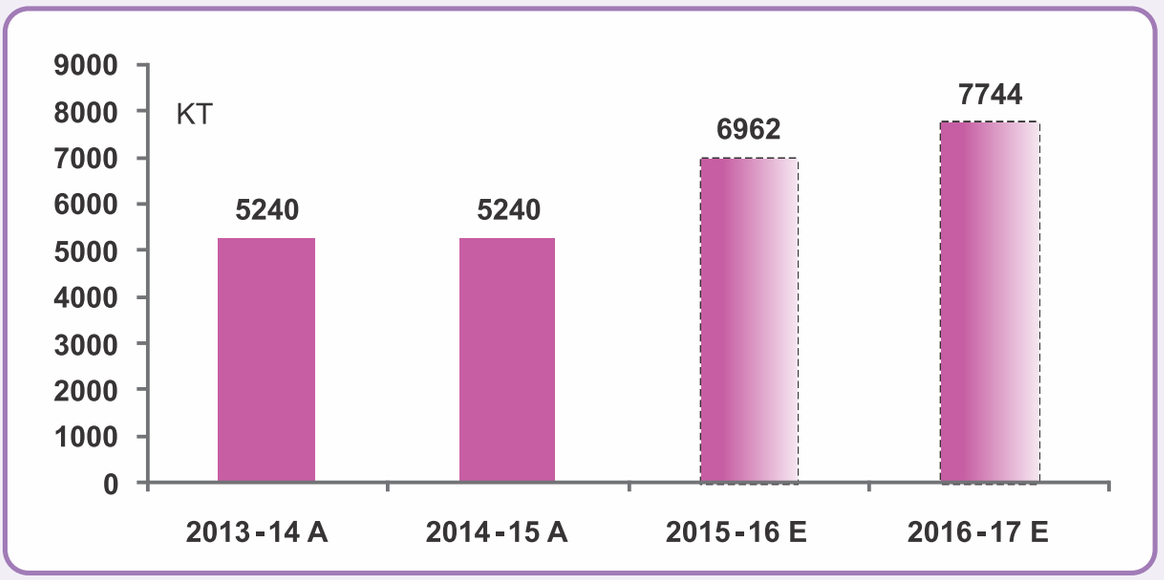
Demand Outlook for next two years



Source: Industry Estimates. A: Actual, E: Estimate

Fibre intermediate demand to grow in the range of 9%-6% over next two years

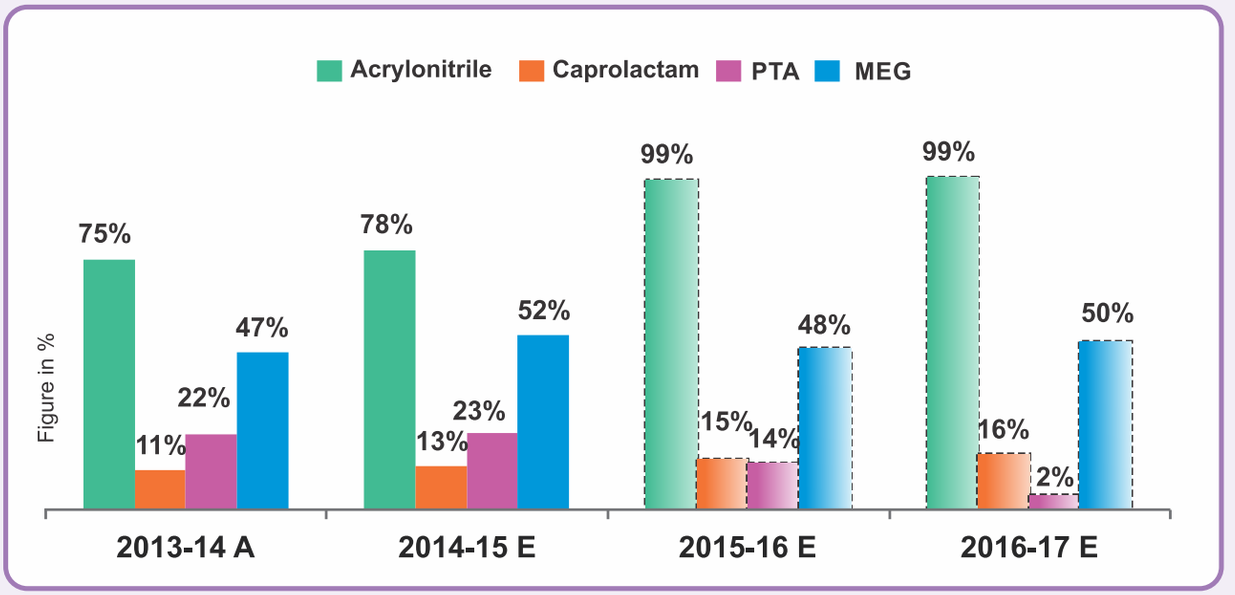
Fibre Intermediate Capacity Addition in next two fiscals



Source: Industry Estimates. A: Actual, E: Estimate

PTA Capacity addition by RIL in 2015-16

Import dependency to reduce significantly for PTA by 2016-17



Source: Industry Estimates. A: Actual, E: Estimate

Exportable surplus from 2015-16 in case of PTA

THANK YOU!

CPMA

Chemicals & Petrochemicals
Manufactures' Association

Chemicals & Petrochemicals Manufacturers' Association

CPMA is the apex forum representing the Indian Petrochemical Industry, Established in 1993, and the Association offers its members a podium to collectively present their ideas, voice their concerns and offer suggestions on relevant issues. It provides a linkage between the industry, the Government and society. It interacts with policy makers and industry associations to develop and maintain harmonious and conducive business conditions.

The Association, registered under the Indian Societies Act, is widely recognized as one of the national apex bodies of the Indian Petrochemical Industry by all Ministries and Departments of Government of India, apex Chambers of Commerce and Industry and other related Associations in India and abroad.CPMA is affiliated to the Confederation of Indian Industry (CII). The Association is also a Steering Committee Member of the Asia Petrochemical Industry Conference (APIC) and had successfully hosted the annual APIC 2010 conference on May 13-14, 2010 in Mumbai.

CPMA comprises various sub-committees constituted to effectively focus on key areas within petrochemicals like Polyolefins, Vinyls, Styrenics, Glycols, Elastomers, Fibre Intermediates and Surfactants. CPMA has also taken the lead to set up and promote the India Centre for Plastics in the Environment (ICPE) to deal with all environmental issues connected with the usage of plastics.

Members of CPMA

1. Chemplast Sanmar Ltd.
2. DCM Shriram Ltd.
3. DCW Ltd.
4. Engineers India Ltd.
5. Finolex Industries Ltd.
6. GAIL India Ltd.
7. Gujarat State Fertilizers & Chemicals Ltd.
8. Haldia Petrochemicals Ltd.
9. HPCL – Mittal Energy Ltd.
10. Indian Oil Corporation Ltd.
11. Indian Synthetic Rubber Ltd.
12. INEOS Styrolution India Ltd.
13. LG Polymers (India) Pvt. Ltd.
14. MCC PTA India Corpn. Pvt. Ltd.
15. MRPL
16. ONGC Petro Additions Ltd.
17. Reliance Industries Ltd.
18. Supreme Petrochem Ltd.
19. Tamilnadu Petroproducts Ltd.

Associate Members : - SABIC India Pvt Ltd and Indorama Industries Ltd.

Chemicals & Petrochemicals Manufacturers' Association

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Contact Person : **Mahinder Singh** - Secretary General CPMA

APIC 2016

ASIA PETROCHEMICAL INDUSTRY CONFERENCE

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CPMA

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