



## **ECONOMIC SLOWDOWN IN INDIA HAS LED TO REDUCED CARBON DIOXIDE EMISSION**

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*A new study has been published in Madrid in 2019 which explains the reduction in the emission of carbon dioxide due to slowdown the in economy in India. This report says the growth in India's carbon dioxide emissions this year has been considerably lower than in the last few years. The Global Carbon Project, which puts out emission estimates for across the world every year, has said India's emissions in 2019 (2.6 billion tonnes or gigatonnes) was likely to be only 1.8 per cent higher than in 2018. This is significantly lower than the 8% growth that India showed last year and the more-than-5% average growth over the last ten years. The growth in global carbon dioxide emissions too is likely to come down this year, to just 0.6% over last year. The lower growth in CO<sub>2</sub> emissions, though desirable, is only positive fallout of the slowdown in the Indian economy.*

**Keywords:** Economic slowdown, Co<sub>2</sub> emission.

### **INTRODUCTION**

Economic growth has been consistently weakening over the last few quarters, leading to reduction in activities that cause emissions. Indian CO<sub>2</sub> emissions have grown at 5.1 per cent per year over the last decade, but growth is expected to be much weaker in 2019, at 1.8 per cent (range 0.7 to 3.7 per cent). Weak economic growth in India has led to slower growth in oil and natural gas use. With a weakening economy, growth in India's generation of electricity has slowed from 6 per cent per year to less than 1 per cent in 2019, despite electrification of villages adding to potential demand. Moreover, the addition of a very wet monsoon led to very high hydropower generation and a decline in generation from coal. Economic slowdown has been the cause for a lower emission growth in the rest of the world as well, and also in China, the world's largest emitter. China had low growth and unexpected declines in CO<sub>2</sub> emissions over the period 2014 to 2016, but in 2017 and 2018, its CO<sub>2</sub> emissions rose again by 1.7 per cent and 2.3 per cent respectively. In 2019, China's CO<sub>2</sub> emissions are expected to rise by 2.6 per cent (range 0.7 to 4.4 per cent). Chinese emissions could have been growing faster if it were not for slower economic growth.

### **State of Economy in 2019**

With recession, job loss and companies winding up operations, NDA government has proved to be extremely bad for India's economy. The GDP growth rate for the second quarter dropped to its lowest in six years. Gross Domestic Product figures released by the Central Statistics Office (CSO) showed that India's GDP for the second quarter of the financial year 2019 (Jul-Sep 19) was 4.5 - lowest since 2012-13. This will be proper to cite some of growth figures over the previous years which suggest the kind of slowdown the Indian economy is passing through.

**Table 1, Sector Wise and Year Wise in India**

SECTORS	EARS			
	2016-17	2017-18	2018-19	2019-20 (PART)
AGRICULTURAL GROWTH	6.3	5.0	2.9	2.1
INDEX OF INDUSTRIAL PRODUCTION GROWTH	4.6	4.4	3.9	2.4
CORE SECTOR GROWTH	4.8	4.3	4.4	0.2
CREDIT GROWTH TO MSME	0.9	-0.4	2.3	2.7
MANUFACTURING	-1.2	1.7	-1.4	0.7
PRIVATE FINAL CONSUMPTION GROWTH	56.1	56.3	56.9	55.7
UNEMPLOYMENT	9.65	4.03	5.14	9.7

With consecutive declines for six quarters, the expectations of almost all major financial institutions and rating agencies for India's GDP growth have also come down. India is in the middle of a severe credit contraction that started with the liquidity squeeze triggered by the crisis in the non-bank finance companies (NBFCs), which has now spread to deposit-taking companies as well. India is growing below historical trend and there will be some pressure on broad consumption aggregates. Corporate tax cut has also not yielded any positive result as yet. With most sectors are currently facing macro headwinds, broad macro parameters (investment, domestic and global) are all at/near to the lowest levels since FY14. There is a dip in both consumer and business confidence. Index of industrial production (IIP), core sector growth and rural employment numbers are showing extreme stress in economy. Under the current environment when both business and consumer sentiments are down, a rate cut alone will not spur consumption and/or investment demand. We have to understand the stress of market. And when the market is millions of individuals unrelated to each other taking individual decisions in an environment of fear and uncertainty, and impelled by different motives, the market is not simply trouble, it is big trouble. They find themselves in the unenviable situation of presiding over the slow decline and imminent collapse of the Indian economy. In the last six quarters for which official figures are available, India's GDP growth was, in per cent, 8.0, 7.0, 6.6, 5.8, 5.0 and 4.5. Both durable and non-durable consumer goods are selling less. Wholesale price inflation has climbed up to 1.92 per cent and the consumer price inflation stands at 4.62 per cent. The plant load factor of all thermal plants is about 49 per cent, meaning thereby that one-half of all thermal capacity has been shut down because of lack of demand for electricity. The government thinks it can wish away the impending disaster. The fault lines are many but some of them are indefensible decisions taken in the past namely, demonetization, a flawed GST, tax terrorism, regulatory overkill, protectionism and centralization of decision-making in the government.

## **AREAS WHICH NEEDS IMMEDIATE ATTENTION**

Let's start with manufacturing. At 15%, India's share of manufacturing to GDP has remained persistently flat over a long period. Compare that with Malaysia at 22%, South Korea and Thailand at 27%, China at 29% over a much higher GDP, and even Bangladesh at 17%. It seems that 'Made in India' has done nothing to increase manufacturing in our GDP. There's worse. Not only has there been no rise in the share of manufacturing, but it has also shrunk across key sectors. Over the last six months up to May 2019, textiles de-grew by 1% a month, electrical equipment didn't grow at all, rubber and plastic products slumped by over 3%, the output of fabricated metals as well as paper crashed by over 10% a month, and that of motor vehicles plummeted by over 5% a month. Matters have worsened in June 2019. The index of industrial production hit a four-month low with 15 of the 23 industry groups showing negative growth. Next question: how much are we investing to create future income? Today, our gross fixed capital formation is 28% of GDP, depending on whether it is measured in constant or current prices. There being no significant productivity increases, these rates are wholly insufficient to sustain consistent GDP growth in the region of 6 %, let aside 8%. Compared to our capital formation of around 31% of GDP, it was over 34% in Indonesia, 44% in China, and over 31% and rising in Bangladesh. In the last two years, there have been no additional investment proposals in any sector. In the last 50 years, no economically significant nation has grown rapidly without investing in the quality of its workforce something that becomes supremely important in an era of rapid computerization, networking and artificial intelligence. Where do we stand today? In 2011, the literacy rate for Indians of 18-24 years was 86%. Compare that with 97% for China in its period of highest growth, 99% for Indonesia, and 98% for Malaysia and Thailand. It is worse for women of same age group: 82% for India, 95% for China, 99% for Indonesia, and 98% for Malaysia as well as Thailand. No Southeast Asian and East Asian country has discriminated against girls in education but India has done it and continues to do so. Given this educational disparity, it isn't surprising that India has a very low share of women in the workforce which itself is fast declining over time. In 2005, women accounted for over 26% of the workforce. This has steadily reduced to 22% in 2018. In comparison, the share in Bangladesh in 2018 was over 30%, China 44%; Indonesia 39%, Malaysia 38%, and Thailand above 45%. State of export is painful. Between the months of April 2011 and June 2019, our exports have been pretty much flat oscillating around \$25 billion a month. China, with five times our GDP, exports almost eight times as much. South Korea, at 60% of our GDP, exports twice as much. Malaysia and Thailand, with less than a fifth of our GDP, export over three-quarters as much as we do. Simply put, notwithstanding IT, we have failed as an exporting nation. A persistently overvalued real exchange rate has also played its role. The scenario is depressing. Our manufacturing is jammed at a long term low of 15% of GDP and going through a grim phase. Domestic demand has seriously slowed down. There is no vent through greater exports. Having ignored education for decades, we have millions of young people without the skills for tomorrow's employment. We are persistently poor in employing women. This looks like the beginning of a serious structural problem, not a temporary cyclical one.

## **BANKS HAVE ALSO NOT ALLOWED TO LET ECONOMY GROW**

Since February, RBI has cut its interest rate by 135 basis points. Yet, bank lending rates for new loans have not fallen by much while interest rates on many existing loans have actually gone up. Frustrated by the sluggish transmission, the RBI decided to cut the repo rate by another 25 basis points in October and urged banks to link their lending rates to the repo rate. Yet, for the most part, the banking system has ignored the signalling and only some banks have reduced lending rates on new loans by 10 basis points. In essence, while the RBI has cut its lending rate to the banks by 135 basis points (or 1.35 percentage points) in the nine months since February, the interest rates being charged to the common consumer this October 2019 have come down by only about 40-odd basis points. Indeed, even though it is counter-intuitive, interest rates on existing loans (not new loans) have actually gone up by 7 basis points.

### **THE PROBLEM**

The main issue is that people are not consuming at a high enough rates. On paper, the argument is that if banks reduce their lending rates, they would also have to reduce their deposit rates (the interest rate banks pay when we park our money with them in a savings bank deposits or a fixed deposit). This, in turn, will incentivise people to save less and spend more.

The other problem in the economy at present is that businesses are not investing in existing or new facilities. Part of the reason is that they have unsold inventories because people are not buying as much; as such, they argue, what is the point of borrowing money and investing. But part of the reason is also that the interest rate charged on loans is quite high.

### **Banks are Not Taking Risk**

Because repo rates have little impact on a bank's overall cost of funds, and reducing lending rates just because the repo has been cut is not feasible for banks. Here's why. For any bank to be viable there must be a clear difference between the interest rate it charges from borrowers on loans it provides and the interest rate it gives to consumers on deposits it accepts. The difference between these two sets of interest rates has to be not only positive but also big enough for the bank to make profits. To attract deposits, banks pay a high deposit rate. Such deposits make up almost 80% of all banks' funds from which they then lend to borrowers. Banks borrow a minuscule fraction under the repo. So even sharply reducing the repo rate doesn't change the overall cost of funds. Unless banks reduce their deposit rates, they will not be able to reduce their lending rates.

### **Can Bank Reduce Deposit Rates?**

That's because if a bank were to reduce its deposit rates, depositors would shift to a rival bank that pays better interest rates or park more and more of their savings in small saving instruments such as public provident fund, Sukanya Samriddhi Yojana etc that pay much higher interest rates. There is another aspect. Even if banks wanted to reduce their deposit rates, they can't always reduce them immediately. According to a research by CRISIL 65% of total deposits are "term" deposits (fixed for certain duration) and take, on an average, up to two years to get re-priced at fresh rates.



### **The Government Doesn't Work On Economy**

Why doesn't this happen in developed countries? That's because the financial system is far more developed and diversified. Most importantly, the banking system there doesn't have to bear the burden of providing loans to everyone in the economy - from a small personal loan to buy a refrigerator to large business loan to set up a factory. Most demands for big loans are directed towards the corporate bond market - wherein a company floats bonds (or IOUs) and borrows money from the public by paying whatever interest rate the market demands. Moreover, depositors are not in the habit of getting a fixed interest rate on their savings while expecting a variable interest rate on their loans. At the current low levels of per capita income, the savers are far more risk-averse in India and unwilling to invest in higher-risk instruments other than bank deposits. Lastly, the overall borrowing by the public sector - that is the government and government-owned institutions - is not so high so as to drive up the interest rates in the economy as it happens in India.

### **SLOWDOWN IN ECONOMY HAS LED TO REDUCTION IN CARBON DIOXIDE EMISSION**

In the first eight months of 2019, growth in India's CO<sub>2</sub> emissions slowed down sharply, putting the country on track to its lowest annual increase in nearly 20 years. The report<sup>1</sup> based on data from various ministries responsible for electricity, coal, oil, gas and foreign trade, shows that emissions increased by 2% in the first eight months of the year, a lower rate than any annual increase since 2001. The growth of electricity generation from the conventional sources for the year 2014-15 was 8.43 % compared to its growth during 2017-18 which has come down to 3.57%<sup>2</sup> (Ministry of Power, Government of India 2019). The main reason was a slowdown in the expansion of coal-fired electricity generation. This has been found that the renewable output is surging but the demand growth slowing. Oil demand growth has also slowed this year, helping keep the increase in India's emissions to just 2%, against an average of 5% per year over the past decade. The trend in India's CO<sub>2</sub> emissions is of global importance. Since 2013, the country has accounted for more than half of the increase in global CO<sub>2</sub> output. Slower growth in coal-based power generation will also benefit the country's air quality efforts but this is not as if the central and state pollution control boards have done anything substantially to stop CO<sub>2</sub> emission as essentially all coal-fired power plants in India commonly required in, say, the EU and China. Earlier the India's CO<sub>2</sub> emissions had doubled since 2005, driven by a rapid expansion in coal use but the growth is poised to slow down in 2019 on account of slowdown in Indian economy. Some 75% of India's electricity is still generated from fossil fuels, meaning the country has one of the world's dirtiest electricity systems. The power sector is also responsible for half of India's CO<sub>2</sub> emissions<sup>3</sup>. Since 2000, electricity demand has grown at an increasingly rapid pace and most of this increase has been met by rising coal generation. This is also certain that in recent years rapid growth in renewable generation has seen coal meet a shrinking share of the increase in overall demand. In the first six months of 2019, wind, solar and hydro met a record 70% of the increase in electricity demand<sup>4</sup>.

Industrial coal use fell dramatically in 2017 after the government having demonetized banknotes, therefore affecting the construction sector. Industrial coal use rebounded in 2018 but growth appears to have petered out this year and this is because the combined total of coal sales from state-owned mines to consumers outside the power sector and imports of coking coal and coke fell 14% in 2017 and rose 15% in 2018. But it increased by just 3% in the first eight months of 2019. Oil demand growth also slowed to 2.6% in the first eight months of the year, compared with 4.6% last year, and 5% on average over the past 10 years. Growth in diesel demand fell which indicated a fall in freight volumes growth. Use of pet coke, a major source of oil product consumption growth in recent years, continued to fall after an import ban was put in place.

## **DISCUSSION AND CONCLUSION**

There are around 20 fossil fuel companies worldwide whose relentless exploitation of the world's oil, gas and coal reserves can be directly linked to more than one-third of all greenhouse gas emissions in the modern era. This is a matter of in-depth studies that how this cohort of state-owned and multinational firms are driving the climate emergency that threatens the future of humanity, and details how they have continued to expand their operations despite being aware of the industry's devastating impact on the planet. This has been studied that what the global corporations have extracted from the ground, and the subsequent emissions these fossil fuels are responsible for since 1965, the point at which experts say the environmental impact of fossil fuels was known by governments. The top 20 companies on the list have contributed to 35% of all energy-related carbon dioxide and methane worldwide, totaling 480bn tonnes of carbon dioxide equivalent (Gt CO<sub>2</sub>e) since 1965. Twelve of the top 20 companies are state-owned and together their extractions are responsible for 20% of total emissions in the same period. The leading state-owned polluter is Saudi Aramco, which has produced 4.38% of the global total on its own. It has been found that 90% of the emissions attributed to the top 20 climate culprits was from use of their products, such as petrol, jet fuel, natural gas, and thermal coal. One-tenth came from extracting, refining, and delivering the finished fuels. In yet another study, this has been established that CO<sub>2</sub> and methane emissions from the 90 biggest industrial carbon producers were responsible for almost half the rise in global temperature and close to a third of the sea level rise between 1880 and 2016. In one of the other revealing study this is found that the largest livestock-market-listed oil and gas companies spend nearly \$200m each year lobbying to delay, control or block policies to tackle climate change. Therefore, it is pertinent to understand the dynamics of carbon dioxide emission and its impact on climate change. Carbon dioxide emission has been closely found to be associated with the economic growth. Weaker economic growth, particularly in China and India, along with substantial decline in coal use in the US and the European Union have contributed to slowing down of carbon dioxide emissions globally this year. Despite the slowdown and reducing dependency on coal in India and China, global carbon dioxide emissions are projected to rise by 0.6% in 2019. This increase, though, is substantially lower compared with the previous two years that is, 1.5% in 2017 and 2.1% in 2018 due to a robust growth in use of natural gas and oil. Natural gas has been the dominant driver of global

emissions since 2012. An understanding of this perturbation carbon budget over time and the underlying variability and trends in the natural carbon cycle is necessary to also understand the response of natural sinks to changes in climate, CO<sub>2</sub> and land use change drivers, and the permissible emissions for a given climate stabilization target 7&8. The global atmospheric CO<sub>2</sub> concentration reached 407.38±0.1 ppm averaged over 2018. For 2019, preliminary data for the first 6-10 months indicate a reduced growth in EFF of +0.6% (range of +0.2% to 1.5%) based on national emissions projections for China, the USA, the EU, and India and projections of gross domestic product corrected for recent changes in the carbon intensity of the economy for the rest of the world<sup>9</sup>. Carbon dioxide emissions are poised to grow at their slowest since 2001 due to a slower growth in coal-based power generation but the rise in CO<sub>2</sub> emissions from India sees wild swings from 7.7% in 2014 to 3.5% the next year and then back to 7.8% in 2018. This is the first time that emissions are expected to grow below 3% from the previous year and this shows some issues to be sorted out at the requisite level. Industrial coal use fell dramatically in 2017 because of a slowdown in the construction sector and bounced back in 2018. The combined total of coal sales from state-owned mines to consumers outside the power sector and imports of coking coal and coke fell 14% in 2017 and rose 15% in 2018. But it increased by just 3% in the first eight months of 2019. As per its commitments to the United Nations Framework Convention on Climate Change, India has promised to reduce the emission intensity of its economy by 2030, compared to 2005 levels. It has also committed to having 40% of its energy from renewable sources by 2030. Historically, the rise in carbon emissions has closely tracked the growth of the world's economy. In the year 2018, for instance, carbon emission rose by 2.7% while the global economy grew by 3%. In the year 2019, the global economy is predicted to grow by about 3.2 percent again<sup>10</sup> but its overall carbon emissions will only increase by about 0.6 percent. This has been also found that internationally coal is not favored as a fuel in the international market and it has led to the collapse of coal industry. In both the United States and Europe, coal use fell by at least 10 percent in the year 2019. In the European Union, from 2013 to 2018, coal use fell by what now seems like a mere 5 percent a year. Meanwhile, in the United States, power companies have closed more than 500 coal-burning power plants since 2010, and they are not planning to build any new ones. Perhaps the most staggering fact: In the United States, the amount of power generated by coal has been halved since 2005. But coal is not declining everywhere. Coal use in China rose by about 1 percent in the year 2019. That may not sound like much, but coal is such a carbon-intensive fuel and China burns so much of it that it translates to a lot of new emissions. That surge in energy use has allowed China to catch up to the rest of the world economically. China's per-person carbon emissions are now as high or higher as the average country in Europe.

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