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V I E W P O I N T

FEBRUARY 2021 • THIRD EDITION

Economics Department, Aryabhatta College

PRINCIPAL'S MESSAGE

Dr. Manoj Sinha

Dear readers,

I proudly present to you the third edition of our annual economics issue: Viewpoint. The year 2020 challenged us all in many ways by compelling us to rethink every notion we held to be true. The Economics department being the proactive community that it is, did not let the pandemic deter its efforts in publishing their ideas.

Viewpoint is a platform created by the students of the department to voice out their opinions and showcase their research work on important economic issues. True to its purpose, this year's edition strives to cover a number of fields that have been transformed by the pandemic by carefully analysing all the overt and latent economic mechanisms at play. A plethora of other themes have also been included to come up with the perfect mix of economics for our readers that will keep monotony at bay.

The lockdown forced all our students to step out of their shells while still being confined. I'm glad to see that their creativity and understanding of even the most challenging economic concepts have increased. It gives me a sense of pride to witness how the quality of articles keeps on improving with every new edition of Viewpoint. I wholeheartedly congratulate the editorial team and all the faculty members of the Economics department for living up to their reputation by releasing yet another riveting edition of Viewpoint.

HEAD OF DEPARTMENT'S MESSAGE

Mr. N.M. Singh

It is a matter of great pride and pleasure that the Economics Society is bringing out the third edition of its annual magazine – 'Viewpoint'. This issue covers a wide range of topics spanning the novel Covid-19 pandemic, labour market, climate change, immigration and the current budget 2021-22.

The student members of the magazine committee took up this challenge beyond their usual hectic class schedules for a greater stride towards excellence in college life. They have worked tirelessly and coordinated with each other in the currently challenging novel Covid-19 pandemic situation. They have shown that no hurdle can impede the realisation of their dream. This effort on their part shall remain an encouragement to future students of the department and the college.

I congratulate all the members of the magazine committee and my senior colleague Dr. Deepika Goel, for motivating and guiding the committee through each edition of this magazine. I also would like to thank all my colleagues at the Economics Department for their constant support and encouragement. Constant encouragement, countering every obstacle, and steering the college to realise its true potential has been the hallmark of our patron and the college principal, Dr. Manoj Sinha. Hope this edition lives up to his expectations.

OUR ADVISORS

Mr. HARISH DHAWAN
Advisor

A third issue, and what a lovely surprise this time. Taking up the challenge to improve, the editors have done a commendable job, in the process creating the hopes for a still brighter future for *Viewpoint*. The times in which *Viewpoint* has started, have been more challenging than what we have seen in the years gone by. A year through a pandemic, times of torture for migrant workers, disappearing livelihoods and falling incomes for others. Government policies and measures to boost a failing economy fail here and provide relief there. Some firms fail while others make hay while the crisis shines. Agriculture that provided some sense of security and hope through the pandemic faces its own crisis and rounds of protests.

These are times that pose problems, attempts at whose solutions give meaning to the subject of Economics. That young minds have taken up this challenge provides the hope and cheer that we certainly need.

It is a proud moment for me and the Department that the 3rd edition of *Viewpoint* is being launched. A guided strategy, hard work and perseverance is exactly what Team-Viewpoint: 2020-21 portrayed which helped us to sail through these uncertain times. I congratulate them all for their effort. I sincerely hope that this endeavour of ours aimed at stifling young economic minds which started a few years ago will be met with an enthusiastic response. I am sure readers would enjoy reading our '*Viewpoint*'.

Dr. DEEPIKA GOEL
Advisor

LETTER FROM THE EDITORS

In the past year we have all adapted ourselves to some massive changes in our daily lives. Viewpoint's third edition portrays all these changes and has turned out to be a magazine with a very meaningful and personal touch from the entire Economics Department.

Attending college from home, we were faced with a challenge to come up with the third edition of Viewpoint without having the luxury of meeting in person to deliberate on the action plan. However, we did not let the pandemic put a dampener on our vision of making this edition an enriching experience for all our readers.

Adapting to the changes enforced by the unprecedented situation, the team conducted regular online meetings, with virtual discussions taking over our entire planning process. Each stage of coming up with this edition - from receiving articles and editing them, to designing the final look and planning for its launch - was made more cumbersome and time consuming. Despite these difficulties, the entire team stood up to the task, striving to compile a magazine which is sure to stand the test of time, reflecting the extraordinary circumstances under which it was conceived.

In September 2020, the newly appointed Team Viewpoint decided to do something it had never done before. We organised an all-India article writing competition in an attempt to get the engines started while also challenging ourselves to pull it off well. We were thrilled to see how undergraduate students from universities all across the nation participated in our endeavour by sending us their thoroughly researched and well-articulated articles.

Viewpoint 2021 also includes an entirely new section - The Almanac of Class of 2021. The students of the outgoing batch of 2021 joined hands with Team Viewpoint to give it an incredibly personal touch by sharing a quotation which they felt best described their college life.

What made this journey unforgettable is the vigour and dedication with which students participated, overcoming the gloom of missing out on an entire year of normalcy to pull off something we can all be proud of.

We express our sincerest gratitude to our principal, Dr. Manoj Sinha, our advisers Dr. Harish Dhawan, Dr. Deepika Goel and Mr. NM Singh, the entire editorial and designing teams - which worked tirelessly to ensure a perfect product, all students who contributed articles, and those who shared their internship experiences.

We truly hope you enjoy reading the magazine as much as we enjoyed the process of bringing it together.

SANA MIDHA
Editor-in-Chief

APOORVA SHARMA
Executive Editor

AYUSHMAN RAI
Executive Editor

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The Perfect Blend

With no dearth of meaningful issues to discuss and an opportunity to make the most out of an unprecedented situation, students from the Economics Department put their thinking caps on and got down to work.

Keeping in mind its role as a platform for a healthy exchange of ideas and opinion, ViewPoint presents to you a plethora of articles - by the students, for the public, of the world.

Covering a wide variety of topics which define our generation - from climate change to unemployment, gold prices to growth predictions, the state of education in India to skirmishes with China - this section showcases the students' eloquence and their strive to encourage an open debate.

In simple words - a Perfect Blend.

LIVELIHOOD FOR ALL: A CHIMERA?

By Meghna Yadav

No country however rich, can afford the waste of it's human resources. Demoralization caused by vast unemployment is our greatest extravagance. Morally, it is the greatest menace to our social order.

F.D. Roosevelt

Generating employment opportunities and creating a meaningful livelihood for all is considered to be a long-term challenge for a country. As per the World Bank's recently released South Asia Economic Focus Report titled "Jobless Growth", India's employment rate is 50%, which is significantly lower than the expected rate of 60%. Jobless growth implies that the economy under consideration does experience growth in terms of GDP but the employment remains constant or decreases. India, though, might have experienced a relatively high aggregate economic growth but faces persistent and endemic deprivation. Poverty and inequalities continue to plague the lowest strata of the economic pyramid and people are still jobless.

LFPR (Labour Force Participation Rate) is defined as a number of persons looking for job as a proportion of the working age population (age group 15 - 59). As per International Labour Organisation (ILO) estimates, the world LFPR was around 60.9 % in 2017, whereas for India it was merely 50.7%.. Additionally, the National Sample Survey Office's (NSSO) estimates for the year 2017-18 show that India's joblessness was 6.1% of the labour force, which is amongst the highest since 1972-73. As per ILO estimates for 2020, the LFPR for the world has slipped down to 60.47% whereas India's has slipped down to 49.166%.

Growth in India can be attributed to the service sector. IT and financial services are drivers of growth in the last two decades but these sectors are not labour intensive. Although the contribution of the service sector to India's GDP has grown but its contribution to the employment structure has remained stagnant. The labour intensive manufacturing sector did not become the engine of growth, unlike the knowledge intensive service sector. However, some segments of capital investment manufacturing have clearly been the engines of growth for the country. India has failed to witness a growth in the labour intensive segment of the manufacturing sector as it did not move past the import-substituting phases of its economic development to an export-oriented development strategy like its South Asian neighbours did.

Another reason is the existence of excess rigidities in the formal manufacturing labour market. The rigid labour regulations have created disincentives for employers to create jobs leading to stagnation. The labour-intensive segment of the formal manufacturing sector has witnessed contraction as stringent employment protection legislation has pushed employers towards more capital-intensive modes of production than warranted by existing costs of labour relative to capital, making the trade regime in India biased towards capital-intensive manufacturing.

Apparently, it is not the only matter of worry. ILO estimates also suggest that vulnerable employment is likely to increase in future. Vulnerable employment, as defined by the UN, is the sum of the employment status groups of own account workers and contributing family workers. They are deprived of formal work arrangements and more likely to lack decent working conditions, adequate social security and 'voice' through effective representation by trade unions.

The share of workers in vulnerable employment is directly linked to the share of people living in poverty. Due to their immigration status, discriminatory or poorly enforced labour laws and obfuscated employment relations, they are often exposed to greater risk. As per ILO's World Employment and Social Outlook Report, 77% of workers in India, i.e. 3 out of 4 workers, were prey to vulnerable employment in 2019, which is notably greater than India's South Asian neighbours.

Keeping in account the growing contribution of the service sector to the GDP, the report highlights that a significant proportion of the jobs created in the services sector over the past couple of decades have been in traditional low value-added services, where informality and vulnerable forms of employment are dominant. Additionally, the share of informal employment has risen within all manufacturing industries, partly because of labour market rigidities. The quality of jobs, thus, also becomes a critical part of the employment challenge.

The crux of the problem is the shortage of 'good jobs' that have high labour productivity, and can therefore provide decent incomes. Such jobs can be found in the organized sector, while most workers are bottled up in the unorganized sector. In the absence of social security, households accept any job, ignoring its quality and leading to low wages. While public discussions on jobs have increased, discussions on labour reforms have not been taken up with vigour. Sticky labour laws and difficult business environment have led to employers shifting their new hiring in favour of contract labour where social security is much lesser. Increasing employment for low-skilled workers in the organized sector thus becomes an area of focus when dealing with the problem of vulnerable employment.

The COVID pandemic and the consequent lockdown have further impacted the employment menace. The GDP growth in India was contracting since the beginning of 2019 but the period of jobless growth hit rock bottom in 2019- 20, when salaried employment fell to 21.3%. Despite India's rapid growth before 2019, salary jobs grew at a snail's pace from 21.2% in 2016-17 to just 21.6% in 2017-18 and inched to 21.9% in 2018-19.

Formal sector is the largest source of salaried employment in the country. Middle class population is majorly engaged in salaried jobs and entrepreneurship. The country's economy is heavily dependent on this cohort. The lockdown revealed the fragility of India's formal job market. India lost 2.1 crore salaried jobs by the end of August 2019, down from 8.6 crore in 2019-20 to 6.5 crore in the given month, as reported by the CMIE Entrepreneurship in the country has seen a rise but it hasn't helped in job creation. All salaried jobs constitute for 21-22% of total employment in India and directly impact a large share of private consumption.

The pandemic, however, may not be the only reason for one of the most secure sectors of India losing its eminence. It is evident from all the aforementioned reports and figures that the salaried sector was dwindling from the past 3 years. Unemployment has been a problem since 2017-18. There has been negligible improvement in the salaried sector post unlocking of the economy, an unprecedented economic crisis is to be cited behind the situation.

Those employed in the informal sector had to bear the brunt as thousands of small scale traders and focus were forced to shut down their shops and daily wage workers migrated to their native places. ILO report suggests, in India, more than 40 crore informal workers may get pushed into deeper poverty due to COVID-19 outbreak. Salaried job holders working in urban areas however remain amongst the worst-hit workers during the pandemic in India.

As if the challenges faced by the country weren't grim enough , The National Crime Records Bureau's (NCRB) report, 'Suicide in India 2018', states that on an average, 35 unemployed and 36 self-employed people ended their lives every day in 2018 with these two categories accounting for 28,085 suicide deaths during the year. Unemployment transcends the economic sphere and is emerging out to be a crucial social issue that gives birth to suicide.This makes it pertinent to address the issue and ensure India reaps the benefits of a demographic dividend, rather than letting many aspirational lives go to waste.

CLIMATE CHANGE: GEOPOLITICS, INDIA AND COVID-19

By Rishabh Singh

An overview of the actions taken by the world against climate change, the scenario for sustainable development in India and the environmental challenges brought in by the pandemic.

Climate change is arguably the biggest threat faced by the world as a whole. The exploitation of natural resources and specifically overdependence on fossil fuels has placed our society in a position where natural preservation is no longer an issue about simple ethics. The COVID-19 pandemic has also risen because of climate change. People facing water shortage are expected to double by 2050. Declining agricultural output, deadly heat waves, rising number of cyclones and floods- all this suggests the urgency to deal with climate change. Since the late 20th century, the global community has recognised it to be a 'threat to all'. Kyoto Protocol, Paris Agreement, 2019 Climate Change Agreement and setting up of the Intergovernmental Panel on Climate Change are some landmark decisions taken by the world governments but with no visible change.

Impediments to Action against Climate Change

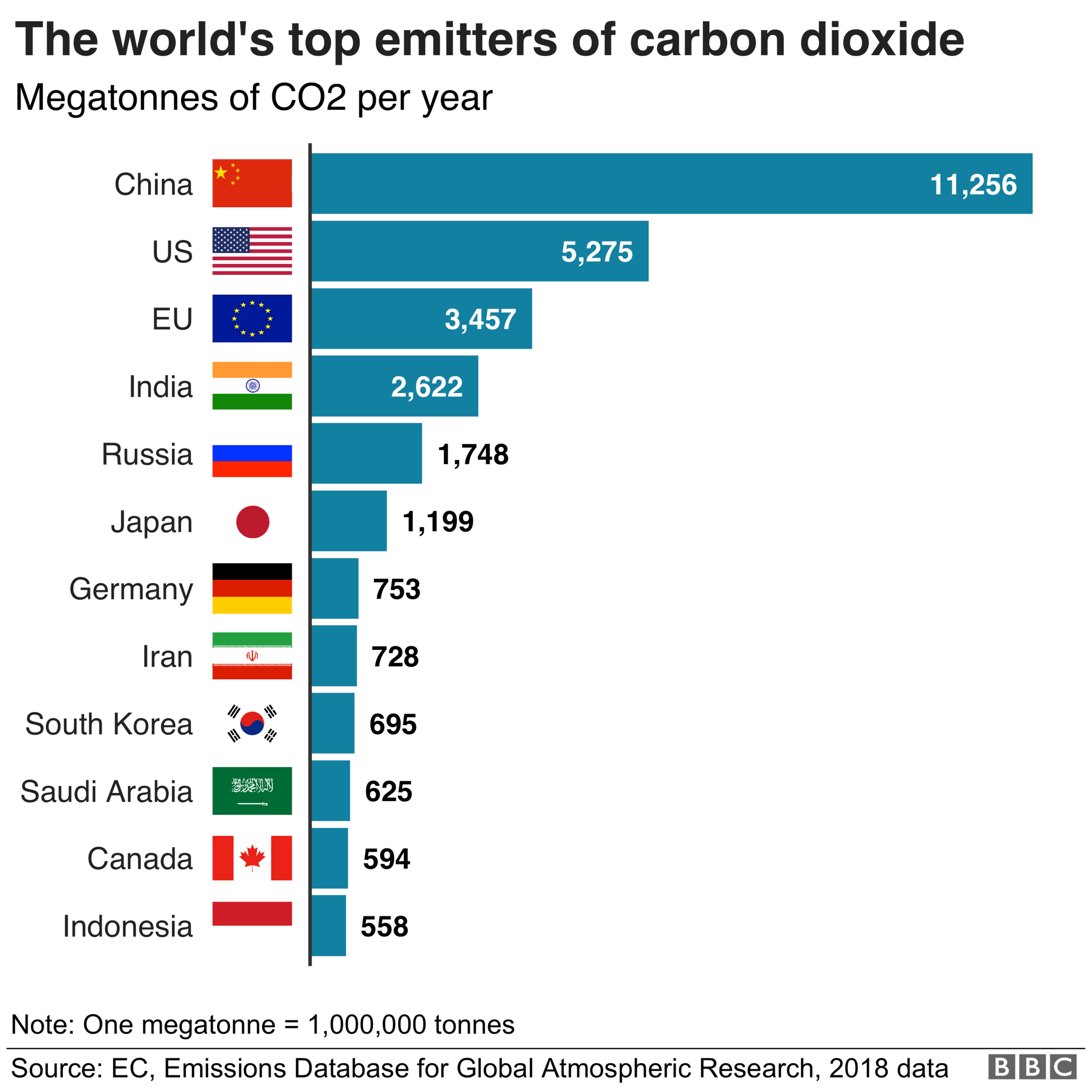
Economic Inequality

According to data compiled by the Global Carbon Project, around half of CO2 emissions come from Europe and the US. Their economic prosperity, driven mostly by unregulated industrialization, has made them better-equipped to adapt to climate change while inflicting collateral damage on poorer nations. A vast majority of developing nations face great economic pressure to overuse their resource pool. This pressure can be domestic, in terms of an impoverished populace demanding resource development in order to improve social well-being; or international - developing nations must forgo investment and overuse current resources in order to pay creditors in financing large debt loads. One of the most severe examples of this problem is the situation in most of Africa. The crippled economies of this continent rely on commodity sales to finance debts that they cannot afford, forcing them to overuse their soils and essentially leading to desertification.

Butterfly Effect

In chaos theory, the butterfly effect explains that when there is sensitive dependence on the initial condition in which a small change is made, it can result in large changes in the later state. Since the impact of climate change happens over a long period of time but it depends on the actions we take every day, it becomes burdensome to make someone realise the gravity of their actions. Therefore, governments and institutions find it easier to prioritize short term goals and ignore the catastrophe that they will cause.The most apt example of the above case would be the USA withdrawing from the 2015 Paris

Agreement that incorporated steps to curbgreenhouse gases and was signed by 195 countries, under the presidency of Donald Trump.



Indian Spectrum

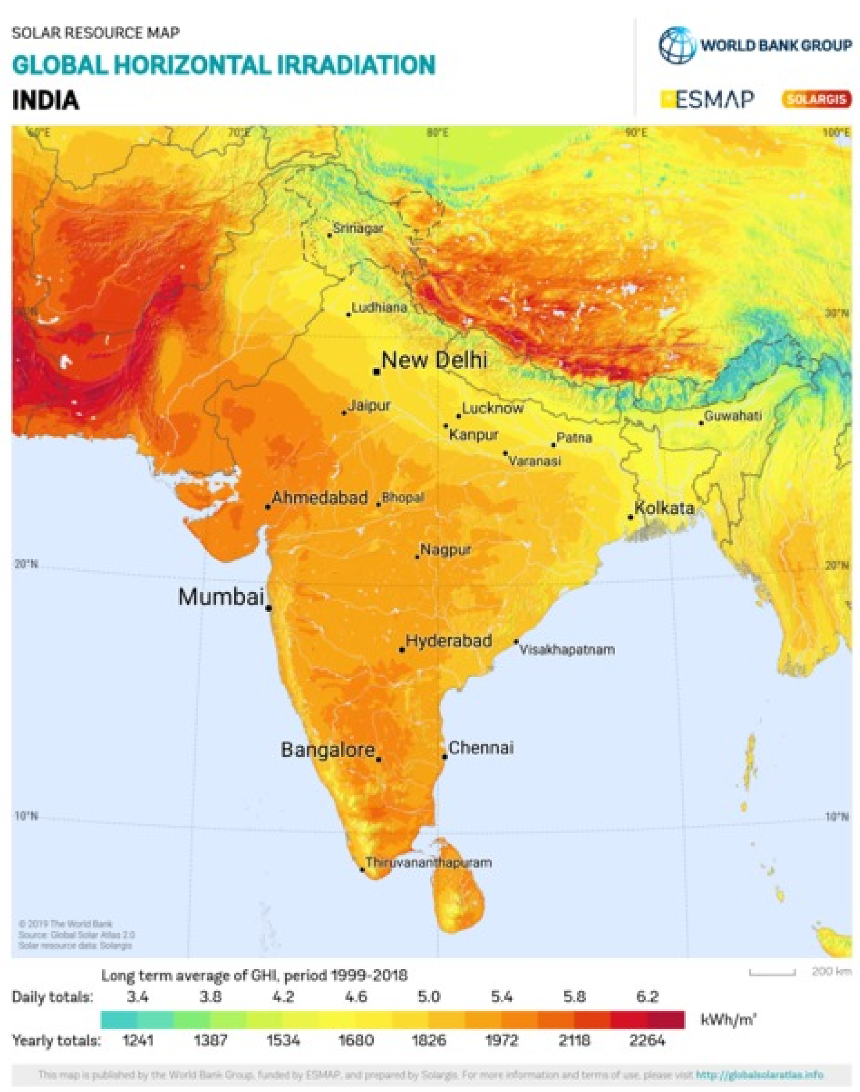
A Grave Possibility

A report released by the Ministry of Earth Sciences shows a very aloof picture of the nature of climate change and its impact on the country in the coming decades. It is the first time that a national assessment and projections have been made specifically for India, taking into consideration factors at regional and local levels.

The report predicts that the average temperature in India by the end of this century will rise by about 4.4 degrees Celsius relative to the 1976-2005 average. The average rise during the 1901-2018 period was 0.7 degrees Celsius. All this could bring drastic changes to India's weather patterns and can cause egregious social and political changes considering the country's inequality. As a populous developing country, India faces a bigger challenge in coping with the consequences of Climate Change than most other countries. Climate Change is a global phenomenon but with local consequences.

Revamped approach

Prime Minister Narendra Modi takes a keen interest in the topic of sustainable development. Under his leadership, India decided to adopt a more proactive and forward-looking approach to the Paris Climate summit. It links India’s commitment to sustainable economic development with its old civilisational values of respecting nature, incorporating a sense of intergenerational equity and common humanity.



The targets set by India are unprecedented for a developing country. The energy intensity of India’s growth will decline by 35% by 2030 compared to 2005 (base year), which means that for every additional dollar of GDP, India will be using a significantly lower amount of energy. The government has set a target of 175 GW of renewable energy consumption by the year 2030 on the strength of the outstanding success of the National Solar Mission. It is reported that this capacity may well be achieved 5 years in advance. The government might raise India’s target to 227 GW for 2030.

The target of achieving 40% of power from renewable sources by 2030 is likely to be achieved some years in advance. The figure is already 21% as of date. India is actively reducing the component of coal-based thermal power in its energy mix. It is not widely known that the country has a very high tax on coal, of the order of Rs.400 per tonne, proceeds from which go into a Clean Energy Fund.

India is advancing on a broad front to ensure a clean energy future for the nation, drawing upon its ingrained civilisational attributes and putting in place a wide range of policy interventions under the legal framework of the Energy Conservation Act, covering 15 energy-intensive industries and the Energy Conservation Building Code, covering all new urban infrastructure. States of the Indian Union have formulated and begun implementing their own State Action Plans on Climate Change (SAPCC). It is hoped that India's leadership in dealing with its own challenges of Climate Change and Energy Security will act as a spur to other countries to raise their own contributions to meeting this global and existential challenge.

Covid-19

Although the pandemic came as a boon for nature, industries are rushing back to ravage it again, this time with even looser regulations. However, instead of worrying about the economic revival, the world should be worried about the mass extinction that's headed our way. The ecosystem consists of several layers, and insects occupy a place more important than humans because they pollinate plants, which provide us with food and oxygen. On the other hand, microbes lay the bedrock which has regulated everything for billions of years: the atmosphere, the biome, the oceans and even the origin of species.

They are the first to react to ecological change. Studies published in various journals, including one in Nature titled Scientists' Warning to Humanity (2019), have emphasised the role microbes play in the emission and removal of greenhouse gases. So, it can be expected that if nature wants to warn us, it will do so through micro-organisms.

Nature has pulled the rug from under our feet. It is odd how the only thing helping us to reduce carbon farming is the pandemic itself. Hotter temperatures by 2100 could slash global GDP by more than 20%, and the way the economic impact will be distributed threatens to turn climate change into an enormous driver of worldwide inequality. Therefore, the world should aim for a 'green revival' instead of going for blatant GDP growth.

There is no reason to believe that the current crisis will recede anytime soon. In our opinion, humanity does not consist of just the governments, the people form the foundation of society. Signing petitions to counter the government doesn't even scratch the mere surface, only working on ground-level can fulfil our duty as a world citizen. Solar geoengineering, carbon farming are some innovative ways to fight climate change as citizens. Finally, the pandemic has made it imperative for us to act against climate change and innovation, adaptation and sacrifice can bolster our fight against it. Failure to do so condemns humanity to an uncertain and possibly catastrophic denouement.

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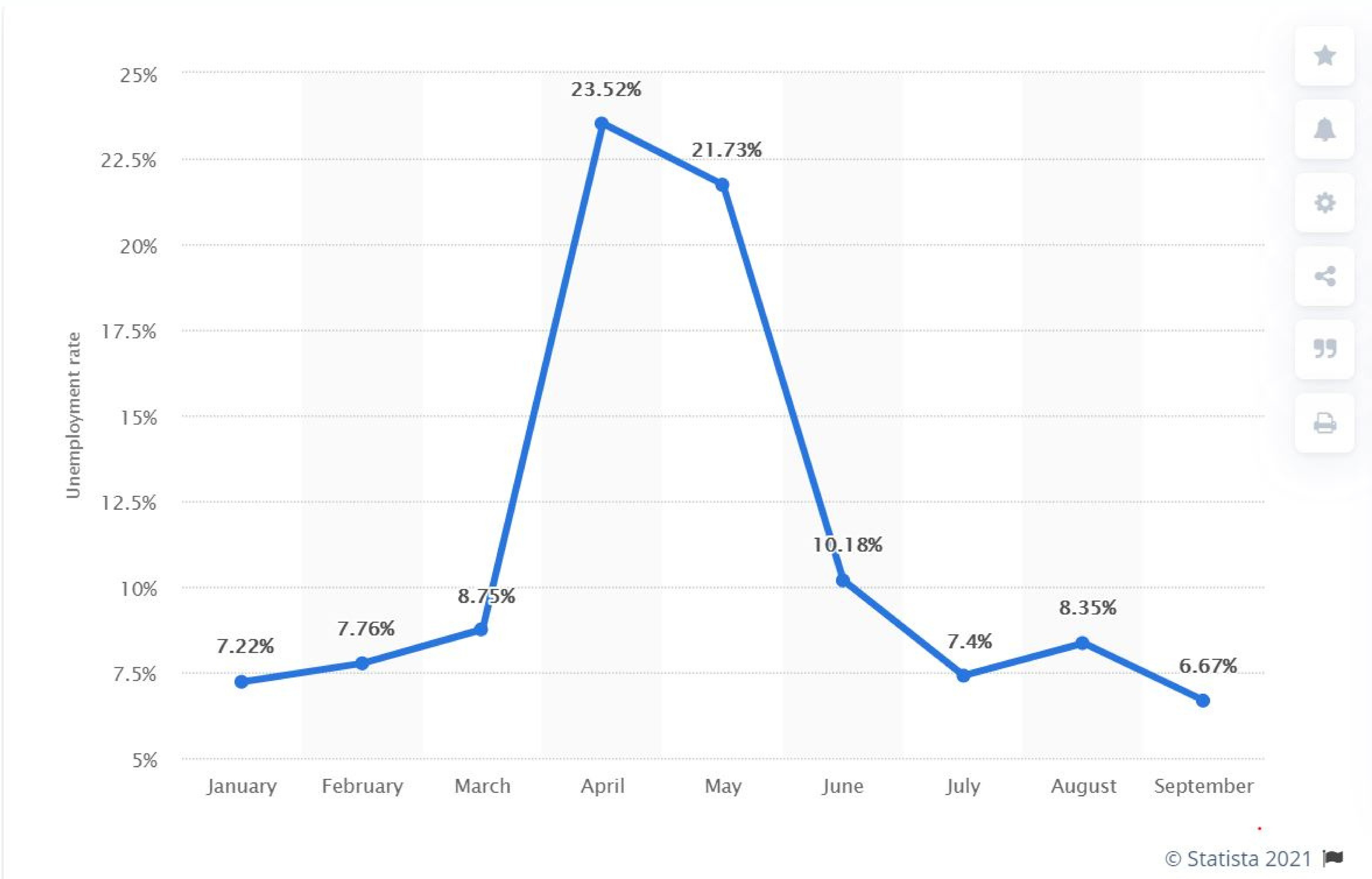
COVID AND THE INDIAN JOB MARKET: THE DISASTROUS DUO

By Apoorva Sharma

The one difference between the 2020 pandemic and the Indian Job Market- Corona Virus spread relentlessly within weeks while the roots of jobless growth in India established themselves years ago. Together, they set in motion a crisis that the Indian economy would take years to reconcile from through formulating well laid out policies and means of rightful governance. The pandemic targeted the formal sector- the biggest source of salaried employment, hence breaking the already fragile job market which had been a top concern since 2016. The past five years were marked by miraculous growth in GDP every quarter but employment did not go hand-in-hand. This trend of Jobless Growth was predicted to impact the Indian economy severely. GDP figures began falling in 2019, right after which the pandemic positioned itself as the reason behind all economic disaster from the view of a layman. However, as figures suggest, the job market only needed a single blow to cause a catastrophe, for which the pandemic played its part:

Impact on Indian Unemployment Rate due to Covid Lockdown



The statistics suggest a 46% fall in income between February to April 2020 and a rise in unemployment to 24 percent in May 2020. As the current pandemic suggests, this was due to the decrease in demand along with the disruption of workforce that the market faced. As a consequence, the Indian economy experienced a loss of more than nine percent for that month.

However, one must also know that the pandemic is not the only reason for a fall in salaried jobs, the unemployment rate had been on a rise since 2017-18. Survey suggests that the country's unemployment recorded 6.1 per cent in 2017-18 which is the highest for the last forty years. For the same year, unemployment has been higher in urban areas when compared to rural areas. This directs us to the fact that for at least three years, salaried jobs have been a scarcity. The Jobless Growth hurdle which has now lead to decline in formal job sector of the economy could also be driven by the following reasons:

1. The Unrequited Gains from Entrepreneurship

The economy is well acquainted with the introduction of various schemes for the display of entrepreneurship as a source of income for the Indian youth, like the 'Make in Indiamovement brought by the Modi government. However, such schemes have had little to no effect on increasing the number of salaried jobs inspite of a spike in the number of independent practices and entrepreneurial ventures. Hence, rise of entrepreneurship in India was not of the kind that helped sustain economic growth as evident by the low job creation. Additionally, at large most start-ups and entrepreneurs in India fall weary to the endless hurdles and fail within two years of establishment. The lack of resources for successful building of a start up in India is another factor suppresing the emergence of startups that can uplift the economy.

The statistics for the same are as follows:

FY20, India had over 7.8 crore entrepreneurs. But as stated above, the increase in entrepreneurship did not add more salaried jobs which remained steady at 8.6 crore. This points to the fact that Indian entrepreneurship growth has been self-employed and majorly consisted of small businesses.According to CMIE: “Salaried jobs do not seem to grow in tandem with economic growth, or even with an increase in entrepreneurship. But, they are suffering the most during the current economic meltdown.” If we talk about job creation when India was experiencing accelerated growth, i.e. before 2019, we realize that salaried jobs grew at snail’s pace: 21.2 per cent in 2016-17 to just 21.6 per cent in 2017-18. It inched to 21.9 per cent in 2018-19.

2. The Meltdown in Urban Jobs

The Indian economy is still trapped in the traditional clutches of rural livelihood. There are more farmers and daily wage earners than people constituting the formal salaried job sector (only 1/3rd of the population). The fact that all salaried jobs put together account for just 21-22 per cent of total employment in India is worrying as it directly impacts a large share of private consumption. Moreover, the informal sector is heavily dependent of the formal sector. The easy employment in the informal sector is due to the demand by the formal sector originating from the urban economy that comprises of salaried jobs. Amidst the lockdown, only rural economy has seen growth as people are forced to become farmers as a last resort. This transition to farming, mainly by daily wage labourers caused a 14 million rise in farm employment. This rural growth is undoubtedly not enough since the economy needs 10 lakh formal jobs to be created every year to effectively support the rising youth.Salaried job holders have been amongst the worst hit workers in this pandemic, which is why there is a decline in private consumption. Hence, the sharp decline in demand has directly been related to the decline in falling income among the middle class households in India.

Conclusion

Conclusively, the turbulence caused by the unification of an already fragile job market and the pandemic had a ripple effect that indirectly tainted the entire economy. The government has launched various programs and campaigns to help sustain households especially in the underprivileged areas. Under the Pradhan Mantri Garib Kalyan Yojana, 312 billion Indian rupees were accrued and provided to around 331 million beneficiaries that included women, construction workers, farmers, and senior citizens. More aid was announced in mid-May, to mainly support small businesses through the crisis.However, this is not a permanent solution to a crisis that dampened growth at an all-time low. The decline in demand surged up post lockdowns but the impact on the job market has been permanent. Government incentives along with proper policy making strictly aimed at the long run is the need of the hour. As the Indian economy hopes to experience 10%-12% GDP growth along with rapid job creation in formal sector, it must emphasise on achieving equitable growth and creating opportunities and training for the youth that has recently shifted from being baby boomers to working individuals. The fiscal stimulus may be sufficient for now, but better measures must be sought after to face a much possible new covid strain and future crisis.

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Figures and data: statistica.com
CMIE

THE STATE OF INDIA'S SUGAR INDUSTRY

By Smriti Bhutani

Introduction

In India, the sugar industry has proved to be the backbone of economic development, partially because of the government policies, at both the Centre and State levels. It is highly regulated by the government, with even the by-products being subject to government control. The sugar industry is the second largest agro-based industry for the nation, after the cotton industry. India is also the world's second largest sugar producer globally, right after Brazil. It produces approximately 15% of the global sugar demand and 25% of the global sugarcane demand. During 2015-2019, approximately 5 million hectares of land was under sugarcane cultivation, which is nearly 3% of the nation's gross cultivable area.

A Comparative Overview

The magnitude of the socio-economic impact of this industry is quite visible. It has played a major role in generating employment in rural areas, with 7.5% of the rural population involved in its cultivation. Moreover, over 50 million people are involved in the farming of sugarcane, its harvesting and other auxiliary activities. India's sugar mills are gradually turning into sugar complexes. This is done so by producing sugar, bio-ethanol, bio-electricity, bio-manure and chemicals, which contribute about 1.1% to the nation's GDP.

Both the area and production of sugarcane fluctuate considerably from year to year. Climatic conditions, the vulnerability of areas cultivated, rainfall conditions, fluctuation in prices, and changes in returns from competing crops are some of the factors that contribute to this situation. Despite the cultivated area being unstable, area and production of sugarcane have increased significantly over the past three decades. While the total cultivated area increased by 57% during this period, that of rice, which occupies a surface area ten times as large, rose by 23%, but the areas allotted to cotton declined. Uttar Pradesh accounts for nearly half of the total sugarcane area. Other major producing states include Maharashtra and Tamil Nadu (12% each), Karnataka (9%) and Andhra Pradesh (6%). A rise in yields has also contributed towards the growth of the industry.

In India, sugar is a vital item of mass consumption and the cheapest source of energy for the poor. To ensure supply of sugar to consumers at an affordable price, the Government has been following a policy of partial control on sugar distribution under a two-tiered pricing system since 1967, excepting for brief breaks in 1971-72 and 1978-79 when exceptional crop conditions made it impossible to implement dual pricing. Total consumption of sugar has increased rapidly despite fluctuations in production.

In a world where sugar has attracted increasing scrutiny for its impact on health and obesity, mills in India are eyeing increased consumption as a means to chop the nation's chronic oversupply, which stems partly from the incentives provided to cultivators in politically powerful rural areas. Consumption in India has stagnated at 19 kilograms per capita per annum compared to a worldwide average of 23 kilograms. Per capita consumption growth between 2000 and 2016 was among the lowest in the world, according to Indian Sugar Mills Association. If per capita consumption rises to the worldwide average, domestic demand will climb by 5.2 million tons a year. This would cut down the surplus, decrease overseas sales and save the government money by reducing export subsidies.

Conclusion

The Indian sugar industry has faced many challenges in the course of its journey, the most recent one caused by the pandemic. During the initial days of lockdown, there was indeed a reduction in the production of sugar. There has been a reduction of 20% as compared to the previous year. As per the Indian Sugar Mills Association, stocks of sugar and ethanol worth Rs 70,000 crore are unsold and currently stuck in the sugar mills. As a result, many mills' ability to pay the sugarcane farmers is being impaired. As frequent lockdowns or extended periods of inactivity could hamper labour-intensive industries like the sugar industry, there is a need to enhance mechanization efforts in the agricultural sector. Micro-level planning for identifying the development needs of the industry is crucial. This is imperative to sustain productivity and prosperity amidst limited resources and unforeseen circumstances.

THE PHILOSOPHY OF ANTI-NATALISM AND ITS EFFECT ON POLICY CREATION

By Himanshi Bakshi

Anti-natalism is a philosophical view, and a social movement that assigns negative value to birth. It is a belief or an idea that says physical procreation and the biological inclusion of more individuals in the human race is not a favourable activity. The term is the antithesis of natalism — the view that says childbearing and biological parenthood are desirable for social reasons, and should therefore be promoted. The followers of this view believe that natalism is harming the environment and depleting the resources of the planet, which are extremely scarce to begin with. They argue that antinatalism is a "humanitarian alternative to human disasters" and a sustainable solution to protect mankind. This argument has various dimensions- political, social, ethical, psychological and economic. Radical antinatalists view birth as morally wrong, encouraging people not to procreate. They believe that this will gradually extinguish the human race and thus the inevitable suffering that human life endures and its causes. A pertinent question that arises here is - are people genuinely willing to accept this mindset, one which goes against years of social conditioning?

The Economic Perspective of Policymaking: Rising population growth rates in the 20th century have generated inevitable media attention as well as unavoidable controversies. National and International policy debates primarily focus on reducing fertility rates, often with inadequate consideration of the impact on women's reproductive rights. Population policies include attempts by states to address issues affecting their populations' composition, size and growth. A population policy ought to be composed of three elements—fertility, mortality and migration. Population policies that intend to influence birth rates may be classified as either pronatalist or antinatalist. A pronatalist policy holds a view "to increase population growth by attempting to raise the number of births. Conversely, an antinatalist policy seeks to limit the number of births and thus lower a country's population growth rate. The means for enacting pronatalist or antinatalist policies include regulation of the availability of modern contraception, maintenance of restrictive abortion laws, sterilization policies, generous childcare benefits, and various subsidies depending upon family size. A nation has to consider a number of factors before implementing a pronatalist or an antinatalist policy.

The primary concern is to deal with competing rights, which involves a dilemma between individual and collective rights, and one between rights and duties. Some governments are able to justify their population policies by showcasing the elevation of the supremacy of one group's future over the rights of individuals or other groups. Hidden in this approach is the rationale that individuals must exercise their reproductive rights with due consideration to the consequences that they have on the community - reproductive rights must be enjoyed along with their correlative duties.

Advocates of this approach claim that a true human rights perspective comprises the totality of competing human rights, defined as including the rights of successor generations to attain a certain quality of life. A fundamental debate over population policies involves issues pertaining to economic inequality. Economic disparities are visible at the global level among low, middle and high income countries. Additionally, class divisions at different levels play an integral role in population policy. While pronatalist governments have used the rationale of the greater social good to urge their citizens to bear more children, governments in countries with high fertility rates often use the principle of social duty to favor population stabilization policies. Countries in the latter category are also predominantly low and middle income countries of the world. Low income women from high income countries are generally disproportionately affected by fertility control policies. For example, in the 1970s, the receipt of state benefits for needy women in the United States was contingent upon their acceptance of being sterilized. Such policies carry a number of incentives and disincentives for its citizens, which are used to fulfill the goals of population policies and can come in many forms and uses- they can be directed toward the medical providers, the users or the recruiters; they can be social or economic, represented by cash or kind subsidies; and they can be designed to directly or indirectly influence reproductive behavior. A central question posed by reproductive rights advocates is whether these incentives are inherently coercive or not. Critics claim that different factors, such as the individual's socio-economic background, gender, types of incentives offered, and the means by which they are enforced, can turn incentives into compulsory measures. They offer financial benefits to impoverished women to either engage in or abstain from certain reproductive actions, creating an inherently involuntary choice. While the rest acknowledge the pressures associated with incentives- claiming that the correct incentives can actually expand the choices available to women by balancing the birth tendencies of certain societies, some assert that incentives are preferable to disincentives, as the latter may inflict punitive measures on individuals.

Conclusion

As the world's population continues to expand and countries endeavour to deal with the challenges of development, the formation of population policies and laws that focus on fertility will become more significant. The focus on population numbers at the expense of human rights is politically wrong and harmful to the goals of social and economic progress. In contrast, laws and policies that promote women's rights - primarily their right to holistic reproductive health care, the improvement of their social, political, and economic status, and their unique rights and needs during adolescence etc. will lead to success with respect to larger goals of national development. Since these laws and policies affect the most basic functions and needs of human life, it is crucial that they are created and implemented in a manner that protects the rights of all people. In totality, the four guiding pillars we elucidate are human rights, a holistic approach to reproductive health, women's advancement, and adolescent issues. Each of these principles must be well evaluated when population policies are designed and executed.

The views expressed are personal and do not represent the institution's views.

GOLD IN 2020: A BULL RALLY

By Ashwin Kalra

Introduction

The meaning and importance of gold has varying interpretations, from laymen to scientists, and for a person who belongs to the economic or finance field. For the latter, gold is one of the safest ways to invest his money. We all know gold is one of the most precious metals and its price is always at peak. So, what exactly makes gold so expensive and valuable? One of the main reasons is the non-corrosive and non-decaying property of gold. Secondly, gold is a naturally mined object, which remains the same and can never be consumed just like oil. Investments in gold can't go bad. Its high liquidity makes it the safest destination for investors. Investments in gold can give heavy returns and can also absorb the value erosion in the country's currency.

Fig. 1 - Graph representing gold price rise since 1970 to January 2021 - INR/Oz USD/Oz

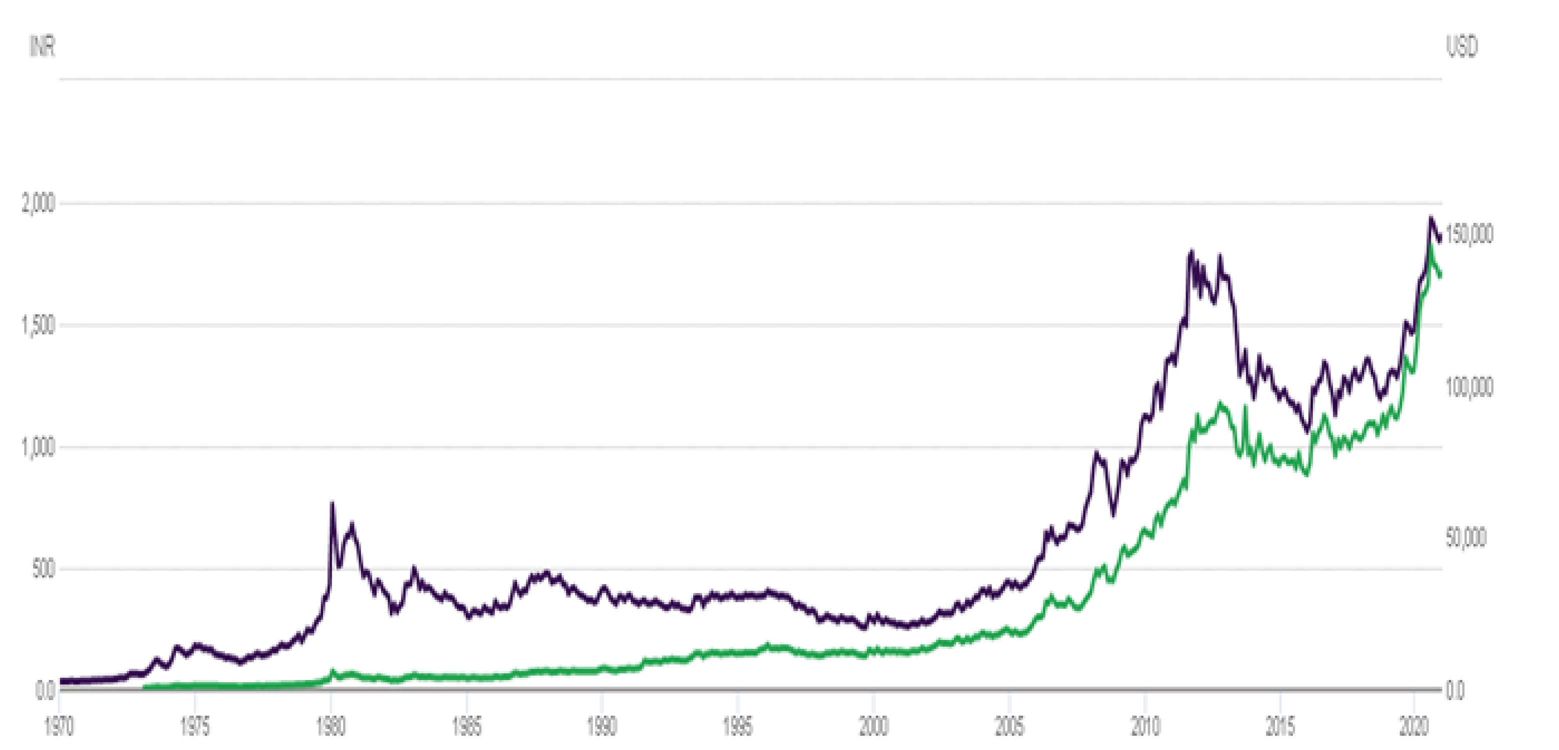

Fig. 2- Graph representing global Gold price trend in 2020
(Goldprice.org)

The above graph represents the growth in the price of gold since the 1970s. It is visible how investing in gold yields good returns. Hence, this makes investment in gold quite profitable.

In 2020, the economic and social uncertainties arriving due to the coronavirus pandemic shifted the main focus to gold, a profitable investment option.

In August 2020, the price of gold reached an all-time high of ₹56,191 per 10 grams at MCX, and USD 2,075 an ounce in the international market.

Reasons behind the Rise of Gold Price globally in 2020

1. Coronavirus Outbreak

During this troubled time, gold was a safe option for all risk-averse investors. Therefore, higher demand led to a rise in international prices. Countries went on a gold-buying spree. More than 700 metric tons of gold had been added to vaults around New York in 2020.

2. Increased Investments in Gold ETF

Piling up of gold in the form of ETF (Exchange Traded Funds) by the Western investors of the USA and Britain led to an 18% increase in gold's demand. As per the World Gold Council, global gold ETF surpassed 1000 tons in September 2020.Even after a decline in the demand of physical gold from China and India, the gold price was on its peak.

Fig3: Graph representing rise in consumption of Gold ETF in 2020.

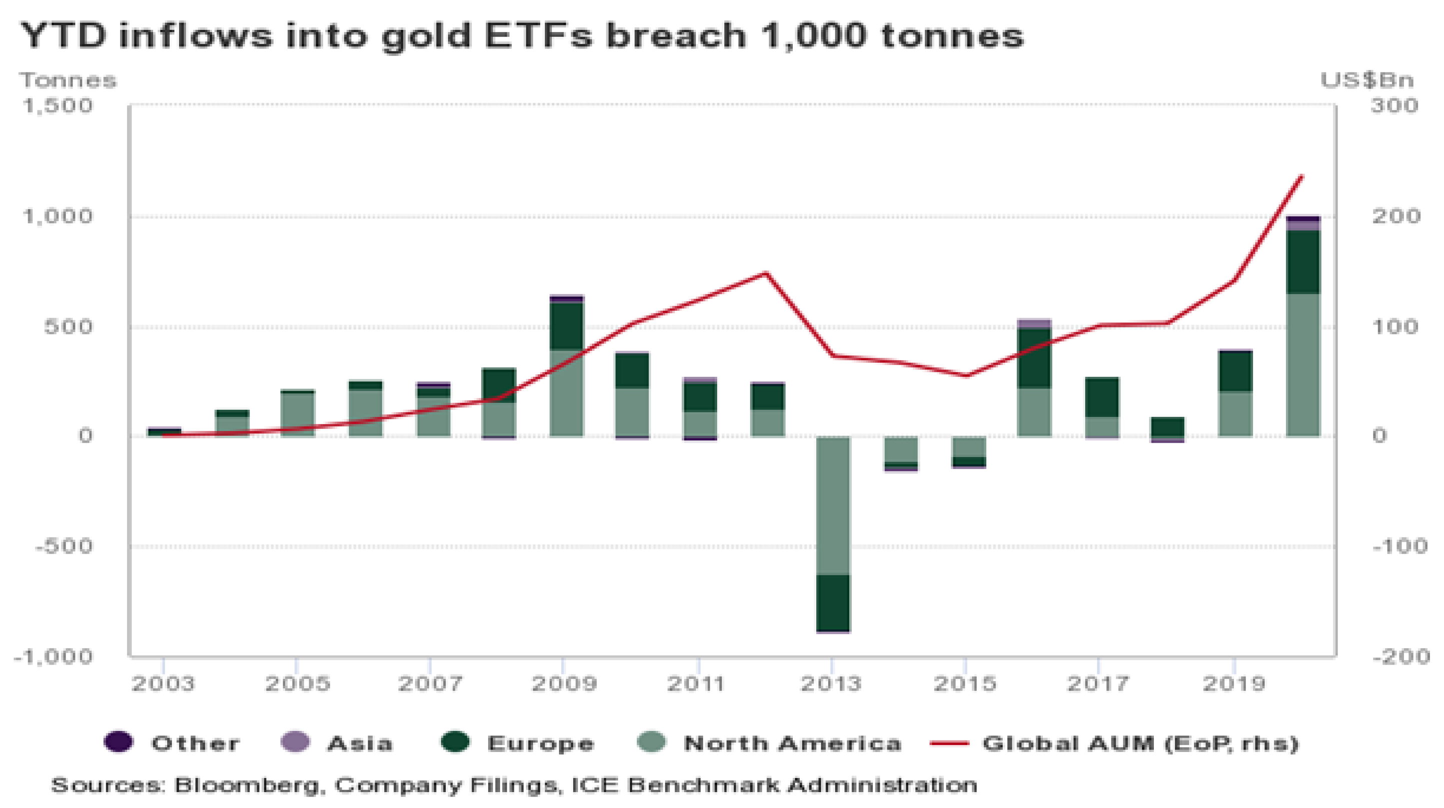

Fig 4: Graph representing Gold price in India trend in 2020

Gold Price Trends in India in 2020

India is the world's largest private gold holding country. In terms of volume, the country imports 800-900 tons of gold annually. Still, from April-October 2020, imports of gold saw a dip by 47% due to a sudden decline in demand for gold in the wake of the Covid-19 pandemic.

Gold prices followed a bullish rally of 28% in rupee terms in 2020. On 7 August 2020, gold was at its all-time highest price of ₹57,008 per 10 gram at MCX, rising by almost 43%. In 2020, gold prices fluctuated like a roller coaster, where initially, the country faced a sudden rise in gold prices and then a decline after August 2020.

Reasons behind rising prices of Gold in India

1. Rise in Global Prices
In the wake of this tragic year, gold was a safe haven to invest in. Countries started consuming gold to safeguard their economies leading to an increase in gold prices.

2. Depreciation of Indian Rupee
Gold prices in India got additional support from rupee depreciation against the dollar as the spot rupee was down by around three percent year-to-date. As India receives most of its gold supply through import practices, depreciation of the Indian rupee led to a rise in the value of gold in the Indian market.

3. Rise in Investment on Gold
The piling of gold ETF by western investors led to a reduction in the demand for physical metal and pushed its prices to an eight-year high.

Turbulences in the economy are often associated with shifts in the investment priorities of the people of that country. Herein, Gold is high on demand because it is a highly effective portfolio diversifier due to its low to negative correlation with all major asset classes. The demand for stock gold in India dipped approximately by 50% yet the prices were leading the bullish path due to the international prices.

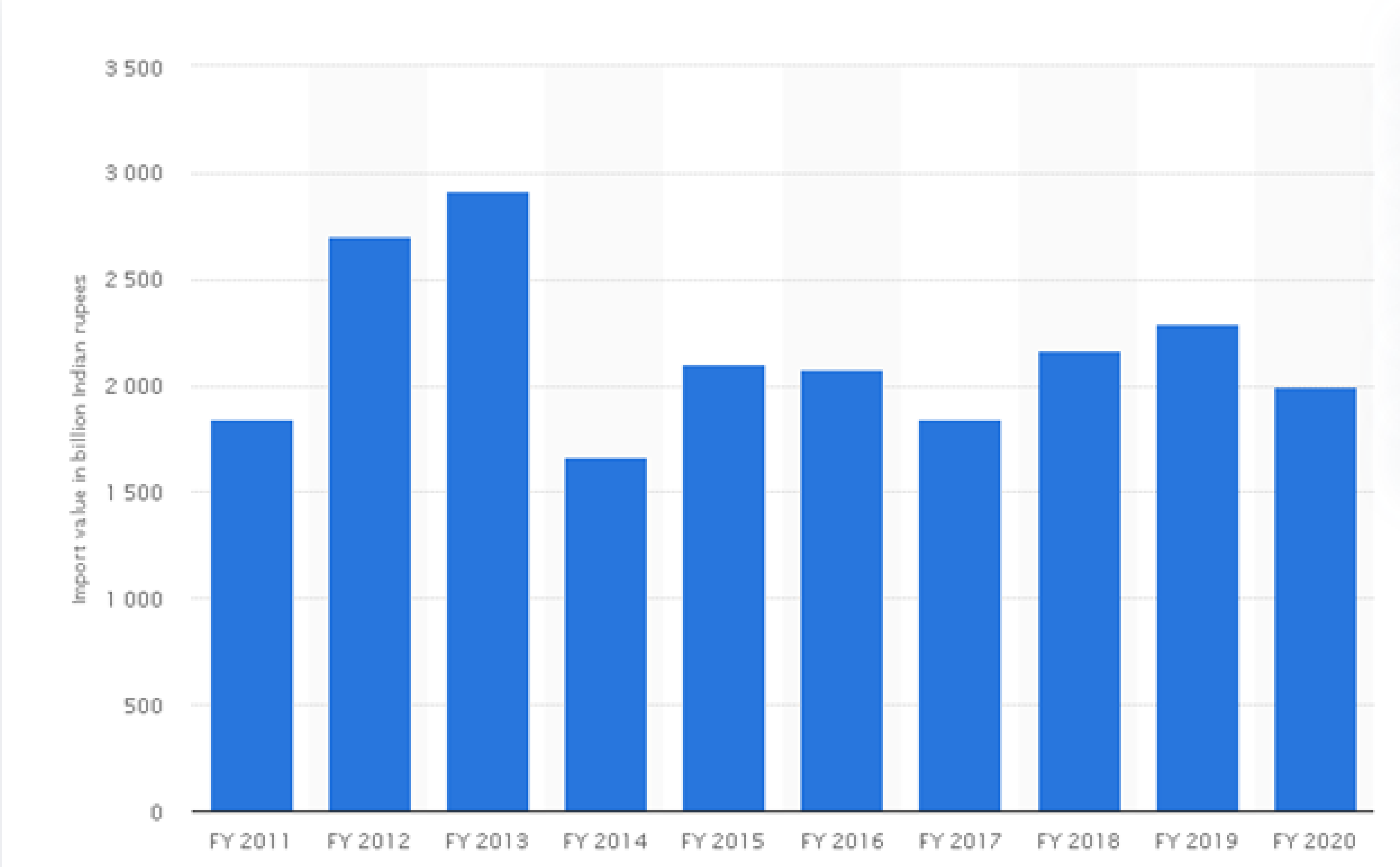

Fig 5: Graph representing gold import in this decade.

Conclusion

It's predicted that gold might even go up to ₹65,000 if the mass distribution of Covid-19 vaccines is disrupted and India's geopolitical tensions rise. On 9 January 2021, gold prices declined by 4% due to the new $900 billion economic stimulus in the USA. Also, hopes from the new government led to equity toward its all-time closing high, which, in turn, weighed down gold prices.

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THE GROWING CHINESE ECONOMIC CLOUT AND LESSONS FOR INDIA

By Joseph Schatz

Until 1978, the Chinese and Indian economy differed marginally and had a similar economic trajectory. The two countries had a similar closed system of the market economy with centralized planning. However, by the end of the 1970s, China initiated its economic reforms whereas India started opening its market only in the early 1990s. China in the interim period grew by leaps and bounds whereas India lagged behind. Both countries experienced fast economic growth which has markedly outpaced other countries in the world. Between China and India, we find that economic growth in China has been superior to that experienced by India. This is evident from the 14.34 trillion-dollar economy of China compared to the 2.87 trillion-dollar economy of India. In per capita terms China is nearly 5 times as strong as India. The annual per capita GDP growth averaged 10.1 per cent in China and 7.2 per cent in India over the years 1978 to 2001. Major shocks to the economy caused by various reasons in the post-1978 period have been similar in both nations. However, due to their large sizes, no single natural disaster has had a catastrophic effect on either of their economies. Correspondingly, economic slumps have affected both nations. So the question of how China managed to have such a massive growth advantage relative to India is intriguing.The reason for the difference in economic growth can be attributed to the economic policy decisions taken by both nations in this period. The institutional reforms undertaken and how they affected the economies of both nations is analysed in this article.By the end of the 1970s when Deng Xiaoping became the leader, the Chinese government allowed for the establishment of TVEs (Township-Village Enterprises) which were semi-private or collective organisations that operated under the market rules. Some of these had considerable autonomy to produce goods as per the market demand. By 1996, TVEs employed 135 million people. The reason for the success of TVEs was the new found freedom of these organisations. The triumph of these TVEs exerted even more pressure on the government to increase autonomy. More private firms came up and slowly private players replaced the TVEs. People were now allowed to choose jobs and resign from their jobs as they desired. Companies could also get workers on contractual basis in comparison to previously hiring permanent workers. However, in India even today the process of firing a worker is a complicated task requiring unnecessary explanations. These obsolete rules have forced companies to take in fewer workers.

As the Chinese economy developed, farmers gradually started to migrate to cities. This offered two-fold benefits. The first was that wages were stabilized with an increase in job supply. Second, it reduced over-dependence on agriculture as the uncertainty and the shocks related to farming were mitigated. The number of people employed in the agricultural sector decreased from 61% in 1981 to 45% in 2005 while in the same period India saw a decrease from 67% to 58.5%. Thus, in a short period of time, China was able to develop strong private organisations that boosted their productivity thereby giving the government more fiscal room.

In India, from the 1980s participation of private players in reserved sectors was allowed. Sectors which were reserved for small enterprises were also opened up. However strict regulations and widespread corruption resulted in lower participation of private players. In 1996 state-owned enterprises controlled 55 per cent of the capital and accounted for 25 per cent of GDP in agricultural sectors. Even after the reforms of 1991, privatization still continued to drag its heels. Only 3 per cent of the sectors ended up partly-privatised by 2001 and 1.13% being fully privatised. This reflected the hindering role that regulatory barriers had on reform outcomes. Also, the limited number of private players led to reduced competition resulting in over-pricing of commodities in India. Thus, India couldn't witness the productivity boost as seen in China in the post reform period. China had a centrally planned system of price control in pre-1978 period. Later a two-price system came into existence wherein, people had to sell some quantity of products at the government price level and the remaining could be sold in the market. This encouraged people to produce more products for sale which unfortunately led to a breach of quality standards in the government priced products. In 1985, this system was abolished and prices became completely market-determined.In India, the government controlled prices of products in the economy. From 1997, this system was slowly stopped though complete reform in this sector was yet to be achieved. Government price control hindered the production facilities of sectors where they could have been most effective.In case of FDI, China allowed foreign investments partially from 1979 onwards. By 1999, China had half of its FDIs in 100% capital investments. This new capital was very important in both providing jobs and acquiring investment for its companies. In India however, by 1990s foreign investments up to 51% was allowed. Only in 2012 major sectors of economy were opened to foreign investments. Even after this, Indian regulations have suffered a lethargic bureaucracy that takes around 2 to 3 years for a business to start in India compared to China's 6 months (according to McKinsey). Moreover, easing of regulations by centre was not followed up by states resulting in no real time benefits.

India's poor infrastructure and constant power failures added to the decrease in FDI while China got the upper hand. China spent around 34 billion dollars in infrastructure from 1993-2003 while in the same period India spent 2-3 billion dollars. India's inflexible labour regulations and an ineffective judicial system made the case even worse. China's foreign investment reached levels of around 30% of their GDP in 2001 while it was a mere 4% in India. China's fiscal position over the years has been way higher than that of India. Though its deficit increased after the initial reforms it sprung back with a sound fiscal cut from 31% to around 20% of GDP in the ensuing years. In the same period India spent around 25-30% of the GDP national defence, subsidies, social pensions etc which ultimately reached a climax with the balance of payment crisis in 1991.A higher expenditure means higher taxes. India's tax compliance was already very low with only 30.9 million people out of the total employed of 363 million in 2005 filing tax returns. Higher taxes led to higher price for goods making it even less competitive in the international market.

This high expenditure ended up in crowding out private investment. India's saving as a percentage of GDP was already abysmal in comparison to China (around 40% of GDP in china compared to 25% in India). Thus, the reason for the spike in China's economic boom in comparison with India is the economic freedom that China could offer. It should be noted that this freedom was even more restrictive in nature before the reforms. China thus, essentially started from dust to build the 2nd largest economy in the world. India on the other hand with its ever-increasing regulations reflected a retarded growth. China was able to deregulate prices quicker, which helped its prices reach equilibrium levels at a faster rate while India is still in the process of deregulating its price control system. China's rapid privatisation helped its productivity tremendously while the attitude to public sector in India has hardly changed. Labour market witnessed substantial changes in China making their shift towards more productive sectors of the economy while India opted for increased wage related regulations. In China, economy was opened to foreign trade and FDI which in turn helped to increase jobs and bring in capital. China's apt fiscal policy decisions played a major role in keeping its goods at a lower price. Moreover, China's greater integration with the global economy improved its ability to capitalize on specialization and large-scale operations, and consequently increased the profits of Chinese enterprises. India has a lot to learn from the miraculous yet planned development of China. India is now at the cusp of a demographic transition and it is the right time to bring appropriate policy changes so as to tap into the demographic dividend accruing from it. There's no time to waste but to act in the right direction.

COLD WAR II: A BLOW UP OR AN IMPENDING REALITY?

By Pratham Goel

On the brink of the Second World War, the first-ever Cold War was initiated between the US and the Soviet Union lasting 44 years (1947-1991). The US won that war, based on military and cultural aspects. The US never considered Soviet its competitor because of its doomed economic policies and structure. Since then, no country has held a candle to the US due to its military strength and large economy with a GDP of USD 22.32 trillion (FY20). However, over the years, experts have expressed apprehension about the deteriorating relations between two of the world's biggest economies, and dread that the world could soon observe Cold War II between US and China. The 2 nations have been in a heated contention for long, and disputes between them have only increased since the outbreak of coronavirus from Wuhan, China in December 2019.

The US has been blaming China for not disclosing facts regarding the virus on time, which ultimately led to a pandemic. The US also stopped its funding to WHO for failure in performing its duty. On the other hand, China argued that such a virus could emerge from anywhere and anytime. “There is zero legal basis for holding China accountable and making it pay for COVID-19... COVID-19 is a natural, not man-made, disaster,” the Chinese statement said. Until now, six lawsuits have been filed against China in US courts prompting Beijing to mull sanctions against US entities and individuals as a response. In its defence, the Chinese Government asserted that China “did not fear” an independent international investigation team visiting China.

A major issue lies also with the Special Administrative Region (SAR) of China, i.e., Hong Kong. Under this act, Hong Kong being a part of China has its own set of rules and policies which provides smooth financial transactions and trade with the US. The anti-Beijing rally that took place in Hong Kong last year prompted China to take up a new strategy to curb terrorism leading to changes in international trade and policies. The US challenged this action as it would affect the free flow of trade between Hong Kong and the US and put more restrictions on transactions akin to China’s case.

Trade War

For long, the world has witnessed a Trade War between the US and China, both increasing their tariff rates on imports leading to an extensive high price of the commodities in the international market. To end this war, both parties came to the negotiating table and declared that China will buy goods and services of at least $200 billion over the next 2 years and the US will reduce its tariff charges and avoid competitive currency devaluation. China didn't stray from its word, and bought all the 50 items it committed to in the first four months of its trade deal with the US. Besides, China continues to buy many American commodities, like agricultural products. Although the Trump administration had employed bullying tactics, like banning TikTok, Beijing is providing greater convenience for American companies, especially financial companies, to enter the Chinese market.

Maritime Rights

The Chinese claim that they found and investigated the islands in the South China Sea and that their trading in the region date back to 2000 years ago. The Chinese Government has consistently stayed firm in maintaining China's territorial sovereignty and maritime rights and interests in the South China Sea. On the other hand, the US opposes that under the UN Convention of the Law of the Sea (UNCLOS), it should have the freedom of navigation through Economic Exclusive Zones (EEZs) and need not intimidate the claimant of Military activities. If things escalate further, there is always a possibility that the world could witness another Cold War.

Nonetheless, we accept that the two nations ought not to seek to reform one another, but should mutually investigate the differences in their systems to peacefully coexist. If they aim towards harmony and world peace then they can come up with a solution soon.

THE DIGITAL PAYMENT INDEX IN INDIA: CASH OR CASHLESS?

By Priya Naik

The digital payment index (DPI) went live on 1st January 2021 to capture the extent of the digitization of payments across India. The Digital Payment Index mainly comprises of 5 broad parameters to measure the deepening and penetration of digital payments. These parameters are as follows: Payment Enablers (25%), Payment Infrastructure – Demand-side factors (10%), Payment infrastructure – Supply-side factors (15%), Payment Performance (45%), Consumer Centricity (5%).

Each of these parameters has sub-parameters which consist of various measurable indicators. The RBI-DPI has been constructed by taking March 2018 as the base period (i.e., the DPI score for march 2018 is set at 100).The basic need for a digital payment index is to boost up the adoption of a cashless economy and measure the growth of cashless transactions in the country.

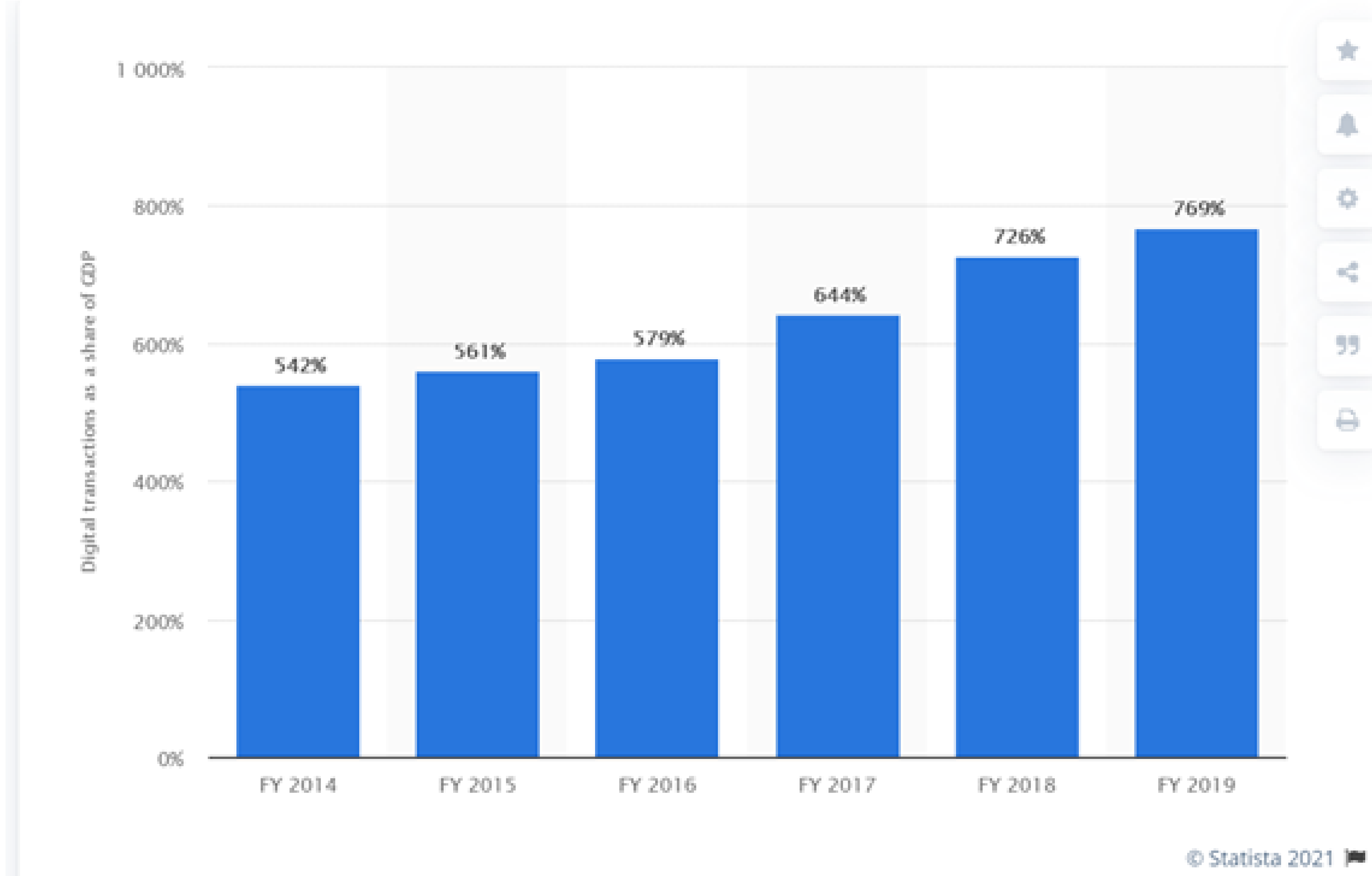
The Payment Enablers include various channels through which the digital payments can be assessed, it includes the internet, Aadhar, bank accounts, etc. The sub-parameters of Payment Infrastructure (demand and supply) include credit cards, debit cards, prepaid payment instruments (GPay, Paytm, easy pay). The payment performance, which carries the highest weightage out of the five is the regulator that would measure factors such as the volume and the value of digital payments, paper cleaning, currency in circulation, and cashwithdrawals.

Lastly, for Customer Centricity, the RBI would consider customer education and awareness, frauds, complaints, etc. The RBI-DPI will be published semi-annually from March this year (i.e., a gap of every 4 months in between) and therefore the first set of operating guidelines will be issued in the month of April. At a base as March 2018, the RBI has measured that the index rose to 153.47 and 207.84 in March 2019 and 2020.

The data visualisation below, shows that there has been a drastic increase in the number of digital transactions as per share of GDP from the fiscal year 2016 to 2019. One major reason why the digital transaction has increased so immensely is demonetization.

Before 2016, debit cards were used as a mode of cashless transaction, but after the announcement of demonetization which had banned the usage of 500 and 1000 Rs notes in the economy, this was the turning point for the Indian economy where people started learning how to use UPI as another medium of cashless transaction apart from debit and credit cards.

BHIM UPI: An Indian Government Initiative



(Source: Statista)

There has been atremendous usage of BHIM UPI which is an online platform for cashless transactions. Due to covid-19, there was a decline in the usage of this very app in the month of April because of the lockdown which was implemented but now that the Indian economy is going cashless. Analyzing the data shows that it only took 9 months for the economy to go from 151,140.66 cr to 4,16,176.21 cr (i.e., from April 2020 to December 2020).

The above analysis shows that the State Bank of India has constituted the major share of UPI transactions, reason, why the State Bank of India excelled, is that there is a large proportion of people who have their bank accounts in there and it has a large share in the financial industry.

Month	No. of Banks live on UPI	Volume (in Mn)	Value (in Cr.)
Dec-20	207	2,234.16	4,16,176.21
Nov-20	200	2,210.23	3,90,999.15
Oct-20	189	2,071.62	3,86,106.74
Sept-20	174	1,800.14	3,29,027.66
Aug-20	168	1618.83	2,98,307.61
July-20	164	1497.36	2,90,537.86
June-20	155	1336.93	2,61,835.00
May-20	155	1,234.50	218,391.60
Apr-20	153	999.57	151,140.66
Mar-20	148	1,246.84	206,462.31
Feb-20	146	1,325.69	222,516.95
Jan-20	144	1,305.02	216,242.97

UPI Beneficiary Banks - Top 30 Banks (November'20)

UPI Beneficiary Banks	Total Volume (In Mn)	Approved %	BD%	TD%	Deemed Approv
State Bank Of India	363.23	95.91%	0.75%	3.06%	0.29%
Paytm Payments Bank	329.04	97.63%	2.29%	0.06%	0.02%
Yes Bank Ltd	255.73	99.76%	0.11%	0.10%	0.03%
ICICI Bank	249.17	99.22%	0.59%	0.12%	0.06%
Axis Bank Ltd.	198.14	99.12%	0.53%	0.20%	0.15%
HDFC BANK LTD	126.45	96.69%	1.45%	0.92%	0.94%
Bank of Baroda	66.75	98.53%	0.91%	0.32%	0.24%
Punjab National Bank	51.97	97.42%	1.08%	1.19%	0.31%
Bank of India	47.35	94.11%	1.21%	3.60%	1.08%
Kotak Mahindra Bank	46.78	97.06%	2.71%	0.01%	0.22%

(Source: NCPI)

Conclusion

I will conclude by saying Digital Payment Index is a good initiative index by the RBI to look upon the growth of the economy. According to RedSeer analysis, India's digital payments industry is likely to grow from Rs 2,153 trillion to Rs 7,092 trillion by 2025. The growth is likely to come on the back of strong use case of merchant payments, government policies including Jan Dhan Yojana, personal data protection bill along with the growth of MSMEs, low penetration of banking and financial services inIndia; growth of millennials and high smartphone penetration suggesting strong headroom for growth.

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NEW LABOUR CODES: BETTER OR WORSE?

By Bhumi Bhardwaj

On September 23rd, 2020 the Parliament passed the remaining three Labour Codes i.e. the 'Industrial Relation Code Bill, 2020', the 'Social Security Code Bill, 2020', and the 'Occupational Safety, Health and Working Conditions Code Bill, 2020.' The Code on Wages was passed by the Parliament in August 2019. The Code on Wages, consolidate and subsume four Central Labour Laws concerning wage and bonus payment. The Code on Industrial Relations aims to streamline the laws regulating industrial disputes and trade unions by consolidating and subsuming three Central Labour Laws relating to Trade Unions, employment in industrial establishment, and settlement of the industrial dispute. The Code on Social Security subsumes nine Central Labour Laws relating to social security, aiming to provide better social benefits such as provident fund, insurance, and gratuity to workers.

The Code on Occupational Safety, Health, and Working Conditions aims to manage the occupational safety, health, and working conditions of workers employed in establishments, and subsume thirteen Central Labour Laws relating to safety, health, and working conditions. These laws are expected to be implemented by April 2021.

These Labour Codes are the first set of major labour reforms in the last three decades. The Government claims that these enactments will facilitate better compliance, bring effective accountability, and will be favorable for both employers and workers. These reforms might increase the ambit of social security by expanding and including gig workers, platform workers, and unorganized workers in the Social Security Code, 2020. Inclusion of fixed-term contract workers in eligibility for gratuity, whereas earlier only permanent workers were covered, is a welcoming move. For working journalists, the gratuity period reduces from 5 years to 3 years. The SS code provides Central and State Government to notify schemes to Gig Workers and Platform workers, and also mandates that these schemes may be funded by State Government, Central Government, and Aggregators who will have to set aside at least 1-2%, not exceeding 5%, of their annual turnover for social security fund. Different schemes are mandated for different categories of workers under this Bill. However, definitions of these workers may overlap. So it is unclear how these schemes specific to categories of worker will apply. It also mandates that during the six weeks following a miscarriage, delivery, and medical termination of pregnancy, women workers can't be hired by any employer. However, a woman is entitled to maternity benefit only if she has worked for not less than 80 days in the prior 12 months for the employer. Despite the inclusion of Gig and Platform workers, the Union Government may have failed to extend social benefits to the entire workforce- both formal and informal sectors.

Female participation in the labour force is a driver of growth and the Code on Occupational Safety, Health, and working conditions entitles women to be employed in all establishments for all types of work including night shift with the given consent of the woman. In hazardous working conditions, employers are required to ensure adequate safeguards before the employment of women for such operations. Transgender rights are also recognized under the OSH code, mandating industrial establishments to provide adequate, suitable, and separate washrooms, locker rooms, bathing places, and shelters or restrooms for male, female, and transgender employees, which is a step forward in gender equality. This code limits the number of working hours to not more than 8 hours per day. But the threshold limit for this law to be applicable is at least 20 workers in establishments with electrical power and 40 in establishments not using such energy, exempting small establishments. The definition of inter-state migrant worker has also been extended to include self-employed migrants, who are required to register themselves on an electronic portal maintained by the Central and the State Government.

The Industrial Relation Code, 2020 provide flexibility to employers to hire and fire a worker without prior permission from the Government. The threshold for standing orders is increased from establishments with 100 workers to 300 workers which will allow small companies to introduce arbitrary service conditions for workers. According to existing Labour Laws establishment with more than 100 workers required permission from Government before any lay-offs or retrenchment, but under the IR Code, this threshold is raised to an establishment with 300 workers. This leaves India's labour vulnerable since 90% of the workforce works in a small establishment. The new code also complicates the situation for Trade Unions. A trade union must have membership of 10% workers or 100 workers from the related industry to be registered. The trade union having more than 51% of the workers as members would be recognized as the sole negotiating union. In case no trade unions meet these criteria, a negotiating council will be formed with representatives of unions that have at least 20% of the worker as members. Though it is unclear what will happen in case no union has the required support of at least 20% of workers to participate in the negotiating council. Previously, the threshold for participation in the negotiating council was 10% instead of 20%.

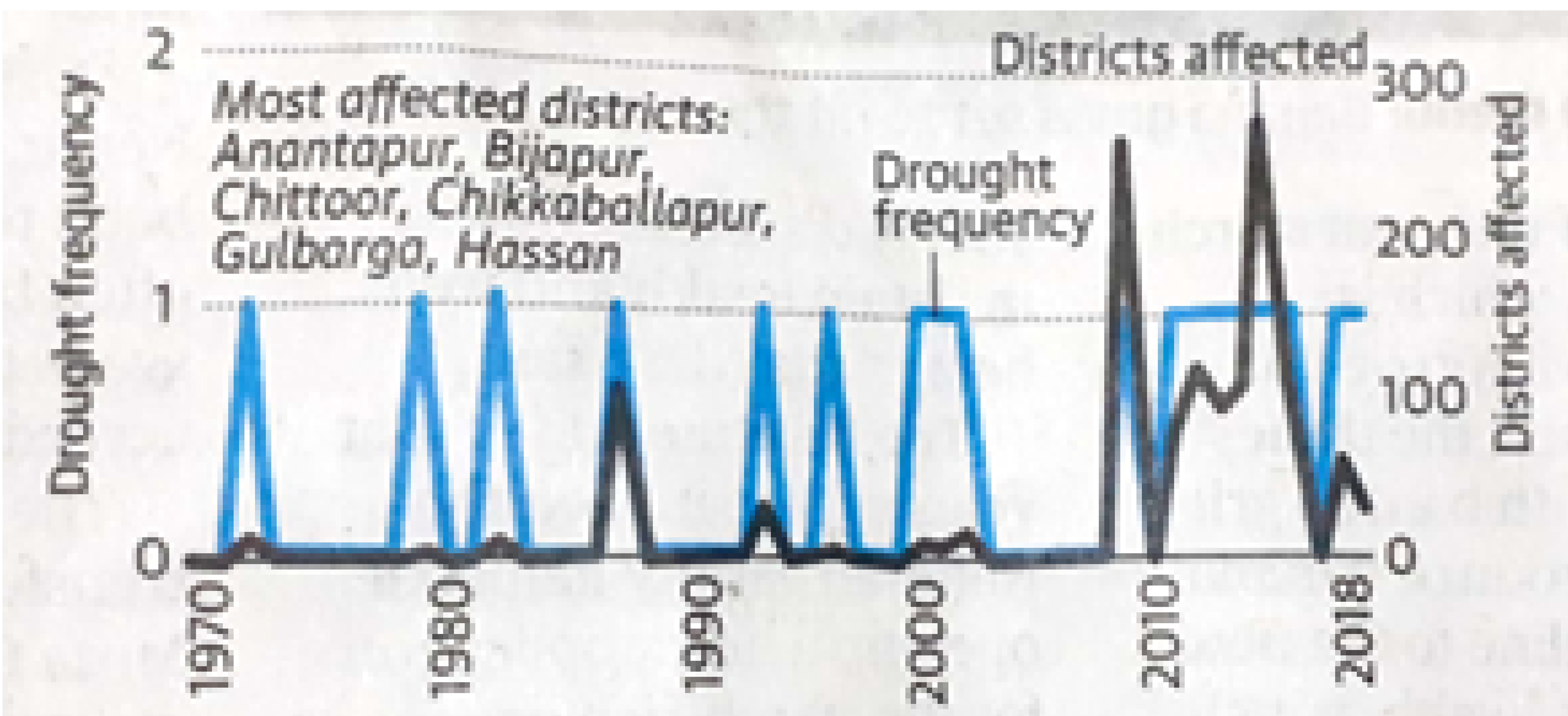
The new code also makes it almost impossible to legally strike by elongating the legally permissible time frame before the workers can go on a legal strike. The Code on Industrial Relations covers all industrial establishments for the required notice and other conditions for a legal strike. The 2020 Bill introduces a provision on fixed term employment which reduces the role of a middleman. The code entitles fixed term employees to the same benefits and conditions of work as available to permanent employees. However, unequal bargain power between the worker and employer could affect such workers. Most employers are supporting these reforms, whereas workers are protesting against them. For decades, protective labour regulations may have hampered economic growth but the question remains whether the labour reforms will bring a balance between economic growth and labour welfare or not. In India where there is a surplus in labour supply, the contractual relationships have profound effects on workers' interests and thus need careful evaluation from time to time.

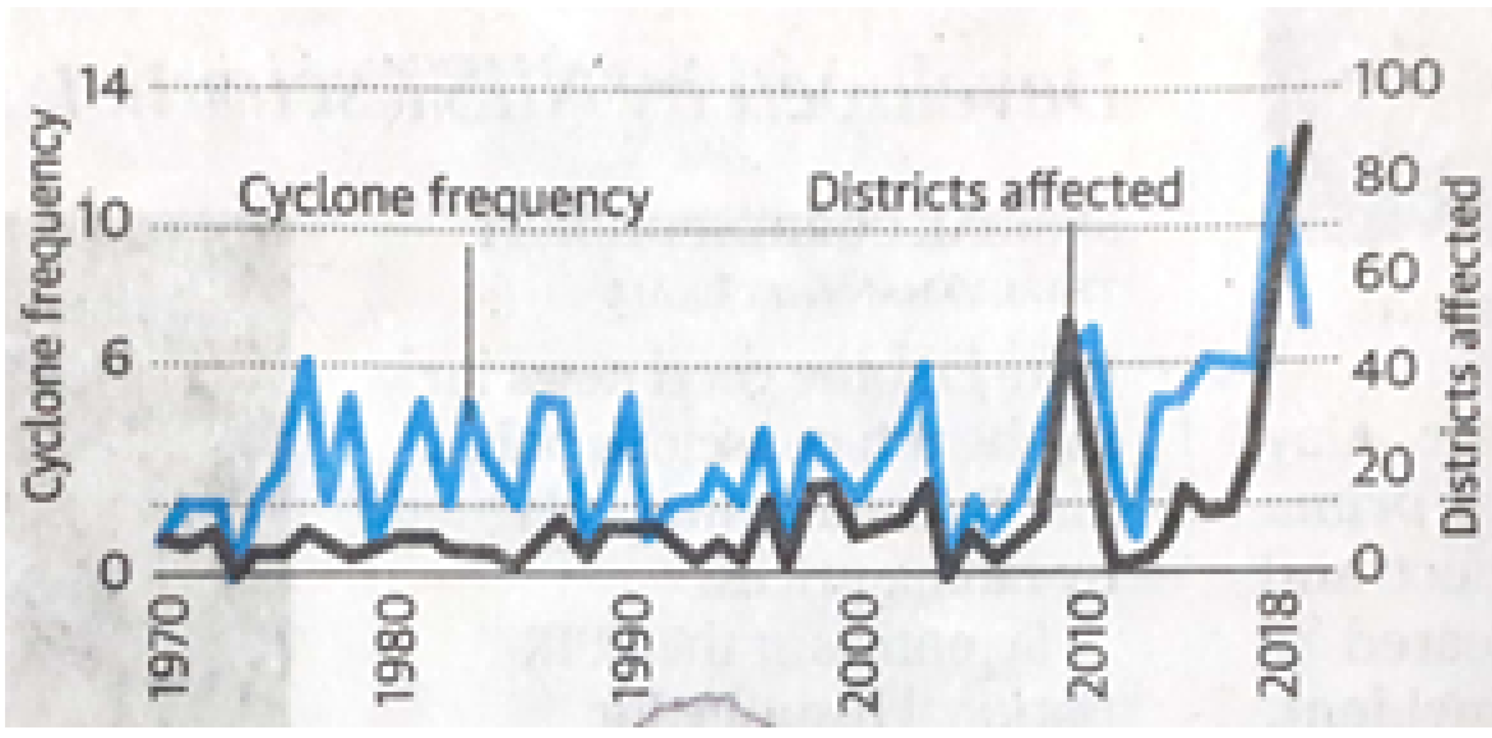
The views expressed are personal and do not represent the institution's views.

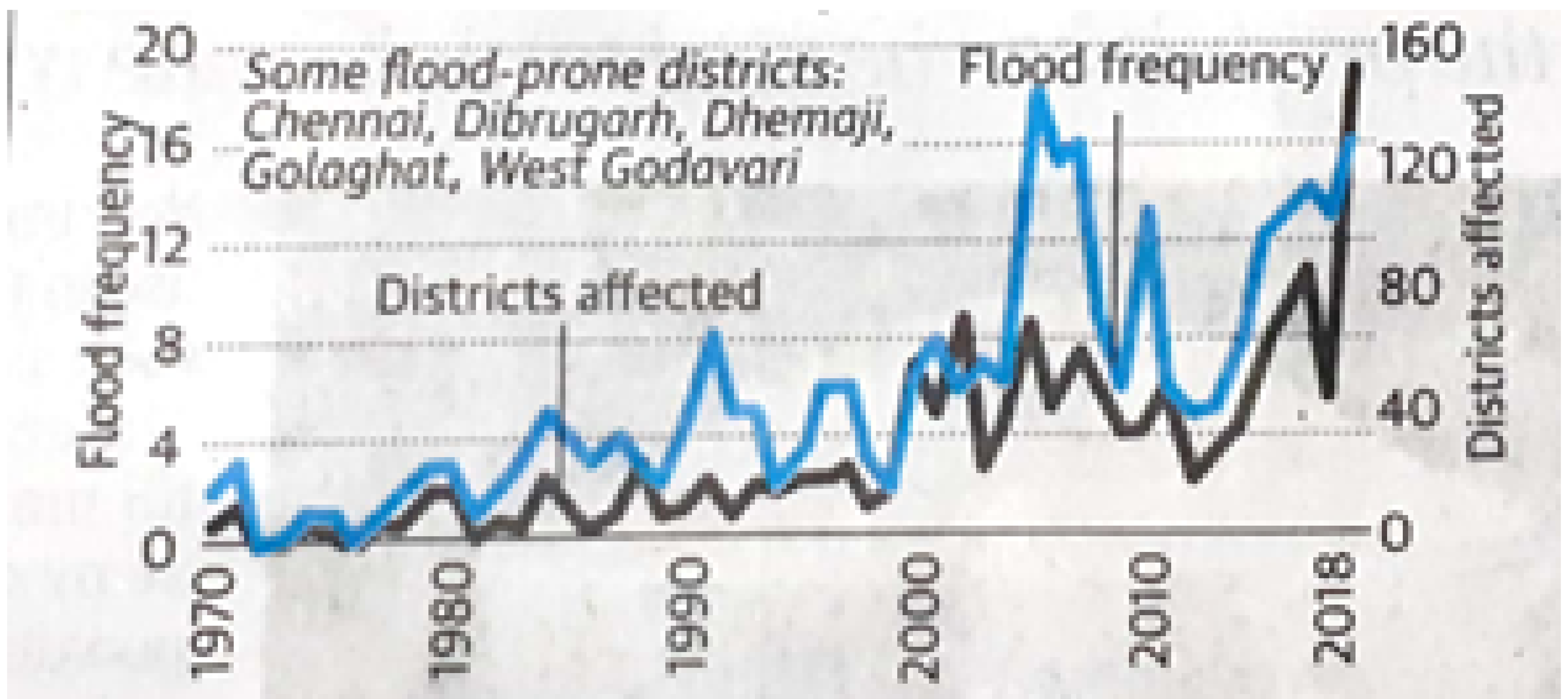
SHIFTING PARADIGMS OF CLIMATE IN RELATION TO THE ECONOMIC DEVELOPMENT

By Khushboo Bansal

Climate change refers to the structural changes occurring in various close-knit environmental elements that influence the weather, crops, species, habitat, and living conditions of human beings. Over a while, India has seen a steady change in climatic conditions. Two of the major factors that produce a ripple effect in the climate change process are a rise in the average global atmospheric temperature and increasing levels of air contamination. Soaring levels of global warming lead to a faster rate of precipitation. Increasing average sea levels, tectonic shifts, and changing the course of rivers are other major concerns. India, in recent years, has seen an alarming rise in the number of cyclones, more intensity earthquakes, and higher variability in its seasons.







From: The Hindu
Source: Ministry of Energy, Mines and Petroleum Resources

The graphs show a rise in the frequency of droughts, cyclones, and floods majorly in the last two decades. The situation is known to continue in the same fashion for upcoming years as well. The question arises- Can India accommodate its economic development along with such worsening environmental scenarios?

There are several government policies and regulations that exhibit a trade-off between a nation's overall progress and its environmental protection. India's strategic and developmental projects, such as the construction of highways, chemical plants, etc are regulated by the central authority. Such projects need environmental clearance to ascertain the level of ecological damage that it may incur in the short-term or long term period. Such development activities might come at a cost of large-scale deforestation or loss of nature's territories that influence the climate of that place. But, a known exception to these are the projects related to 'national security' and 'religious sentiments' of the nation.

It's often seen that defence projects are exempted from a green nod, just because it concerns the security grounds of our country. Infrastructure developments regarding religious places are often overlooked even when they violate the norms of environmental protection. One such enforcement was seen in the latest notification of Environment Infrastructure Assessment (EIA) which comes under the Environmental Protection Act 1986 in august 2020. The draft saw that laws regarding the number of days of public hearings to evaluate a strategic project were changed and a post-facto clearance clause was added. This seriously poses a challenge to the already drowning climate state as it reduces public participation.

During the current pandemic times, RBI in its annual report 2020 also raised concerns over shifting paradigms of climatic change. India experienced a high frequency of floods in the north-eastern regions, while the coastal areas were hard hit by cyclones. Indian tropical climate has been experiencing nature's frictions but not all calamities are a result of human activities. For instance, high rainfall in India's Western Ghats and north-eastern region and proximity of eastern coastal plains to cyclone-prone regions are not under any human control. On the other hand, conservation activities such as the construction of dams and embankments for flood control, meteorological predictions and subsequent safety measures, drainage facilities in low-lying areas, and even property insurance for the affected sections come under human control.

The country might seem to be reviving in all possible spheres, but a negative growth rate in the initial quarters of the current fiscal year along with massive destruction of biodiversity and average human livelihood is not a good sign. All the revival measures targeted at boosting economic growth like more job creation, expansionary monetary policies, and financial stability will go in vain if the country experiences food inflation and continuous loss of infrastructure. Calamities bring with them a chain of destructive events. Severe crop spoilage shattered income of low middle-income groups, and spike in bad-loans due to the inefficiency of farmers to repay the loans are some of them. Development can become standstill as funds won't be utilized in progressive activities.

Conclusion

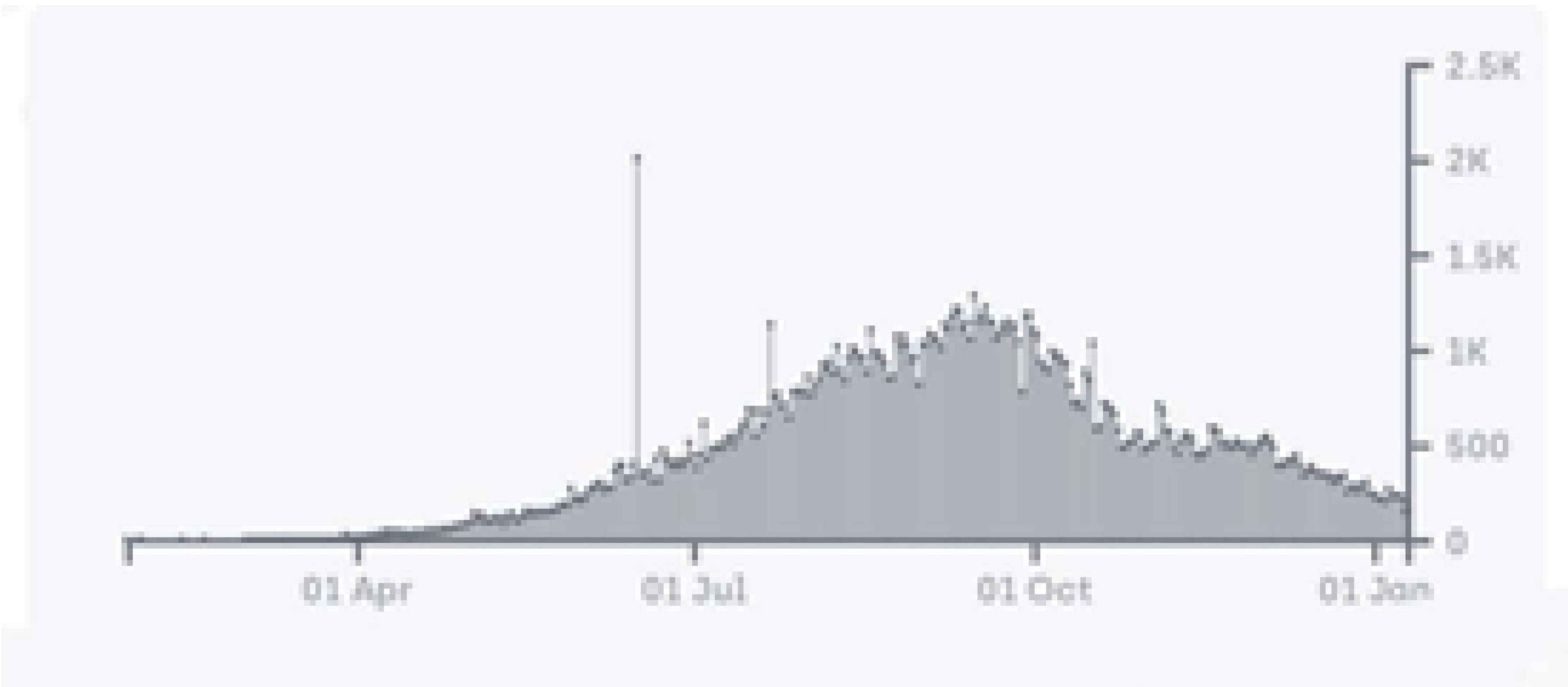
As India is rapidly moving towards industrialization and more self-dependence, its contribution to global gaseous emission and non-renewable fuel consumption is expected to rise. It is, therefore, not only important to focus on economic development, but sustainable economic development. Ecological cost, which can't be quantified, is left out of the country's GDP. Opinions on developmental issues may not converge in such a populous country, but the objective of narrowing income inequality and working towards a supportive environment should be kept in mind.

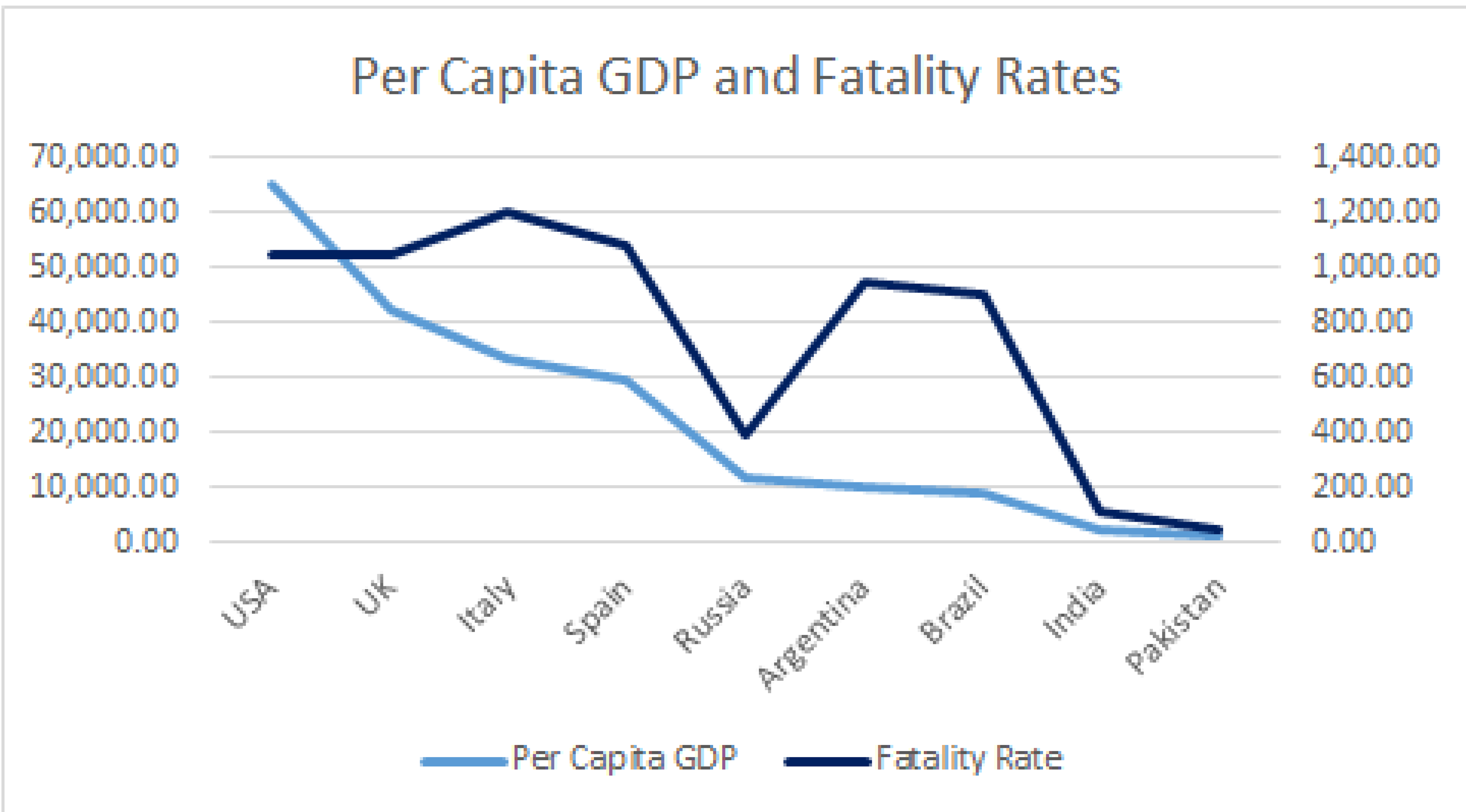
The views expressed are personal and do not represent the institution's views.

THE CURSE OF THE RICH: ANALYSIS OF COVID-19 RELATED DEATHS

By Gayathri Vemuri

When COVID-19 had initially taken the world by storm, many experts considered it to be the end for developing countries. After all, the last plague (Spanish flu in 1918) had wiped out over 5% of India's population, and data also support the same. With poor health infrastructure, greater population density, lower education levels (and hence, awareness) and low income levels, many experts had feared that the virus would wipe out developing countries. However, something peculiar was observed.





Source: JHU CSSE

70% of the deaths attributed to COVID-19 were reported in rich countries. Cynics might link this to lower testing rates and under reporting of cases as well as deaths in poorer countries. But even if a country like India had double the cases than what it reported, it's fatality rate (covid related deaths per million) would be nowhere close to countries like USA, UK and Italy. As for deaths, while under-reporting might be possible by declaring covid deaths as non-covid ones. However, the deaths missed were hardly in 2 figures and the random shoots in the graph indicate rectification of those figures after fresh audits in data collection.While the improvement in India's management of the pandemic since the Spanish flu can be credited to technological progress, higher education and better standards of living, why do we see the opposite in developed countries? Why is there a positive correlation between fatality rate and the wealth of a country?

This is because the interpretation of the past economic growth (for the past century) is anchored by the Industrial Revolutions. At the dawn of industrialization, the gap between the richest and poorest countries was 2:1. But with industrialization, per capita industrial output in countries like Japan, USA and UK took off, output of countries under colonial rule stagnated. It sometimes also fell due to importing these goods and killing their own markets. Today, the income gap between the richest and the poorest countries has risen to more than 80:1.

This growth enabled the citizens of developed countries to afford better healthcare and education; immunity improved, and they were able to fight previous plagues and outbreaks. However, this improvement in quality of life increased their life expectancy as well and now most developed countries are ageing economies. As COVID attacks the immune system, older people are more susceptible to it, leading to greater deaths in developed economies. Citizens of developing countries, on the other hand, due to claustrophobic spaces and less sanitation, were able to develop greater immunity.

This table gives us the following inferences:

- Greater the per capita GDP, greater the life expectancy and average age, and greater the fatality rate.
- There exists an inverse relation in the percentage and fatality rate of countries in the same income group.

While cases are globally declining, the possibility of a second strain impacting the entire world still looms over us. At the beginning of the pandemic, developing countries were the primary concern worldwide and the developed nations suffered from the commentator's curse. Slackened restrictions, nonchalance towards the pandemic and politicizing the use of the mask (especially in case of the USA) is also a contributor to these higher fatality rates. There are no doubts that only by observing greater caution all across the world will we be able to pull ourselves out of this crisis.

Country	Per Capita GDP Classification	*Fatality Rate*	Average Age	HALE	Life Expectancy	Percentage
USA	High Income	1,044	37	69	78.9	87.4524715
UK	High Income	1,051.00	40	72	81.3	88.5608856
Italy	High Income	1,209	44	73	83.5	87.4251497
Spain	High Income	1,079	41.4	74	83.6	88.5167464
Russia	Upper Middle Income	387.00	38.30	63	72.6	86.7768595
Argentina	Upper Middle Income	948.00	31.10	68	76.7	88.6571056
Brazil	Upper Middle Income	903.00	30	66	75.9	86.9565217
India	Lower Middle Income	107.00	26	59	69.7	84.6484935
Pakistan	Lower Middle Income	45.00	23	58	67.3	86.1812779

Source: compiled and computed from World Bank, UNDP and WHO (2019) data
Note: HALE is Healthy Life Expectancy, and percentage is the percentage of one's life that they are healthy.

THE UNTAPPED POTENTIAL OF INDIAN EDUCATIONAL INSTITUTIONS

By Shubham Jain

India is a developing economy where a bulk of the population is still illiterate and living in poverty. There exists a humongous amount of unutilised natural resources at our disposal. However, the country is not skilled enough to take advantage of a situation like this. Educational institutions, in this situation, assist by bridging the gap between unskilled and skilled labor.

Importance of Educational Institutions in Economic Development
The process of education generally starts at a very young age, which helps in shaping the mindset of the children, so the importance of educational institutions cannot be overlooked.

Direct Impact on Wages
Education helps in the development of skills that make the workers more productive, thus awarding a higher wage. Increase in wages lead to increase in the standard of living, thus, expanding the employment opportunities.

Impact on the Economy
The higher wages act as an incentive and lead to a higher employment rate, which in turn increases the production in the economy, thus increasing the GDP. All this also leads to reduction in the income inequalities, leading to economic development.

Impact on Governance
Improved education creates aware citizens, which means better governance and improved health outcomes, consequently moving towards a knowledge economy.

Addition of Educational Institutions to the Economy
When an institution is made, it generates employment for both skilled and unskilled labor. It is also a way for the government to inject money in the economy by increasing the public expenditure also, improving the infrastructure.

Education and the Indian Economy

There is a plethora of economic benefits available by educating the population. Thus, it can be said that one of the best approaches to robust economic growth and poverty reduction is putting a substantial amount of effort in educating the citizens and deepening the human capital of the country. The statistics prove that the statement cannot be more accurate. An article published in 2014, by weforum, says that, in India:

- Each additional year of education increases wages by an average of 10%
- An extra year of school raises the GDP on average by 0.5% annually

Even though there were so many direct as well as indirect impacts of education on the economic growth, India had ample room for improvement.

Higher Educational Institutions and the Real Picture

One of the most critical duties of higher education institutions is to equip students with the skillsets necessary for beginning and growing in a career. At present, even though there is a great demand for graduate talent, employers often have to worry about the skills and job readiness of fresh graduates. The education-employment gap is increasing on a daily basis. Many graduates are not able to find a job in their field and hence are forced to take up non-graduate jobs.

Currently, higher educational institutions are not being utilised to their maximum capacity. The curriculum isn't generally up to date, there is more focus on rote learning and grades than on the real learning and applications of those learnings. Not enough youngsters enter higher education after completing school and not enough adults have been provided higher education. This happens mainly due to poverty, lack of awareness and unavailability of educational institutions in the rural areas when at the same time, majority of the Indian population live in those areas.

What can be done?

Utilising educational institutions to their best can award great economic growth and following are some suggestions:

- Introduction of modern curriculums: Modern curricula promote skill based learning, minimise rote learning and focus more on the application and research aspect of education
- Establishing more subsidised educational institutions: Doing this will provide employment to both skilled and unskilled labour, help in expanding the reach of educational institutions and educating the poor at subsidised rates. Educating the poor will also help in reducing poverty in the long run
- Linking technology with education: Even in many good private schools, use of technology in teaching is very limited. We are experiencing the renaissance of technology and thus it cannot be separated from education in such a state. Indian schools should embrace that technology and education should go hand in hand

Educational institutes have a very big impact on the Indian economy but still aren’t being used to their full potential. Even in 2020, we have so many people who don’t have access to education due to which they fail to develop skills that will help them to improve their standard of living. India was ranked 129 in 2019 in the HDI rankings, which is a matter of grave concern for a country that takes up a huge part of the global population. There lies so much untapped potential that needs to be awakened for our nation to climb up the ladder of development at least steadily if not rapidly.

GREEN ECONOMY: A NEED FOR SUSTAINABLE DEVELOPMENT

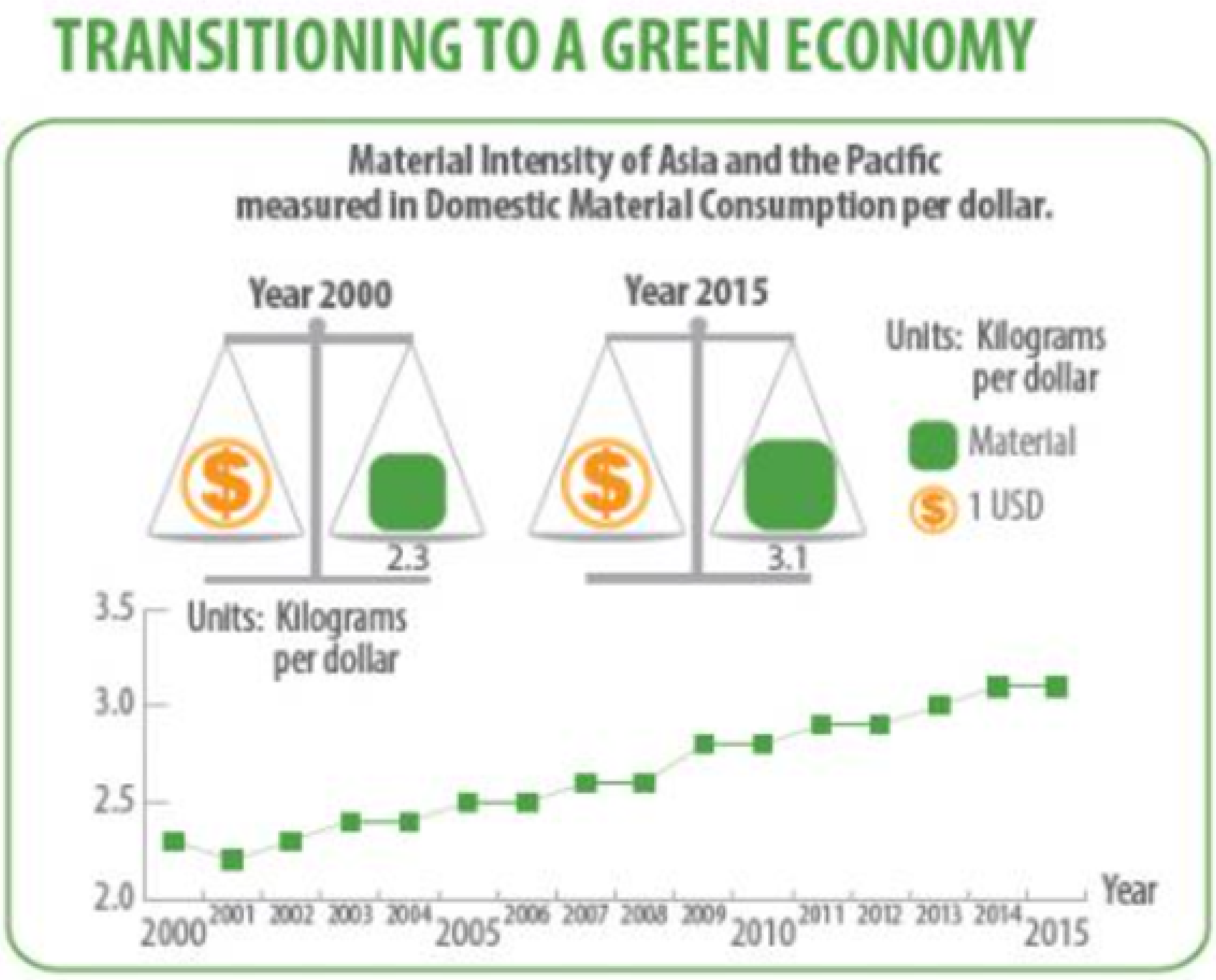
By Vanshika Khandelwal

The Indian economy is viewed as a bright spot within the world landscape. It is one of the quickest rising market economies in the world because the world views India as a brand-new engine of growth. The Indian economy holds the responsibility to fulfil the wants of its billion-plus population, while not surpassing its environmental boundaries.

The Economic Survey 2013 has cautioned that by 2020, India might face 16.7 million 'missing jobs.' Additionally, India needs to travel a long distance before it achieves basic living standards for all. It had 20.6% of the world's poorest in 2011.

India with a score of 0.634, ranks 131 out of 187 countries on the Human Development Index. Moreover, the score fell 27% thanks to regional disparities in education, health, and living standards within the country.

According to the United Nations Report: "A green economy is defined as low carbon, resource-efficient and socially inclusive. In a green economy, growth in employment and income is driven by public and private investment into such economic activities, infrastructure, and assets that allow reduced carbon emissions and pollution, enhanced energy and resource efficiency, and prevention of the loss of biodiversity and ecosystem services."



Source: https://www.unenvironment.org/

Key Barriers

The larger perception in India among businesses and policy manufacturers remains that environmental protection comes at the value of economic progress and development. Financial markets for inexperienced investments are at an emerging stage and systems to direct funding towards green and accountable investments are inadequate. Inexperienced technology is mostly thought of as unreliable and not cost-competitive. The thinking that India cannot afford to 'pollute now, finish off later' has still not gained acceptance. Greening the economy is not recognized as a tool to attain social prosperity and environmental property.

Green Economy Barometer

- Measuring what matters analyses the resilience of a nation's economic modelling and measurement. It discusses alternatives to the strictly economic terms of measure - the gross domestic product and also the fiscal deficit, akin to Gross National Happiness, the Happy Planet Index, and Social Progress Index. India graded 6th out of a hundred ninety countries ranked by GDP growth in 2017, whereas within the same year India was ranked 122 out of one hundred and fifty-fifth countries in the Gross National Happiness report.
- Greening high-impact sectors- Key sectors with a high potential to progress towards greening are identified, these are - Agriculture, Renewable Energy, Construction, Transport, and Medium and Small Industries. The contribution of MSME towards the gross domestic product was as high as 37% in 2012-13, and it has the potential to supply various new jobs.
- Investing in people assesses the condition of individuals and also the action taken by the government to boost and develop human resources. In 2013 the GOI required for the businesses to pay 2% of their profits on corporate social responsibility (CSR).
- Managing natural systems emphasises the protection of India's natural capital – both valuable but finite raw materials, and the harder to measure but irreplaceable assets like biodiversity, rare species, and clean air and water. It examines how more can be done to ensure the equitable distribution of resources and promoting resilience for production and consumption.
- Influencing monetary flows- the trend and quantum of green investment within the economy, at the side of the government's disbursement on the green economy is analysed, and also the inclusiveness of the financial sector is assessed. The government has taken the initiative to manage the resources higher by introducing new coal taxes. Renewable energy in the meantime has attracted outstanding investment of USS 11.4 billion.

Conclusion

Bringing out such a structural shift will require the concerted efforts of everyone in a position to influence social and behavioural change. While the government and business both are playing vital roles, no enduring economic, cultural or political transformation has ever been achieved without a solid constituency demanding and enabling the changes. It is the job of civil society to amplify people's aspirations and requirements to decision-makers at all levels. Civil society plays an important role in bringing in knowledge from the grassroots, helping test and validate transformative innovations on the ground, and reaching out to communities for large scale changes in society. But most importantly they are the link to foster cooperation among businesses, governments, and communities.

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MICROFINANCING: A MODERN DAY BOON

By Ayushi Nema, Shaheed Bhagat Singh College

Introduction

To start a business one of the most important thing one needs is finance and acquiring finance in modern business landscape is especially difficult if they are considered a high risk borrower. This is where micro financing comes in.

Microfinancing is a category of financial service which aims at financial inclusion of individuals and small businesses that lack the means to avail a loan through conventional banking systems. These individuals and small businesses are provided credit in the form of small working capital loans, savings, insurance, fund transfers, remittance and also non-financial services like training, counseling etc. The term “microfinancing” was coined in the 1970s, when micro-financial approach was institutionalized by the founder of Grameen Bank of Bangladesh, Muhammad Yunus.

How does Microfinance work?

The question arises as to how these micro financing institutions are any different from the traditional banks who seemingly offer the same set of services? Financially marginalized (like women, rural and urban poor or low income generating families, emerging entrepreneurs) don’t receive any assistance from commercial banks and this is where MFIs comes in to bridge this gap by providing a range of services to them. A carefully structured process is followed:

- MFIs secure funding from a variety of sources, which depend in part on their status. Thus, MFIs acquire the money granted through microloans from public or private investors, the MFI’s own capital, grants and subsidies, member and customer deposits, loans granted by one or more partner banks, etc.
- MFIs then help the financially marginalized by providing them with the necessary capital to start a business and work towards financial independence. These loans are given without any collateral and thus charge higher rate of interest relative to commercial banks because of the high risk involved. For instance, a loan can be provided to start a tailoring shop and the borrower might have to undergo a training course on financial literacy and once they start earning revenue, they have to repay the loan amount in some proportions along with interest rates charged.
- Recipients of loans and other customers can also take other services like micro savings by investing in income generating endeavours and insurance schemes. With the repayment of loan amount and interest payment and from the funds accumulated in the form of savings and deposits the MFIs keeps on further lending and this process continues.
- MFIs ensure access to services for all and help to eradicate poverty by employment generation and income creation leading to human capital formation and economic development.

An Insight: Role of Microfinance in Developing Countries

According to UNDP data, 1.3 billion people, accounting for 22 percent of the population, live in multidimensional poverty across 107 developing countries. With a majority of them living in rural areas, an estimated 1.7 billion people around the world don't have access to financial services, according to The World Bank. That said, microfinance institutes are often the only significant pathway towards alleviation of poverty, thus bettering economic conditions. It acts as an anti-poverty vaccine in rural India. In a developing country like India, a significantly large part of the Indian population still resides in rural areas with a lack of facilities and knowledge and have minimum amount of money to meet their basic needs. Credit is thus important to the poor people and small and medium scale entrepreneurs not only for kick starting a business and being able to maintain a decent amount of profit for survival, but also for the income generating activities like investing in marginal farms and other small scale self-employment ventures. The pioneer of the microcredit concept Dr. Muhammad Yunus said, “Credit is a human right” which enables people to pursue their ideas and generate employment for themselves and others with that money. Microfinance makes that pursuit possible as a result of which the demand for microcredit has grown significantly over the years. There are various evidences proving success of microfinance in economic development and improving standard of living of citizens in developing nations.

Grameen Bank of Bangladesh is one such example. It emerged as a credit delivery system and has reached nearly 300 million borrowers across the world in 2017. ‘All human beings are born entrepreneurs’ with this ideology, Dr. Yunus launched a program where beggars were given small loans of 10 to 15 dollars without an interest charged, to sell merchandise like toys or sweets as they go from house to house. This proved to be huge success and now they have more than 100,000 homeless people in that program. His other programs also sought to achieve women empowerment as nearly 97% of its members are women.

In India, Self Help Groups (SHGs)-bank linkage program (BLP), launched by NABARD in 1992 has had a profound social impact on the social empowerment process. SHGs have helped its members by enabling better access to credit, households to spend much more on education, has empowered women and helped improve quality of life. According to NABARD report of 31st March 2019, there were almost one crore SHGs in India covering 12 crore families. In April 2020, with a rapid rise of COVID-19 cases, women SHGs left no stones unturned and produced more than 20,000 masks to meet the shortfall. SHGs have helped combat many financial and social reach problems and brought about financial discipline. Microfinance has indeed contributed immensely to the upliftment of financially marginalized communities and eventually in economic development and growth of developing countries by providing platforms for everyone to become entrepreneurs and benefit in terms of growth, income enhancement, poverty reduction and increased food security and livelihoods. It can safely be said that micro-financing is the way forward to promote and enhance the income and standards of living of millions of low-income households, enabling them to contribute to the country’s economic growth, and also promoting equitable growth, especially in the background of India’s goal of becoming a 5 trillion dollar economy by 2025.

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THE CHINESE DILEMMA

By Asmita Tiwari

India-China Trade Deficit

China, the fasting growing Asian economy, has emerged to be one of the largest trading partners of India. It accounts for more than 14% of India's imports. Over a while, the volume of trade between the two countries has increased drastically. The gap between the value of imports and exports has led to an increase in India's trade deficit. Initially, in the short run, a country's trade deficit can help in raising the standard of living since the country has access to a wider range of resources at a cheaper price and the country can consume more than what it produces. But in the long run, it becomes an alarming concern since it can shut down small businesses mainly due to cheap imports, leading to an increase in unemployment.

The main factor attributable to an exponential rise in the trade deficit is the narrow basket of commodities that we export and a wider basket of commodities that we import from China. Most of India's exports to China are goods and raw materials which include cotton, petroleum products, organic chemicals, iron ore, and diamonds/natural gems. Whereas, the imports from China mainly include finished products such as electrical machinery, cell phones, heavy machinery, telecom, power, plastic toys, critical pharmacy ingredients, furniture, fertilizer, food, and textiles, etc.

India's trade with China: Trends and Patterns

(Table: values in US $ Million.)

Year	India's exports o China	Rate of growth	India's Imports from China	Rate of growth	Total trade	Growth of total trade	Trade balance
1995–96	333.2	31.03	813.19	6.85	1,146.39	12.91	−479.99
2000–01	830.03	53.88	1,494.92	16.04	2,324.95	27.21	−664.89
2004–05	5,615.88	90.04	7,097.98	75.12	12,713.86	72.39	−1,482.10
2005–06	6,759.1	20.36	10,868.05	53.11	17,627.15	38.65	−4,108.95
2006–07	8,321.86	23.12	17,475.03	60.79	25,796.89	46.35	−9,153.17
2007–08	10,871.34	30.64	27,146.41	55.34	38,017.74	32.88	−16,275.07
2008–09	9,353.5	−13.96	32,497.02	19.71	41,850.52	17.89	−23,143.52
2009–10	11,617.88	24.21	30,824.02	−5.15	42,441.90	−4.47	−19,206.14
2010–11	15,482.7	33.27	43,479.76	41.06	58,962.46	32.92	−27,997.06

Source: Monthly Statistics of Foreign Trade of India.

Source: India's Trade Deficit with China: Will Free Trade Agreement (FTA) Work for India?

India-China bilateral trade has been growing very rapidly since the 1990's. The trend of India's exports to China indicates that it grew by $15149.5 million whereas the imports from China rose by $42667 from 1995 to 2011. The significant feature which can be observed between their trade relations is China's perennially positive trade balance. With the expansion of trade, the imbalance has been augmenting continuously.

The trade deficit between the two countries stood at $51.76 billion in FY 2017-18 and $58.04 billion in FY 2018-19. In the FY 2019-2020, the trade deficit dipped to $48.66 billion, declining for the first time since 2005. The major items that exhibited a fall in India's imports from China in 2019-20 include accumulators and batteries, man-made yarn & fabric, aluminum, and its products, glass & glassware, paper, paper board & products, and other plastic items.

Covid-19 has brought about a positive development in the Indian economy in regards to its trade figures. India nearly halved the trade deficit to $5.8 billion in the April-June 2020-21 periods as compared to $13.1 billion in the last fiscal year. In a decade, India’s trade gap touched the lowest in April-August period in FY 2020-21 with expansion in exports led by an eightfold rise in iron and steel shipments. The reduction of the trade gap was due to the efforts of the Central government to reduce the number of imports and target robust double digit exports to the neighboring country.

Reasons for the decline in the trade deficit

Apart from the outbreak of the coronavirus pandemic and the imposition of a nationwide lockdown, Prime Minister Narendra Modi’s campaign of Atmanirbhar Bharat and the Galwan Valley clashes with the Chinese troops also gave a push to India's efforts. The Atmanirbhar Bharat Abhiyan was formulated for building a self-reliant India by encouraging domestic manufacturing. As per the results, this strategic action reduced the dependency on Chinese commodities.

Since the emergence of hostilities in Galwan Valley between India and China, New Delhi has worked on policies to stymie the influx of Chinese goods. The government has taken desirable steps to firm up technical regulations for 150 products worth about $47 billion of imports. Over 50 quality control orders and other regulations have been notified in the past. These include consumer electronics, steel, heavy machinery, telecom goods, chemicals, pharmaceuticals, paper, rubber articles, glass, industrial machinery, some metal products, furniture, fertilizer, food, and textiles.

Is narrowing the trade gap sustainable?

According to experts’ opinions, the narrowing of the trade deficit may not be sustainable in the long run. Boycotting Chinese products, restricting Chinese investments, and banning Chinese apps have surely dragged down the imports from China. But from a long term perspective, the shrinking of trade imbalance doesn’t seem plausible since India’s economy won’t be able to avoid the subsequent negative effects of the India-China trade restrictions together with the adverse impact of the Coronavirus pandemic. Currently, though the Indian economy is reviving, the tenure of this steady growth is not so certain. Therefore, India is expected and required to seek broader and futuristic economic cooperation with China.

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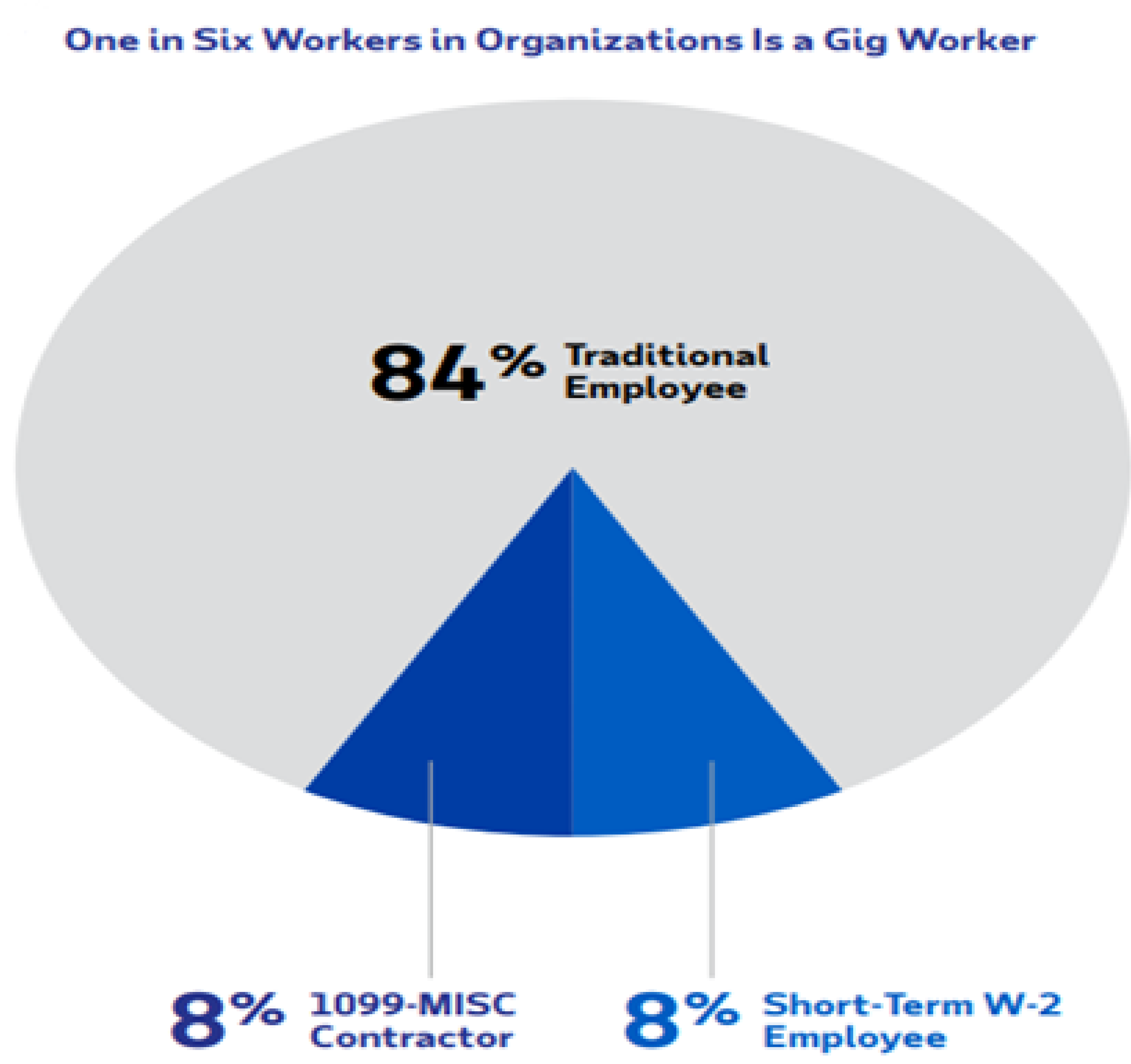
GIG ECONOMY

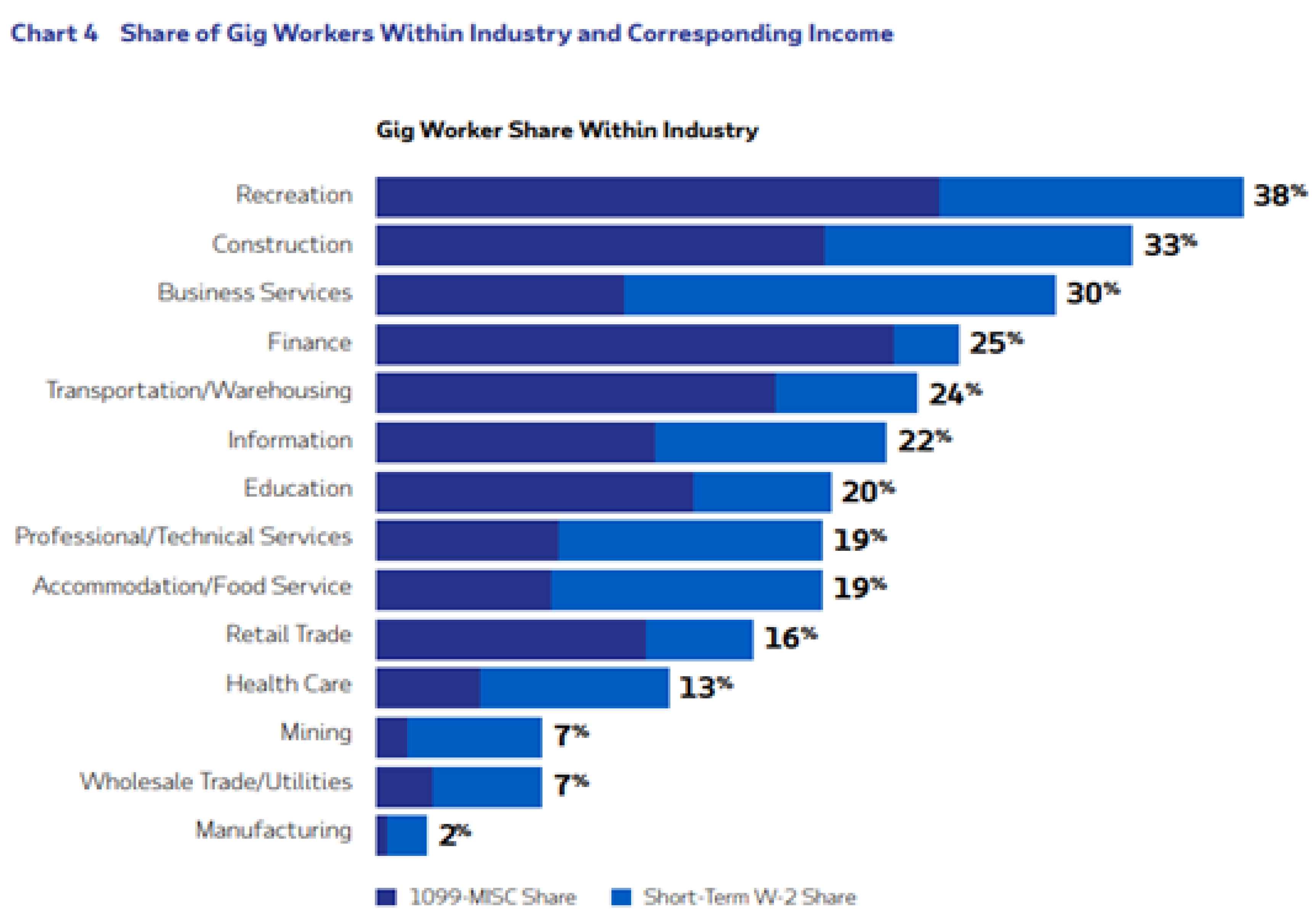
By Rishika Jain

In the Gig Economy, jobs are associated with two peculiarities - flexibility and temporary employment. The term may seem to be a new entrant in the lexicon of economics, but it isn't. We define a gig economy as one where workers connect with clients through online platforms and work for a temporary period or freelancer. In the traditional working scenario, people generally prefer working full time without changing job positions frequently; in the gig economy, workers themselves find their clients and work to enhance their experiences.

Who are gig workers and what type of work do they do?
Gig workers are a general term for all those working as freelancers, temporary workers on contractual agreement.The gig economy includes carrying out small tasks, ranging from delivering the groceries to completing specific projects. Some companies expanding their operations through gig workers are Airbnb, Amazon Flex, Uber, Cabify, Etsy, Shipt, TaskRabbit, etc.

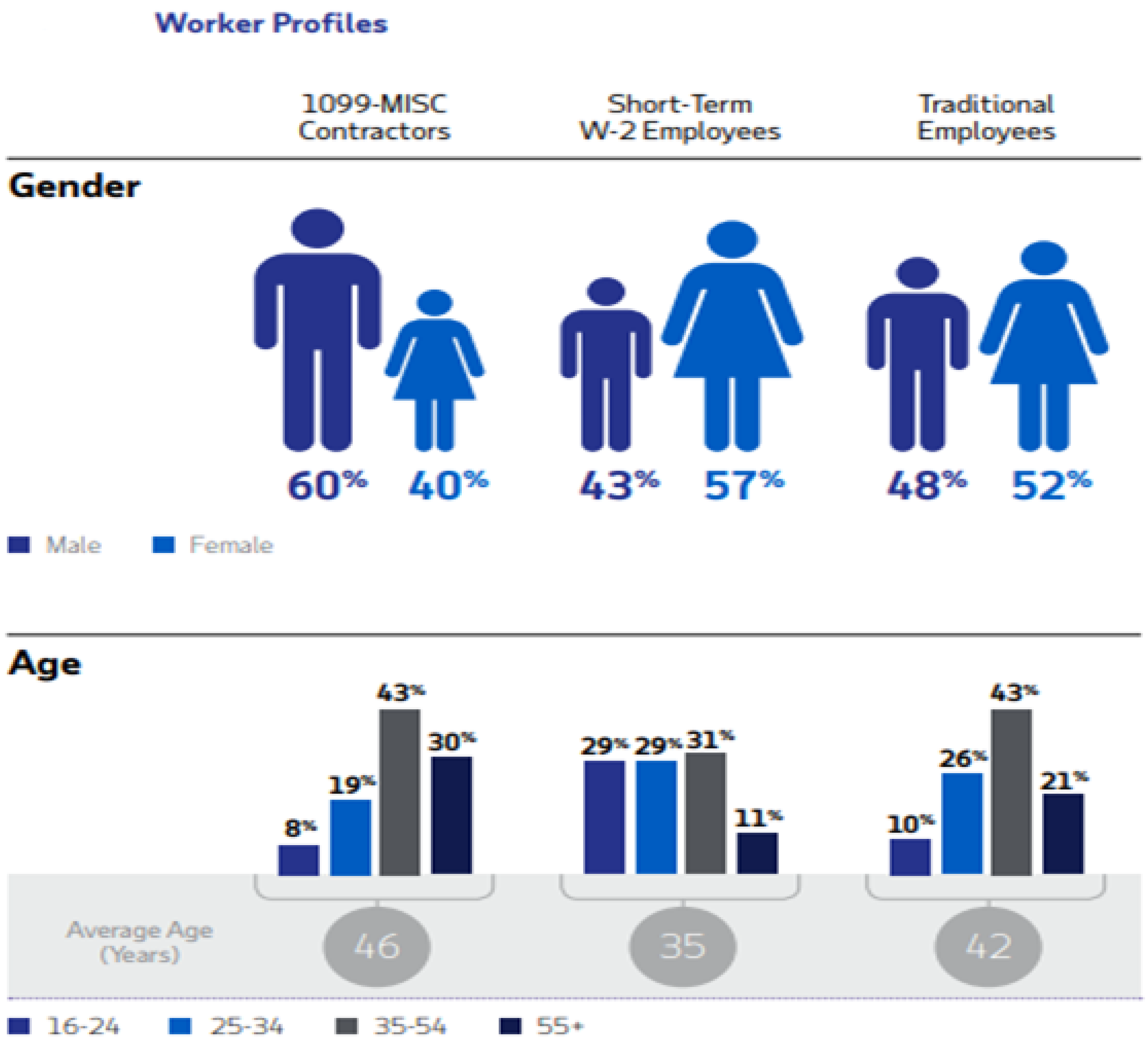
Share of Gig Workers in Companies
According to the Gig Report 2020 by ASSOCHAM, 15 million freelancers in the Indian Gig economy are continually fuelling the demand for independent contracts in finance, human resource, information technology, programming, and designing domains. India decrees 40% of freelance positions offered across the planet. A gig economy report by ADP shows that the share of gig workers in the companies has surged from 14.2% to 16.4%, a 15% increase.





Source: Illuminating the Shadow Workforce by ADP Research, February 2020

As depicted by the above graph, recreation and construction have the highest share of Gig workers. It is but obvious that full-time workers get more employment benefits such as health insurance, paid vacations and a stable job. These benefits for full-time workers are supplementary financial accountabilities for gig workers as they cannot avail them.



Source: Illuminating the Shadow Workforce by ADP Research, February 2020

Sector wise percentage of companies looking to hire gig workers

Industry	Current	Future (2-5 years)
FMCG – Pharma	15%	69%
BFSI	32%	56%
Manufacturing	35%	65%
Services	47%	76%
Technology & BPO	57%	60%

Through the above figures, we gather that companies in every field are planning to expand the gig economy, by hiring more gig workers in the years ahead. The coronavirus pandemic has had a significant contribution in shifting the company's virtues to embrace different talent profiles onboard than hiring full-time employees.

Impact on the Global Economy

The arrival of the gig economy was not treated as an essential economic issue in every country. The countries like Bulgaria, Croatia, Cyprus, Turkey, Greece, Japan, Romania, Latvia, Hungary, Slovakia, and Slovenia haven't given any paramount importance to gig workers. On the other hand, countries like the USA, UK, France, Germany, Austria, Belgium, China, Canada, Finland, Czech Republic, New Zealand, India, Poland, Netherlands, Spain, Ukraine, and Belarus have regarded the gig economy as a significant aspect of their economy.

It has been observed that the gig economy does not impact the global economy due to a couple of reasons:

1. For a gig economy, technological advancement is a prerequisite, such as online platforms where clients and gig workers can interact. Even if there is a technological environment, the accessibility to these platforms by all the workers at cheap rates is not feasible for every nation. Additionally, not all work can be done through online platforms. For example, there is significantly less scope of online business in Croatia because of everything being preferred offline.

2. Besides technological requirements, cultural and regulatory factors play a significant role in the gig economy's growth. Workers seek stable income and job protection as well. It is the primary reason Japan has not given much relevance to the gig economy.

3. The gig economy faces several barriers in some countries because of its rules and regulations. For example, in UAE, 80% of the workers are expatriates, and they should have a work permit registered by a sponsored body. Thus, the prospect of inclusion of these expatriates into the gig economy are narrow.

4. Consumer attitude and preferences also affect the growth of the gig economy. Online platforms will grow only if there is an existing market for them, and consumers can easily access these services through online platforms.

THE FUSION OF ECONOMICS AND CLIMATE CHANGE

By Simran Sharma

Introduction

It is no news that climate change constitutes various aspects that has harmful effects on our environment. In the current decade, we have come across promising theories which propose that economics can be used as a tool to counter climatic threatening phenomena. The most prominent and basic form of climate change for which we've been warned by multiple researchers innumerable times (since the 19th century), is the carbon emission in the atmosphere which has its effects on the air, water and soil. Moreover, the carbon being emitted has non-renewable fossil fuels as its major source, hence posing the problem of resource depletion as well. Carbon emissions consist of multiple Greenhouse Gases (GHGs) such as Carbon Dioxide (CO_2), Methane (CH_4), Hydro fluorocarbons (HFCs), and Nitrous Oxide (N_2O). These GHGs have evident and adverse climatic impacts on the earth, its natural resources and the health and welfare of humans.

The Role of Economic Policymaking in Climate Action

Economic policies can be used as a medium for controlling overwhelming effect of carbon emissions. Economists have analysed and tried to compute carbon emission (climate change as a whole) in monetary terms in order to make judgements in a common unit and come up with working theories to prevent climate change. Apparently, this is a difficult task as many aspects like depletion of ecosystems and acidification of oceans and many other climatic effects cannot be measured easily in monetary terms. Economists try and use the cost-benefit analysis, resilient strategies and adaptive strategies along with predicting potential impacts.

Every piece of trade, every decision of consumption has attached to it a carbon footprint. A carbon footprint is the amount of carbon dioxide being released in the environment through the activities being conducted. Straight from the decision of moving from point A to B, we rely on transportation in one form or the other which has its ripple effects in the carbon footprint phenomenon. Hence there is an environmental cost linked to our activities. There are many economic policies that aim at reduction and regulation of the carbon emissions as mentioned above. These policies aim at reduction through market based approaches and have proven to be effective in the reduction of carbon emissions through the aspects of taxation on emissions and permit regulations on trade. Taxation on emission provides polluters with an incentive for incorporating cost-effective solutions in order to control emissions and hence reduce the cost of production or else they will have to comply with the set taxation on the emissions and pay them. Permit regulations set a specific limit or target on the total emissions and then allocate or auction pollution permits accordingly. This gives the polluters an incentive for reducing their emissions in an economic manner so as to be able to auction off their permits to polluters who have higher costs for compliance with the limits set by the authorities or to reduce the total pollution emitted even more so as to avoid purchasing further allowances.

Humans always respond to incentives hence these market oriented approaches have proved to be effective. By leaving the decision of emission on the polluter themselves, market oriented approaches are a new way of controlling emissions other than the prescriptive approaches where in the authorities simply set a prescriptive limit on the emissions.Under this approach, polluters have an incentive to continually decrease their emissions beyond what is needed to comply with the standard as with all the continuous reduction in emissions they are presented with the continuous opportunities to pay less in the form of taxes or pay less for more permits as well as earn by auctioning off their permits.For regulating GHG emissions, these Market approaches are effective as carbon emissions are the same wherever they occur and in whatever form they may occur and so they have the same effects on the environment.

Risks attached to Economic Policymaking under Climatic domain
Every analysis method and every policy has certain risks attached to it. These policies may be able to reduce and control the overall flow of carbon emissions, the ultimate point of concern for us is the total quantity of carbon emissions in our atmosphere, and therefore the cumulative concentration of Greenhouse Gases in our atmosphere is the ultimate concern under all this.Hence in the short term, we observe that the damage caused per additional ton of emitted carbon into the environment is seen to change little with the amount emitted. If certain sources are exempted from the policy, then some relatively low cost emission reductions might not occur, raising the overall cost of the policy. Also, if sources of pollution are compartmentalised into different sector- specific or pollutant-specific approaches, each class of polluter may face a different price for their contribution to the environmental pollution. Therefore, trading opportunities that reduce pollution control costs will be unrealised having demonstrated that taking a non-integrated approach to control greenhouse gas emissions will likely result in higher costs. The time horizon, that is the pre-decided point in time (in the future) for the total evaluation of these policies, over the accrual of the costs and benefits of the policies regarding climate change and the global relationships they involve raise challenges for estimation. The exact benefits and costs are at least somewhat uncertain of virtually every environmental regulation. This is due to the fact that, estimating benefits and costs involves the projections of future economic activity and the future effects and costs of reducing environmental pollution. In almost every case, some of the future effects and costs are not entirely known or able to be quantified or monetized. As discussed earlier, the degradation being caused to the environment is not an easy thing to be computed in monetary terms.

There are many policies in effect around the world under the theories discussed here, some notable examples being:

1. The “Environmental Protection Law” in China where “Article 21 of the EPL calls for direct incentives for environmental industries in the form of “fiscal assistance, taxation, prices and government procurement to encourage and support the environmental industries”. Article 22 focuses on incentives to improve the environment in excess of mandated requirements, and provides that “governments shall adopt policies and measures in finance, taxation, price, and government procurement, among others, to encourage and support further pollutant discharge reduction by enterprises, public institutions, and other businesses after meeting the statutory requirements for the discharge of pollutants”. (Source law.asia)

2. "The implementation of market-based instruments has been the control of sulphur dioxide (SO_2) emissions within the context of acid rain reduction under Title IV of the 'Clean Air Act amendments of 1990' within the USA.” (Source Stavins 2003)

3. “Carbon taxes in Denmark, Norway, and Sweden are intended to possess an incentive effect, additionally to a revenue-generating effect, but it's been difficult to work out their actual impacts.” (Source Blackman and Harrington 1999)

The list of such environmental policies are endless. They are effectively putting market based approaches and instruments in effect in order to regulate climate change in all parts of the world. The future of our planet is under scrutiny and there will be an expected surge in the importance of implementation of the current policies and creation of better policies. Economics as a field can extend itself to almost every domain, but its fusion with environment draws solutions to the most detrimental phenomena in the world, one that needs to be solved for our wellbeing.

IMMIGRATION: A DISCOURSE OF CONTEXTS

By Avantika (IPCW) and Mayul (ZHDC)

Migration is not a new phenomenon. For as far as the traces of identifying trajectories go, migration by the humankind originated in the African continent to the rest of the world; supposedly 40,000[1] years ago and hasn't stopped ever since. One type of migration is immigration which refers to a person moving from his/her/their native land to a foreign land and is therefore referred to as an immigrant. While there are a myriad of reasons as to why people choose to immigrate, but research stresses on economic prospects and enhancement in quality of life as the primary reasons.[2] This enhancement could be because of reasons like technological advancements, enhanced infrastructure, better opportunities etc.[3]

Additionally, it also benefits the country from where a person emigrates (homeland of the migrant), because the immigrant workers tend to send money back home, referred to as Remittances, which increases the national income of their native country.[4]

Immigration, with time, has become a contentious issue for the countries, where people immigrate, primarily because of two reasons:

1. Native Workers Think That Immigrants Take Their Jobs

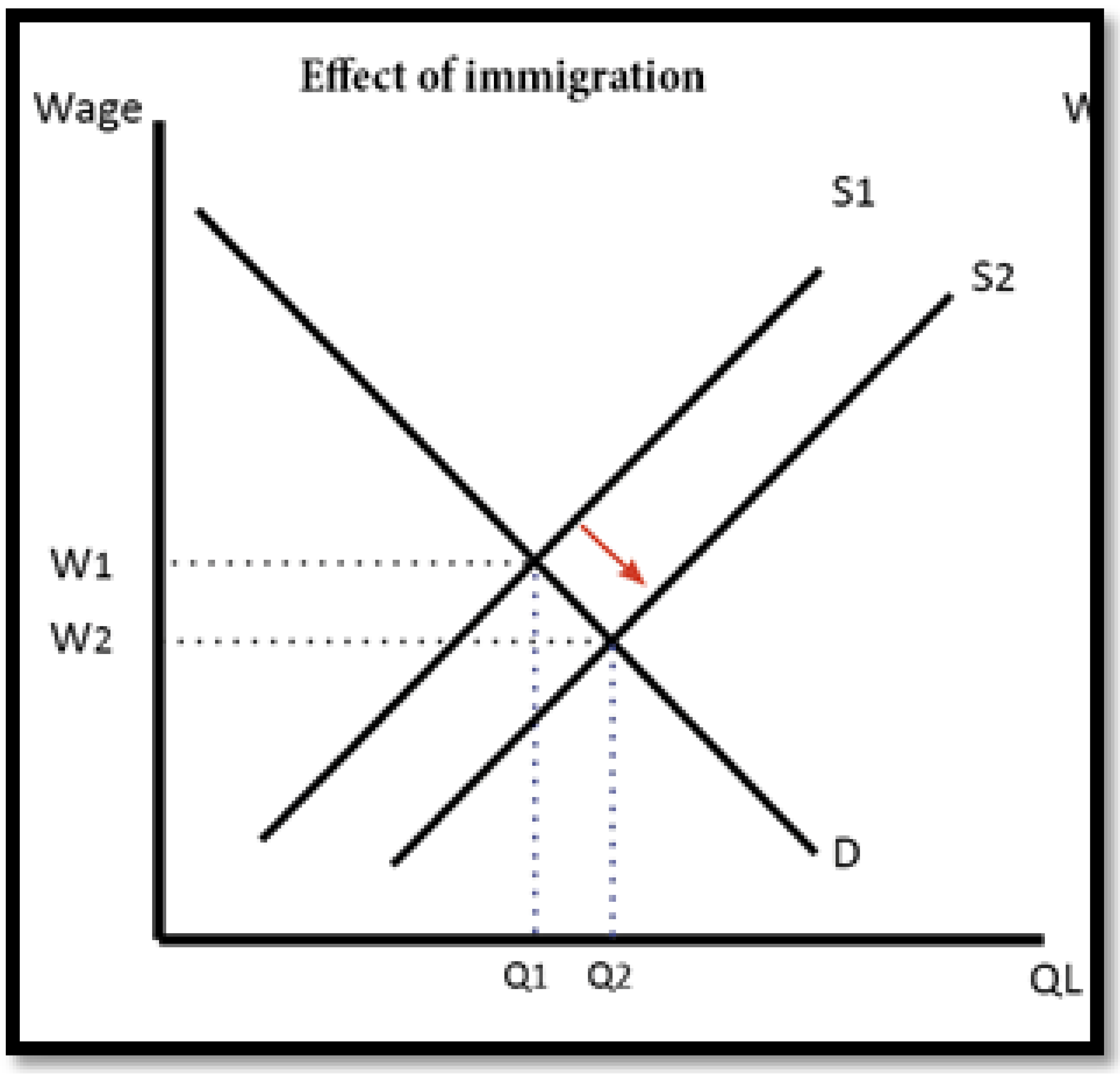
This statement is only partially true. If we talk about low-skilled workers, data represents that these immigrants don't directly compete with the native workers in the market but only complement the existing jobs in the market. [5] Therefore, the nature of jobs that immigrants tend to take is complementary and thus doesn't rob native workers off their jobs. For example, if immigrants take up jobs involving housekeeping, the natives naturally tend to take high paying jobs as their household commitments are automatically lowered.

Besides, it is the high-skilled workers amongst which the spirit of competition seems much more prevalent.[6] Data shows that about 40% of the Fortune 500 companies were started by immigrants. And while immigrants make up only about 15% of the population, they make up a major 30% of American businesses. In fact, over 54% of the Unicorns have immigrant founders.[7] This misplaced belief of competitiveness also breeds another contention amongst native workers that the number of jobs is very limited.

Contrarily, migration patterns within and to a country have shown to rather improve the state of economy in terms of the job opportunities and the sheer number of them.[8] When people move to new land, they certainly don't leave behind their cultural preferences, be it in food, clothing etc. This paves the way for the generation of a new market.[9]Similarly, there’s also a massive potential of diversification of/in pre-existing markets. With new skill sets and cultural preferences, the labour market itself ends up offering a wide range of varieties in terms of labour on the basis of work ethic, intellectual endowment, etc.[10]

2. Natives think that with the influx of people in the job markets, wages tend to go down

From a microeconomic theory perspective, as labour supply increases owing to a reason (migration) other than the wage rate itself, the supply curve shifts to right, and ultimately lowers the wages..



This however, is a misconception since population growth leads to increased aggregate demand which in turns leads to more employment opportunities and therefore, wages remain constant.[11]

While it's reasonable for countries to restrict entry to people for reasons such as institutional inefficiencies and/or national security, it should rather be fair and humane. Comprehensive approaches to immigration and development must fundamentally respect human rights tackling all forms of discrimination, intolerance and racism.

Debates over immigration policies have intensified over time but with effective strategy implementation, they can be beneficial to both the countries, that of origin and destination.

Nature of immigration policies are rather a matter of context wherein sometimes, same policies work differently depending on the setting they're implemented in.

Policy frameworks must facilitate immigrants in filling up shortages which will only improve work force participation rates, improve general income levels in the economy and generate economic opportunities for the economy, which would have otherwise been lost.

An exhaustive vetting infrastructure needs to be set up to oversee flow of migrants, both temporary and permanent. Legal infrastructure to govern migrants and their business transactions must be set up so as to correct irregularities which enable immigrants to contribute to the economy in terms of entrepreneurships, investments and innovations.

Policies that stimulate the migrants to return to their homeland may have end up hugely benefitting the country in a variety of ways, provided suitable infrastructural incentives are offered.[12] Migrants' human capital can then be capitalised, furthermore improved and advantage of the pre-established connectivity & ties to developed economies can be taken.

And therefore, it becomes essential for governments to formulate policies that manage migration flows systematically, and are also capable of incorporating & making use of the mutual benefits, whilst minimising the damages.

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BUDGET 2021

By Ashwin Kalra and Piyush Pandey

Migration is not a new phenomenon. For as far as the traces of identifying Year 2020 was one of the most unprecedented years for almost everyone. A virus, hundreds times smaller than a grain of salt, upended billions, eventually ending millions of lives across the world. Hence to protect the mankind from this pandemic, countries across the world imposed complete lockdowns which left a drastic impact on the world economy. India too suffered a lot in this year. Hence the budget of 2021 has come with an expectation of healing this nation from the impacts of pandemic. Finance Minister Nirmala Sitharaman liberated herself from fiscal restraints to budget for a massive expenditure push to bolster India's nascent recovery. The government proposes to spend ₹ 34.83 lakh crore in 2021-22.

SECTOR	ALLOCATION OF FUNDS
Ministry of agriculture and farmers' welfare	₹123017.57 crore
Ministry of commerce and industry	₹12768.25 crore
Ministry of Culture	₹2687.99 crore
Ministry of Education	₹93198.81crore
Ministry of health and family welfare	₹71423.03crore
Ministry of Defence	₹337961.49 crore
Ministry of Railways	₹2954.64crore
Ministry of Road Transport and Highways	₹9870.89 crore
Ministry of Rural Development	₹133689.50crore
Ministry of Textile	₹3591.61crore
Ministry of tourism	₹2026.77crore
Ministry of Skill Development and Entrepreneurship	₹ 2711.53crore
Ministry of Youth affair and Sports	₹2549.41 crore

Budget of this year is based on 6 pillars which are as follows:

- Health and well-being
- Physical and financial capital and infra
- Inclusive development
- Human capital
- Innovation and R&D
- Minimum government, maximum governance

As in the previous year our economy was brutally hit by pandemic which left several people unemployed and also led to contraction in GDP, hence this year's budget comes with an aim to push spending and give a thrust to building public infrastructure, to strengthen Atmanirbharta. Moreover the government has also left Income Tax Slab unchanged. Whereas no more tax filling provision are gifted to seniors above 75 with only one pension, interest income. The interest earned by the Provident Fund contributions above Rs. 2.5 lakh a year will now be taxed at normal rates. In wake of this pandemic the govt. has budgeted ₹35,000 crore for covid-19 vaccination in 2021-22. Items like refrigerators, AC, LED lights, and mobile phones will become more expensive due to hike in custom duty on imported parts.

This budget is considered as the growth-oriented budget which will not only assist country to get Double-digit growth but is also planning to make the infrastructural ground of this country more and more strong. To strengthen the railways National Rail Plan is created to bring a future ready Railway system by 2030 to bring down logistics cost, 100% electrification of Railways to be completed by 2023. Metrolite and Metroneo services are announced in 27 cities, plus additional allocations for Kochi Metro, Chennai Metro Phase 2, Bengaluru Metro Phase 2A and B, Nashik and Nagpur Metros are budgeted. Moreover to build up our road transport the Finance Minister proposed the following National Highway budget for the below states: Tamil Nadu: 3500km @₹ 1.03 lakh crores Kerala: 1100km @Rs.65,000 crores West Bengal: 675km @₹25,000 crores Also, National highway project of around ₹19,000 crores is in progress in Assam. Overall, the FM proposes a total of ₹1,18,101 lakh crore for Ministry of Road Transport and Highways.

To upgrade the educational sector ₹ 93224 crores to Ministry of Education. The govt. has planned to set up 100 new Sainik Schools 750 Eklavya schools in tribal areas and a Central University to come up in Ladakh. Govt. has also planned the Improvement of existing 15000+ schools as with National Education Policy. ₹ 35,200 crores is allotted to revamp the post matric Scholarship Scheme, for Scheduled Castes. Agriculture sector of India contributes around 16% of the Indian GDP, and also employs 41.9% of workforce in India. Hence to enhance this sector -Agriculture infrastructure fund to be made available for APMCs for augmenting their infrastructure. 1,000 more Mandis will be integrated under e-NAM market place. Moreover under "Operation Green Scheme" will now be enlarged to include 22 perishable products. Mega investments are also budgeted to set up 7 textile parks in next 3 years.

In financials, govt. proposed for privatization of two public sector banks in addition to IDBI Bank and one general insurance company. Moreover in casde bank fails, the depositors will be able to get immidate acess to their deposits up to the deposit insurance amount of ₹5 lakh. The FM announced to bring the long-awaited LIC IPO in FY22. Government also imposed Agriculture Infrastructure and Development Cess (AIDC) of ₹2.5 per liter on petrol and ₹4 per liter on diesel and 100% on Alcohol. But there will be no impact on petrol and diesel prices as the amount imposed as AIDC on Petrol and Diesel is being counter-balanced by an equal reduction in Basic Excise Duty & Special Additional Excise Duty to the same amount.

To enhance startups in India government has extended the eligibility period to claim capital gains tax exemption for investments made in startups by one more year to March 31, 2022. The residency limit to set up an OPC has also been reduced from 182 days to 120 days. Moreover ₹15,700 crore are allocated for the next financial year for the development of MSMEs which is double the amount allocated in 2020. The budget has indeed tried to touch various parts of our lives while trying to help all the strata of society. After an unprecedented year in which health systems around the globes faced the brunt of decades of negligence, this budget has proved to be revolutionary for the health care systems in India, with a massive upgrade slated for increasing the basic healthcare coverage.

But as the year proved to be upsetting for the health care system, it was also devastating for the job sector, with millions losing their jobs and with that all the minimal social security they had earlier. Bold and necessary steps were taken to promote job creation with unmatched spending allocated to infrastructure. Steps are also being taken to create a healthy startup ecosystem to also promote foreign investment. The government also refrained from raising the taxes for individuals, giving the much-needed sigh to many. On the other hand, much-needed tax exemptions were given to senior citizens. All in the entire budget sounds to be moving in the correct direction. The plan to revive the economy has been successfully created, what is required now is the bold and upfront implementation, for the taste of the pudding lies in the eating.

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Project Based Articles

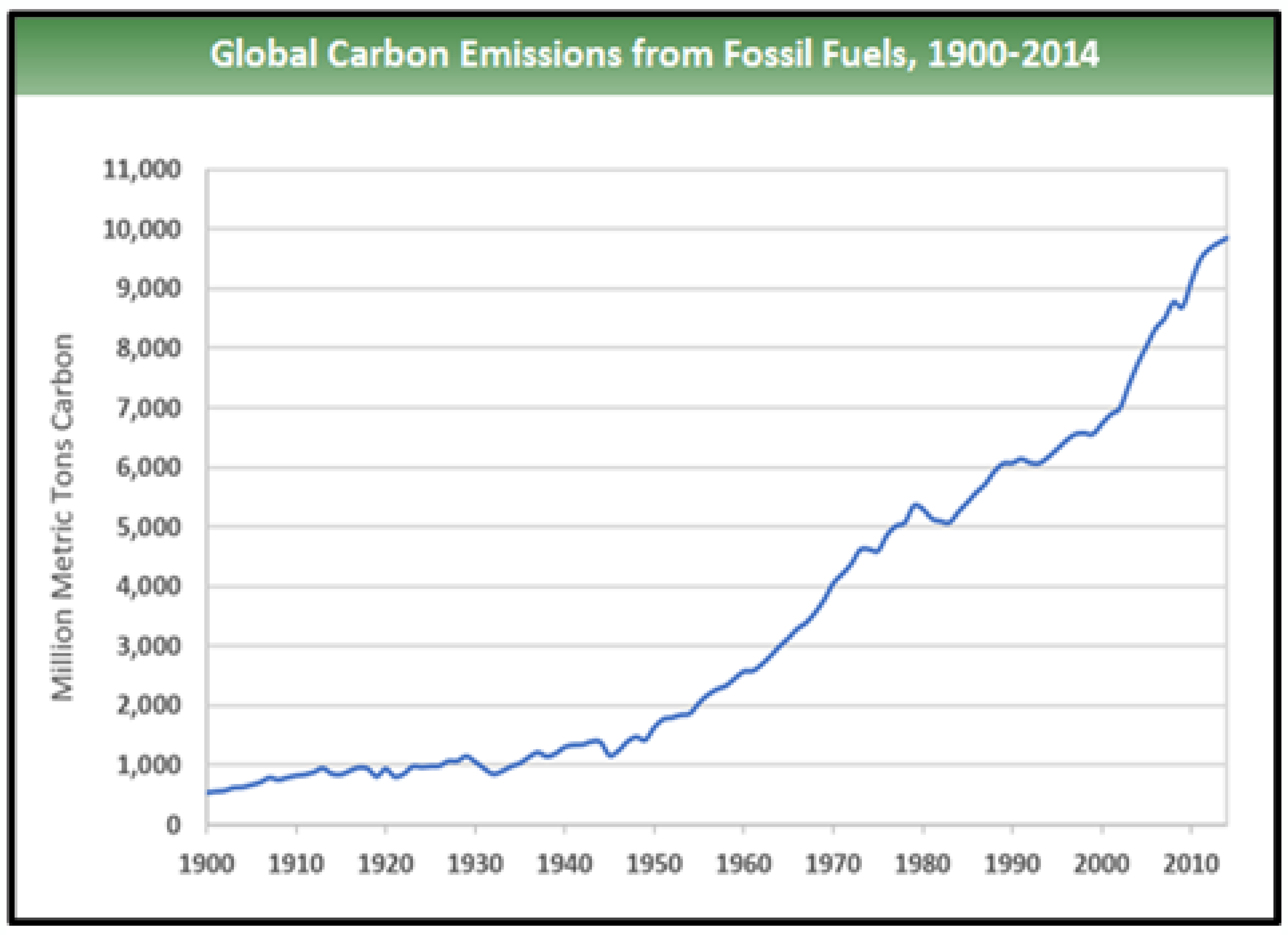
During the course of their rigorous academic calendar, students undertake a number of research projects, each of which showcases a level of understanding and practical application which budding economists strive for.

ViewPoint introduces a new section, featuring project-based articles on a wide range of topics which encompass Macroeconomics, Microeconomics, Environmental Economics & Econometrics.

A selected few from a plethora of interesting articles have been included in this section.

FACTORS AFFECTING THE PER CAPITA CO2 EMISSION LEVELS IN INDIA

By Trived Kullappa



Source: https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data

Climatic conditions have been deteriorating all over the world at an alarming rate with CO2 emissions being the major contributing factor for the deterioration, hence, the level of CO2 emissions become a huge concern. In this context, it becomes relevant to examine the factors that affect the levels of CO2 emissions. Emission levels are affected by various factors like rapid urbanization, economic growth, number of vehicles used, energy mix etc.

In a developing country like India that faces ever-rising energy demands (the energy sector here contributes to an estimated 73% of emissions), a need for rapid economic growth and energy mix dominated by the fossil fuel-based energy, keeping a check on the level of CO2 emissions becomes the need of the hour to prevent an irreversible deterioration of the climate. So, I decided to conduct a study on the topic – "Factors affecting the per capita CO2 emission levels in India".

Literature Review

The relationship between CO2 emissions, per capita GDP and fossil fuel energy consumption has been studied extensively by many scholars and the variables have been proved to be closely interlinked. The following studies were reviewed to form the basis of my expectations of the relationship between the dependent and independentvariables used in the paper.

1. "On the Relationship between CO2 Emissions and Economic Growth: The Mauritian Experience" by Seetanah Boopen and Sannassee Vinesh which analyses the relationship between GDP and carbon dioxide emissions for Mauritius and vice-versa in a historical perspective. Using time series properties and econometrics analysis, their results suggest GDP has a positive impact on per capita CO2 emissions (negative impact on the environment).
2. "A Dynamic Analysis of CO2 Emissions and the GDP Relationship: Empirical Evidence from High-income OECD Countries" by H. Uçak, A. Aslan, F. Yucel & A. Turgut. Their study concludes that there is positive relationship between carbon dioxide (CO2) emissions and gross domestic product (GDP); examining the per capita income and CO2 emissions of 20 high-income countries for 1961–2004.

The Models– Four different models were put through regression in the paper to estimate the individual and combined impact of the explanatory variables –

- Fossil fuel energy consumption (as % of total energy consumption),
- Per capita GDP (at constant 2010 USD) &
- Alternative energy consumption (as% of total energy consumption) on the dependent variable - Per capita CO_2 emissions (measured in metric tonnes).

They were as follows:

$CDEPCt = \beta1 + \beta2\ GDPPCt + \beta3\ FFECt + \beta4 AECt + ut$
$CDEPCt = \alpha1 + \alpha2\ GDPPCt + \alpha3\ FFECt + ut$
$CDEPCt = b1 + b2\ GDPPCt + ut$
$CDEPCt = a1 + a2\ FFECt + ut$
a1, b1, $\alpha1$, $\beta1$ → intercept coefficients
a2, b2, $\alpha2$, $\alpha3$, $\beta2$, $\beta3$, $\beta4$ → slope coefficients
CDEPCt → Carbon Dioxide (CO_2) emissions per capita in metric tonnes in period t
GDPPCt → per capita GDP [constant 2010 USD] in time period t
FFECt →Fossil fuel energy consumption (% of total energy consumption) in time period t
AECt→ AlternativeEnergy consumption (% of total energy consumption) in time period t
ut → error term in time period t

Methodology and Data Source
The simple linear regression and multiple linear regression using Ordinary Least Square Method (OLS) under the Classical Linear Regression model with the standard OLS assumptions were used to determine the individual and combined impact of the two factors on the level of per capita CO_2 emissions. Violations of the OLS assumptions were also checked in the paper and efforts were made to correct these violations. The analysis is based on data from 1971 to 2014 available on World Bank Statistics which provides authentic and accurate economic data on the variables that are being investigated in the project. The data collected was imported to Gretl for the analysis where the models mentioned above were regressed through OLS.

1. Apriori Expectations
Based on the literature reviewed and logic I entered the study of these models with the following expectations:

- A positive partial slope coefficient of GDPPC - an increase in nations per capita GDP, holding Fossil fuel energy consumption and Alternative Energy consumption constant, must lead to an increase in per capita CO_2 emission,
- A positive partial slope coefficient of FFEC - an increase in Fossil fuel energy consumption, holding per capita GDP and Alternative Energy consumption constant, must lead to an increase in per capita CO_2 emission because combustion of Fossil fuels to derive energy releases emissions as a by-product, and

- A negative partial slope coefficient of AEC - an increase in Alternative Energy consumption, holding per capita GDP and Fossil fuel energy consumption constant, must lead to a decrease in per capita CO2 emissions as alternative energy are clean substitutes for fossil fuels and do not emit CO2 as by-product.

Results

On Checking if the variable AEC [alternative energy consumption (as % of total energy consumption)], that is added to model 2 to obtain model 1, has significantly increased explained variations in our predicted dependent variable from mean in relation to the unexplained (residual) variations it was found out that the variable AEC does not improve the model significantly hence the variable AEC is statistically insignificant implying model 2 is better than model 1. Similarly, on comparing models 2,3 and 4 it was found out that the proportion of the variance in the dependent variable that is predictable from the independent variables (measured by R2 (coefficient of determination) – the higher the value better is the model) increased to 99.0773% in model 2 from 97.196% in model 3 and 89.8414% in model 3. In addition to these the residuals (value of dependent variable that is unexplained by the model) in models 3 and 4 were not normally distributed which is an important assumption to conduct the regression using OLS method. Thus, it can be concluded that model 2 is better than model 3 and 4.

Thus, in the article I wish to put forward the results obtained from regressing model 2 as it turned out to be the best among the 4 models tested:

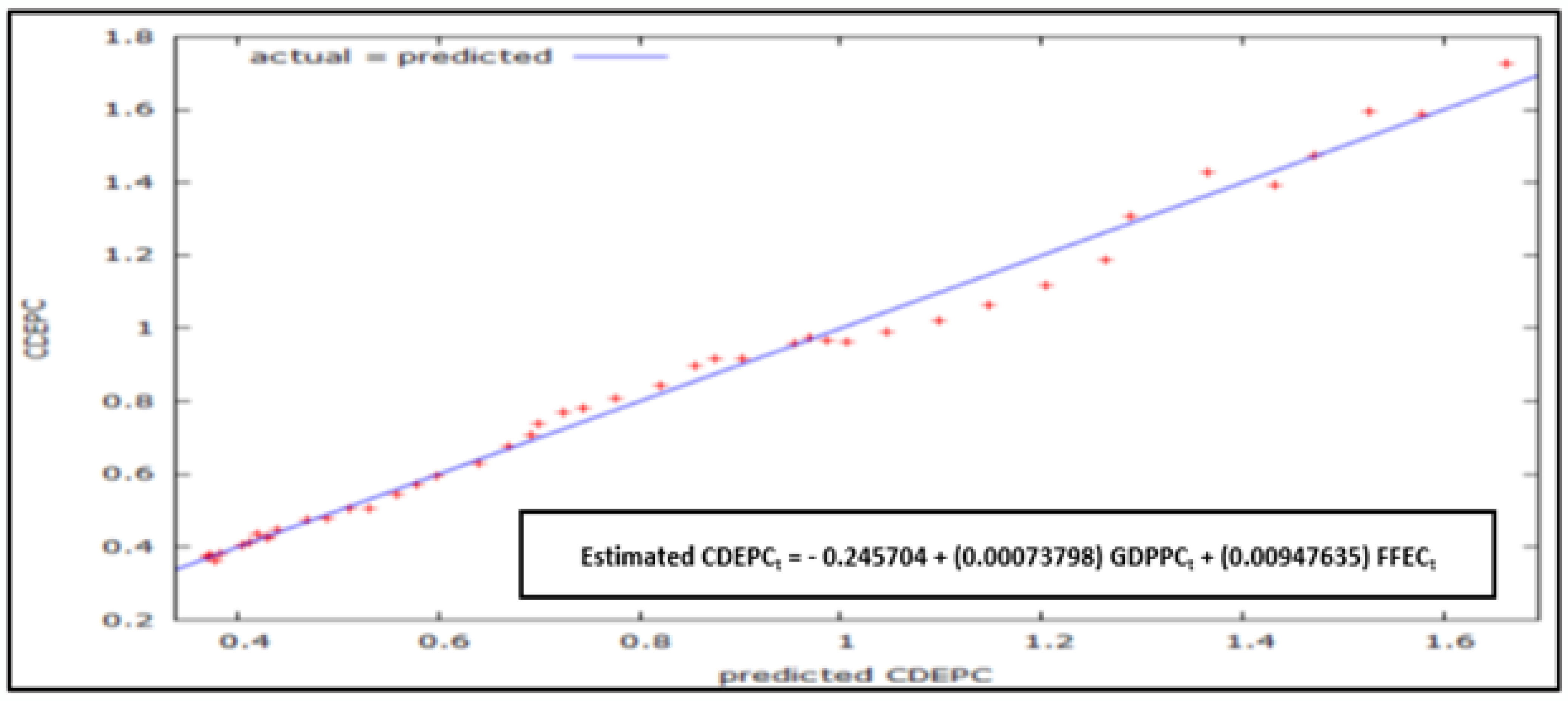
- The estimated value of intercept is equal to - 0.245704 (a negative value) which suggests that if fossil fuel energy consumption (as % of total energy consumption) and per capita GDP are equal to 0 then the level of CO2 emissions per capita will be approximately (- 0.246) metric tonnes which makes no sense.
- The partial slope coefficient of GDPPC is 7.38 x 10-4, a positive sign as expected. An increase in the nation's per capita income by 1 (2010 USD) (approximately 45.1 INR) keeping FFEC constant leads to an increase in per capita CO2 emissions by 7.38 x 10-4 metric tons (0.738 kg).

The t statistic of slope coefficient of the variable GDPPC is a remarkably high 20.26 which makes it statistically significant implying that the variable GDPPC has a significant impact on CDEPC.

The partial slope coefficient of FFEC is 9.48 x 10-3, a positive value as expected. It indicates that, a 1 unit increase in fossil fuel energy consumption (as % of total consumption), at a constant per capita GDP level, increases per capita CO2 emissions by 9.48 x 10-3 metric tonnes (9.48 kgs).

The t statistic of slope coefficient of the variable FFEC is 9.14 and is statistically significant implying that the variable FFEC has a significant impact on CDEPC.

- R2 value is equal to 99% which implies that the regression line fits the observed data very well, in other words the explanatory variables explain 99% of variations in the dependent variable CDEPC. The graph below visually represents that predicted values and actual observed values of CDEPC do not differ much indicating a good fit.



gretl: model 2

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```
Model 2: OLS, using observations 1971-2014 (T = 44)
Dependent variable: CDEPC

              coefficient    std. error    t-ratio    p-value
  ---------------------------------------------------------------
  const       -0.245704      0.0347375     -7.073     1.30e-08   ***
  GDPPC        0.000737980   3.64286e-05   20.26      5.70e-023  ***
  FFEC         0.00947635    0.00103645     9.143     1.90e-011  ***

Mean dependent var    0.822163   S.D. dependent var    0.382063
Sum squared resid     0.057916   S.E. of regression    0.037584
R-squared             0.990773   Adjusted R-squared    0.990323
F(2, 41)              2201.241   P-value(F)            1.92e-42
Log-likelihood        83.49156   Akaike criterion     -160.9831
Schwarz criterion    -155.6306   Hannan-Quinn         -158.9981
rho                   0.662196   Durbin-Watson         0.695914
```

- The residuals are normally distributed.
- The Variance inflation factor (VIF) value for both the variables turned out be equal to 5.318 that suggests there is no collinearity problem (according to the decision rule which says collinearity problem exists if VIF values are greater than 10). Also, since R2 value is extremely high and the individual t statistics are highly significant we can rule out the possibility of multicollinearity.

Presence of heteroscedasticity was detected. I tried remedying it using the weighted least square approach (where the model is transformed - each observation is given equal weightage and then the weighted sum of residual squares are minimized) but heteroscedasticity was still present in the transformed model.

The Durbin Watson d statistic = 0.696 hints at the presence of positive autocorrelation. Efforts were made to remedy it following the Prais Winsten approach and I was successful in treating the autocorrelation, but the correction came with a few setbacks –
i) R-squared value dropped from 0.990773 to 0.948469, and
ii) t-ratio of both GDPPC and FFEC dropped from 20.26 and 9.143
to 11.40 and 2.823 respectively, though the t ratios are still statistically significant, their significance has been dampened.

Conclusion

Empirical results suggest that both per capita GDP and Fossil fuel energy consumption have a significant and positive effect (as expected) on the level of CO_2 emissions. Two OLS assumptions - homoscedasticity and no autocorrelation were violated, steps were taken to correct them, autocorrelation was corrected while heteroscedasticity was present even after using the remedy. There are many possible ways to improve the models studied (maybe by trying a different forms of regression model for instance a logarithmic model may provide better results) and further work is possible related to this topic, given its relevance in today's world. In a growing economy like India with growing GDP and energy demand, there must be steps taken so that the demand for energy is fulfilled by Alternative energy sources rather than conventional energy sources. Though since 2015 the Government has been focused on increasing the Renewable energy's share of installed capacity in the nation, but at present there is a lack of demand for the cleaner energy due to various reasons such as lack of awareness, difficulty in storing the renewable energy for future use etc. Thus, the government has to focus on providing incentives to stimulate demand for cleaner energy which in turn provides the producers incentive to replace conventional fossil fuel energy with clean energy decreasing the amount of CO_2 emitted and improving the air quality and climatic conditions.

THE JAPANESE INFLATIONARY TALE

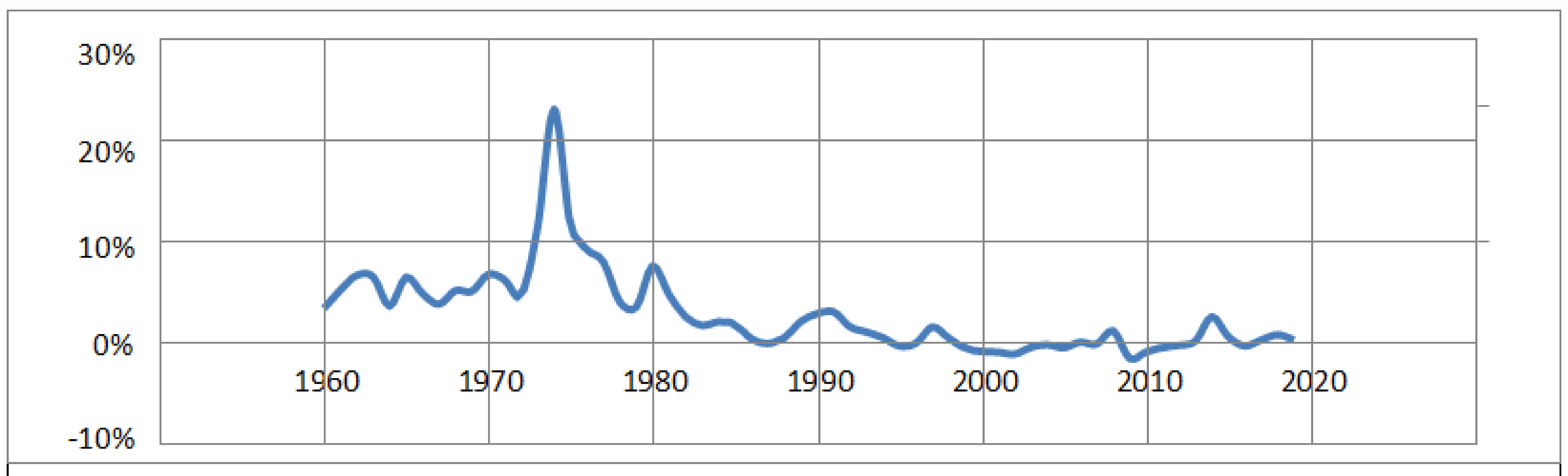
By Varun Mehta

The Japanese Miracle

'Japanese Miracle' refers to the miraculous Economic growth after World War 2. However, it is interesting to note the wild relations between output growth, monetary management and Inflation after the 'miracle' ended. The inflationary episode of Japan is not just a short term phenomenon but by large, a phenomenon which spans decades. Briefly shown in fig (1), the blue segment showcases the Inflation. Inflation peaked at 24% during 1974 and steadily fell afterwards. One then tends to question,

- Why did Inflation Rapidly rise during the 1970s?
- What happened after the 1980s?

Japan CPI Inflation Fig(1)



Source: Statistics Bureau of Japan, Self-Computed.

What caused a peak in inflation?

1. The Aggregate Demand Relation and Monetary Neglect: Growth in output can be expressed in simple macroeconomic terms as growth in money stock minus inflation.

(1)$gyt = gmt - \pi t$

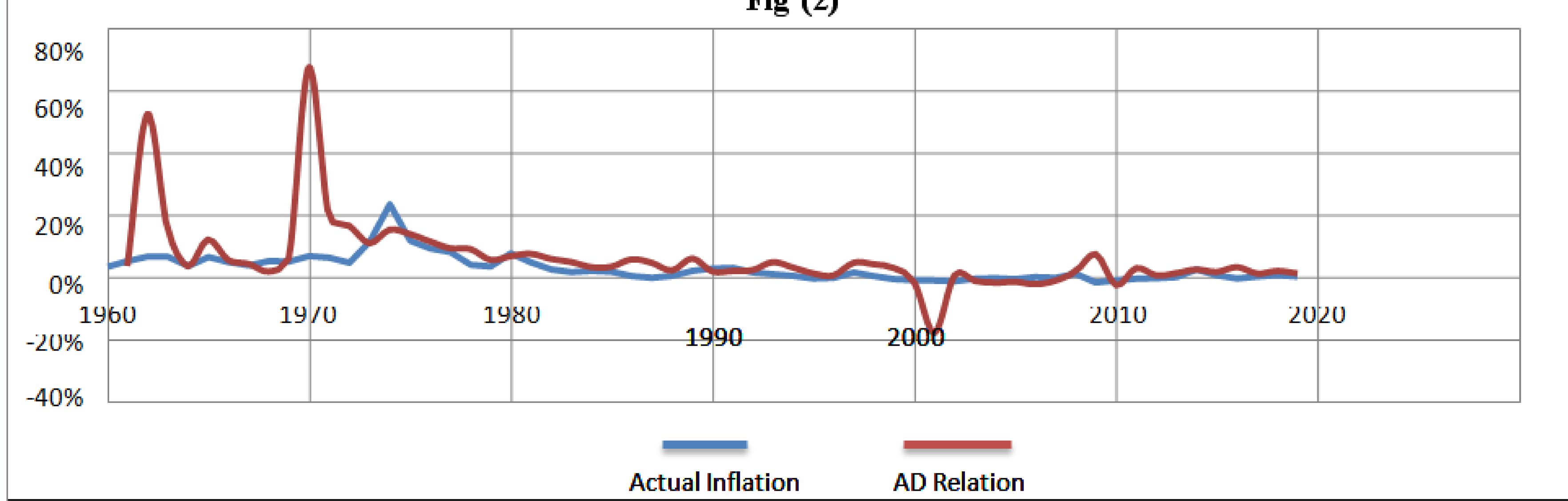
(2)$\pi t = gmt - gyt$

After computing it for Japan's real output growth and broad money supply increase in figure 2, each point refers to the growth of money supply over real output growth. The growth in money stock was mainly due to the Bank of Japan's operation in the foreign exchange market. At the same time, the economy was undergoing a fiscal expansion as a part of Prime Minister's Kakuei Tanaka's "Japanese Archipelago Rebuilding Plan" (active public investment for large-scale transportation infrastructure).[2]

Other Reasons

Real output growth topped at 12.48%, average real output growth for 1961-69 was 10%, and the average broad money growth was 22%. As judged by the Japanese government, this was the result of excess demand

AD Relation and Actual Inflation
Fig (2)



Source: Statistics Bureau of Japan, Self-Computed.

concluding that the economy was overheating. In order to control the overheating economy, Bank of Japan (BoJ) raised the discount rate to 6.25% in September 1969. Output growth fell from 12% in 1969 to 0.399% in 1970. However, believing that excess demand was neutralised, BoJ in 1970's reduced the rates to 6%. It did not stop there but further reduced it to 4.25% in 1972 (Fig 3). Hence this event is characterized by 'Monetary Neglect'. [3]

Another reason which the Japanese government and Bank of Japan did not accept at first was inflation led by increases in wages. Wages had been rising over labour productivity before 1970 due to a strong labour union. This came to be known as 'cost-push inflation.' [3]

Input costs too, had started rising due to the oil shocks of the 1970s. Japan, in the first half of 1970, had a rising share of Imports in its GDP. Imports rose from 7.9% in 1970 to 13% of GDP in 1974. [4]

Japan's foreign oil dependency was particularly high (99.7%). In Japan, the first oil shock caused both WPI and CPI inflation to surge (between them, WPI rose faster) beyond what could be explained by the pure oil impact. People were thrown into panic and tried to hoard as many daily necessities as possible, such as toilet paper, soap and kerosene. However, this stocking behaviour collectively led to empty shelves in supermarkets, although the flow supply was sufficient to cover the flow demand. Seeing empty shelves, people panicked even more. Termed as 'kyoran bukka' (crazy prices), a shortage was also observed in industrial inputs. [2]

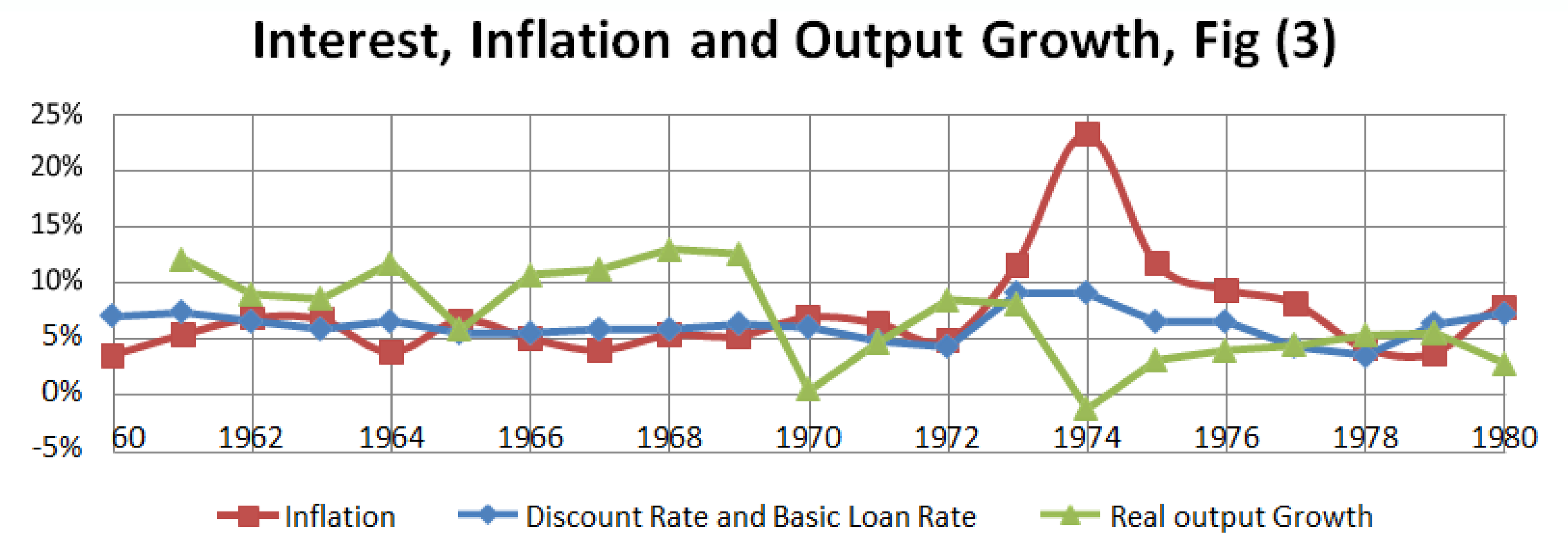
Normalisation and Monetary Tightening of the 1970s

Central Bank at first sought to battle inflation with discount rates. An effect of increasing discount rates had a positive effect on bank's call rate. Typically call rates is the rate at which banks lend money to other banks for a short duration. If these rates increase sharply, the operation of short term lending is disrupted, slowing down the 'normal' operations of the banks. See fig (3.)

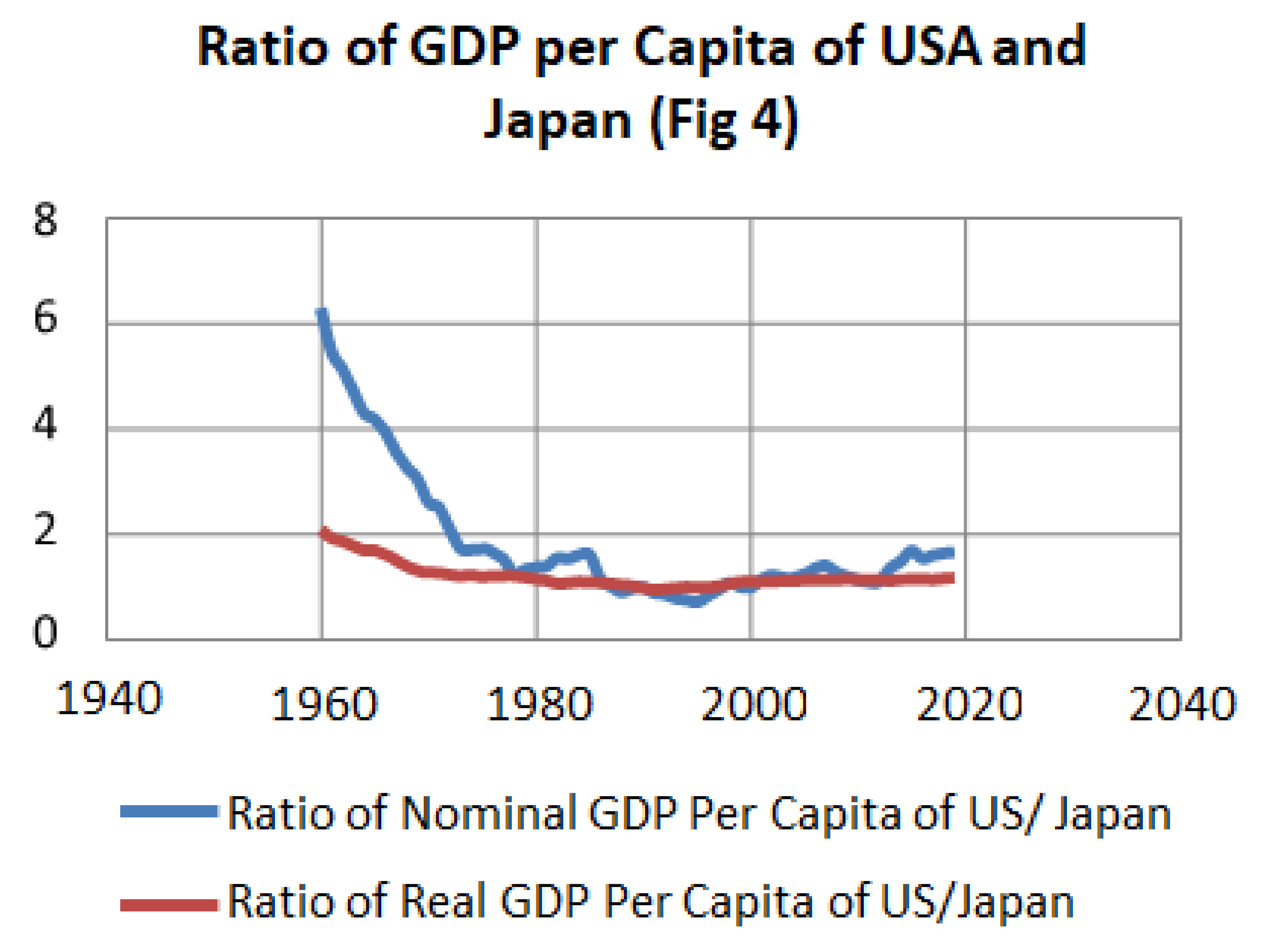
However, Japanese government knew that eliminating demand pressure would not be enough to curb inflation. Thus in April 1973, several cost-push measures were introduced, which included increased surveillance of prices of domestic and imported goods. The government's reaction in December 1973 to continuing inflation and the OPEC oil shock did include some non-monetary attempts to fight inflation, such as a freeze on rice prices and rail fares coupled with a 9% discount rate, pushing the Japanese economy into a short recession. [3] See Fig 3

At the same time, as inflation peaked, the efforts of the government, the monetary authorities and their restrictive policy pushed the economy into a recession, unemployment which was on average near 1.2% started to climb steadily after that, reaching 1.4% in 1974 and crossed 2% in 1976. After the first oil shock and "crazy prices", Prime Minister Tanaka's "Rebuilding Plan" was abandoned. Monetary policy was also gradually tightened. The Bank of Japan was severely criticized for causing a serious inflation, and in response, it became more "monetarist." The Bank of Japan began to target lower monetary growth to avoid further inflation. [2]

The Aftermath – Low Inflation Period and Role of Expectations



Source: Statistics Bureau of Japan, Bank of Japan, Self-Computed.



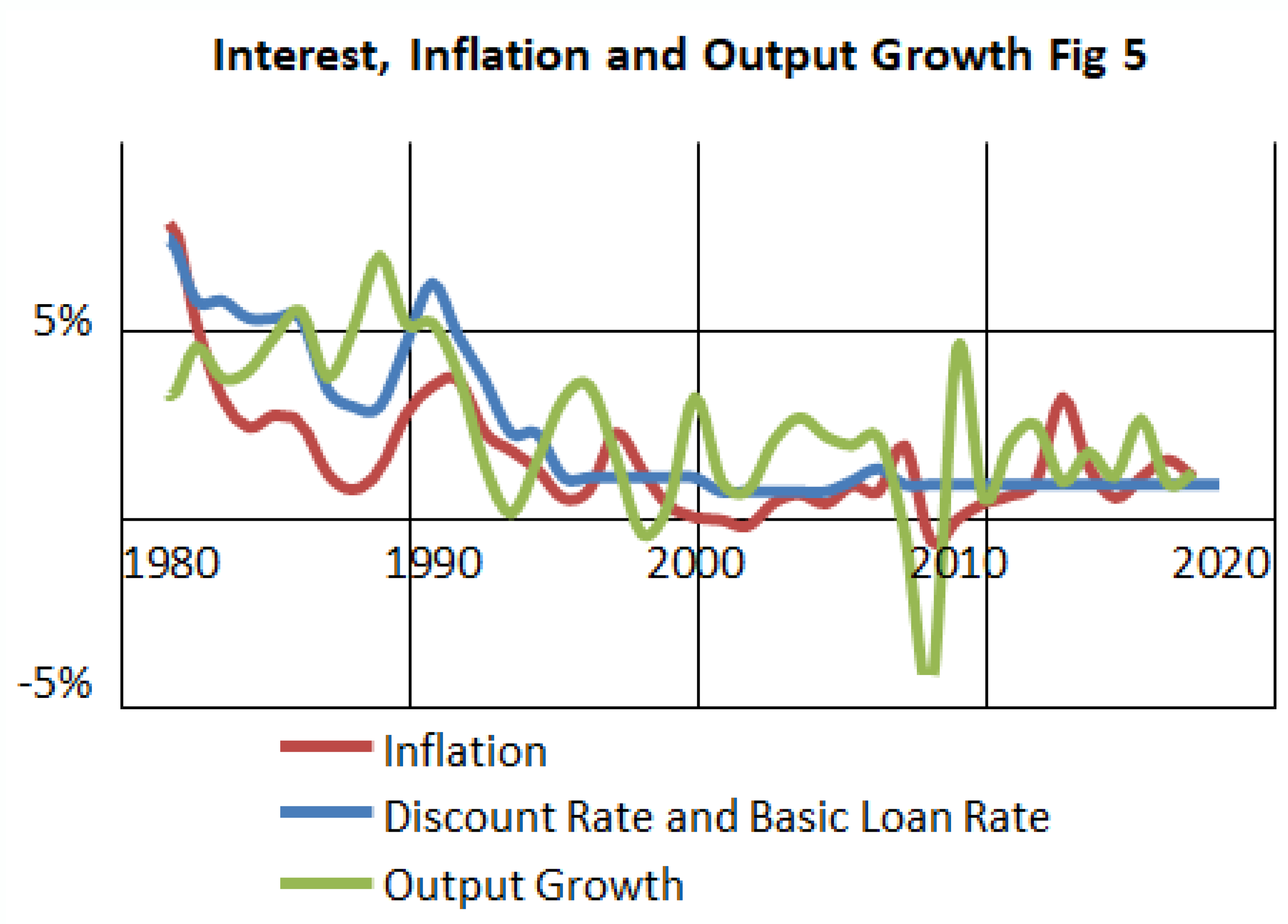
Source: World Bank, Self-Computed

After the 1980's, Bank of Japan increasingly kept a close watch on Inflation. The main focus was to change the expectations of the wage setters and the firms. The Bank firmly decided that "both the firms' attitudes for price increases and the employees' spring negotiations for higher wages should strongly be halted," [5]

Changing expectations became vital because the gap created between the, 'developed' western countries and the eastern 'developing' countries was also closing down. As seen from Figure(4) the ratio of GDP per capita of US was 6 times that of Japan, in 1960, 2.5 times in 1970's and 1.1 times that of Japan in 1980s. GDP per capita has fairly converged to unitary levels after that. Hence any scope of extraordinary growth would warrant for inflation. Hence the high growth periods of 1950-70s were coming to close. An aggressive monetary policy would be unsustainable after the 1980's. [2][6]

The Low Inflationary Period

Since the real estate crisis in Japan, the economy has taken a long time to recover to its actual potential. The average growth rate of Japan's Economy from 1990 onwards is 0.4%. After the 1990 Crisis, Bank of Japan reduced the discount rates to 0.5% and maintained an average discount rate of 0.329% (Fig 5). Hence the very instrument of stimulating the Economy was dealt with obsolete. Economy of Japan cannot be stimulated further just by the actions of changing discount rates anymore.



Source: Statistics Bureau of Japan, Bank of Japan, Self-Computed.

For a long time, Japan has faced strikingly low inflation, negative inflation in some periods. Monetary stimulus does not work. Bank of Japan has commented on the same and said that the budget of household with respect to prices is extremely sensitive. [7] So if prices start to rise, household cut back on their budget, firms face low demand, and by not sacrificing profit margin, they do not increase wages. Hence this suit follows, and prices remain subdued.Low output growth and low money supply growth has led to the gap defined in the equation (2.)

To be virtually 'filled', hence leaving no scope of inflation from the money supply side. In recent years, broad money supply growth itself has turned negative, and output growth has followed the same suit. The consequence of such a policy has constrained the Japanese economy to stagnant levels.

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[3] https://www.ijcb.org/journal/ijcb07q4a2.pdf

[4] https://data.worldbank.org/indicator/NE.IMP.GNFS.ZS?locations=JP

[5] Letter from the Director-General of Policy Planning Department, February 18,1980, No.39903,1980b ,https://www.richmondfed.org//media/richmondfedorg/conferences_and_events/research/2016/pdf/koike_bank-of-japan.pdf

[6] Graphical presentation of the idea of japan closing the gap between developed and developing countries, extracted from World Bank's Open Database.

[7]https://www.forbes.com/sites/francescoppola/2018/07/31/japans-lowflation-problem/#74208e4a3d64

SUSTAINABLE ACCOUNTING: ANALYSING THE CURRENT SCENARIO

By Yuvraj Pratap Singh, BBE Dept.

Sustainable Accounting implies accounting of income undertaken by incorporating all resources, including use and abuse of renewable & non-renewable resources. (Bhattacharya 2001) Through this, the linkages between environment and development can be understood. Various terms, methods and difficulties faced in 'Sustainable Accounting' have been discussed in this article. In the end, a case study has been analysed and supported with conclusions. Broadly, there are two difficulties in studying sustainable accounting: 1. Non-imputation of value of environmental goods & services used in the production process. 2. Absence of any allowance for depreciation, degradation or depletion of natural resources.

Ecosystem

An ecosystem is an interaction of all living and non-living components co-existing as a system. Interlinked by energy flows and nutrient cycles, these systems are subject to periodic disturbances and recovery from such disturbances. Human beings, through their activities, Constitute a part of the ecosystem. These activities are sometimes large enough
to influence factors and outcomes of the ecosystem.

Economic Accounting

To understand and accommodate natural resources, let us analyse macro accounting of economic factors. Gross Domestic Product (GDP) is the market value of final goods and services produced in a country during a given time period. (Blanchard 2017)

GDP - Depreciation = NDP (Net Domestic Product)

(1) NDP – Indirect Taxes = Aggregate Domestic Income (NDP factor cost)
(2) GNP (Gross National Product) = GDP + Net Factor Income (from Abroad)
(3) National Income = NDP + Net Factor Income (from Abroad)
(4) NNPfactor cost (Net National Product) =NDPFC + Net Factor Income (Abroad)
(5) Aggregate Demand = Aggregate Supply
(6) GDP = Domestic Production – Intermediate use consumption
(7) GDP = Private consumption + Public consumption + Gross investment + Exports – Imports
(8) For Man-Made Capital: Closing Stock = Initial Stock + Investment during accounting period – capital depreciation

System of National Accounts

1953

The principal author of the 1953 SNA: Richard Stone, noted that attempts to quantify the economy had followed four separate paths: Measuring the value, Constructing input-output tables, Flow-of-funds analysis and Compilation of balance sheets (United Nations Statistics Divison). It consisted of six accounts:
1. Final expenditure on the GDP
2. National income
3. Domestic capital formation
4. Disposable income
5. Net borrowing of households & government
6. The external account.

1993

Following the dissolution of USSR, and the fall of the Berlin Wall, the SNA of 1993 truly became a global system. A key feature of the 1993 SNA was it's consistency with other international data systems, such as the OECD Guidelines on Foreign Direct Investment, the IMF's Manuals on Balance of Payments and Government Finance Statistics. The four accounts for institutional sectors of the 1968 SNA were expanded to sixteen. The asset boundary was enlarged to incorporate expenditures on software, mineral exploration and valuables. Natural resources, as defined in the SNA 2008, consist of naturally occurring resources such as land, water resources, uncultivated forests and deposits of minerals that have an economic value.According to ESA 2010, natural resources are non-produced assets that naturally occur and which can enforce or transfer ownership.

Link between Nature and Environment

The environment provides inputs to humans and by extension to the economy by way of its abundant flora & fauna, land, water, air, leisure, minerals, forests. Furthermore, the environment also acts a sink for all the waste generated by human activity. A clean and abundant environment has ample benefits for society. Conversely, a poor environment may lead to decline of economic growth, health concerns for those who are exposed to air pollution, water pollution or diseases.

Sustainability

"Sustainable development is development that meets the needs of today's generation without compromising the ability of future generations to meet their own needs." It is rightly said that balance is the key to ensure sustainability. On one hand, we desire a fast and efficient production process to boost our economy. However, such progress should not accompany a hefty cost of ruining natural resources and environment. Natural capital cannotbe substituted and preserving the value of natural capital stock is feeble. Hence, natural and man-made capital can be perfectly substituted only if man-made capital can be effectively increased.

Hicks and Hartwick

In a non-substituting society, 'Hicksian measure' of income from extraction of an exhaustible resource translates to subtraction of such extractions. However, this would render the national income of some countries to be near zero (Bhattacharya 2001). Under weak sustainability, Hartwick proposed that consumption should not fall. Thus we have the Hartwick Rule which states that a constant level of consumption can be maintained perpetually from an environmental endowment if all scarcity rents from resource extraction are invested in other capital. The basic idea is to keep the Principal intact and live off the service flow alone.

Forest Resources

Let us assume that we look at the planet through a lens of weak sustainability. Is it reasonable to assume that now we can provide a full account for all-natural resources? No, that is certainly not the case.
Let's take the example of forest resources. In such a case, it is difficult to account for Degradation & Depletion since it doesn't have the same value as depreciation. Accounting for addition to forest stock: A) Natural Regeneration B) Plantation 3. Flow from forest stocks (partially legal) 4. Natural Phenomenon: Forest Fires, Landslides, Earthquakes & Floods

Green Net National Product

GNNP = Value of consumption of Natural Goods & Services + Value of production of nature collected (fuelwood) + Value of environmental amenities provided by environmental resource stocks (air) + Value of leisure enjoyed (aesthetic beauty) + Value of net addition to production capital + Value of net addition to natural capital stock (plantation in forest) + Value of addition to stock of defensive capital (water purifier)

Here, the emphasis is laid on stock of defensive capital, the costs that are incurred by the society in defence or precautionary measures against environmental degradation. We also ought to sort out the problem of double counting here. Treating defence expenses as consumption, negative regeneration within sustainable income accounting is valuable in understanding results of public investment in defensive capital. SNA is a flow accounting system, preservation may involve no or little cost but the present consumption must be sacrificed from usage of natural resources.

Value of Natural Resources

There are two methods which are extensively used to determine the value of natural resources:
1. Revealed Preference- When value is derived from market prices
2. Stated Preference- Value of 'non-marketed' goods by means of 'use' & 'non-use' values.

System of Environmental Economic Accounting

The SEEA is a statistical system that brings together the economic and environmental information into a united framework which can be used to measure the current condition of the environment and repercussions of the economic process on the environment. The SEEA contains an internationally accepted set of standard concepts, definitions, classifications, accounting rules and tables which can produce internationally comparable statistics. The SEEA consists of three parts: The SEEA Central Framework (2012), which was adopted by the UN Statistical Commission as the first international standard for environmental-economic accounting in 2012, followed by The SEEA Experimental Ecosystem Accounting which offers a synthesis of current knowledge in ecosystem accounting and lastly The SEEA Applications and Extensions which illustrates to compilers and users of SEEA Central Framework based accounts how the information can be used in decision making, policy review and formulation, analysis and research.

Global Water Tariff Survey: Implications

This paper examines the relations between tariffs and sustainability, efficiency and equity, using a unique data-set for 308 cities in 102 countries. It is observed that lower per capita consumption, smaller local populations, lower water availability, higher demand and a lower
risk of shortages are correlated with higher water tariffs. (Global Water Intel 2020). It is quite evident that there is a negative correlation between price of water and scarcity of water. It's cheaper to use water where there is less of it.

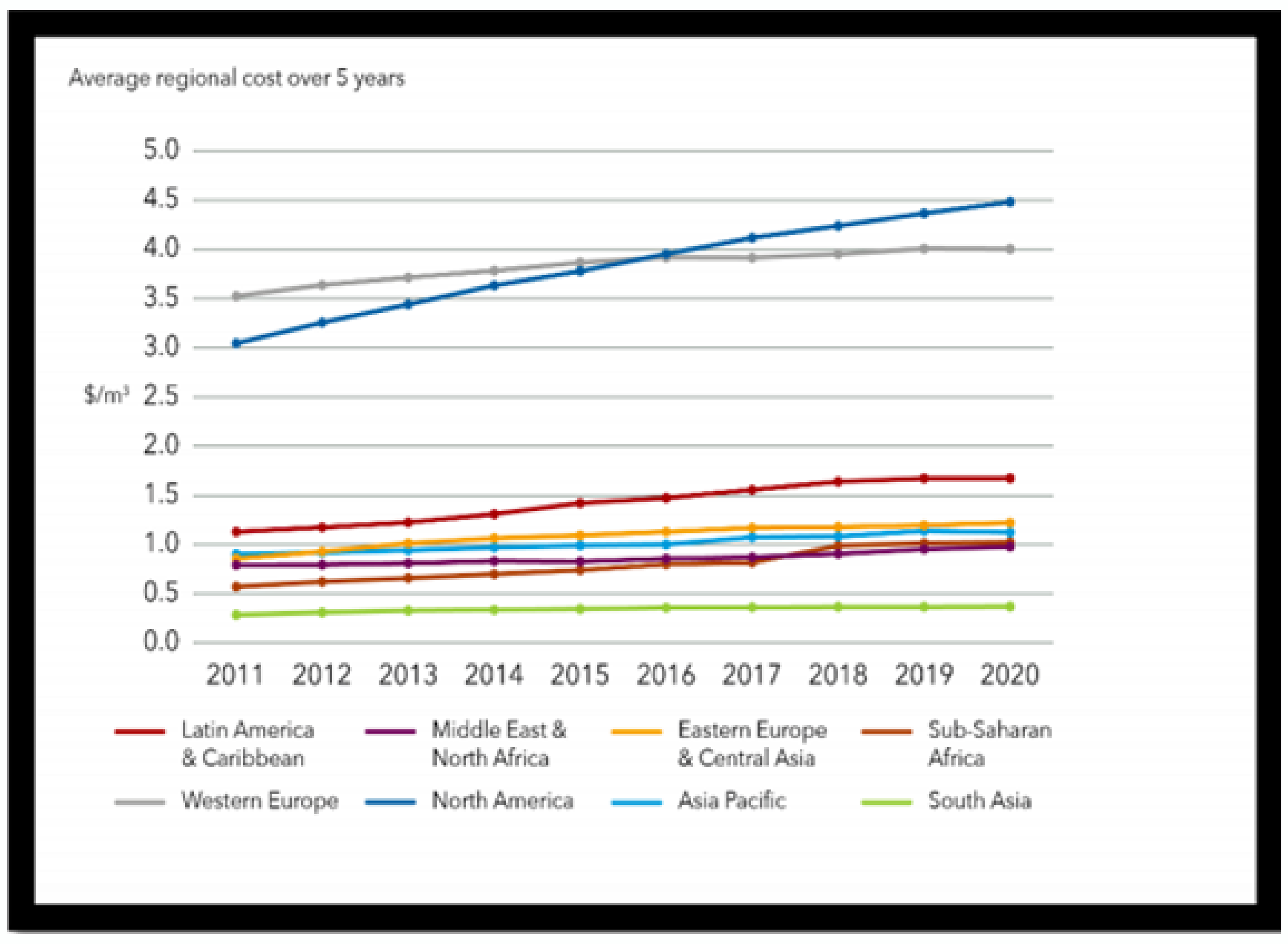

Figure 1: Negative Correlation between scarcity and price

	City	% Decrease
1=	León (Mexico)	-100.0%
1=	Ndjamena (Chad)	-100.0%
1=	Accra (Ghana)	-100.0%
4	Osaka (Japan)	-60.4%
5	La Paz (Bolivia)	-47.9%
6	Sendai (Japan)	-35.2%
7	Adana (Turkey)	-34.0%
8	Tallinn (Estonia)	-26.6%
9	Toulouse (France)	-25.3%
10	Newcastle (United Kingdom)	-24.9%

Figure 2: Decrease in Waste-Water Tariff

The ongoing Covid-19 pandemic has drastically decreased the rate of wastewater tariff. In Japan, the decrease had occurred between July to September to provide relief and financial support to residents during the pandemic. The decrease has also occurred due to public pressure and hence prices have subsequently decreased. Wastewater tariffs ought to be higher than drinking water tariffs since it is more expensive to manage.

However, the traditional sewer systems with wastewater treatment plants are unaffordable for low income communities and it is killing people. Most of the deaths that are reported out of waterborne diseases are primarily because of poor wastewater management. This segment certainly needs a new paradigm which can ensure effective management.

Conclusion

The entire world is now waking up to the harm that has been done by our continuous and relentless profit-driven pursuit by way of consumption and production. Corporates and governments are ideating ways to reduce ongoing pollution and reverse what has been done. The Ministry of Environment, Forest and Climate Change (MoEF&CC) has published the draft Environment Impact Assessment (EIA) Notification 2020. (Ministry of Environment, Forest and Climate Change n.d.) EIA is a significant process for evaluation of environmental impact. It is a process where people's views are taken into consideration for granting final approval to any developmental project or activity. It basically acts as a decision-making tool to conclude whether a project should be approved or not. The new notification is being brought in order to make the process more transparent and expedient by the implementation of an online system, further delegation, rationalisation and standardisation of the process.

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FACTORS AFFECTING TOTAL FOODGRAIN PRODUCTION IN INDIA (1950-2016)

By Lakshay Kumar

Motivation

At present, India's rates of food grain availability are worrisome: at 487 grams per person per day. (It was 468.7 grams per person per day in 1961). A report by NITI Aayog (2018) on supply and demand projections for the agriculture sector reported that the demand for food grains in India is expected to increase by seven percent from 255 million tonnes in 2016-17 to 272 million tonnes by 2020-21. It is in this context that it becomes important to examine the major factors that affect productivity of food grains in the country. Some of these food grains are also an important component in ensuring availability of high-value products —such as milk and meat—as animal feed.

Literature Review

1) Manojit Chattopadhyay and Subrata Kumar Mitra published their paper paper on Comparative Decision models for anticipating shortage of food grain production in India in 2016. This paper attempts to predict food shortages in advance from the analysis of rainfall during the monsoon months along with other inputs used for crop production, such as land used for cereal production, percentage of area covered under irrigation and fertiliser use.

2) Advance information of food shortage can help policy makers to take remedial measures in order to prevent devastating consequences arising out of food non-availability.

Econometric Methodology

Method of Ordinary least squares (OLS) Ordinary Least Squares (OLS) method is widely used to estimate the parameter of a linear regression model. OLS estimators minimize the sum of the squared errors (a difference between observed values and predicted values). While OLS is computationally feasible and can be easily used while doing any econometrics test, it is important to know the underlying assumptions of OLS regression. This is because lack of knowledge of OLS assumptions would result in its misuse and give incorrect results for the econometrics test completed. The importance of OLS assumptions cannot be overemphasized. Following are the assumptions of OLS Method:

1) The linear regression model is "linear in parameters" and correctly specified.
2) The Values of Explanatory variables are stochastic.
3) Given Values of Explanatory variables mean of the error term is 0.
4) Existence of homoscedasticity.
5) There is no multi-co linearity (or perfect co linearity)
6) Number of Observations should be more than number of explanatory variables.
7) Error terms should be normally distributed.

Initial Regression Model

ProdF = β1 + β2 Area + β3 Field + Ui

After regressing this model (Through OLS) in gretl following results were obtained

gretl: model 1

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```
Model 1: OLS, using observations 1951-2018 (T = 68)
Dependent variable: Production

             coefficient   std. error    t-ratio    p-value
  ---------------------------------------------------------
  const      -89.5747      5.16091       -17.36    4.29e-026 ***
  Area         0.735376    0.0456423      16.11    2.20e-024 ***
  Yield        0.123015    0.000636487   193.3     1.94e-091 ***

Mean dependent var   149.4950   S.D. dependent var   65.69289
Sum squared resid    331.0111   S.E. of regression   2.256652
R-squared            0.998855   Adjusted R-squared   0.998820
F(2, 65)             28356.65   P-value(F)           2.56e-96
Log-likelihood      -150.2977   Akaike criterion     306.5954
Schwarz criterion    313.2540   Hannan-Quinn         309.2338
rho                  0.327389   Durbin-Watson        1.244508
```

From this we can make out our model as -

Production = -89.57 + 0.735Area + 0.123 Yield

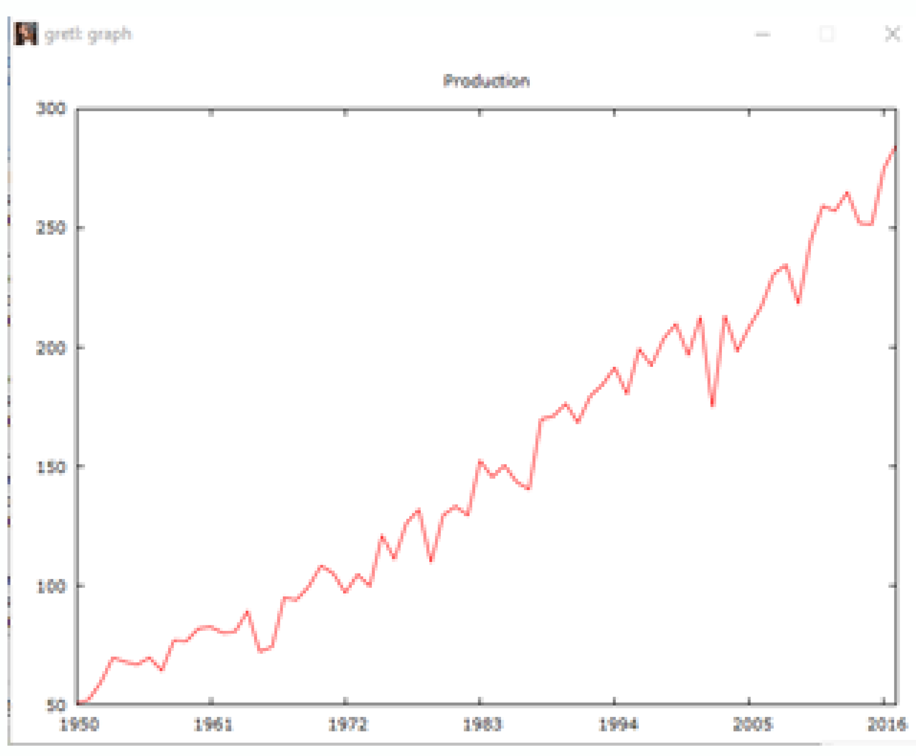
Also, the Signs of the coefficients also satisfy our economic theory that states that Area, and Yield have positive relation with Production.

Empirical Results

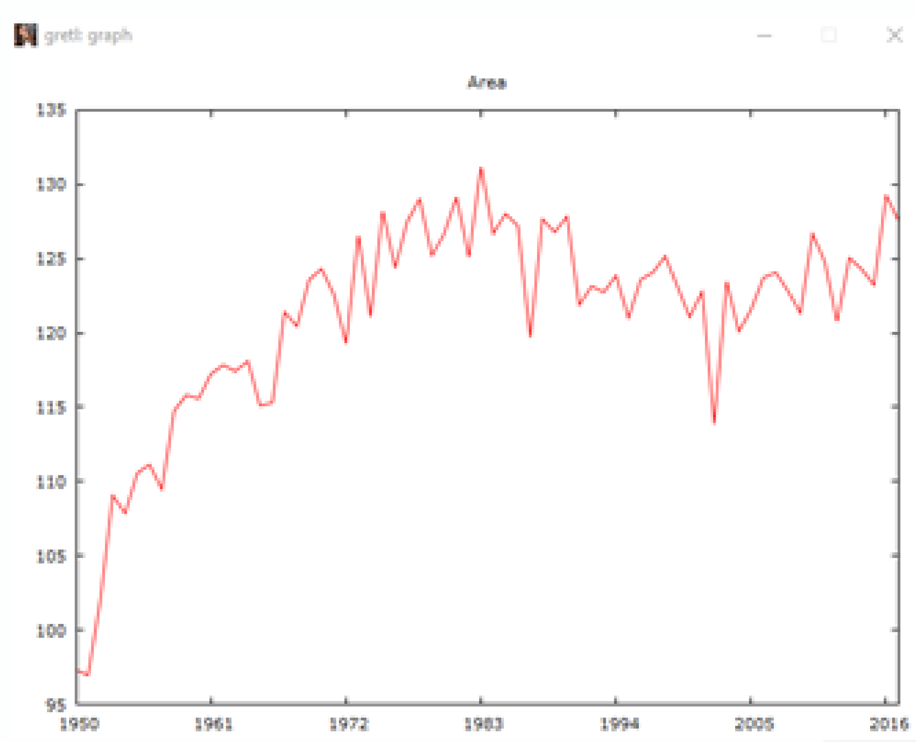
From Graph 1 (INDIA 1950-2016) we can conclude that Production of Foodgrains in India has seen almost a 5 fold increase in the last six decades, with the sharpest drop around 2008 near the time of the global financial crisis of 2008.

Graph 2 shows that there has been a drastic increase in the area of land used for production of foodgrains over the last six decades by approximately 30 million hectares with sharp falls in 1985 and 2005 which might be due to shift from agricultural sector to industrial and corporate sectors as a result of globalization and industrialization.

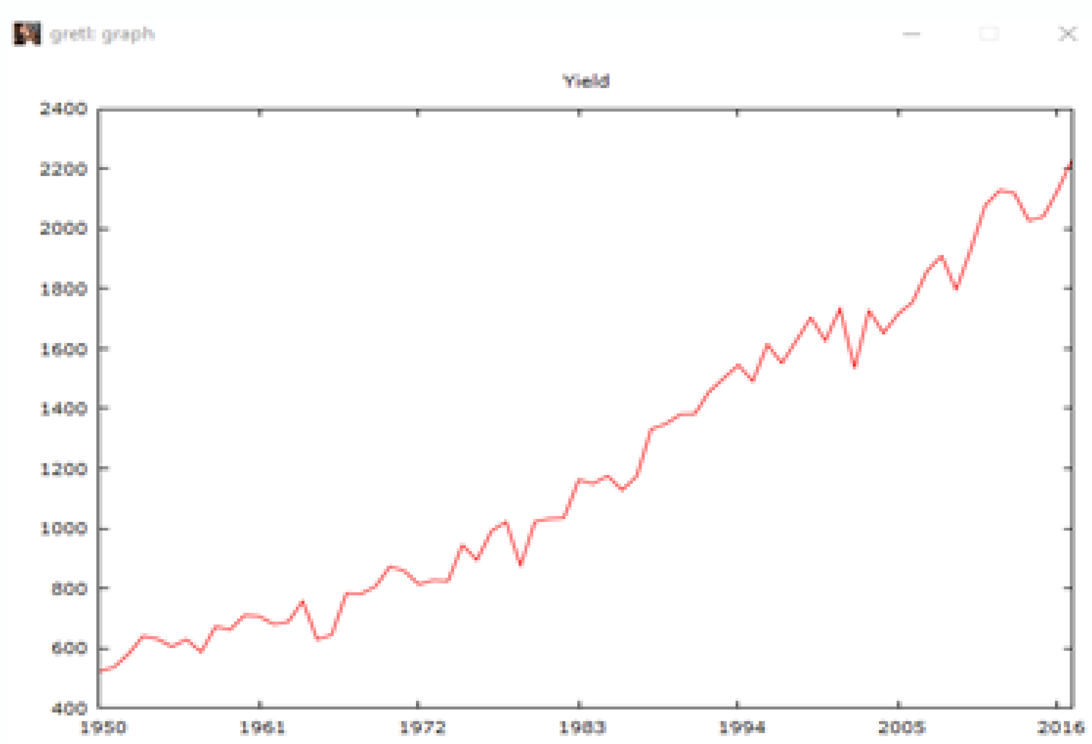
Graph 3 shows that per kg yield from per hectare of land has increased by more than 4 times. Much of this increase can be credited to the Green Revolution started by Mr. M.S. Swaminathan in mid 1960's. The sharp fall in production in 2003-04 can be attributed to the excessive rains, floods and droughts in that year.



Graph 1



Graph 2



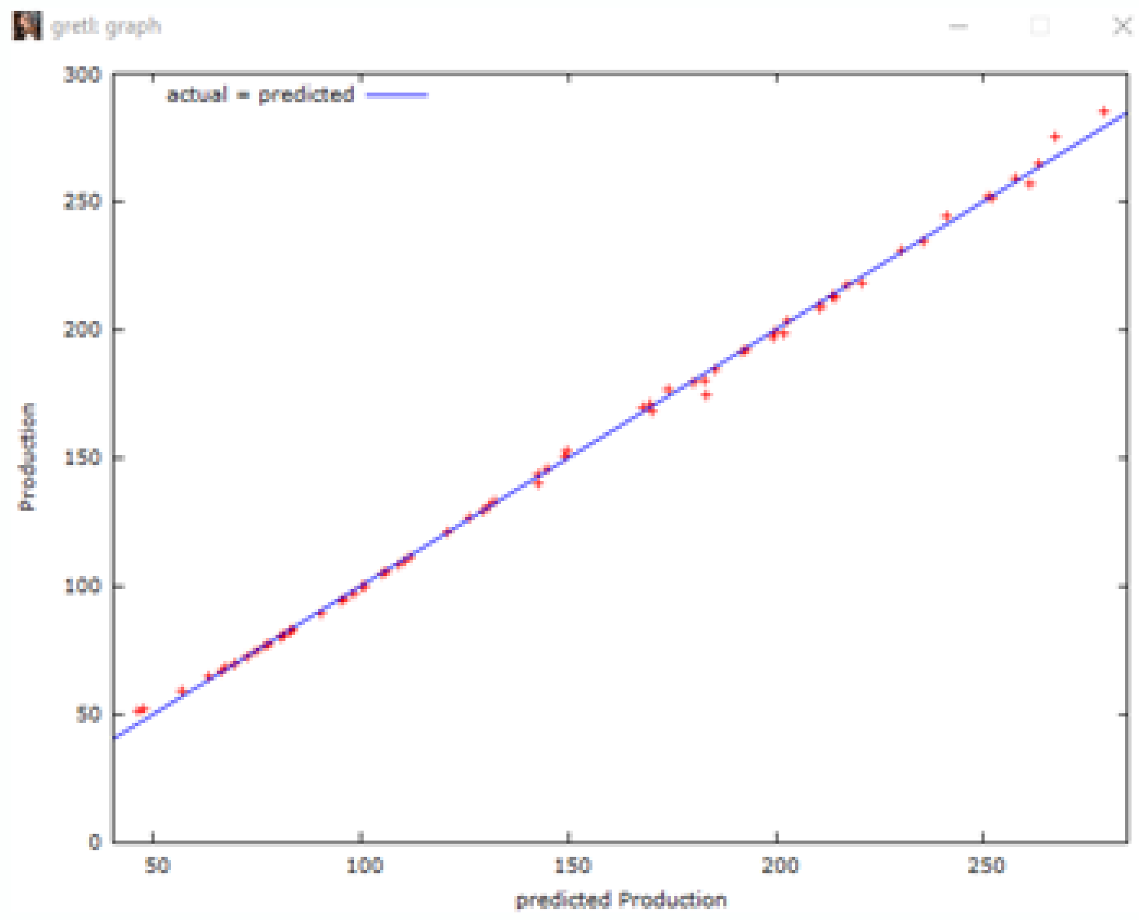
Graph 3

Actual VS Fitted (Production of Foodgrains)

The model predictions are quite accurate as from the above graph we can see that there are very less scattered values this shows there's a strong correlation between the model's predictions and its actual values regarding the production of foodgrains.

This OLS regression shows following results:

1) Coefficient of Constant tells that if the value of ProdR, ProdW and AreaF will be 0 then ProdF would be -89.5747 which does not make any economic sense.



2) One Unit increase in the Area keeping Yield constant would lead to 0.735376 units increase in the level of Production.

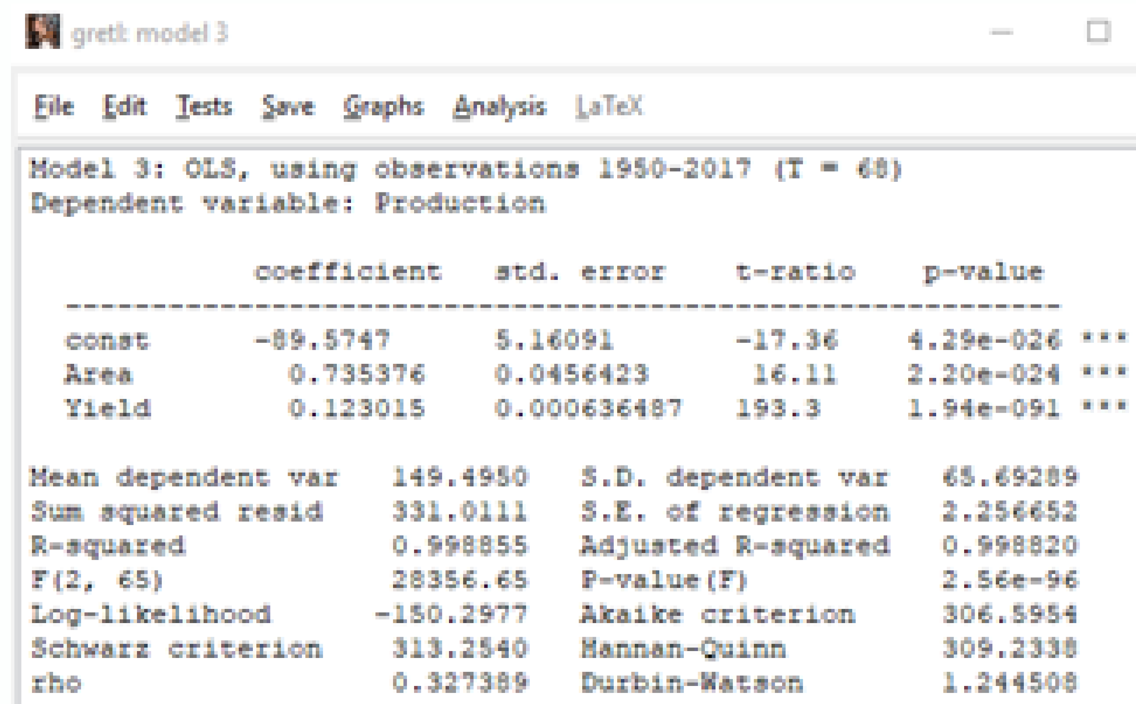
3) One unit increase in the Yield keeping Area constant would lead to 0.123015 units of increase in the level of Production.

4) All t ratio's (All |t| > 2) are significant suggesting that coefficients are statistically significant (so all independent variables have significant impact on dependent variable)

5) As the value of R-square is 0.99885 that means 99.85 % of the variation in ProdF is explained by Area, Yield.

6) Only 0.15 % of the variation is left unexplained

7) Coefficients are also economically significant as their sign is as expected from the economic theory. Positive relation between Area, Yield and Production matched with the positive signs of the coefficient.



gretl: model 3

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Model 3: OLS, using observations 1950-2017 (T = 68)
Dependent variable: Production

	coefficient	std. error	t-ratio	p-value	
const	-89.5747	5.16091	-17.36	4.29e-026	***
Area	0.735376	0.0456423	16.11	2.20e-024	***
Yield	0.123015	0.000636487	193.3	1.94e-091	***

Mean dependent var	149.4950	S.D. dependent var	65.69289
Sum squared resid	331.0111	S.E. of regression	2.256652
R-squared	0.998855	Adjusted R-squared	0.998820
F(2, 65)	28356.65	P-value(F)	2.56e-96
Log-likelihood	-150.2977	Akaike criterion	306.5954
Schwarz criterion	313.2540	Hannan-Quinn	309.2338
rho	0.327389	Durbin-Watson	1.244508

We observed that the level of Production of Foodgrains has increased over the last 60 years in the India and its movement is closely in resemblance with increase in Yield of land. The study shows that both the explanatory variables had significant effect on the dependent variable. Areas under production of foodgrains, Yield per hectare of land are both positively related to the Production of foodgrains which is in accordance with the economic theory. Violation of OLS Assumptions was also tested in this study and was found that the initial model had heteroskedasticity and autocorrelation violations. (Autocorrelation corrected by Prais-Winston transformation under GLS). Overall, the empirical results seemed to support that Production of Foodgrains is being significantly affected by the dependent variables. But it is acknowledged that there can be several other underlying factors like water availability, seasonal changes and monetary incentives for farmers adding to the disparity which were beyond the scope of this study.

References:

Relevant data for project variables were taken from http://www.agricoop.nic.in/ under Agricultural Statistics at a Glance (2018). The data was also extremely reliable having been in a published report by Government of India along with –

1. Ministry of Agriculture & Farmers Welfare
2. Department of Agriculture, Cooperation & Farmer
3. Directorate of Economics and Statistics

VERIFICATION OF ENGEL'S LAW FOR THE INDIAN ECONOMY

By Varun Mehta, Ritika Nandi and Satyam Sahani

What is Engel's Law?

Engel's Law is an economic theory that describes the relationship between income and food expenditures. It states that as family income increases, the percentage of Income spent on food decreases. The theory was introduced by Ernst Engel, a German economist and statistician, in 1857.

Explanation

Engel's Law states that as the income of a family increases, the proportion of income spent on food decreases, although the absolute dollar expenditures on food are still increasing. Engel's Law does not assume that the spending on food remains constant as family income increases. For example, a family with a $5,000 monthly income spends $2,000 on food, which makes up 40% ($2,000/$5,000) of its budget. If the income of this family increases by 40% to $7,000, it will spend $2,500 on food. Although its absolute expenditures on food increase by 25%, the relative proportion to income decreases to 35.7% ($2,500/$7,000).

Income elasticity of demand for food

Income elasticity of demand is a measure of the sensitivity of the quantity of demand for a good to every percentage change in income. It is calculated by dividing the percentage change in the quantity of demand by the percentage change in consumers' income. When family income increases, the expenditures on the food for that family typically rise as well, which indicates a positive relationship between consumers' income and the demand for food. It suggests that the income elasticity of food is positive. However, the increase in food expenditures is slower than the increase in consumers' income, which leads to a decrease in proportion. Engels' Law implies that the income elasticity of demand for food is positive but less than 1. From the data we have gathered, The long run Average Marginal Propensity to Consume Food for India is just 31% validating the fact stated above.

Engel's Coefficient

Engel's Law supports that households with lower income spend a larger proportion of their income on food than the ones with a middle- or higher-income level. Food consumption typically makes up a great portion of the budget of a poor family, as the rich ones tend to spend greater portions of their income on other items, such as entertainment and luxury goods. The theory can be extended to a country-wide scale and supports that developed countries with higher average household income see a lower proportion of income spent on food – which is measured by the Engel coefficient – than the developing countries with lower income. A country's Engel coefficient reflects its economic status.

A decreasing Engel coefficient usually indicates economic growth with a rising income level in the country. Conversely, an increasing Engel coefficient indicates a drop in a country's income level.

Major Components of PFCE:
Given below are the main components of Private Final Consumption Expenditure.

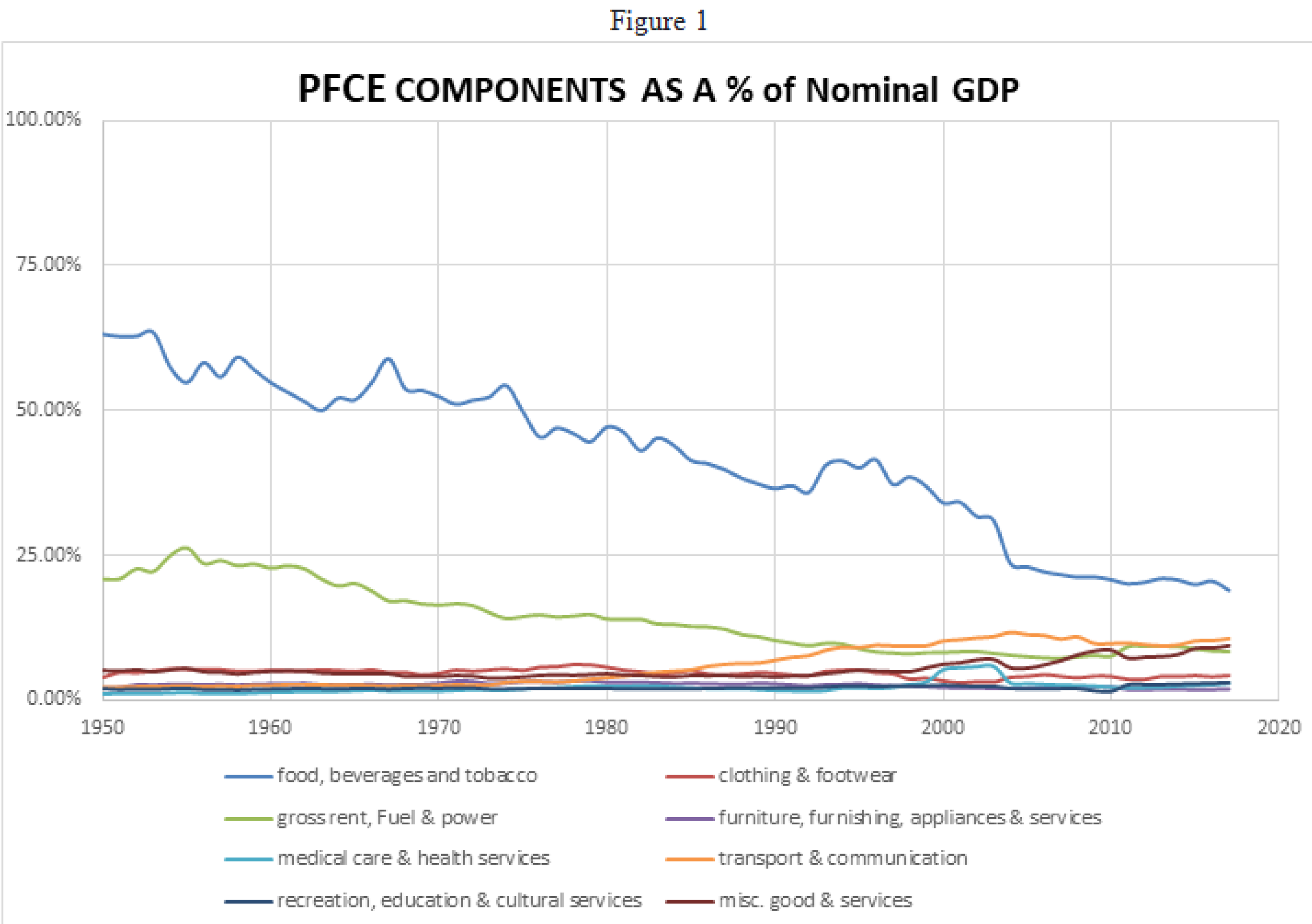
food, beverages and tobacco
clothing & footwear
gross rent, Fuel & power
furniture, furnishing, appliances & services
medical care & health services
transport & communication
recreation, education & cultural services
misc. good & services

COMPONENTS OF FOOD DEMAND:

1	**food, beverages and tobacco**
1.1	food
	Bread, Cereals
	Pulses
	sugar and gur
	oils and oilseeds
	fruits and vegetables
	potatoes & other tuber
	milk & milk products
	meat, egg & fish
	coffee, tea & cocoa
	spices
	other foods
1.2	**beverages, pan & intoxicant**
	beverages
	pan & other intoxicant
1.3	tobacco and its products
1.4	hotels & restaurants

Source: National Accounts Statistics

Figure 1



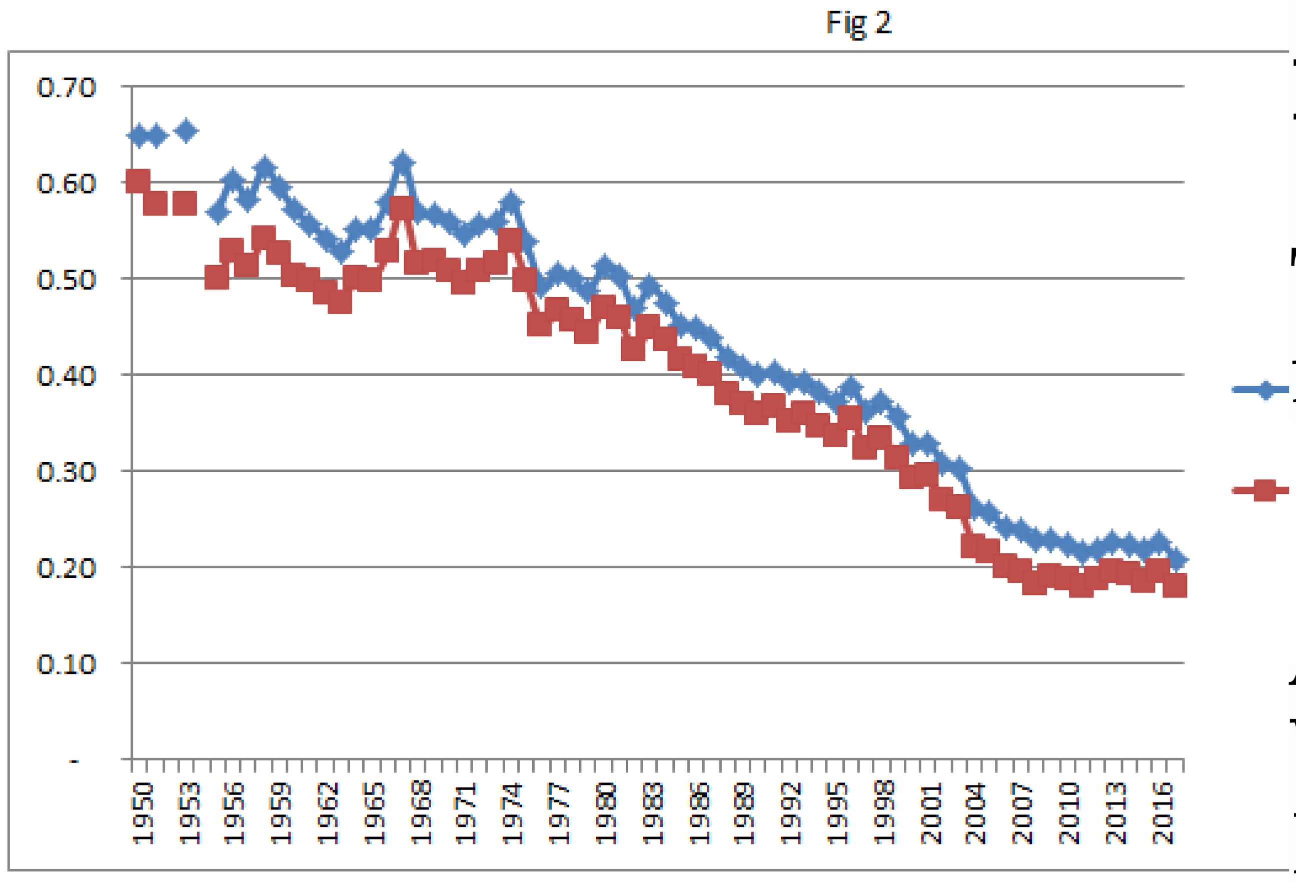
Data Source: National Accounts Statistics

Proportion Analysis

- In 1950 about 63.13% of the income went towards financing the food, beverages and Tobacco component of the PFCE. From then on it declined to about 18.95% in 2017.
- From 1985-1989 and 2006-2012 percentage of income spent on Food, beverages and tobacco decreased at an average rate of 1.01% and 0.3 % respectively.
- Another component that experiences a decline is Gross rent, fueland power from 20.90% in 1950 to 8.35% in 2017.
- Percentage of income spent on almost all the components of PFCE seems to be decreasing except for Transport and communication which went from being 2.21% in 1950 to 10.62% in 2017 and Miscellaneous goods and services(including good like personal care products) which went from being 5.14% in 1950 to 9.38% in 2017.
- One of the components that remained constant throughout these 68 years is Recreation, education and cultural services which measured between 1-2% for all these years.

As Engel's Law states the relation between rising income and allocation of food demand, we now correct Figure 1 for negative Income growths, Adjust GDP for Taxes and Plot Food Demand for only rising income time period.

Fig 2



Data Source: National Accounts Statistics

Income Elasticity of Demand

The Income Elasticity of any demanded good is given as the discrete case:

$$\frac{\Delta Change\ in\ Good\ Demanded\ at\ Time\ t}{\Delta Change\ in\ Income\ at\ Time\ t} \times \frac{Income\ at\ time\ t-1}{Quantity\ Demanded\ at\ time\ t-1}$$

Assumption being that Price remains constant. We now computed Income Elasticity of Demand for Food using Real Data as provided in National Accounting Statistics for two different time periods. 1950-2000 and 2011-2017, since base prices have changed over the years, the data from 1950-2000 was available at constant prices of 1999-2000. The data available afterwards was segregated into 2 different constant prices namely 2004-05 and 2011-12 base prices. Hence we chose two different data sets with different constant prices and computed elasticities with respect to Income.

Average Income Elasticity (1950-2000) at 1999-2000 Constant Prices	
food	0.54
clothing & footwear	1.68
gross rent, Fuel & power	0.55
furniture, furnishing, appliances & services	1.24
medical care & health services	0.62
transport & communication	1.64
recreation, education & cultural services	1.16
misc. good & services	0.97
hotels & restaurants	1.55
beverages	7.05

Data Source: National Accounts Statistics. Elasticities are self-Computed.

As we can see on Average, Data for the Indian Economy actually supports the claim that Income Elasticity of Food Demand lies between 0 and 1. But this may actually not be true for Individual Point years.

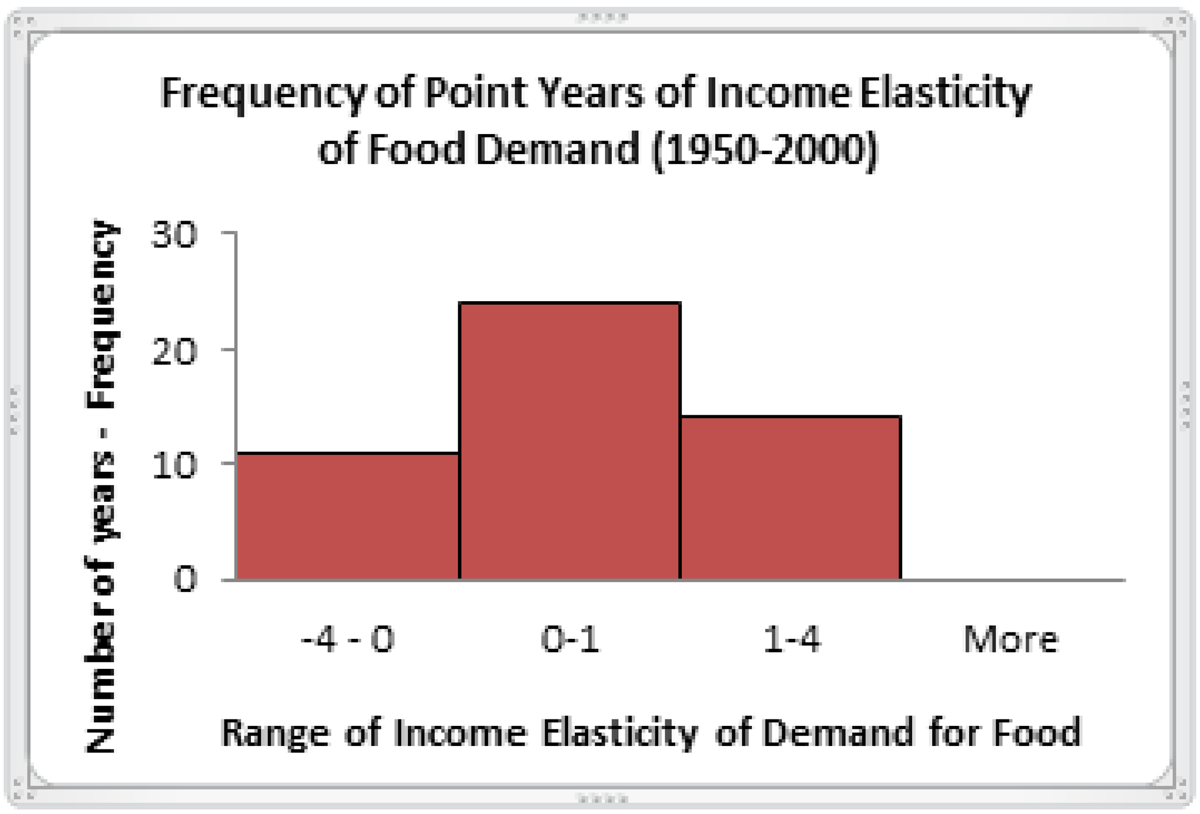
Average Income Elasticity (2011-2017) at 2011-12 Constant Prices	
Food	0.70938463
Alcoholic beverages, tobacco and narcotics	-0.11133876
Clothing and footwear	1.12358507
Housing, water, electricity, gas and other fuels	0.67734373
Furnishing, household equipment and routine household maintenance	1.25740118
Health	1.74723342
Transport	1.30284332
Communication	0.81607457
Recreation and culture	0.57011625
Education	1.19529795
Restaurants and hotels	0.87892265
Miscellaneous goods and services	1.8307327

Data Source: National Accounts Statistics. Elasticities are self-computed.

Why?

According to the Data we computed the following frequency distribution. (Note that the upper class limits are not inclusive.) The Horizontal Axis marks the range of Income Elasticity observed in the National Income Data. The Income Elasticity of Food demand was negative for 11 Years, Greater than 1 for 14 years and between 0 and 1 (as it should be) for 24 years. This acts as a counter example to Engel's law that Income Elasticity cannot always be between zero and one. For the analysis of 2011-17, Income elasticity on many occasions exceeded unity as well.

Figure 3



Data Source: National Accounts Statistics.

A more detailed observation can be made by looking at the sub components of Food. Abnormal Cases where Income Elasticity is greater than 1 or less than 0 are much prevalent in many cases. Out of 15 case components of Food Expenditure, 11 case components have had 'abnormal' years where Income Elasticity was greater than 1 or less than 0. For the year 2011-17. Where there are 17 case components of Food, only 8 components namely had 'abnormal' years where Income Elasticity was greater than 1 or less than 0.

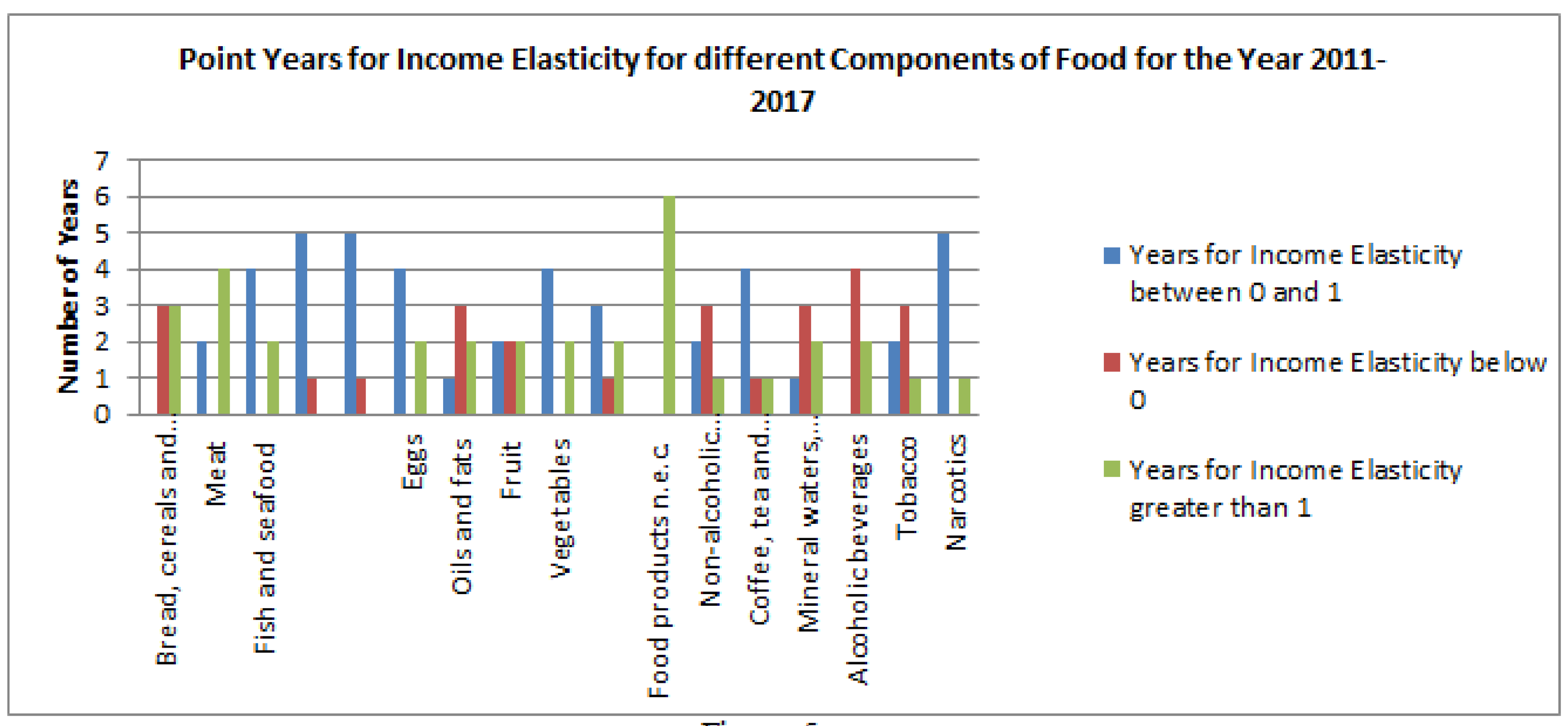


Figure 5

Data Source: National Accounts Statistics

Conclusion
As income increases, It's not necessary that Food Consumption as a proportion must always go down. After studying the Income Elasticity, we can say that it can never be perfectly within 0-1 range, which may be the reason for such variable ups and downs in proportion to food consumption. Elasticity in the real world can hardly be constant. It may be due to a sudden surge in a particular food demand. Health consciousness can play a major role in dictating what the preferences of the consumer will be. A substituting example of this case is the growing Avocado Industry worldwide. Due to its health benefits, the demand has surged worldwide. We can find many such examples anywhere. Hence food demand may be influenced by preferences.

Though our analysis remains incomplete without treating Engel's Coefficient, we can say that the Law 'generally' holds. In the long term, as economic activity spurs, expenditure shifts from food to other commodities. This was addressed by Adam Smith, in his book, Wealth of Nations, where he remarked at the food consumption of the poor and rich but asked the readers to implore the differences of luxury goods at the rich's disposal.

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Winning Articles

To overcome the pandemic blues, Team Viewpoint organised an all-India Article Writing competition in the month of September 2020.

The competition had the following three themes:

- Rethinking Indian Economic Diplomacy within the Purview of Global Economic Cooperation
- Shifting Paradigms of the Indian Labour Market in the COVID Era
- The Rise of Behavioural Economics and its Impact on Organisations.

We witnessed an overwhelming response from a number of undergraduate students from across the nation and finalised on one winner for each category. The winning articles along with the winner names have been included in this section.

RETHINKING INDIAN ECONOMIC DIPLOMACY WITH THE PURVIEW OF GLOBAL ECONOMIC COOPERATION

By Angkuran Dey, Symbiosis Centre for Media & Communication

The role of India in the world sphere has seen a paradigm shift over the periods. It has been a quest of successive governments for finding the right economic model from Independence to the present times. Post the liberalization of the economy in the 1990s India would soon transform as it started changing its position from one of the highest receivers of aid to now engaging in economic projects. The liberalization brought in new challenges, which are beyond the scope of this article.

India traditionally has been a strategic hold of the East India Company and it still clings on as it tries to re-establish itself on the colonial vestiges and showcase to the world as a land of opportunities and the 'cradle of civilization'. Diplomatic relations between countries have seen consistency during the NDA role, except for the disengagement with China. Engaging in Economic Diplomacy is not just about excelling in trade negotiations, but looking at it through precision and bring value additions aiding in the economic growth. With the world facing greater challenges amidst a Pandemic, global economy in a free-fall, a growing ecological crisis and a society being driven by technology. Global co-operation has become more of a necessity, rather than an expensive indulgence to exert someone's influence.

As we move forward India needs to reinforce its place across multilateral organizations and engage more across domains. We are essentially seeing a situation now, where countries are shielding themselves from the world and are going into ultra-protectionism mode. The Global landscape has been in constant flux, what has India done to usher in this new age? Through this essay we would be looking at some broad areas which demand some serious global cooperation and the use of nuanced Economic Diplomacy towards creating a greater role for India to play in the global economy:

Healthcare sector: Health presents a new challenge here, as the pandemic brought the fragile health infrastructure to its knees. What India needs here, is the use of diplomacy in a targeted sense and as the world is being shaped by globalization. An example of engaging in economic diplomacy in the domain of health would be to harness India's ability to produce vaccines and generic medicines at low cost. This could be used to forge relations between countries with robust hublic healthcare system while extending lines of credit across African and South Asian countries by providing with medicines at low cost.

The growing emphasis on the use of IT: Changes in a world which is growing rapidly presents new opportunities and challenges to start investing rapidly in areas which are expected to define the future of a nation-state. In a world driven by data, where accessing data has become faster than ever. India is ushering in an IT boom, which seems to be slowly waning away with growing slashing of jobs in the IT sector. There is an urgent need to address these problems through upskilling of employees, partnership with Internationaland developing new areas which would foster growth in the employment rate. While we might be competing with global players in IT. Going forward, through targeted engagement in specific areas the growing force of IT can become a key driver of growth. Some examples would be to spreading initiatives like Google Rail wire across second and third-tier cities and towns towards fostering greater connectivity. While we might be competing with global players in IT. Going forward, through targeted engagement in specific areas the growing force of IT can become a key driver of growth. Some examples would be to spreading initiatives like Google Rail wire across second and third-tier cities and towns towards fostering greater connectivity.

Domains of Science and the ecological challenge before us: With sciences entering into a new dawn, perhaps revolutionary but can be disruptive as well if they go out of hand without regulations. This includes fields like Synthetic Biology, Artificial Intelligence, Nanotechnology, the use of 3D printing amongst a host of other advances. As these branches progress towards creating a new paradigm in Science. One cannot wildly fathom about the impact that these advances will have and how they would interact with the existing political structures, which can be argued that is already becoming quite rusty. At the moment, every guess is verging on the extreme. These changes will alter the global landscape and present an opportunity for countries to engage. Economic Diplomacy between Universities, thinktanks, labs and other structures in the Scientific field presents an opportunity for Investment and taking a step towards advancement. While also allowing some of the country's finest minds to engage with them and creating a scientifically robust youth going forward. The only question though, here would be; Is India economically ready to invest more and engage in such high-level talks?

Industries in India, are largely resource-sensitive and we are one of the leading emitters. This presents an ecological and economic dilemma, about how to act? While India stares at the worst unemployment figures in History and a dipping GDP percentage. The government is harping on greater FDI (Foreign Direct Investment) and bringing in more establishments into the country shores. It seems like a serious setback to India's target of Carbon Neutrality by 2040.With ecological imbalances becoming entrenched, Can India find a balance between the Economy and maintaining sustainability? It also presents an opportunity for cooperation in the global sphere for India to find a middle ground and find a

The "Age of Acceleration" has officially set in. India, one of the fast-growing economies in the world had to set its clock by a bit amidst a Pandemic which has sent the economy in a tail-spin. It is time for a growing global co-operation amongst countries and slowly rebuild their economies through the power of Diplomacy while bringing in a sense of stability to the Global Economy. Some problems are rather indigenous to India, social realities and growing wealth inequality would need to be taken into account towards creating a robust policy surrounding the Economy, and engaging in high-level Diplomatic talks focusses on the specific, rather than broad issues.perfect balance between establishing Industries and sustainability.

The views expressed are personal and do not represent the institution's views.

SHIFTING PARADIGMS OF THE INDIAN LABOUR MARKET IN THE COVID ERA

By Anupam Kumar Singh, Shyam Lal College (Eve)

With unprecedented clusters of events unravelling, the Indian economy is seeing a colossal impact, which has been reflected in the recent GDP crunch off -23.9% in the first quarter of FY'21. The labour market has been severely impacted, due to the ongoing pandemic as the country has been locked down for nearly a year. The effects of the lockdown are widely visible in the unorganized sector, where the young labour force is affected the most.

Owing to the humanitarian crisis in the country there has been a trend of decreasing labour participation and increasing unemployment in the country. The labour participation rate declined to as low as 35.5% in April, immediately after the lockdown, and the unemployment rate plunged to 24% - both a historic low.

There has been a large-scale withdrawal of labour from the labour force during the COVID crisis due to a lack of jobs and a lack of secure working conditions. A similar decline was earlier seen during demonetization, followed by the GST implications recently, but when compared, the magnitude was lower than the present prevailing condition. The impact is not only limited to the unorganized sector but has crept beyond it to the organized sector, with an estimated 21 million salaried jobs being lost.

The migrant labour from the unorganized sectors returned home with fear in their mind and hunger in their stomach, as they had no jobs. As per the CMIE data report, more than 100 million workers have lost employment with the vast majority from the unorganized sector. When closely examined, only the agricultural-sector has seen an increase in jobs in the form of pseudo-employment.

Job Shortage

Private consumption and investment are the two biggest engines for growth in the case of the Indian economy. In India, the service sector and the industrial sector are the two major contributors to the GDP. However, these sectors have limited job creation. The working-class population highly relies on these sectors for employment, but lack of adequate jobs in this sector is unable to absorb the labour force, leaving them unemployed.

Firms, mostly from the unorganized sector, are either laying off their employees or cutting down the wages - up to 80% in some cases. According to a survey by recruitment.com- “68% of the employers surveyed have either started layoffs, or are planning to”. Even before the humanitarian crisis, trends in the industrial sector were not overwhelming either. A reduction in the corporate tax, announced in September 2019, was intended to spur investment and boost economic growth. It proved contrary to expectations as the corporates increased their profit savings instead of an investment. That gave a little source for job creation and no scope of unemployment reduction.

Live and Livelihood Trade-Off

As suggested by reports, the Indian economy was in a dilapidated state even before the pandemic. The pandemic made the process spontaneous and the economy entered into complete hibernation. The large-scale migration of the devastated workers suggests that the Micro, Small, and Medium Enterprises (MSMEs) have been impacted the most.

Daily wage workers found it hard to sustain themselves during the lockdown. Now, these workers are left with the only choice of a trade-off between starvation and infection. Even during the normal days, the labourer's rights were unprotected with weakly implemented social security laws. Wages being paid lower than the minimum level and delayed payments breaks the spine of a poor family of 7-8 members with a single earning adult. To worsen these conditions, states such as UP, Maharashtra and Gujarat have diluted the labour laws, with COVID as an excuse.

Adding to the dilemma, the recently amended labour law, 'The Industrial Relation Code, 2020', leaves loose ends for their rights to be exploited in the name of industrial sustenance. The minimum number of workers in small firms has been increased to 300, leaving a loophole for the exploitation of an already vulnerable labour force. This magnifies the sufferings of the daily wage labour, forcing them into entering the vicious cycle of destitution and hunger, as a consequence of which a greater number of children will be pulled into child labour and human trafficking.

The Voiceless Sufferers

The workers working condition has been highlighted in this crisis. With an income barely enough to feed themselves, the workers of the unorganized sector are forced to live in the slums of the megacities. There is no social distancing in these slums, leaving people prone to infection. In stark contrast, the business class benefits by their influence into the political system by manipulating the laws in their favour.

To tackle the problem of the growing rate of unemployment and the increasing miseries of the poor, the government needs an enormous fiscal stimulus. There have been multiple attempts by the government of India to aid the wound, but a much larger stimulus is need targeted towards the demand side of the economy. With no money in hands of the poor and increased savings in the middle-class families, the government needs to transfer money to the poor by an amount greater than Rs.500 for a period of more than 4-5 months. This would increase the demand for goods, increasing consumption, directing the firms to produce more, and thus generating employment opportunities.

The MGNREGS, which provided some relief to the workers back at home, is already running out of the fund in the first half of the fiscal year. Sustaining the MGNREGS by funding it would help the workers until the situation is back to normal. A scheme like this in urban India would attract back the migrant worker would help in reviving the MSMEs.

Apart from this, health should be given utmost priority to wipe out fear from the mind of people. Free health service, low cost check-ups and treatment of the migrant worker and poor-workers would prove to be boon in winning the trust back of these people. That would enable them to come back to work without being terrified by the crisis.

In this time of hardship, every individual needs to contribute their share to prevent an economic catastrophe. People should decrease their savings and invest in the market like normal times, which would help in restoring it back to normal. Instead of relying solely on the government, it's time to push the economy from our end as well to generate employment and prevent an economic depression successfully.

YOU THINK YOU MAKE YOUR OWN CHOICES? THINK AGAIN.

By Svetlana Sehgal, Shri Ram College of Commerce

"Wouldn't economics make a lot of sense, if it were based on how people actually behave, instead of how they should behave?"
Ariely, Dan. Predictably Irrational: Hidden Forces That Shape Our Decisions

Think about the last thing you bought from a store. You probably bought something you really liked, wanted or needed. However, was it the best choice available to you? Were you provided with complete information? Were you in some way, 'nudged' to believe that you really liked it? You will never know.

Richard Thaler started writing in the 1980s and 1990s about the strange behavior of people under certain circumstances or in specific contexts, that couldn't be explained by Gary S. Becker's Rationality Theory or the standard economic theory that had been developed till then. Starting from his 1980 article in the first issue of the Journal of Economic behavior and organization to all his subsequent works, he drew a strong outline of the field of Behavioral Economics. However, the importance of psychology in economics had long been identified in Herbert Simon's work of 1950s (the concept of 'bounded rationality') and Kahneman's and Tversky's famous Prospect Theory. They had mentioned how our decision-making power and our rationality is relative to context and environment. Thus, the presence of psychology's influence in economics had long been acknowledged but it was only researched upon in depth and experimented much later.

While it is often viewed from the consumption side, many people fail to notice how often and how successfully, organizations cash in on the very same concept. The field in itself is a very interesting one and its origin, even more. Thaler claims to have developed the idea from little observational stories he collected while he was still at graduate school. The simplest yet complex one goes as follows:

He and his friends were at a party and there was a bowl of nuts till they were waiting for dinner. But seeing that more than half the bowl was empty in no time, Thaler took the bowl inside and when he came out, everyone thanked him. A common axiom in economics is that more is always preferred to less and we know as 'rational' agents, when to turn down something extra. Why then, can't we resist a few nuts when we know we are waiting for dinner to be served and that is going to be much more fulfilling than some low-cost snack?

What behavioral economics seeks to do is answer such questions by not doing away with neoclassical theories altogether but building supplementary theories that are more representative of actual human behavior in situations when people might not have proper feedback, good information or ample experience.

In 2008, Thaler wrote *Nudge: Improving decisions about Health, Wealth and Happiness* along with Cass Sunstein which explores the possibility of "nudging" people towards certain behavior by subtly changing the environment/context they decide in. The book had ample application in public policy as well as business management.

Most organizations thrive on their inherent understanding of people, employees and customers than the product or service itself. How you project your organization and give these people small hints to take effective or useful decisions is thus, an art worth mastering.

In Psychology, it is a commonly known fact that only that information is remembered or understood by us correctly, which manages to make a lasting impact on one of our senses. The nudge theory works on multiple such concepts of psychology and thereafter, creates tactical ways for employees and customers to arrive at positive decisions for the company, rather than using a show of force or coercion. Do you remember seeing fresh fruit at eye level at the grocery store? That was a nudge to finish their stock before it goes bad. You remember seeing something overtly expensive on the menu when you went out to dine the other day? That was a nudge to encourage you to order the second most expensive thing because you successfully think it's cheaper in comparison and you got a good deal.

Ever wondered why Starbucks charges more than a Dunkin' coffee and you happily pay? Because right at the beginning they made their store functioning unique and got their products uncommon names. This 'made' you believe that it is worth more than you get at every other coffee shop.

Lemonade, a US based Insurance startup, is using newer implementations of behavioral finance to 'remake insurance as a social good rather than a necessary evil'. Most of you won't associate yourself with the Insurance company you pay your premium to but would definitely endorse the charity you donate to. Lemonade allows clients to choose a charity while buying their policy and all that is left at the end of the year from your premiums, goes to the said charity. With the engagement as a charity donor, clients have a feeling of social responsibility that makes them default less and actually spread word of mouth more. Lemonade boasts of having no formal marketing in place except client recommendations.

As an employer/manager (Thaler and Sunstein like to call them 'choice architects') when you wish to nudge employees towards positive behavior for the organization, your perception in their minds as someone with integrity, ethics and welcomeness seeks to influence the success of the theory to a great extent. When looking to encourage a section of employees to complete a given task, tell them that everyone else has done it and their desire to not stand away from the crowd awkwardly, will make sure you have it at your desk the next morning. But a little nudge to the leaders to create a healthy workenvironment can sky rocket success too.

The Boston Consulting Group (BCG) has a digital nudge system wherein, leaders trying to send in an email beyond office hours, come across a pop in that gives them options to mark it as low priority, defer it to the next day or send it as it is.

Thaler was the first behavioral economist to have received a Nobel Prize in his field because many notable neoclassical theorists feel that such work only seeks to question our rationality and sense. What many of them don't give enough credit to, is that even today, graduates are taught the standard economic theory with an assumption of Ceteris Paribus because before learning to question literature, it is imperative to learn the alphabet. So, with the rise of behavioral economics, in no way has the importance of standard theories been undermined. But economics works because Economic agents like us exist; and just like you cannot rely on a stable price forever, you can never know for sure if I'll overfeed myself with nuts tonight or prefer waiting for dinner.

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Internship Experiences

Internships are an integral part of inculcating industry-based skills and exploring one's niche. Students of the Economics department undertook internships in various fields, including Research, Marketing and Business Development.

This section features their internship experiences and learnings. It illustrates how members of the department honed their personalities by gaining meaningful work experience.

My economic and policy research internship has been extremely insightful and knowledgeable. I got an opportunity to expand my horizons on various economic issues, and I also learned how to apply my knowledge of economic theories and models to analyse various policy decisions, and also suggest policy changes. It has been a great learning opportunity for me.

Jyothika Vaidayanthan, Economics Year II
Federation of Karnataka

It was an incredible experience to work with the company. It was a market research based internship with the objective of researching on different topics related to market along with presenting new and useful ideas for our research based work.

Asmita Tiwari, Economics Year II
Lumevent Pvt Ltd

My project name was 'Srishtipath'. The project was to collect funds for needy people to provide basic amenities. During the internship period, I built my own team to collect funds for the project. Overall it was a nice experience and devote myself for a noble cause.

Shatakshi, Economics Year III
Humanity Welfare Council

Working as a content writer at 'The Marketing Insights' taught me the essence of three main components: relevance, creativity and structuring while creating an piece of content. With proper guidance, it enabled me to work on my research and fact-checking skills that are generally incorporated to enhance the quality and reliability of an article. The first-hand experience of learning from a very talente and independent lady entrepreneur certainly proved very beneficial to me during my summer internship.

Khushboo Bansal, Economics Year II
The Marketing Insights

I had to acquire customers for Medlife and Pharmeasy. I approached the potential customers and asked them to purchase the medicines through these apps using my promocode for discount. Similarly, for Resumod I made people aware about this resume building company and asked them to build resumes on this website. I got to learn how customers can be convinced, how relationships with company and customers can be built.

Bhavya, Economics Year III
Pharmeasy, Falcon Minds, Medlife

Diving into the field of Marketing from a field like Economics sounds vague, right? While I was exploring various internship opportunities amidst the pandemic, I realised that Marketing is something which has always intrigued me. Fortunately, I got an opportunity to intern with Grey Group, a leading multinational marketing agency and got so much to learn. Working with diverse clients along with ideating and executing digital campaigns has always fascinated me. I got another beautiful opportunity of getting associated with a renowned NGO called CRY wherein I not only interacted with the children but also ideated and managed campaigns and collaborations with various companies. I can confidently say that Economics has equipped me with a skill set that I can proficiently apply in the field of Marketing.

Himanshi Bakshi, Economics Year III
Grey Global Group, CRY NGO

I have done two internships in the year 2020, both in research. The first one was with a Delhi-based think tank, Global Counter Terrorism Council, wherein I worked in the capacity of a Research Coordinator for 3 months. It was an experience that provided a global facet to my knowledge base in the field of global affairs. I interacted with many high-level bureaucrats and defence personnel and learned about things like defence and security postures of nations, transnational relations and more. My second internship was with a non-profit based in The Hague, Netherlands called Frank Creations. I worked as a researcher here under a senior Dutch diplomat. I authored articles and vision statements along with some editing and public outreach work too. I have learned massively from these two experiences that have honed my skills to fit the contemporary society of today that has a large scope for innovation.

Sana Midha, Economics Year III
Global Terrorism Council, Frank Creations

From getting selected to intern at one of the top FMCG's across not only India but globally, to having the opportunity to learn from some of the best corporate practices, I was extremely excited when I received my onboarding email from Nestle. My spirits were slightly dampened too, due to the looming prospect of doing the internship online and not getting the opportunity to go to work at Nestle's office and experience the corporate culture firsthand. Nevertheless the entire HR team, my mentor, and even the top management ensured that all of us had an interactive, learning experience. I got the opportunity to work in supply-chain, a relatively newer field, and it exposed me to various new possibilities. Devising a route-to-market strategy for Nestle as part of my internship project, I came across some interesting findings and by the end of my project I had a huge sense of satisfaction, since my project would be considered for implementation in Nestle's rural and urban consumer markets. All in all, while amidst a pandemic, my internship experience at Nestle was pretty amazing and I would do it all over again if I had to.

Lakshay Kumar, Economics Year III
Nestlé

I volunteered in a project aimed at supporting "Sahayata Kendra" in Jharkhand for 3 weeks under DSE. The project was coordinated by Jean Drèze. We worked in small teams to help women claim their maternity rights, including creating awareness and documenting and submitting forms correctly to ensure easy functioning of the whole process.

Rajnish Kumar, Economics Year III
Delhi School of Economics

I worked as an Data Scientist Intern with The Sparks Foundation in which I have gathered a lot of skills and knowledge. It was an excellent opportunity to learn about some of the tools like Rstudio and Python and help me gain experience and skills to analyse data.

Digij Chhabra, Economics Year III
The Spark Foundation

This internship gave me an opportunity to grow creatively, as a content writer, providing me the requisite exposure to deal with large firms and building their social media outreach.

Ayushman Rai, Economics Year III
Gangamani Fashion

I have been working as a content writer for past 7 months. The company is in the sector of abroad education. I have written more than 60 blogs and 40 statement of purpose during my internship tenure. All the 60 blogs are published on the company's website. This internship has enhanced my writing skills and also broaden my knowledge about abroad education.

Rishika Jain, Economics Year III
Edumpus

My internship at Nestlé helped me explore the field of E-commerce and Marketing. There is nothing else that fascinates me more than analyzing market trends and strategizing campaigns especially during a pandemic when the whole world is at halt. I worked along with the e-commerce team to derive asset based performance of Nestlé products on platforms like Flipkart, Grofers and Big Basket. It was an endearing experience that helped me develop creative and analytical skills.

Apoorva Sharma, Economics Year III
Nestlé

Research Intern at BRIEF India: Worked on the policy research report for Cross LOC trade between India and Pakistan. Developed recommendations for Conciliation Resources, London for socio-economic development of the erstwhile state of Jammu and Kashmir, with special emphasis on Trade and Tourism. Operations Intern at Urban Company: Worked on fixing logistics module with appropriate processing structures and strategy for cost efficiency. Co-ordinated and communicated with city level teams for the logistics and backend support of an upcoming project under UC's Beauty and Wellness vertical.

Sarthak Malhotra, Economics Year III
BRIEF India Pvt Ltd, Urban Company

Had worked at MNREGA Sahayta Kendra (MSK) in Basia Block in Jharkhand for a month in 2019. Our team assisted in launching new program in these MSK's for covering the PM-MVY a maternity entitlement scheme amongst particularly vulnerable tribal groups. Our work included checking whether beneficiaries received benefits or not, helping get women enrolled into the program thru the BDO and CDPO and Anganwadi Sewikas. Also, we collected data on the mid-day meal program. At conclusion we conducted a Jan Samvaad with all govt representatives as well as ASHA and Anganwadi workers as a mass awareness and enrolment program with productive dialogue.

Avnish Roperia, Economics Year III
Professor Jean Dreze & Team

I-CAN was an organisation that was formed to help underprivileged communities that have been hardest hit due COVID-19. It is a unique movement to combat the pandemic through an online platform that connects those who are in need of help and those who can provide it. My internship was a data analysis one. My main job was to clean data from help seekers and help givers, find out the most severely hit areas pan India, draw inferences about the patterns of the spread of covid and present it. I learnt the basics of excel and R, and it was a fruitful experience.

Gayathri Vemuri, Economics Year II
India Cowin Action Network

I worked at The Soul Spoon as a Business Development Intern. It was a start-up and I worked tenaciously on revenue modelling. I was also engaged in implementing creative sales strategies and diversifying the product line. My revenue model recommendations increased the profit margins by 12% The SoulSpoon works like Zomato and connects home bakers to residents all over Delhi.

Aditya Jain, Economics Year III
The Soul Spoon

Almanac

The pandemic might have cast a gloom over the Class of 2021, but it did not dampen their enthusiasm to graduate with the same vigour with which they began their journey at Aryabhatta College.

The students of Class of 2021 have shown their consistent hard work and dedication, despite having to adjust to unconventional learning methods and an entire year of virtual classes.

The boundless talent within the class, coupled with an engaging environment fostered by our professors, paved the way for a successful batch of young leaders who will surely leave their mark on the world in their chosen fields of work.

We wish them all the best for their future endeavors and challenges.

ABHISHEK MALAN

If you're miserable when alone, you're obviously in a bad company.

ADITYA GOYAL

Was released from his 3 year sentence.

ADITYA JAIN

At the end of the day, It's all about how robust your network is and how staunch you are to the people around you!

AISHWARYA

No one is you and that is your superpower!

AMISHA BANSAL

Start where you are, use what you have, do what you can.

APOORVA SHARMA

“I would rather die of passion than of boredom.”

AVNISH ROPERIA

Work Hard, Play Hard, Laugh Harder

AYUSHMAN RAI

Loved college. Covid happened. What's college?

BHAVYA

College has given me confidence, that one has not to be a topper in every aspect.

DHRUV GUJJAR

The Office, Season 5 Episode 27 5:45

DIGIJ CHHABRA

Started with freshers and ending with farewell... The things which we gained is gyaan and a new parivaar.

GAYTRI DEVI

Minute by minute ~SKAM

HIMANSHI BAKSHI
Find opportunities. Create opportunities. Make the most out of every opportunity.

HIMANSHU MAINI
Remember, if you think of something funny, you gotta say it, win, lose or draw.

KARMANYA
This is the beginning of anything you want now!

KHEMARAM
"There is a time and place for everything, that is college."

KISLAYA PRABHAT
College life brought freedom into my life. With freedom comes responsibility, today after almost 3 years of college I feel I'm now a more responsible guy than ever.

LAKSHAY AGARWAL
If no one comes from the future to stop you from doing it then how bad of a decision can it really be.

LAKSHAY KUMAR
One day you'll leave this world behind, so live a life you will remember.

LIPIN KUMAR
Make today ridiculously amazing.

MEGHNA YADAV
I have always, profoundly loved the idea of not being what people expect me to be. The most pleasant surprises afterall, shall always come from defying expectations.

RAJ MIDHA
Started my journey directionless and with frivolity, made beautiful memories in between, ending it with dreams and a lifelong family.

RAJNISH KUMAR
Don't run after brand, you can still get unique from non-branded.

SAKSHAM AGGARWAL
"It's not enough that I should succeed - others should fail."

SAMARTH MANUEL
Just because you're trash doesn't mean you can't do great things, its called garbage can not garbage cannot.

SAMARTH MUNSHI
I like the idea of being the funny guy in the dramatic thin , playing a hit man with a weird sense of humour.

SANA MIDHA
It started like Harry Potter and the Sorcerer's Stone but is ending like Game of Thrones season 8.

SANDEEP MURMU
Weird place for me - when I was attending I wanted to run home ASAP, now I want to visit college.

SARTHAK MALHOTRA
"Yeh bhi theek hai."

SHATAKSHI
My college life helped me increase my horizon. It made me realise my true potential and taught me to be creative.

SHEKHAR SHAMI
We have our memories, now let's go make the future.

SIMRAN SAHNI
It is the darkest right before dawn, but the sunrise is always beautiful.

SOMANSH ARORA
Be fearless in pursuit of what sets your soul on fire.

SURYANSH KUMAR KUNWAR
College is a place for getting as many bad decisions as possible out of the way before you're forced into the real world.

TARUNIKA SHARMA
Where we land is never where we thought would.

TRIVED K
Someone somewhere messed with a bat and wrecked a smooth & memorable ride.

TULIKA RAWAT

To build a strong team you must see someone else's strength as a compliment to your weakness not a threat to your position or authority.

TUSHAR GUPTA

College has given me the greatest friends, fun worth lifetime and learned to tackle difficulties, I wish it would never end!

UDAY SINGH

You should be a man of great riches.

VARUN JARNGAL

"When you have a dream, you've got to grab it and never let go."

VEDANT SINGH

God is not coming, help yourself. By the way, college treks are the best.

DEPARTMENT OF ECONOMICS

THE TEACHERS

Mr. N.M. Singh, Dr. Surajit Deb, Dr. Kartikeya Kohli,
Dr. Deepika Goel, Dr. Astha Ahuja, Dr. S.L. Chakravorty,
Mr. Harish Dhawan, Dr. Gursharan Rastogi

DEPARTMENT OF ECONOMICS – THE STUDENTS

YEAR – 1

Nishant Verma
Priyanka Patel
Sparsh Bhaskar
Alok Yadav
Abhishek Kumar
Shubham
Sunny Kumar
Kishan Sahu
Sandeep Yadav
Lakshya Vasaniya
Aditya Agrawal
Rashika Singh
Sakshum Singh
Arav Rooprai
Vidhi Khanna
Ashwin Kalra
Ansh Mahendru
Aryan Garg
Shubham Gupta
Ayush Bhasin
Jatin Jain
Joseph Schatz
Vishal Shisodia
Himanshu Shekhar
Simran Sharma
Aryan Arora
Piyush Pandey
Samved Kumar
Boby Yadav
Pavni Arora
Gaura Kandpal
Muskan Kathuria
Tanishq Madaan
Saoumil Chutani
Udhav Aggarwal
Daksh Sharma
Abhimanyu Kumar
Arunima Marwaha
Prerna Soni
Ayush Arya
Sarthak Mishra
Anand Kumar
Surbhi Gupta

YEAR – 2

Krrish Kumar
Anu
Anandeshwar
Ritik Sahni
Sufiya Salim
Mandeep
Jagbir
Kartikeya
Raju Paswan
Yuganshu
Vedant Khodankar
Harshit Tyagi
Priya Naik
Wilinliu Charenamei
Asmita Tiwari
Ritika Nandi
Varun Mehta
Karan
Vaishali
Satyam
Anubhav Tyagi
Omansh Sharma
Bhumi Bhardwaj
Vedant Gupta
Vanshika Khandelwal
Khushi Joshi
Smriti Bhutani
Nitin Kumar
Pratham Goel
Siddharth Malhotra
Mishthi Bajaj
Shubham Jain
Rishabh Singh
Shreya Suri
Punay Dang
Shivam Khari
Vnash Oberoi
Lokesh Joshi
Yash Pawar
Rythem Jain
Rishika Jain
Samay Jain
Devanshu Basu
Ujjwal Aggarwal
Aryan Sethi
Saurabh Kumar
Sankalp Rawal
Sneha Kalita
Sarvesh Kumar
Karsh Vashisht
Naina Singh
Sahej Kapoor
Sarthak Arora
Kavya Bhardwaj
Anisha Kalita
Rashi Pahwa
Gayathri Vemuri
Khushboo Bansal
Jyothika Vaidyanathan
Ayush Batra
Geethika Patnaik
Vinayak Tiwari
Falguni Singh
Karuna Cressida
Karuna Clarens

MIND OVER MATTER
THE ECONOMICS SOCIETY OF ARYABHATTA COLLEGE

Mind Over Matter is a society which, under the purview of the Department of Economics at Aryabhatta College, provides a platform for students to showcase their talent in the field of Economics.

Recognizing the role of a society in actively promoting a student's holistic development, Mind Over Matter conducts an annual Economics festival, organizes seminars attended by experts from across the country, and publishes an annual magazine - ViewPoint. The objective of the society is to encourage intellectual activity among students and inculcate in them an interest in the vast field of Economics.

ViewPoint, the brainchild of the department, is an epitome of student-centered learning. It instills a passion for research and is a medium for them to express their views regarding issues of importance. The magazine aims to trigger discussions pertaining to such issues that define the world we live in, and harness the boundless potential of our youth.

At Mind Over Matter, every ViewPoint matters!

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