FIPI

December 2018

Policy & Economic Report - Oil & Gas Market

Federation of Indian Petroleum Industry (FIPI)

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Year in review: 2018

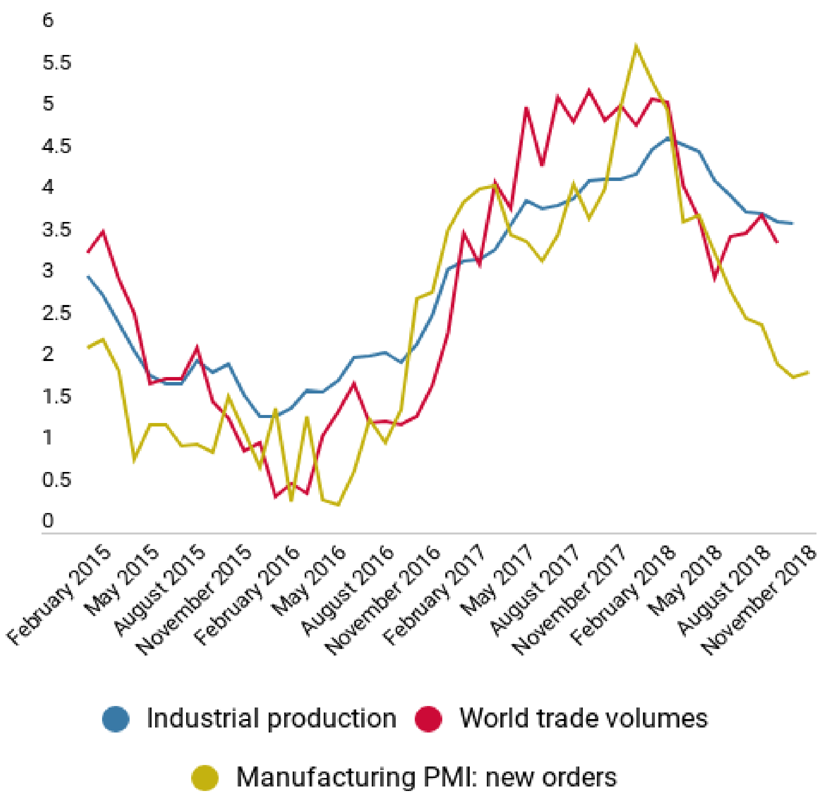
Global Economy

Although 2018 started on an upbeat note, majorly boosted by a pickup in global manufacturing and trade through 2017, soon enough investor's confidence dipped and along with it the upswing lost steam.

Slowing down

After rapid growth in 2017, industrial production and trade have slowed, and business confidence has fallen.

(percent change; difference from 50 for PMI)



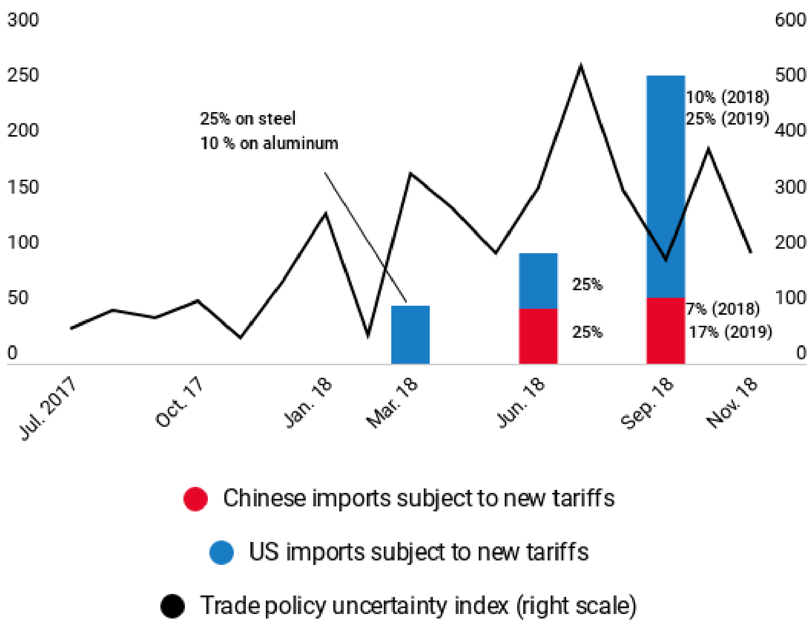
Sources: CPB Netherlands Bureau for Economic Policy Analysis; Haver Analytics; and Markit Economics.
Note: PMI = purchasing managers' index. PMI greater than 50 implies expansion of economic activity, while PMI less than 50 implies contraction. Industrial production and trade are shown as a three-month moving average percent change from one year ago.

The implementation of tariffs by major economies such as the United States and the retaliatory measures taken by China has resulted in a major loss of momentum. The protectionist tendencies adopted om trade has meant higher uncertainty about trade policies, thereby impacting future investment decisions.

Trade tensions

Major trade actions have raised trade policy uncertainty.

(billion US dollars)



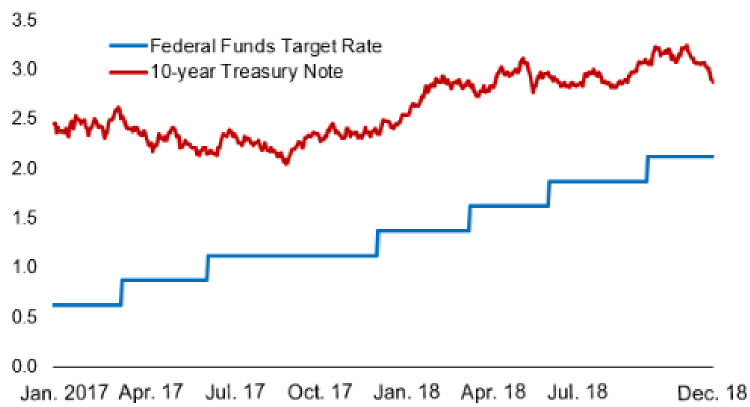
Source: Baker, Bloom, and Davis (www.PolicyUncertainty.com).
Note: Bars indicate value of imports affected by announced tariffs in billlion US dollars.
Labels indicate the tarriff rate applied to the affected imports.

Tax cuts and spending have stimulated demand and as a result the US economy has expanded at a fast pace in 2018. Consequently, the US Federal Reserve has continued to raise the policy interest rate.

Gradually increasing

US policy rates have been rising steadily, while US 10-year bond rates have also increased but less so.

(percent)



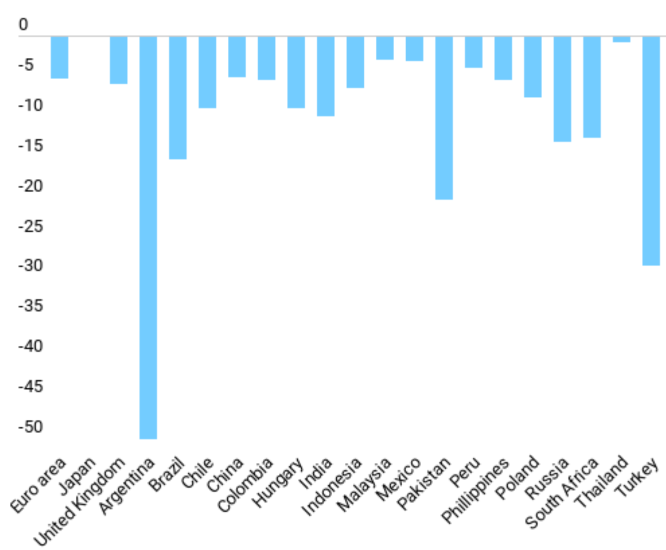
Source: Haver Analytics.

Stronger growth and interest rates in the United States as compared to rest of the economies has in turn ensured an appreciated US dollar in 2018.

Stronger than the rest

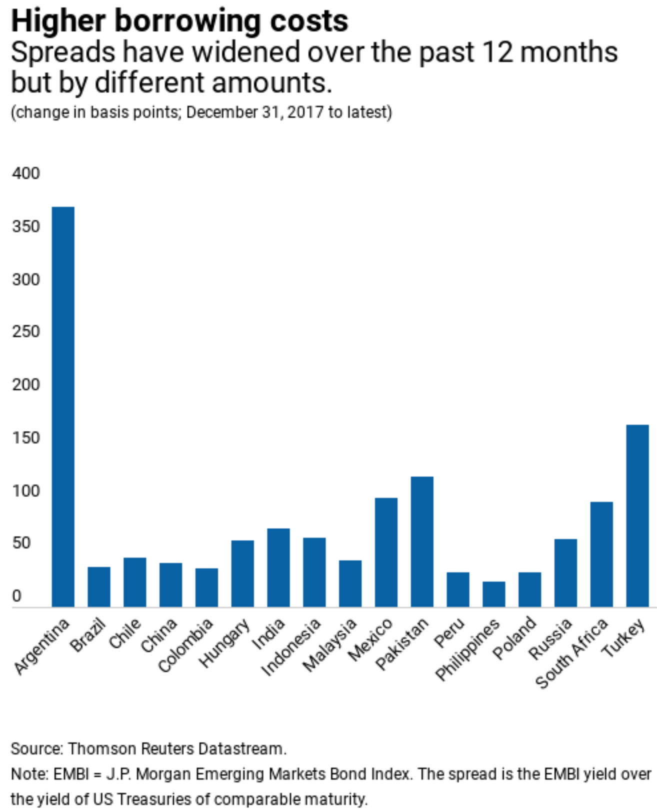
A strong US economy and higher US interest rates have strengthened the US dollar.

(nominal exchange rate vs. US dollar; percent; December 31, 2017 to latest)



Source: IMF staff calculations.

US dollar gain has resulted in many emerging economies to come under strain and hence the risk-taking appetite of global investors has dropped.



Europe nearly died in 2018

Populism tightened its grip across Europe in 2018. What started as protests against minor tax in the impending budget was actually a signal for much larger failing. In a continent swamped by populist movements all around, Macron's election to Presidency in 2017 had seemed like an exemplar antidote. The November protests which however cascaded to enormous proportions resulting in grant of major concessions actually that Europe's dodge against populism was most certainly over.

While Britain's inability to agree on what Brexit means should have deterred the onslaught of populist movements, it definitely wasn't so. From Matteo Salvini's Italy to Denmark's ban on burqa, incidents of abrupt policy decisions propelled by populist tendencies definitely seemed to have become the norm now.

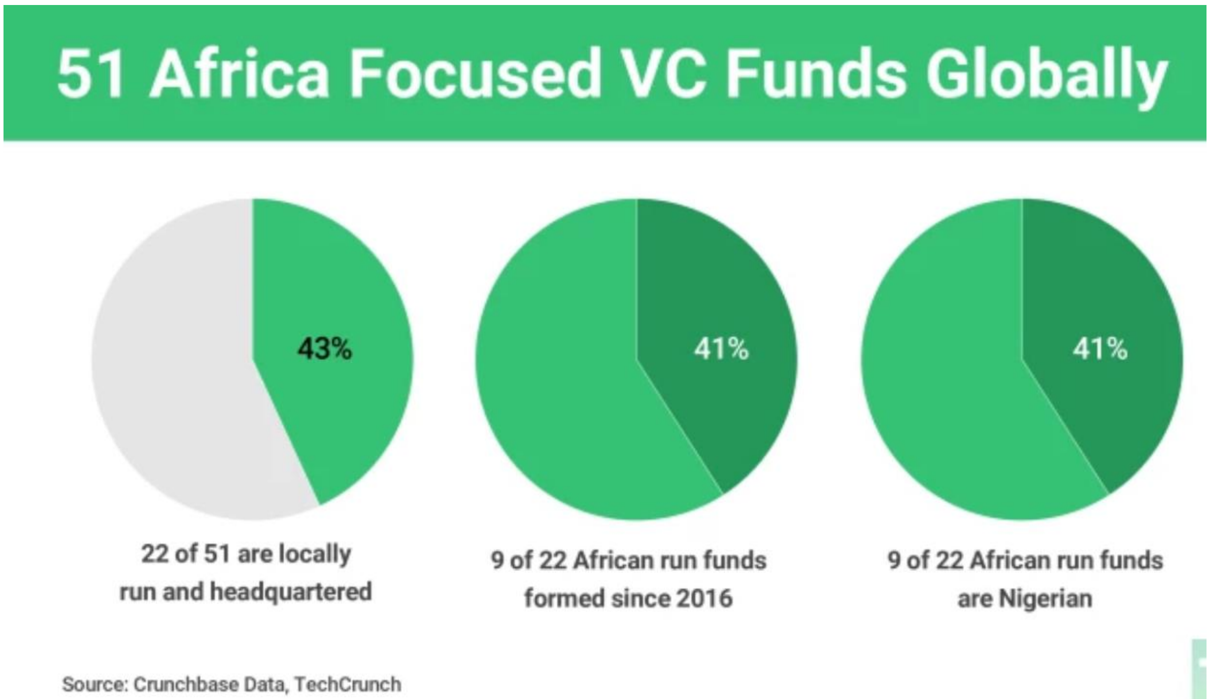
Turkish Lira in crisis

August saw the Turkish lira plunging by 20 per cent against the US dollar as a result of President Trump's announcement of doubling of steel and aluminium on Turkey. This record low decline sent the global markets into turmoil. Already grappling from high levels of debt in the private sector and significant foreign funding in the banking system, corporate financial and foreign currency debt accounted for up to

70 per cent of Turkey's economy. With global markets already being jittery due to trade war between US and China, the falling lira worsened the situation.

Africa: A year of venture capital, global expansion, blockchain and drones

Africa's venture capital landscape seemed to have become more African in 2018 with an increasing number of investment funds centres in the continent and run by locals.



2018 saw African tech demonstrating its expansion capabilities with major collaborations between local tech firms and big names continuing.

With crypto fever gripping many economies in 2018, Africa shaped its own narrative by working on one that was more grounded in utility than speculation.

From 'Strategic Engagement' to 'Strategic Competition'

The crucial Sin-American relationship seems to be undergoing a massive shift. Since Deng Xiaoping's market reforms set China on its current trajectory, US policy has been one of inclusion, resting in the belief that the country's inclusion in the global economy would address security concerns. However, analysis now claims that this has not happened and the reverse seems to be the case according to former U.S. Treasury Secretary Henry Paulson at Asia Society last month.

A roller-coaster year for India

The year commenced with oil prices surging past $60 a barrel and expectations remained that the prices would remain elevated with projections that it may even touch $100 a barrel due to production cut and Iran sanctions imposed by United States. However, the unprecedented oil price crash due to waiver given to eight countries from Iran sanctions, increase in production to control surging prices and slowing global demand resulted in a slump to as low as $49.93 a barrel on December 24, 2018.

India recorded a 7.1 per cent growth rate in the third quarter of FY17 as compared to 6.3 per cent in the previous quarter. The next quarters saw a further accelerated growth rate at 7.7 per cent and 8.2 per cent respectively. Hopeful that the disruptions caused by the Goods and Services Act (GST) would wane, expectations were that the India would record a growth rate of 7.3-7.6 per cent in FY19. However, the slump in the second quarter of FY19 to 7.1 per cent indicated fundamental issues with economic growth.

Volatility in oil prices and the impact of hike in minimum support price (MSP) to farmers resulted in a higher inflation projection at the beginning of the year. However, RBI's back to back repo rate hike twice resulted in inflation dropping to 2.88 per cent, much lower than its target of 4 per cent due to slump in oil prices and negligible impact of MSP.

Economy in Focus during December 2018

Irreversible path to a downturn

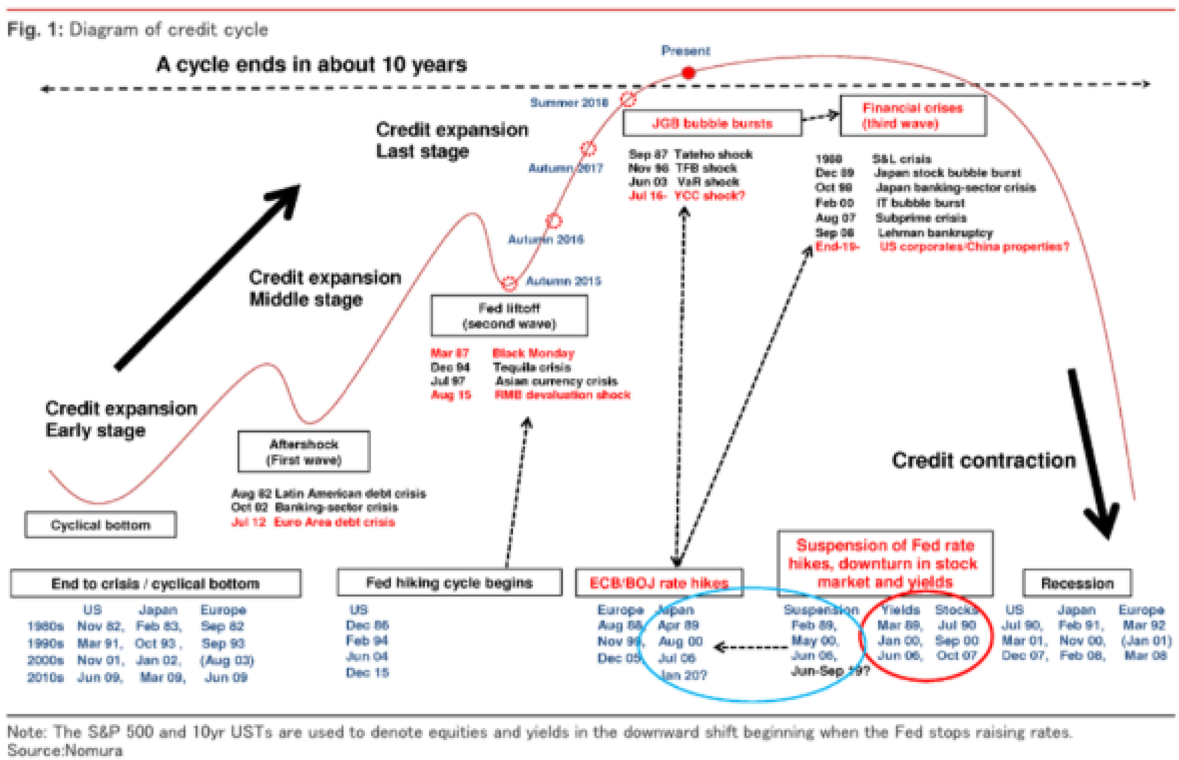


Diagram of a credit cycle.
Nomura

Chief Japan rates strategist at Nomura, Naka Matsuzawa claims that the global economy today is at the credit expansion/last stage heading towards a plateau and a downturn. A single cycle is historically a decade long. The beginning is marked by the end of a crisis/a cyclical bottom and ends when credit contracts and the economy enters into a recession.

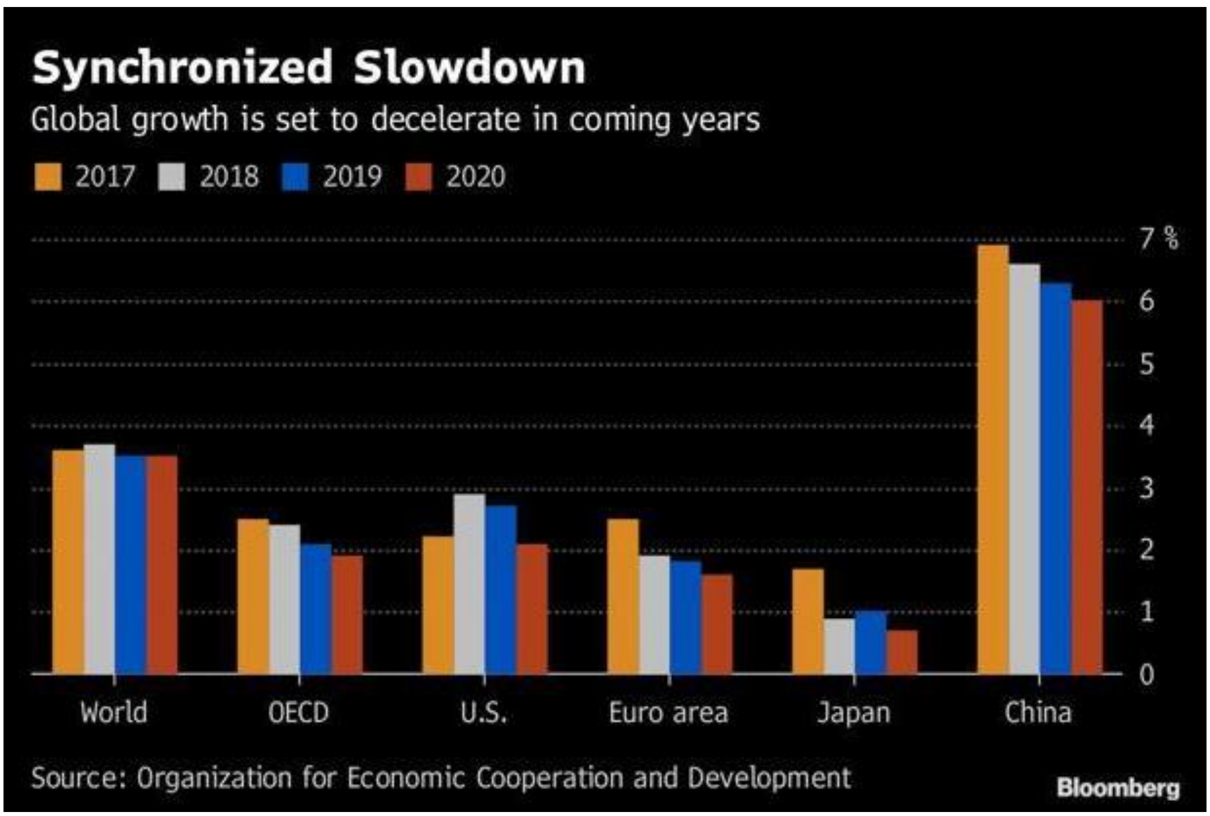
The economy is not expected to fall suddenly into a downturn but recover slightly in the second half of 2019 to the first half of 2020. A downturn is expected in the second half of 2020 and the financial markets are expected to reflect this downturn in the first half of 2020. Currently, the triggers for this downturn seem to US's hawkish approach to Chinese policy, further decline in crude oil prices and an increase in bankruptcies among the US energy companies.

Darkening cloud over China - Red signal to global economy

The already battered economy seems to be in the path of another hit with China's manufacturing recession. With the official PMI sliding down to 49.4 for December and new export orders venturing on crisis levels of 46.6, Nomura claims that worst is yet to come.

Nomura states that the outlook for 2019 is along the lines of China leading South Asia into a credit crunch as global liquidity wipes out, accompanied by property slumps and deflation in several countries in the next few months. Current account surplus economies such as China, Korea, Singapore, Thailand and Malaysia are expected to be at the vortex of this turmoil, more so since they are expor-reliant.

Delayed War Pain in 2019



Amid the rush of front-loading export orders ahead of threatened tariffs and tipping volumes triggered by US-Sino spat, the global economy is bound to feel pain in 2019. With GoPro Inc. moving most of its U.S.-bound camera production out of China by next summer and FedEx Corp. recently slashing its profit forecast and pared international air-freight capacity, the casualties seem to be piling up.

According to Bank of America Merrill Lynch, the trade war news accounted for a net drop of 6 percent in the S&P 500 this year. Trade volumes are expected to slow down to 4 per cent in 2019 from 4.2 percent this year according to the International Monetary Fund.

Europe figures heavily in the list of casualties as well. Germany's key machinery sector is set to record an output increase of 5 per cent in real terms in 2018 before the growth slows down to 2 per cent next year. With US placing tariff impositions on auto imports from Europe and Japan, the relations between world's major economies are bound to be strained.

Europe's next crisis

The overhyped boom of 2017 in the Eurozone has officially ended. Euro zone has been growing at the slowest annual growth rate in more than four years, with real gross domestic product growing at an annual rate of a mere 1.2 per cent in the first nine months of 2018. The slowdown can be attributed to Europe's largest economies – Germany, France, Italy and Spain which together accounts for roughly three-quarters of bloc's output.

What is essentially worrying is the steady dampening in the growth rate of private consumption. Consumption is the driving force behind the profitability of business investments. Hence cutting back on spending would either mean European businesses selling more abroad as exports or cutting investment – both scenarios being undesirable.

Survey suggest that the worrying situation is only expected to get worse. France's private sector observed outright contraction for the first time in two and a half years while Italy saw its output losing pace in 67 months.

Macroeconomic data suggests that Europe is more likely to be at the receiving end of recession than over-heating. Consumer prices have been consistently growing at just 1 per cent each year for the past six years and unemployment remains a persistent problem across the bloc. With conditions as such, Europe's economy seems to be inadvertently pushed into recession and Europe's incomplete monetary union makes it especially fragile.

Emerging from first recession in a decade in South Africa

Data from Statistics South Africa showed that South Africa's economy had expanded 2.2 per cent in the third quarter in quarter on quarter basis.

While manufacturing output rose 7.5 percent and agricultural output surged 6.5 per cent, the underlying economy remains weak and the central bank and National Treasury show an annual growth of less than 1 per cent for the year.

Despite tribulations, India remains fastest growing economy

India is expected to grow at the rate of around 7.8 per cent in the next calendar year with investment cycles expected to see further growth.

India's improved ranking on the World Bank's 'ease of doing business' report for the second time in a row, jumping to 77th position on the back of reforms related to insolvency, taxation and other areas has indeed been good news for the economy.

While the collection of the Goods and Services Tax crossed the Rs 1 lakh crore mark in October, after a gap of five months, but again slipped below the mark to Rs 97,637 crore in November, it was still higher than the average monthly collection in the year. This improved collection has increased hopes of the monthly collection to remain above Rs 1 lakh crore next year.

Inflation has been maintained well below the forecasts of RBI while the April-October period saw industrial output growth of 5.6 per cent as compared to 2.5 per cent in the same period of the previous fiscal. It stood at an 11-month high of 8.1 per cent in October.

Expectations from 2019

Uncertainty shines over 2019

Un-diversifiable risk is an uncertainty that plagues the entire market segment. Post the Lehman Brothers collapse on Sept 15, 2018, the market has been dominated by two non-economic variables, namely, Confidence and fear. Wherever economic confidence has been high, the markets have been booming and growth rates have been rising. This seems to stand true for ASEAN and China. However, wherever, fear seems to have made its way into the economic landscape, economies have been a victim to slumping growth rates and low development such as Italy, Japan, UK, Australia and many countries in Europe.

Already markets have gone down by 20 per cent which means to say that $9 Trillion has been wiped off equity markets. Reports suggest that if the markets go down by 50 per cent next year, $23 - $25 trillion will be wiped out from equity and bond markets.

Added to the existing uncertainty is the sovereign currency risk which has embedded in itself the structural, cyclical and political variables. 2019 may see few currencies such as Dollar, Euro and Pound Sterling go through depreciation thereby bringing about a bout of uncertainty.

The Biggest Problem in 2019

Reports claim that while US-China trade war may have been dominating the economic landscape in 2018, the problem dominating the scenes in 2019 could be massive business failures resulting in bank failures in emerging markets relying on foreign funds. While interest rates and easy money created by central bankers in recent years have lifted up both demand and supply side of the global economy on higher levels, lately with banks raising interest rates, the free flow of money is receding. This is bound to affect consumer spending, higher economic growth, income and employment levels boosted by growth as well higher investment.

Adding to this problem, is the rise of anti-globalization ideologies thereby increasing the wave of pessimism for 2019.

Oil plunge – What does it say about the global economy?

Oil is an important advisory of future growth. US crude prices have crashed more than 40 per cent from hitting a four year high of above $76 in October.

The International Monetary Fund predicts global growth to slow to 2.5 per cent next year from 2.8 per cent this year. A slump in economic activity would entail lesser demand for energy. It is in tune with this thought that the International Energy Agency has warned of “relatively weak” demand in Europe and developed Asian countries and a “slowdown” in India, Brazil and Argentina mostly due to currency depreciation. OPEC seems to be agreeing when it said that the demand for its oil next year was expected to be 1 million barrels a day less than in 2018.

The price of oil would act as a major determinant in the status of the agreement made by OPEC and its allies as well as Russia and other partners in slashing production to maintain prices. If the price remains below $60 a barrel, the agreement could be extended till December. However, if the price surges back to $80 per barrel, then it may increase its output.

OPEC cut is expected to influence what the market will be doing which in turn will affect US policy with regard to Iran sanctions and the unlikely “waivers” that it has doled out.

US shale oil boom has reshaped the global energy landscape. In September, United States became the world’s largest producer of crude oil, overtaking Russia and Saudi Arabia for the first time since 1973. This advantageous position that US finds itself in is bound to raise questions on OPEC’s ability to influence prices.

Key Policy developments in Indian O&G sector in 2018

- **On 18th January 2018, Ministry of Petroleum and Natural Gas launched Bid Round I under the innovative Open Acreage Licensing Programme in New Delhi**

  With the objective to achieve Prime Minister's vision for Energy Security and Sufficiency, the Ministry of Petroleum and Natural Gas (MoPNG) has steered a plethora of reforms in the recent past years. Aligned with the objective, the Government launched the Bid Round I under Open Acreage Licensing (OAL) Programme for international competitive bidding on 18 January, 2018. The landmark event was presided by Minister of Petroleum and Natural Gas, Minister of Skill Development and Entrepreneurship Mr. Dharmendra Pradhan. For the first time in India, 55 bidder selected blocks, each carved out by prospective bidders themselves in promising basins with an area of 59,282 Sq. Kms were announced for bidding. This is the largest offering of acreages; the Government has announced in the past 8 years.

- **In February, the Union Cabinet approved Discovered Small Fields (DSF) Policy Bid Round-II for 60 un-monetized discoveries of ONGC and OIL under Nomination and Relinquished Discoveries under PSC Regime**

  The Union Cabinet chaired by the Prime Minister Mr. Narendra Modi has given its approval for extending the Discovered Small Field Policy notified on 14.10.2015 to identified 60 discovered small fields / un-monetized discoveries for offer under the Discovered Small Field Policy Bid Round-II. Out of these, 22 fields/ discoveries belong to of Oil and Natural Gas Corporation (ONGC) Limited, 5 belong to Oil India Limited (OIL) and 12 are relinquished fields / discoveries from the New Exploration and Licensing Policy (NELP) Blocks. In addition, 21 fields / discoveries are remaining from DSF Bid Round-l which were put on offer but could not be awarded due to insufficient response from the investor.

- **Indian Consortium and Saudi Aramco Sign MoU for Ratnagiri Mega Refinery in Maharashtra**

  An Indian Consortium consisting of IOCL, BPCL and HPCL and Saudi Aramco signed a Memorandum of Understanding (MoU) here today to jointly develop and build an integrated refinery and petrochemicals complex, Ratnagiri Refinery & Petrochemicals Ltd. (RRPCL) in the State of Maharashtra. The refinery will be capable of processing 1.2 million barrels of crude oil per day (60 million metric tonnes per annum, or MMTPA). It will produce a range of refined petroleum products, including petrol and diesel meeting BS-VI fuel efficiency norms. The Refinery will also provide feedstock for the integrated petrochemicals complex, which will be capable of producing approx. 18 million tonnes per annum of petrochemical products.

- **First ever auction of blocks under the Open Acreage Licensing Programme ('OALP') was conducted in May 2018**

The OALP Bid Round – I was successfully concluded on May 2, 2018. This was the first ever auction of blocks under the Open Acreage Licensing Programme ('OALP') in India. Path breaking Hydrocarbon Exploration and Licensing Policy ('HELP'), which was approved by the Union Cabinet, chaired by the Prime Minister Mr. Narendra Modi, in March 2016, has been the centre-piece of upstream Oil and Gas sector reform process in the country. OALP under the aegis of Hydrocarbon Exploration and Licensing Policy (HELP) is meant to steer India as a global E&P investment destination. Investors had submitted Expression of Interest (EoI) for fifty-five blocks spread across the country for carrying out Exploration and Production activities.

Mr. Dharmendra Pradhan, Union Cabinet Minister in charge of Ministry of Petroleum and Natural Gas inaugurated the National Data Depository and opened OALP process in June 2017. 55 EoI's received were put on bid in the month of January 2018. These 55 blocks spread across 10 sedimentary basins of India were on offer, spread across Onland, Shallow Water (offshore), and Deepwater areas, cover around 60,000 sqkms. The blocks are spread all across the Indian sedimentary areas, namely, Assam-Arakan (19), Mumbai Offshore (2), Cambay (11), Rajasthan (9), KG (5), Cauvery (3), Kutch (2), Saurashtra (2), Himalayan Foreland (1) and Ganga (1) basin

- **In the month of May 2018, India received the 1st cargo of ADNOC crude oil for its Mangalore Strategic Petroleum Reserve**

On May 21st, India received the 1st cargo of UAE crude oil for filling up one of the two Strategic Petroleum Reserve (SPR) caverns built by Indian Strategic Petroleum Reserve Ltd (ISPRL) at Mangalore. On 12thMay, Mr. Dharmendra Pradhan, Minister of Petroleum and Natural Gas & Skill Development & Entrepreneurship and H.E. Dr. Sultan Al Jaber, UAE Minister of State and ADNOC Group CEO from Abu Dhabi jointly initiated the filling of the crude oil carrier vessel MT Inspiration with 2 million barrels of crude oil belonging to Abu Dhabi National Oil Company (ADNOC) of UAE.

- **In June, Cabinet Committee of Economic Affairs (CCEA) approved Mechanism for procurement of ethanol by Public Sector Oil Marketing Companies (OMCs) to carry out the Ethanol Blended Petrol (EBP) Programme**

The Cabinet Committee on Economic Affairs chaired by Prime Minister Shri Narendra Modi has approved the Mechanism for procurement of ethanol by Public Sector Oil Marketing Companies (OMCs) to carry out the Ethanol Blended Petrol (EBP) Programme- Revision of ethanol price for supply to Public Sector OMCs.

Government has notified administered price of ethanol since 2014. This decision has significantly improved the supply of ethanol during the past four years. The ethanol procured by Public Sector OMCs has increased from 38 crore litre in ethanol supply year 2013-14 to estimated 140 crore litre in 2017-18.

- **Policy framework for streamlining the working of Production Sharing Contracts (PSCs) in Pre-NELP and NELP Blocks was approved by the Union Cabinet in July 2018**

  On July 18, the cabinet committee on economic affairs chaired by Prime Minister Mr. Narendra Modi approved the policy framework for streamlining the operations of Production Sharing Contracts (PSCs) for increased domestic production of hydrocarbon resources. The policy framework includes: i) Special dispensation for E&P activities in North Eastern Region (NER), ii) Sharing of Royalty and Cess in Pre-NELP Exploration Blocks

- **Policy Framework to Promote and Incentivize Enhanced Recovery Methods for Oil and Gas was approved by the Union Cabinet in September 2018**

  The Union Cabinet chaired by Prime Minister Mr. Narendra Modi has approved the Policy framework to promote and incentivize Enhanced Recovery (ER)/ Improved Recovery (IR)/ Unconventional Hydrocarbon (UHC) production Methods/techniques to improve recovery factor of existing hydrocarbons reserves for augmenting domestic production of oil and gas. The ER includes Enhanced Oil Recovery (EOR) and Enhanced Gas Recovery (EGR), Unconventional Hydrocarbon (UHC) production methods include Shale oil and gas production, tight oil and gas production, production from oil shale, gas hydrates and heavy oil. Enhanced Recovery, Improved Recovery and exploration and exploitation of unconventional hydrocarbons are capital intensive, technologically complex and challenging in nature. It calls for supporting infrastructure, logistic support, fiscal incentives and enabling environment. Technological interventions have significant potential in stimulating the recovery of hydrocarbon reserves from the matured/aging fields. An increase by 5% in recovery rate of original in-place volume in oil production is envisaged for producing 120 MMT of additional oil in next 20 years. In case of gas, an increase of 3% recovery rate on original in- place volume is envisaged, leading to additional production of 52 BCM of gas in next 20 years

- **In October 2018, contracts of the blocks awarded under the Open Acreage Licensing Programme (OALP) Bid Round-I was signed with the awardees at New Delhi**

  On October 1st, Government of India today signed the contracts of the blocks awarded under the Open Acreage Licensing Programme (OALP) Bid Round-I with the awardees at New Delhi. The event was presided by Mr. Dharmendra Pradhan, Minister for Petroleum and Natural Gas & Skill Development and Entrepreneurship, along with Dr. M. M. Kutty, Secretary (P&NG), Dr. V. P. Joy, Director General- Directorate General of Hydrocarbons and other senior officials of the Ministry.

Initially, 110 e-bids were received for 55 blocks on offer with participation from 9 companies, singly or in consortium. Finally, contracts have been signed for all 55 blocks with 6 companies. The details of the contract areas signed is placed at Annexure 1.This will add a huge accretion of 59,282 sq.km to the exploration area. This is about 65% of the area presently under exploration in the country. This will lead to significant increase in E&P activities in India and in long run discoveries from these fields may significantly boost domestic production.

The bid round-I of OALP was launched in January 2018 under the liberalized Hydrocarbon Exploration and Licensing Policy (HELP). It is for the first time that bidding in the E&P sector in India was for blocks that had been selected by bidders themselves with government playing a facilitator role. The OALP bid round-I have received overwhelming enthusiasm from various stakeholders of E&P industry, with all 55 blocks on offer receiving bids and being awarded

- **Gas trading hub to be set up soon to allow easy and ready access to gas suppliers**

On 12th December, Minister of Petroleum and Natural Gas & Skill Development and Entrepreneurship, Mr. Dharmendra Pradhan spoke about setting up a gas trading hub that will allow easy and ready access to gas suppliers and buyers to freely trade natural gas and in turn help India to develop its own hub-based pricing. Mr. Pradhan further added that, about 300 billion dollars would be invested in coming decade

Key developments in Oil & Gas sector during December 2018

- **Government's focus is to bring about transformational changes in the energy landscape of India to fulfil the twin objectives of energy justice and climate justice**

  Minister of Petroleum and Natural Gas & Skill Development and Entrepreneurship, Mr. Dharmendra Pradhan has said that Energy is a key driver of economic growth and thus, our Government's focus has been to bring about transformational changes in the energy landscape of India to fulfil the twin objectives of energy justice and climate justice. Speaking at a Programme on 11th December, he said that the Indian energy sector is at the herald of a new beginning; with the energy vision laid down by Prime Minister Mr. Narendra Modi. The four energy pillars viz. Energy Access, Energy Efficiency, Energy Sustainability and Energy Security; has to be seen in tandem for a stable energy future. The Petroleum Ministry has endeavored to "Reform, Perform and Transform' the sector. India's per capita energy consumption is around 1/3rd of the World's average

- **Gas trading hub to be set up soon to allow easy and ready access to gas suppliers**

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- **Prime Minister Narendra Modi to lay foundation of Paradip Hyderabad Pipeline Product Project and Bokaro-Angul section of Jagdishpur-Haldia & Bokaro-Dhamra Gas Pipeline Project in Odisha**

  On 24th December, Prime Minister Mr. Narendra Modi laid the foundation for Paradip Hyderabad Product Pipeline Project (PHPL) by Indian Oil Corporation Ltd. and Bokaro-Angul section of Jagdishpur-Haldia & Bokaro-Dhamra Gas Pipeline Project (PM Urja Ganga) by Gas Authority of India Limited (GAIL). Highlighting the details of the 1212 Km long Paradip – Hyderabad Product Pipeline, Minister of Petroleum and Natural Gas & Skill Development and Entrepreneurship, Mr. Dharmendra Pradhan said PHPL is being built by IOC Ltd. at a sanctioned cost of Rs. 3,800 crores. It is capable of transporting 4.5 MMTPA of petrol, diesel, kerosene and Aviation Turbine Fuel (ATF). The pipeline originates at Paradip and traverses through three States - Odisha (329 Km), Andhra Pradesh (723 Km) and Telangana (160 Km) before terminating at Hyderabad. The pipeline has delivery cum pumping stations at Behrampur, Vizag, Rajahmundry and Vijaywada. He mentioned that apart from generating employment during its construction, the PHPL will also ensure efficient transportation of petroleum products across the three States and further cement Paradip's position as an energy hub of eastern India.

  Mr. Pradhan further informed that the 667 Km long Bokaro-Angul pipeline sections of the landmark Jagdishpur-Haldia-Bokaro-Dhamra Pipeline Project (PM Urja Ganga) is being built by the Gas Authority of India Limited at a sanctioned cost of Rs. 3,437 crores. The pipeline is a part of the landmark Pradhan Mantri Urja Ganga project and traverses 367 Km across 5 districts in Odisha and 360 Km across 6 districts in Jharkhand, he added.

- **CNG Queue Management System (QMS) and Social CRM of IGL launched by Mr. Dharmendra Pradhan**

On 21st December, Minister of Petroleum and Natural Gas & Skill development and Entrepreneurship Mr. Dharmendra Pradhan launched various Digital Customer initiatives of Indraprastha Gas Limited (IGL). These included CNG Queue Management System (QMS) and Social CRM.

Lauding the initiatives of IGL in introducing QMS, Mr. Pradhan said that it would tackle the problem of long queues at CNG stations, save time and check the wastage of fuel for waiting vehicles. This will improve the quality of life and enhance income of the vehicle drivers using CNG as fuel. The CNG Queue Management System through "OORJA" mobile application would provide information regarding the average waiting time at the CNG station and also alternative nearby CNG Station to the customers. The customers would know the waiting time for three broad categories i.e. Buses, Cars and Autos. They will also be able to see CNG Station nearby and the waiting time for three categories of vehicles. This application would be available through invitation initially for ten days and would be available for download from 1st Jan. 2019.

The Technology platform—Social CRM will address customer queries, complaints, service requests, grievances on various social media platforms, such as Facebook, twitter and Instagram. This can be used to effectively view and monitor the grievance redressal process by using the sentiment analysis.

Oil and Gas Market - Year in a recap…

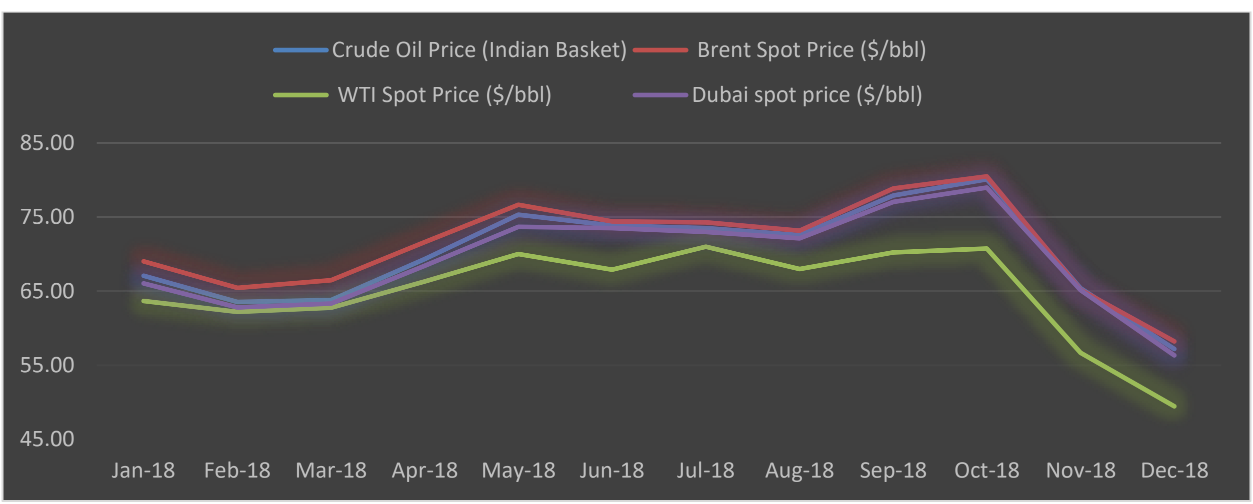
Crude oil

The year 2018 saw crude oil trading at a four years peak however ending in red down by almost 40% from its four-year peak in 2018. In January 2018, Brent and WTI crude were trading in the range of $60 - $69 per barrel. Reduction in surplus inventories from the supply market caused the crude price to take an upward trend. In 2018, crude oil prices saw a 4-year high due to the tightening of crude oil market. Increase in oil price encouraged producers to pump more crude as United States, Russia and Saudi Arabia reached a record production level in 2018. Production disruptions in Venezuela, Libya, Nigeria and the sanctions on Iran helped the crude price to a 4-year high in 2018. In October, Brent Price reached $86 a barrel while WTI reached $76 on the account of US sponsored trade sanctions on Iran.

In early November, as the second round of sanctions on Iran came into effect, the world waited in anticipation of a major surge in oil prices as a major chunk of Iranian production is withdrawn from the market. This sanction was expected to remove 2 mbpd from the market. To counter the loss of Iranian crude, Saudi Arabia increased its production, while US gave a waiver of six months to eight countries for importing crude from Iran. This led to surplus of crude oil in the market, triggering the fall of crude oil price.

OPEC countries and other major producers met in Vienna on the 6th of December to discuss a production cut to support the falling prices. It was agreed to cut 1.2 mbpd in January 2019, with 800,000 bpd cut coming from OPEC while the rest coming from Russia. By the last week of December, crude oil prices further tumbled and reached a 1-year low due to sluggish demand growth. During the year, Indian crude basket averaged $69.9 a barrel.

Figure 1 Benchmark Prices of India, Brent, WTI and Dubai crude prices 2018

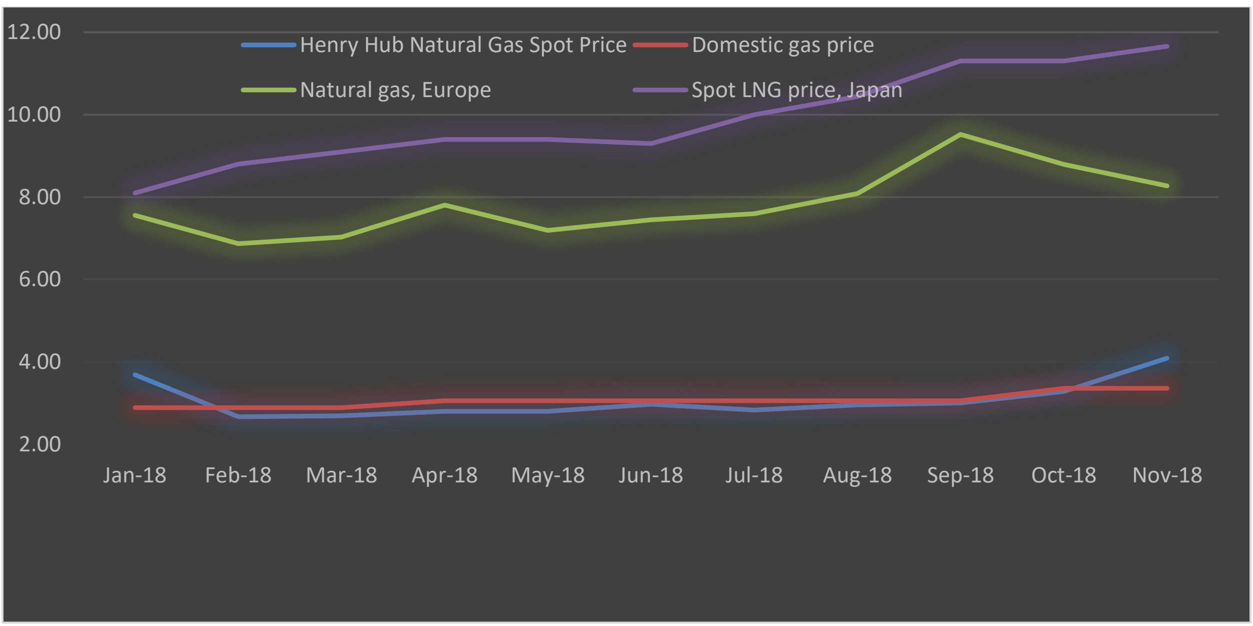


Source: WORLD BANK

Natural Gas

The year 2018 saw an increase in Henry Hub Natural Gas price primarily due to the tightening market, cold weather and lower inventory levels. Gas production reached a new high in 2018 due to increased demand. Natural gas production in US reached close to 82 BCF per day. Except for the month of January, US remained a net exporter of gas. In India, domestic gas price was hiked twice during 2018. During Jan-Mar 2018, domestically produced gas was sold at $2.89/MMBtu. By April, the price was revised to $3.06/MMBtu. Prevailing price based on the update for October 2018- March 2019 is $3.36/MMBtu. 2018 saw an increase in gas price by 19.3%. Demand of gas in the Asian region led by China, India, South Korea and Japan remained strong, which triggered an upswing in LNG prices over the year, with JCC spot price increasing from around $ 8 per barrel to around $ 12 per barrel in November 2018.

Figure 2 Global natural gas price trends - 2018



Source: WORLD BANK

Oil & Gas Market in December 2018

Crude oil price

In November, oil prices were sliding down on account of waivers granted by the U.S to the 8 countries from its sanctions on Iran. As the imports from Iran didn't stop as expected, the market was left with surplus supply. Crude production from U.S and Russia hit all-time high in November 2018, leading to imbalance in the market. OPEC's forecast showed a decline in demand for crude in 2019. As a result, OPEC has suggested a production cut of about 1.4 mbpd to balance the oversupplied market.

With record production from U.S and Russia, and increase in oil inventory levels, the commodity prices across the globe declined. One of the main reasons that triggered this volatility was the waiver given by U.S in regards to Iranian crude imports for 8 countries. This sent crude supply and inventories to a higher level, causing the price crash. Uncertainty over the U.S.-China trade war, geopolitical situations and slowdown in global growth are other reasons that attributed to price fall. Brent, WTI and Indian basket crude prices declined by around 15.8%, 18.2% and 25.72 % respectively from the prices at start of the month.

- Brent crude price averaged $65.17 per bbl in November 2018, and was down 19.0% and up 3.9% on a month on month (MoM) and year on year (YoY) basis, respectively.
- WTI crude price averaged $56.67 per bbl in November 2018, and was down 19.9% and up 0.1% on a month on month (MoM) and year on year (YoY) basis, respectively.
- Dubai crude price averaged $65.11 per bbl in November 2018, and was down 17.5% and up 7.5% on a month on month (MoM) and year on year (YoY) basis, respectively.

Table 1: Crude oil price in November, 2018

Crude oil	Price ($/bbl) in November 2018	MoM (%) change	YoY (%) change
Brent	65.17	-19.0%	3.9%
WTI	56.67	-19.9%	0.1%
Dubai	65.11	-17.5%	7.5%

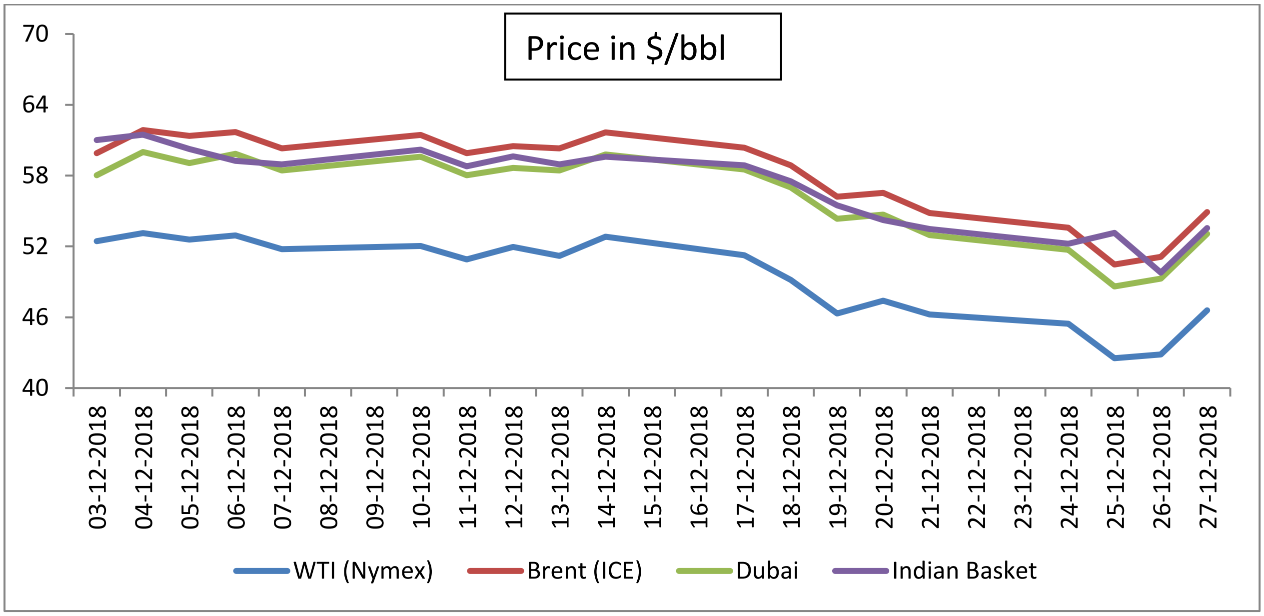
Source: WORLD BANK

Crude oil prices at a one year low in December

At the start of December, oil prices further slid down on the concern of growing oversupply in the market. Top producers Russia, Saudi Arabia and United States pumping out oil at records level, coupled with declining demand has led to a supply surplus situation. OPEC Countries and other major producers met on December 6th in Vienna to discuss on production cut in an attempt to balance the market. At the end of the meeting OPEC and allies agreed to cut the production by 1.2 mbpd from January 2019.

Financial concerns in emerging markets, rising interest rates and trade tensions are triggering the worries of a slowdown in global economic growth which would weigh on fuel consumption. Demand for oil is forecasted to grow slower than previously anticipated in 2019.

Figure 3: Crude oil price in December 2018

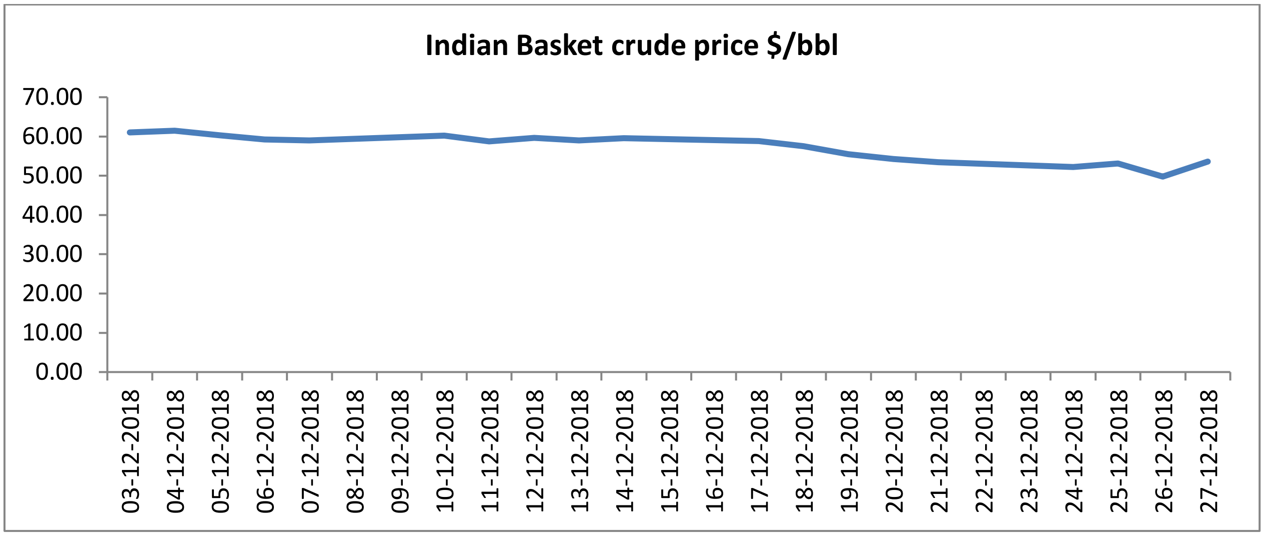


Source: EIA, PPAC

Indian Basket Crude oil price

- The Indian basket of Crude Oil represents a derived basket comprising of Sour grade (Oman & Dubai average) and Sweet grade (Brent Dated) of Crude oil processed in Indian refineries in the ratio of 72.38:27.62 during 2016-17.

Figure 4: Indian crude oil basket price in $ per bbl



Source: Petroleum Planning & Analysis Cell

- Indian crude basket price averaged $ 57.18 per barrel in December, down 15.8% Month on Month (MoM) basis and down by 8.2% on a year on year (YoY) basis, respectively.

Oil demand & supply

Preliminary data indicates that global oil supply increased by 0.50 mb/d to average 100.64 mb/d in November 2018, compared with the previous month. An increase in non-OPEC supply (including OPEC NGLs) of 0.44 mb/d compared with the previous month was mainly driven by OECD Americas. OPEC's crude oil production averaged 32.97 mb/d in November, a decrease of 11tb/d from the previous month. The share of OPEC crude oil in total global production declined by 0.2% to reach 32.8% in November compared with the previous month. Estimates are based on preliminary data from direct communication for non-OPEC supply, OPEC NGLs and non-conventional oil, while estimates for OPEC are based on secondary sources.

For 2019, non-OPEC oil supply growth was revised down by 0.08 mb/d from the November's forecast to stand at 2.16 mb/d and is now projected to reach an average of 62.19 mb/d. The downward revision comes due to a mandatory production adjustment in Alberta and Russia. Demand forecasts for 2019 for non-OPEC supply growth indicate higher volumes outpacing the expansion in world oil demand, leading to widening excess supply in the market. In 2019, world oil demand growth is anticipated to grow by 1.29 mb/d y-o-y, with total world consumption to reach 100.08 mb/d, unchanged from November's report.

The recent downward revision to the global economic growth forecast and associated uncertainties confirms the emerging pressure on oil demand observed in recent month.

Table 2: World Oil demand in mbpd

	2017	1Q18	2Q18	3Q18	4Q18	2018	Growth	%
Total OECD	**47.42**	**47.69**	**47.24**	**48.13**	**48.37**	**47.86**	**0.44**	**0.94**
Dev. Countries	**32.13**	**32.44**	**32.60**	**32.86**	**32.71**	**32.65**	**0.53**	**1.64**
~ of which India	*4.53*	*4.83*	*4.74*	*4.40*	*5.02*	*4.75*	*0.22*	*4.76*
Other regions	**17.74**	**17.68**	**18.18**	**18.32**	**18.90**	**18.27**	**0.53**	**2.99**
~ of which China	12.32	12.28	12.84	12.65	13.07	12.71	0.39	3.18
Total world	**97.29**	**97.80**	**98.02**	**99.32**	**99.98**	**98.79**	**1.50**	**1.54**

Source: OPEC monthly report, December 2018

*Note: *2018 = Forecast*

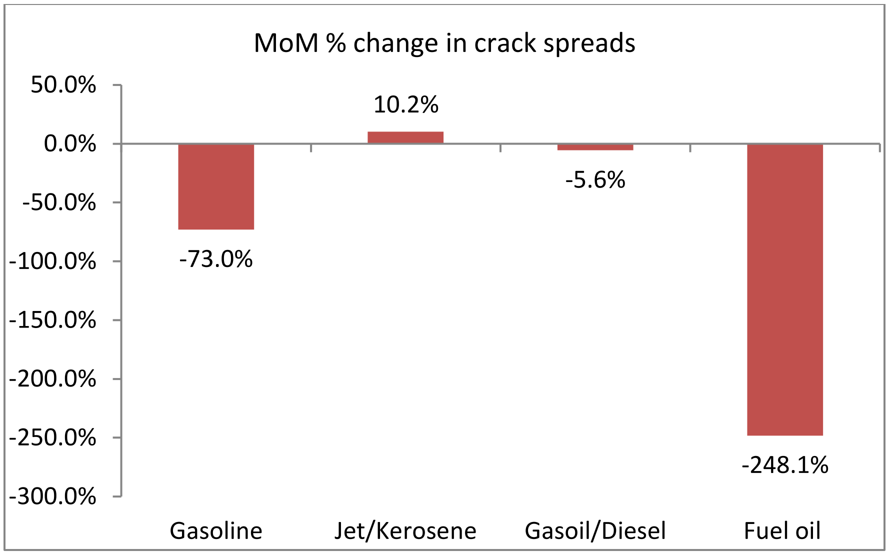
Global petroleum product prices

Prices in the Asian Gasoline-92 market saw a decline of 22% over the previous month. Retail price has fallen by significant smaller margin. Refinery margins dipped slightly. Gasoline cracks in Singapore declined to $1.13/b, a new low due to prevailing oversupply despite the slower demand growth. Refinery utilization declined in November averaging 80.13% in selected Asian markets comprising of Japan, China, India and Singapore.

Jet/Kerosene continued to trend upwards performing well, after the recovery seen in the previous month. Jet/kerosene crack reached the second highest mark of the year in November and highest since February 2018. The upside development was driven by strong inventory drawdowns in Japan and firm demand from India. Warmer winter months have likely impacted the demand for kerosene which is widely used in heating. Higher demand for aviation around the holiday season has set a positive stage for jet fuel in the near term.

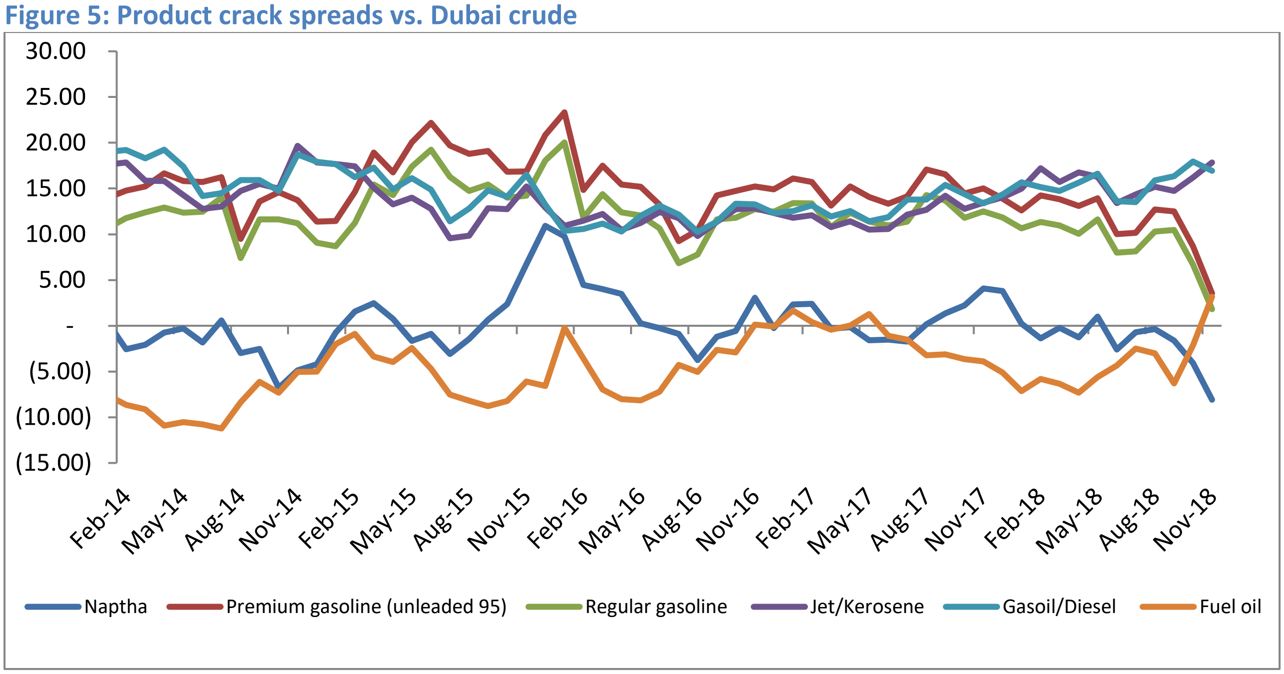
Pressured by slower buying interest and increase in Chinese export quotas, gasoil crack spread declined by 5.6 %. Singapore gasoil crack spread against Oman averaged $16.26/b, down by $1.25 m-o-m but up by $3.11 y-o-y

The fuel oil market in Singapore continued to strengthen, further extending the sharp rise in fuel oil cracks witnessed since September. They entered the positive territory for the first time in last 3 years. A decline in fuel oil supply in line with 20% drop is fuel oil stocks y-o-y in Singapore, contributed to market tightness.



Source: OPEC monthly report

Figure 5: Product crack spreads vs. Dubai crude



Source: OPEC, FIPI

Table 3: Singapore FOB, refined product prices ($/bbl)

Products	Price ($/b) in November 2018	MoM (%) change	YoY (%) change
Naptha	57.01	-23.9%	-11.8%
Premium gasoline (unleaded 95)	68.65	-21.7%	-9.2%
Regular gasoline (unleaded 92)	66.92	-21.9%	-8.4%
Jet/Kerosene	82.97	-12.8%	12.1%
Gasoil/Diesel (50 ppm)	82.05	-15.3%	10.9%
Fuel oil (180 cst 2.0% S)	68.28	-11.1%	20.5%
Fuel oil (380 cst 3.5% S)	68.25	-10.9%	20.4%

Source: OPEC

Petroleum products consumption in India

- In November, LPG consumption decreased 10.8% on MoM basis.
- Consumption of gasoline increased (9.1% YoY) driven by higher demand from transport segment.
- Demand for diesel decreased by 4.6% on YoY basis in the month of November.

Table 4: Petroleum products consumption in India, November 2018

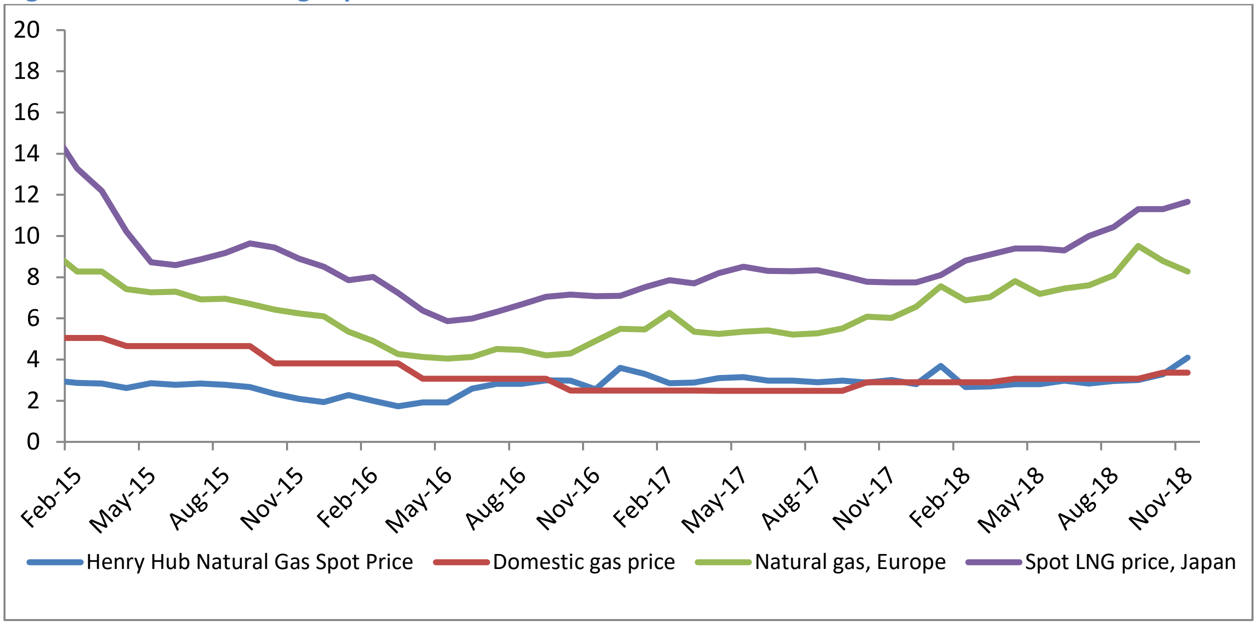
Petroleum products	Consumption in '000 MT November 2018	MoM (%) change	YoY (%) change
LPG	1,842	-10.8%	-7.8%
Naphtha	1,214	-1.3%	14.1%
MS	2,318	-0.5%	9.1%
ATF	683	-0.9%	6.4%
HSD	6,921	-1.0%	-4.6%
LDO	47	-4.1%	-11.5%
Lubricants & Greases	322	-2.1%	5.1%
FO & LSHS	499	-10.0%	-11.3%
Bitumen	518	-8.5%	-15.7%
Petroleum coke	1,856	-9.3%	-2.8%
Others	776	-9.1%	22.4%
TOTAL	**17,273**	**-4.0%**	**-1.2%**

Source: PPAC

Natural Gas Price

Natural gas prices in US has increased steadily and was trading 36% above the previous year in November 2018 due to colder weather and higher demanding for heating. LNG prices saw an upswing over previous year due to higher natural gas demand.

Figure 6: Global natural gas price trends



Source: EIA, WORLD BANK

Table 5: Gas price

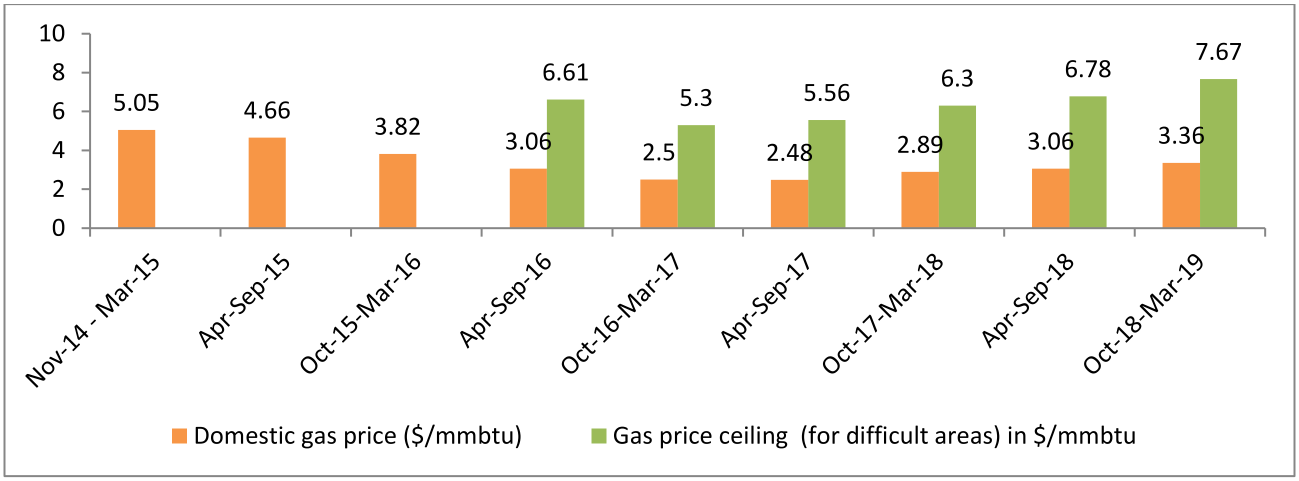
Natural Gas	Price ($/MMBTU) in November 2018	MoM (%) change	YoY (%) change
India, Domestic gas price	3.36	0.0%	16.3%
India, Gas price ceiling – difficult areas	7.67	13.1%	21.7%
Henry Hub	4.09	24.7%	35.9%
Natural Gas, Europe	8.27	-5.9%	37.4%
Liquefied Natural Gas, Japan	11.66	3.2%	50.5%

Source: EIA, PPAC,

Domestic natural gas price which takes into account international benchmarks including Henry Hub, Alberta hub, Russia and UK National Balancing Point, has increased around 23% as compared to a year before, thus capturing the international gas price trends.

A notification was issued by MoP&NG on 21st March 2016, for marketing including pricing freedom for gas to be produced from discoveries in deep water, ultra-deep water, and high-pressure high temperature areas. For the October to March 2019 period, the price of gas from such areas has been notified at $7.67 per MMBTU.

Figure 7: Domestic natural gas price

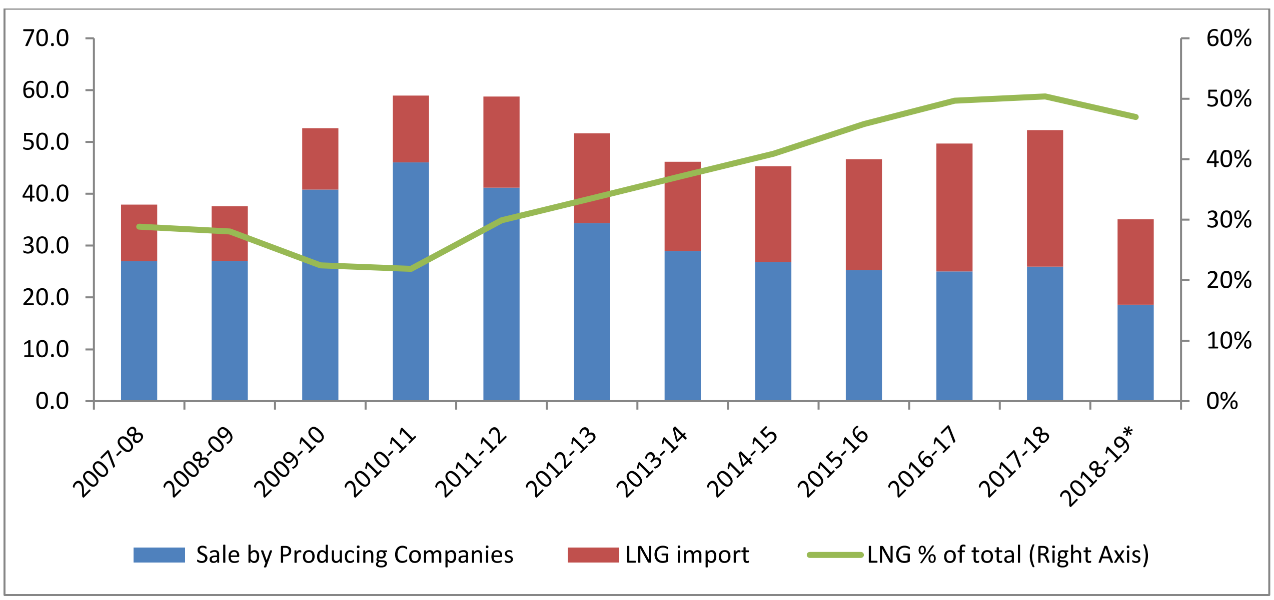


Source: PPAC

Natural gas production, consumption and import in India

- Natural gas constitutes for 6.2% of total energy primary mix of India
- Natural gas consumption in India has grown at a very slow pace in the past 3 – 4 years, with share of LNG imports increasing in the overall consumption mix

Figure 8: Domestic natural gas consumption, domestic production and LNG import in BCM



Source: PPAC

**Figures for 2018-19 are for the period of April – October only. Sale by producing companies includes internal consumption*

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