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FACULTY NOTE

We are pleased to present the 2023 edition of our annual academic journal - Ecolloquial. This publication serves as a valuable platform for our students to explore and analyse current economic issues, express their opinions, and showcase their research.

We are proud of the hard work and dedication of the students who have contributed papers and articles spanning across domains like public welfare, macroeconomics, green energy, political economy, etc. to this edition of Ecolloquial.

We would also like to acknowledge the efforts of the Editorial team, who have worked tirelessly to ensure the timely publication of this journal and undertake initiatives to promote research endeavours among students. Their commitment to excellence is reflected in the quality of the articles included in this edition.

Finally, we would like to express our gratitude to Mr. Vatsal Nahata & Dr. Shamika Ravi for sparing their valuable time for us. We hope the journal provides an enriching experience for the readers.

Ms. Himani C.
Assistant Professor
Department of Economics

EDITOR'S NOTE

It is with great honour & pride that we present to you the 2023 edition of Ecolloquial - a compilation of the finest academic pieces spanning across a plethora of domains like public welfare, international economy, finance, macroeconomics, green energy, political economy and more.

This edition is a culmination of the hard work, determination & perseverance of the Editorial Board, who worked day and night not just to compile the journal, but also to promote research endeavours among the student community. The board successfully launched a research repository application, undertook one-on-one guidance sessions for first-time authors and organised monthly reading circles to facilitate academic discussions.

We were delighted to receive an overwhelming number of submissions for this edition from undergraduate students across India. In addition to the research papers, this edition also features the winning entry of Dr. Saroj Gupta Memorial Paper Presentation Competition as well as research articles under the ‘Schools of Thought’ section - a space for students to express their opinions, policy suggestions & analyse a wide range of topics from the multidimensional lens of social science. This edition mirrors the bold research endeavours undertaken by students and attempts to capture and juxtapose the themes of the contemporary global economic scenario.

We would like to express our heartfelt gratitude to Mr. Vatsal Nahata, Research Analyst at the International Monetary Fund (IMF) and Dr. Shamika Ravi, member of the Economic Advisory Council to the Prime Minister (EAC-PM), for sparing their precious time with us for the guest interview. The featured interviews are a powerhouse of expertise and enriching experience.

We would also like to express our gratitude to the Department of Economics faculty members- Mr. Kapil Dev and Ms. Himani C. who have supported and encouraged us throughout the process.

Research at an undergraduate level is only a humble beginning and we hope that this journal proves to be an encouraging facilitator for future researchers and intellectuals. We hope that this journal serves as a springboard for young students to pursue further research and study in the multifaceted field of economics.

We hope the readers have an enriching reading experience that elevates their curiosity and propels them into exploring the economic academic literature.

Signing off
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RESEARCH PAPERS

JANANI SURAKSHA YOJANA AND CONTRACEPTIVE USE IN INDIA: DIFFERENTIAL EFFECTS IN WEST BENGAL AND BIHAR

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ABSTRACT-

This paper studied the effect of Janani Suraksha Yojana (Maternal Protection Scheme) on family planning in India, using data from the National Family Health Survey III and IV. The study used two difference-in-difference regression models. Additionally, given the significant role ASHA workers play in the implementation of JSY, we consider the role of ASHA workers on contraceptive use, and whether contraceptive uptake increased or decreased following an interaction with ASHA workers in the last three months in a high performing state (West Bengal) vs low performing state (Bihar). To conduct this comparison, administrative data on the number of ASHA workers present in each district in West Bengal and Bihar for the year 2015 was employed.

KEYWORDS-

Cash incentives, Health-seeking behaviour, Maternal Health, Fertility, Family Planning, India

JEL CLASSIFICATION CODES-

I140, I12, I15, I18

INTRODUCTION:

This paper aims to study the effect of Janani Suraksha Yojana or JSY (Maternal Protection Scheme) on family planning in India. Janani Suraksha Yojana or JSY (Maternal Protection Scheme) was started as part of the National Rural Health Mission (NRHM) in India on 12 April 2005. The Government of India initiated this cash incentive scheme to promote institutional deliveries with an aim to reduce maternal mortality ratio (MMR). It also aimed to reduce infant mortality rate by encouraging institutional deliveries and focusing on institutional care among women, particularly those belonging to families below the poverty line. This was achieved by providing them cash at the time of delivery, along with antenatal and postnatal services. JSY is currently the world's largest cash transfer programme, with more than 54 million beneficiaries since its initiation (Ng et al.) The programme divided states into low-performing states (LPS) and high-performing states (HPS) depending on the pre-programme level of institutional deliveries. The level of financial assistance is based on the performance level and whether the state is rural or urban.

There are two mechanisms at work while exploring the role of JSY on contraceptive use intent. One potential pathway is that JSY, through increasing access to maternal services, may have provided an opportunity to educate and motivate women to initiate contraception use just after delivery. This would lead to the intent to avail of family planning methods in the future to be higher amongst Janani Suraksha Yojana users than non-JSY users.

However, a second mechanism at work is the unintended role of cash incentive programmes such as JSY on fertility. Cash incentive programmes may lead to an increase in fertility since the monetary incentive could be encouraging couples to have more children or to have their next child faster. Research has also suggested that ASHA workers may be encouraging couples to have more children and to opt for institutional deliveries for their own gains. While distributing contraceptives and counselling women on spacing and spacing methods are also a responsibility of ASHAs, due to a lesser relative monetary benefit, this is often attributed a secondary role. This would suggest that, contrary to the first pathway, contraceptive use might decrease among JSY users.

Given that two contradictory mechanisms are at work, the theoretical relationship between JSY and contraceptive use is not known a priori. Our paper aims to provide empirical validity to these theoretical frameworks. Additionally, given the significant role ASHA workers play in the implementation of JSY, we will consider the role of ASHA workers on contraceptive use, and whether contraceptive uptake increased or decreased following an interaction with ASHA workers in the last three months.

METHODOLOGY & DATA:

This study uses data from the National Family Health Survey III and IV. NFHS-III was conducted in 2005-2006, and taken to represent the pre-JSY period, while the NFHS-IV, conducted in 2015-2016, was taken as the post-JSY period. Since the 2005 NFHS was primarily conducted before July 2005 and the JSY program was not implemented until the end of 2005, we considered survey data from 2005 to be in the pre-JSY period. We will also be using administrative data on the number of ASHA workers present in each district in Bihar and West Bengal from the year 2015, found on the official website for the National Rural Health Mission.

Women were assigned to the control group if they belonged to a High Performing State, were above the poverty line, and did not belong to a Scheduled Caste or Tribe, since these women would not be eligible to receive JSY assistance. Women were assigned to the treatment group if they belonged to a Low Performing State, were below the poverty line, and belonged to a Scheduled Caste or Tribe. Women who were infecund and not sexually active were excluded from the dataset.

Summary Statistics

Our Summary Statistics from Table I show that there is an increase in use of modern family planning methods from 2005 to 2015. Furthermore, there is an increase in total years of education for women, increase in employment, and a marginal increase in the knowledge of modern family methods. By geographical region, participation is highest in the east, followed by the west, the north and the least in the south. This can be attributed to the prevalence of better education rates and self selection. In terms of the wealth quintile, participation reduced as we went to higher quantiles. This is in line with the target group of the programme being poor women.

In Table II, we can see that JSY participation is significantly higher amongst LPS states. Furthermore, JSY users are more likely to be SC/ST/ OBCS rather than General Caste. In terms of the wealth quintile, JSY participation reduces as we move up amongst the wealth quintile, with participation being highest amongst the poorest women. This can be attributed to the self-selection mechanism of the programme; with the target group of JSY being poor, ST/SC/ OBC women from LPS states.

LITERATURE REVIEW:

Postpartum Family Planning (PPFP) is imperative to prevent closely spaced mistimed pregnancies after child birth. A study by Mekonnen et al. (2021) highlights how knowledge surrounding postpartum contraceptives is very low in Ethiopia, underscoring the need for institutional delivery and family planning counselling in the postpartum period.

Two studies, Bansal et al. (2022) and Sinha (1997) have examined the role of maternal health services on contraceptive use in India. Sinha (1997) finds a positive association between the utilisation of antenatal care services and ever-use of family planning methods in Orissa. Bansal et al. (2022), however, find that while the number of women using maternal healthcare services in India has increased, there has been no proportional increase in the use of contraception after childbirth.

Numerous studies have examined whether JSY has been successful in achieving its stated objectives of increasing institutional birth rates and decreasing mother and infant mortality. According to Lim et al. (2010), JSY had a marginal effect on institutional births and prenatal care use, despite the fact that it did not adequately cover the lowest members of society and the programme suffered from significant geographical variance. Das et al. (2011), however, warns against prematurely declaring JSY a success, drawing attention to contradictions in the Lim et al. (2010) study, including ambiguity and measurement errors. In another study by Powell-Jackson et al. in 2015, they found no evidence of JSY's impact on neonatal mortality. The Powell-Jackson study also considered the unintended effects of JSY, finding that JSY was associated with an increase in breastfeeding and a rise in pregnancies.

Literature on the impact of cash-incentive programmes on demographic outcomes in India is limited. To our knowledge, the only studies to investigate this phenomenon are Powell-Jackson (2015) and Nandi et al. (2015) which considered the unintended effects of JSY on fertility, finding that JSY may have resulted in a 2.5–3.5 percentage point rise in the probability of childbirth in 10 states.

Furthermore, the contribution of ASHA workers in the success of JSY and contraceptive usage has not received enough attention. An important contributor to the implementation of the National Rural Health Mission (of which JSY is a sub-programme) were ASHA workers, local women trained to function in their own village as health activists and front-line basic health care providers. These on-ground functionaries received incentive-based payments which were heavily geared towards encouraging female sterilisation procedures over spacing methods. Analysing the role of ASHA workers in contraceptive intake is therefore critical for policy formulation. Our paper attempts to address these deficiencies in existing literature regarding the effect of cash-incentive programmes on demographic outcomes, such as changes in intention to use contraceptives, as well as discuss the policy implications of these results.

ESTIMATING EQUATION:

We aim to use two difference-in-difference regression models to test our hypotheses. We use the following estimating equation:

$$FP_{idt} = \beta_0 + \beta_1 Treat * Post_{dt} + \delta_t + \gamma_s + + \varepsilon_{idt}$$

- FPidt is our outcome variable indicating whether the woman intends to use any form of family planning in the future.
- Treatdt *Postidt is an interaction term, capturing the treatment effect of JSY in 2015
- δs refers to state-level fixed effects
- γs refers to year-level fixed effects
- Xidt is a vector of individual demographic characteristics including education of the mother, education of the husband, age, household wealth, healthcare autonomy, and dummies for (categories) of urban residence, religion, and ethnicity.

The programme was implemented at a district level, and the differences in the number of ASHA workers in each district would have a marked impact on contraceptive use. In our second regression model, we conduct a comparison of the effect of JSY on contraceptive use between a Low Performing State (Bihar) and a High Performing State (West Bengal). For this, we use administrative data on the number of ASHA workers present in each district in the two states of Bihar and West Bengal from the year 2015, found on the official website for the National Rural Health Mission.

We thereby use the following equation in our second regression model:

$$FP_{idt} = \beta_0 + \beta_3 Treat * Post_{dt} + \beta_3 Bihar + TotalASHA\beta_4 + X_{idt}\beta_5 + \gamma_t + \gamma_s + \varepsilon_{idt}$$

- FPidt is our outcome variable indicating whether the woman intends to use any form of family planning in the future.
- Treatdt *Postidt is an interaction term, capturing the treatment effect of JSY in 2015 (the post-intervention period of JSY)
- Bihar is a dummy variable taking the value 1 if the women belongs to Bihar and 0 if the women belongs to West Bengal
- The variable TotalASHA indicates the total number of ASHA workers present in the women’s district
- γs refers to year level fixed effects
- Xidt is a vector of individual demographic characteristics including education of the mother, education of the husband, age, household wealth, healthcare autonomy, and dummies for (categories) of urban residence, religion, and ethnicity.

RESULTS:

Our results effectively showcase the two potential pathways of impact on family planning we hypothesised. First, we find there is an increase in the Intent to Family Plan for JSY users in 2015 by 5.17 percentage points. The effect remains positive at 4.25 percentage points when we add demographic controls. We can attribute this to greater exposure to family planning when JSY users went to health-care centres and other health institutions to deliver. With a unit increase in age, we see a rise in family planning by 0.64 percentage points. This can be due to availability of higher resources to opt into family planning services as one ages and also a preference to not have children later in life. The positive impact is also showcased through the rise in education as intent to family plan goes up by 3.06 percentage points for each extra year of education. We can attribute this to higher awareness and more positive attitudes towards family planning in the educated. The largest rise in intent to family-plan is exhibited for married women. This can be related to the societal norms surrounding premarital sex in India.

Conversely, two indicators point to a reduction in intent to family plan. This holds for the post period (2015) and the drop in likelihood in intent to family plan in employed women (-4.3 percentage points). This would be due to a multitude of factors, with an important factor being poverty as found in Gakidou & Vayena (2007). Another explanation could be with regards to employed women specifically, their intent to family plan could go down because they would now have more financial resources to support a child. All these results are statistically significant.

In order to account for the impact of ASHA workers specifically and to understand the relative effect on High Performing States versus Low Performing States, we contrast intent to family plan in West Bengal and Bihar. We find an increase in intent to family plan by 3.6 percentage points for JSY users in 2015. Trends for the post period and employed women also hold here, and similar to the results from our national data we see a decrease in the intent to family plan for both. Additionally, the rise in likelihood to use family planning for married and educated women is also echoed here. The covariates for age and urban-rural showcase different results here, with both of them showing a negative effect on intent to family plan with -0.328 percentage points and -4.16 percentage points repeatedly. We hypothesise that this is because of availability of more resources with ageing and more earning opportunities in urban settings. We see an increase in the likelihood in intent to family plan in Bihar relative to West Bengal, when we add controls. This can be due to higher focus given to Bihar in the programme due to its LPS status. However, this finding is not statistically significant.

Lastly, we see that ASHA workers have a negative impact on the intent to family plan. This is in line with the findings of Nandi (2016), In our findings, intent to family plan reduces by a magnitude of 0.00764 percentage points (without controls) and 0.00699 percentage points (with controls) as number of ASHA workers in the district rose. This is reflective of the alternative pathway of the effect of JSY on fertility discussed in studies like Nandy et al. (2016). Since ASHA workers are given a greater incentive for attending institutional deliveries as compared to imparting family planning under the JSY programme, they are likely to give less importance to the latter.

CONCLUSION:

In scope and expected results, Janani Suraksha Yojana has been one of the most ambitious maternal and child health schemes in both the country and the world. However, in order to realise its full potential, there is a need to consider its effect on a full range of demographic outcomes. The potential referred to here also includes unintended fringe benefits of the scheme in improving maternal and child health outcomes such as the increase in use of family planning and contraceptive use. Our paper attempted to capture these fringe effects, showing that the programme had a positive effect on contraceptive usage, but that contraceptive usage intent went down in Bihar and West Bengal when there was an increase in the total number of ASHA workers in the district.

Through our study, we found that JSY has a positive effect on intent to family plan in our post period. Both higher levels of education and age also resulted in a positive impact, while employment showed a negative impact. We also looked at the specific example of Bihar and Bengal, to understand the role of ASHA workers in depth. Our results from the national sample are affirmed here too, with the exception of age and living in an urban area - both of which had a negative effect. The results also reflect the higher focus given to Low Performing States during the implementation of JSY. Lastly, we found a decrease in intent to family plan as the number of ASHA workers in the district increased, which is consistent with existing literature such as Nandi et al. (2016). We hypothesised that this is due to the fact that since ASHA workers are given a greater incentive for attending institutional deliveries as compared to imparting family planning under the JSY programme, they are likely to give less importance to the latter.

Our findings have important policy implications; showing that by strengthening maternal healthcare services, the possibility of increase in the practice of family planning would increase. The possibly damaging unintended consequences discussed in this paper, such as the negative impact of ASHA workers on contraceptive usage due to their preference for attending institutional deliveries as compared to imparting family planning under the JSY programme, should be considered while formulating policies.

However, our study also has some limitations. Firstly, our analysis relies on an intent-to-treat approach, measuring the district-level coverage for the intended recipients rather than considering which individuals actually received JSY. This was done to mitigate biases arising from measurement errors in JSY coverage or utilisation data. However, it is possible that this may lead to an under-estimate of the effect size of the programme, particularly in areas where implementation was slower, where there was less information provided about the JSY programme, as well as alternative factors that may have led to low programme coverage. Our analysis also relies on intent to family plan rather than actual data on family planning and so similar concerns about the reliability of the data might arise.

Another limitation of our models is our inability to use district fixed effects to control for time-invariant unobservable characteristics operating at the district level that may influence contraceptive use intent, which are correlated with the expansion of the programme. This is due to the fact that NFHS-III did not include district data for individuals due to the confidentiality requirements of HIV testing.

The role of family planning and contraceptive use, which act as an important indicator of development in a nation, cannot be understated with regards to health outcomes for both the mother and the children. Our paper established that schemes like the Janani Suraksha Yojana play an imperative role in facilitating these goals and can be leveraged to a greater extent to realise these additional effects given the national reach and scope of the programme.

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APPENDIX:

Table I: Summary Statistics

Variables	**Pre-JSY period (2005) Post-JSY period (2015)**			
	Mean Std Dev Mean	**Std Dev**	**Min**	**Max**
Currently using or intending to us family planning	0.6310087 0.386736 0.816918	0.4825321	0	1
Program characteristics				
Participation in JSY (2015)	-- -- 0.423882	0.494174	0	1
Individual Characteristics				
Total Years of Education	5.253393 5.22003 5.783734	5.179132	0	20
Age Living in an Urban Area	32.46439 8.355133 33.27144 1.56072 0.4963016 1.715582	8.44789 0.4511374	15 0	49 1
Employed	0.2533719 0.4817948 0.3662971	0.4349447	0	1
Knowledge of modern family planning method	0.988132 0.1082928 0.9892805	0.1029787	0	1
No religion	0.0004352 0.0208566 0.0005514	0.023475	0	1
Muslim	0.1251676 0.3309108 0.1237846	0.329336	0	1
Christian	0.075898 0.2648364 0.0670604	0.2501269	0	1
Buddhist Hindu	0.0131848 0.1140664 0.0126054 0.7469478 0.4347631 0.7612232	0.1115639 0.4263365	0 0	1 1
Sikh	0.0226765 0.1488708 6.36E-06	0.0025223	0	1
Jain	0.0041519 0.0643015 0.0109512	0.1040737	0	1
Belongs to scheduled Caste	0.1700736 0.3756997 0.1766618	0.3813827	0	1
Belongs to scheduled Tribe	0.1243678 0.3300026 0.3955063	0.4889597	0	1
Belongs to Other Backward Cast	0.3297617 0.4701293 0.2426428	0.4286813	0	1
Total Number of Observations	**85,022 4,71,545**			

Table II: Trends in JSY participation (2015)

Variables	**Non-JSY users**		**JSY users**			
	Mean	Std. dev.	Mean	Std Dev	Min	Max
Low-Performing State	0.1971662	0.3978598	0.4376973	0.4961071	0	1
Scheduled caste	0.1671238	0.3730873	0.2087646	0.406429	0	1
Scheduled tribe	0.1377468	0.3446349	0.1894762	0.3918895	0	1
Other backward class	0.3533759	0.4780193	0.4066756	0.4912172	0	1
General Caste	0.3344535	0.4718002	0.1905285	0.3927211	0	1
Employed	0.330625	0.4704399	0.1713822	0.3768596	0	1
Wealth Quintile						
Poorest	0.1170771	0.321513	0.2704155	0.4441779	0	1
Poorer	0.1539934	0.3609433	0.2698971	0.4439096	0	1
Middle	0.1989995	0.3992487	0.2186916	0.4133621	0	1
Richer	0.2397214	0.4269144	0.1541663	0.361111	0	1
Richest	0.2902085	0.4538596	0.0868295	0.2815873	0	1

Table III: Regression results

	(1) FP Intent (National) (no controls)	(2) FP Intent (National) (controls)	(3) FP Intent (Bihar vs W. Bengal) (no controls)	(4) FP Intent (Bihar vs W. Bengal) (controls)
Treat * Post	0.0517***	0.0425***	0.0360***	0.0327*
	(0.00369)	(0.00928)	(0.00981)	(0.0169)
2015 (year fixed effects)	-0.0767***	-0.0613***	-0.295***	-0.292***
	(0.00435)	(0.00712)	(0.0159)	(0.0242)
Bihar			-0.00928	0.00366
			(0.0130)	(0.0134)
Total ASHA workers in district			-0.0000764***	-0.0000699***
			(0.00000467)	(0.00000794)
Urban		0.000941		-0.0416***
		(0.00718)		(0.0141)
Currently Married		0.270***		0.143***
		(0.0167)		(0.0330)
Employed		-0.0430***		-0.00920
		(0.00699)		(0.0134)
Ideal number of children of either sex		0.000166		-0.0000811
		(0.000535)		(0.00103)
Household wealth index in quintiles		0.00345		-0.0109**
		(0.00278)		(0.00527)
Muslim		0.141		-0.0601
		(0.123)		(0.209)
Christian		0.106		-0.0553
		(0.123)		(0.214)
Buddhist/ Neo-Buddhist		0.129		-0.0939
		(0.126)		(0.270)
Hindu		0.117		-0.0480
		(0.123)		(0.209)
Donyi-Polo		0.341**		
		(0.139)		
Sikh		0.110		-0.0727
		(0.127)		(0.256)
Zoroastrian		-0.318		
		(0.489)		
Jain		0.00591		-0.0594
Year fixed effects	No	Yes	No	Yes
State fixed effects	No	Yes	No	No
Constant	0.403***	-0.168	1.007***	1.032***
	(0.00367)	(0.125)	(0.0132)	(0.214)
Observations	86810	28680	10285	3486

Standard errors in parentheses
$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

COMPARISON OF CONSUMER GAINS UNDER UNIVERSAL AND TARGETED PUBLIC DISTRIBUTION SYSTEM IN KERALA

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ABSTRACT-

The public distribution system of India has often been considered one of the most vital systems for ensuring food security in the nation. In that, Kerala has been lauded worldwide for its efficient implementation of the PDS system and the consequent outcomes. This paper aims to estimate consumer gains in the absence of rationing under the current Targeted Public Distribution System of the state and compare them with those of the pre-targeting regime. It also studies existing shortcomings of the system that could possibly decrease consumer gains and provides an overview of the state's rationing system before and after the reforms that aimed to provide goods on a targeted basis.

KEYWORDS-

Welfare, Targeting, Food Security, Consumer Gains

JEL CLASSIFICATION CODES-

H44, H75, I38

INTRODUCTION:

The Public Distribution System (PDS) of India is primarily a welfare programme under the Ministry of Consumer Affairs, Food, and Public Distribution. It entails the distribution of food grains (rice, wheat, pulses, sugar, etc.) and non-food items(kerosene) to the needy at a subsidised rate. The PDS system plays a pivotal role in ensuring food security.

In June 1997, the Targeted Public Distribution was launched by the Government of India following which Kerala had to replace its near-efficient universal model. The TPDS aimed to serve the population below the poverty line, remove the urban bias and increase coverage, transparency, and accountability. Many studies have been conducted to assess the working of the TPDS and check if the system was able to aid the poor and underprivileged in the ways that were intended.

In 2016, the state also successfully implemented the National Food Security Act (NFSA) 2013. The NFSA passed by the Government of India on July 5, 2013 marks a paradigm shift in the area of food security, shifting away from a welfare-based approach to one based on rights. This act gives two-thirds of the population, including 75% of the rural population and 50% of the urban population, the legal right to obtain discounted food grains through the TPDS.

Kerala is historically a food-deficient state. According to the Economic Survey 2017, only 15% of the total food grain requirements are being met domestically, while the state primarily depends on its neighbouring states for vegetables. Thus, to guarantee food grains to the entire population, the state has evolved a public distribution system that is touted to be the most effective in India.

LITERATURE REVIEW:

The Kerala Model of development has received special recognition from economists across the globe, especially for its universal public distribution system that existed prior to 1992. The system was extensively studied by scholars for its stellar results in improving developmental outcomes such as nutritional intake and food security. The reforms of 1997 led to the implementation of a targeted system with hopes of maximising benefits for the poorer strata and reducing the burden on the government treasury by cutting down the provisions available for the economically well-off.

The reforms had the immediate impact of reducing coverage rates, i.e, ration card holders in the state across districts. However, this has been attributed by some scholars to the emergence of alternate forms of identity proofs as prior to that, ration cards often served an important role as proof of identity.

Amartya Sen and Jean Dreze in their collaborative work “An Uncertain Glory” point to the following while observing public services in Kerala “The basic principle is that facilities such as school, education, primary healthcare, midday meals, electricity connections, ration cards, and drinking water should as far as possible be made effectively available to all on a non-discriminatory basis, instead of being targeted to specific sections of the population”. They attribute the same as the reason for the success of the Kerala model of development.

It is in this context that a comparative study of the purely universal and current targeted system appears much needed. P.S George has written extensively about the universal public distribution system that existed in the country prior to reforms in his research report for the International Food Policy Research Institute titled 'Public Distribution of Foodgrains in Kerala- Income Distribution Implications and Effectiveness'. In the report, the author credits the universal system for increasing consumer welfare in the state and provides a well-ground method for calculating consumer gains.

In order to calculate consumer gains under the current system, we have used the same methodology as George and wish to credit him entirely for the same. There exists a vast literature on the possible failings of the new system by economists such as Dreze and Sen as well as independent research organisations, which have also been presented over the course of this paper.

AGRICULTURAL LANDSCAPE OF KERALA:

Rice is the staple food of Kerala. But since the 1980s, there has been a steep decline in paddy cultivation in Kerala. Both the area under paddy cultivation and the amount of rice produced in the state have dropped significantly. Farmers have been shifting to cultivating cash crops like rubber, coconut, etc. There has also been a considerable decrease in the land under cultivation. Agriculture's contribution to the Gross State Value Added (GSVA) fell from 12.37 percent in 2013–14 to 9.44 percent in 2020–21. In order to increase vegetable output, the state has given vegetable development schemes a high priority. Thus, to maintain self-sufficiency, Kerala evolved a highly efficient PDS system.

RATION CARDS:

The civil supplies department issues ration cards to the people of Kerala on behalf of the government. The process of obtaining a ration card has also been highly digitised and is very accessible to citizens. Digitalisation of the process has enabled the government to ensure that the benefits of the PDS reach only to those who genuinely need it and has made the process more efficient, Beneficiaries can register themselves through the Civil supplies department website or simply avail of these services through Akshaya centres or TSO/DSO offices.

The total number of cards- 9344088 Total number of beneficiaries: 35792742

The PDS system in Kerala has a chain of 14,173 ration shops. The qualified priority households have been identified in accordance with the State's approved criteria. In Kerala, there are four types of ration cards with different colour codes. The yellow colour code represents the AAY card, The Pink colour code represents the Priority card, the Non-Priority Subsidy card comes in blue colour and the white colour cards are the Non-Priority Non-Subsidy ones.

The Antyodaya Anna Yojana card is given to the most economically backward members of society. Beneficiaries receive 35 kilograms of essential consumables, including rice and wheat, at no cost.

The Priority Card(Pink) is for people who fall under the Below Poverty Line category. They receive 5kg of food grains(4 kg of rice and 1 kg of wheat).

The Non-Priority Card(White) is for people who are above the poverty line. People can avail up to 2kg of rice at a price fixed by the government.

Table 3.1: Wheat and Rice Allotment

Category	No of Cards	Entitlement per month	Price/Kg	State Subsidy per Kg
AAY Rice	587975	30Kg/Card	Free	₹3
AAY Wheat		5Kg/Card	Free	₹2
PHH rice	3507563	4Kg/member	₹2	₹1
PHH Wheat		1Kg/member	₹2	NIL
NPS Rice	2330213	2Kg/member	₹4	₹4.30
NPNS Rice	2881121	Varies	₹10.90	NIL
Fortified Atta	NPS and NPNS	2 Kg or 3 Kg	₹17	NIL

Table 3.2: Percentage of Active Beneficiaries

S.No	Card Type	Cards	Beneficiaries	% of total
1	AAY	587975	2022650	29.07
2	PHH	3507563	13198742	26.57
3	Non Priority Subsidy	2330213	9560557	24.37
4	Non Priority	2881121	10960047	26.29

Kerala has also adopted the Aadhar-linked ration card system for better distribution and implementation. The Kerala State Civil Supplies Corporation also known as Supplyco has also been highly successful in intervening in the open market to stabilise the price of 13 essential commodities. Supplyco acts as the execution branch of the Department of Food and Civil Supplies. It assures the food security of about 30 million people in Kerala through a chain of retail outlets- stores, markets, etc. The Kerala government also has a scheme where people, who can afford to, can give up their ration cards. In July 2021, after the Kerala government urged people to surrender their ration cards voluntarily if they don't fall under any category, around 1,25,070 people surrendered their cards to the government.

CALCULATING CONSUMER GAINS:

METHODOLOGY

The following methodology for calculating consumer gains has been adapted from 'Public Distribution of Foodgrains in Kerala- Income Distribution Implication and Effectiveness' by P.S George. The report analyses consumer gains in the absence of rationing to arrive at the conclusion that rationing is beneficial for consumer welfare. While we do acknowledge limitations do exist in utilising the same methodology for analysing TPDS, the equations help provide an overall perspective if not a perfect one into whether the current system continues to be as beneficial as its predecessor. For simplicity, we assume prices have remained approximately constant throughout the month.

This paper will analyse consumer gains for each type of cardholder individually and sum it up for comparison with gains under the universal system. A negative gain in the absence of rationing for each group would automatically imply that the existing cardholders are benefiting from the rationing system. AAY and PHH card holders under the system no doubt have a clear-cut benefit from being a part of the system as they are able to purchase rice at no cost.

With regards to the open market purchase in the presence of rationing, in the absence of adequate data, it is assumed that it is purchased only by NPNS and NPS cardholders in the ratio of 3:2. The monthly data has been divided by four to arrive at weekly gains in order to assist in comparison with weekly gains calculated by George in his report.

With regards to assumptions regarding prices in the absence of rationing, we have followed the same as George in taking it to be approximately the same as that of a food surplus state such as Andhra Pradesh.

The equation for calculating consumer gains is as follows:

$$WC = Rr(P^*-Pr^*) + qm(Pr-Pr^*)$$

Where:

WC = consumer gain
Rr = quantities of rice distributed through ration shops
Pr* = market price of rice in the absence of rationing
P* = ration price of rice
qm = quantities of rice purchased from the open market
Pr = Open market price of rice without rationing

LIMITATIONS

- The current public distribution system consists of several centre-led schemes such as PMKAY, the data pertaining to which has not been used in calculations. This might result in an underestimation of the overall consumer gains.
- The methodology does not take into account the costs of availing the benefits such as obtaining an Aadhar-linked ration card or the time and effort required to arrive at the nearest ration shops indicating the likelihood of overestimating gains
- There is no provision to take into account the quality of the food grains purchased from ration shops and whether they differ in nutritional value and other factors when compared to that which is purchased from the open market at full price.

Despite the above limitations, the methodology still remains justified as total expenditure on ration offtake and the opportunity cost of the system are one of the primary factors for analysing whether any public distribution system is able to achieve its targets.

Table 4.1

SCHEME WISE SALE FOR REGULAR RICE (FOR Jan '23 in kgs)			
NFSA	AAY	RAW RICE	485091
		BOILED RICE	551769.45
		MATTA	0
		TOTAL	10368570.45
	PHH	RAW RICE	26338786.72
		BOILED RICE	11363879.3
		MATTA	10412826.5
		TOTAL	48115492.52
NON NFSA	NPS	RAW RICE	9036257.01
		BOILED RICE	2883623.91

		MATTA	10412826.5
		TOTAL	48115492.52
NON NFSA	NPS	RAW RICE	9036257.01
		BOILED RICE	2883623.91
		MATTA	2693866.7
		TOTAL	146113747.62
	NPNS	RAW RICE	4553695.5
		BOILED RICE	1847764.9
		MATTA	2613359.71
		TOTAL	9014820.06

Source: https://epos.kerala.gov.in/

Table 4.2: Prices for Boiled rice

PRICES FOR BOILED RICE (Rs per kg)	
AAY	0
PHH	0
NPS	4
NPNS	10.7

Table 4.3

CONSUMER GAINS FOR NPNS	
Quantities of rice distributed through ration shops (R_r)	9014820.06
Market price of rice in the absence of ration (P_r*)	34.1
Ration price of rice (P*)	10.7
Quantities of rice purchased from the open market (q_m)	187200
Open market price of rice under rationing (P_r)	37.5
Consumer Gains in the absence of rationing (per week in million Rs)	-52.58

Table 4.4

CONSUMER GAINS FOR NPS	
Quantities of rice distributed through ration shops (R_r)	14613747.62
Market price of rice in the absence of ration (P_r*)	34.1
Ration price of rice (P*)	4
Quantities of rice purchased from the open market (q_m)	124800
Open market price of rice under rationing (P_r)	37.5
Consumer Gains in the absence of rationing (per week in million Rs)	–109.86

Table 4.5

CONSUMER GAINS FOR PHH	
Quantities of rice distributed through ration shops (R_r)	48115492.52
Market price of rice in the absence of ration (P_r*)	34.1
Ration price of rice (P*)	0
Quantities of rice purchased from the open market (q_m)	0
Open market price of rice under rationing (P_r)	37.5
Consumer Gains in the absence of rationing (per week in million Rs)	–451.06

Table 4.6

CONSUMER GAINS FOR AAY	
Quantities of rice distributed through ration shops (R_r)	10368570.45
Market price of rice in the absence of ration (P_r*)	34.1
Ration price of rice (P*)	0
Quantities of rice purchased from the open market (q_m)	0
Open market price of rice under rationing (P_r)	37.5
Consumer Gains in the absence of rationing (per week in million Rs)	–97.21

Table 4.7

ESTIMATED TOTAL CONSUMER GAINS IN THE ABSENCE OF RATIONING	
Universal Rationing System	-1384.50
Targeted Public Distribution System	-177.06

Source: P.S George 'Public Distribution of Foodgrains in Kerala- Income Distribution Implication and Effectiveness'

The negative sign of consumer gains indicates a net loss to consumers in the absence of rationing, Hence even under the current Targeted Public Distribution Scheme, consumers are well off in the presence of a rationing system rather in its absence. However this net loss seems graters under the universal system indicating a possible inefficiency of the current targeted regime.

OBSERVATIONS:

An analysis of the above calculations yields the following two main results:

- DECREASE IN NET LOSS

The net loss to consumers in the absence of rationing has declined under the Targeted Public Distribution System. This implies consumers would have had much more to lose when the universal system was abolished than if the current system were to be removed.

- AAY AND PHH CARDHOLDERS HAVE LEAST NET LOSS

The net loss to consumers in the absence of rationing is least for AAY and PHH cardholders which is not a good indication as they are the target group for whom the benefits must be maximised. The results may also have occurred due to the assumption that these cardholders do not consume from the open market. Nevertheless, the indication that their gains from the rationing system is much lesser than NPNS and NPS cardholders signals the need for change.

CAUSES FOR DECLINE IN CONSUMER GAINS:

- LACK OF BENEFICIARIES IN THE LOW INCOME GROUP

As mentioned in the above tables the percentage of cardholders actively availing ration benefits remains at 29.07% and 26.57% for AAY and PHH cardholders respectively, at par with NPS and NPNS cardholders. Interestingly the ration offtake in absolute terms by NPNS households is 1.5 times higher than that of AAY households, despite the latter being offered the provision free of cost. A number of factors could contribute to this issue however its prevalence shows a stark inefficiency in the system with regard to uplifting the gains of the most needy.

- DEMONSTRATION EFFECT

A popular theory as to why under-utilisation of ration resources exists among the low-income groups is that of the demonstration effect whereby it is argued the consumption pattern of low income groups is based on that of the higher-income groups. A targeted system put in place a clear categorization of ration shops as those targeted toward the needy. This can lead to low-income groups not wanting to associate themselves with the system and wanting to follow in the footsteps of their well-off counterparts.

- DECREASED ACCOUNTABILITY

The grains available at ration shops are often notorious for being poor in quality in comparison to their open-market counterparts. Under the targeted system, as the number of high-income customers who had the social capital to hold shop dealers accountable for their actions dwindled, so did the quality of goods and services by ration shops. Low-income groups who benefit the most from ration shops often lack the social standing to challenge the pitiful state of these shops and hence accept reality. The same argument has also been presented by Amartya Sen and Jean Dreze in their book An Uncertain Glory

- ACCESSIBILITY CONCERNS

The current system of Aadhar-linked ration cation cards can make obtaining new ones difficult without adequate support and services since it involves complicated processes such as biometric authentication and proof of identity. The process can take months to complete and dissuade people from applying for ration cards.

- PREVALENCE OF FRAUD

Black marketeering is a common phenomenon linked to public distribution centres across the country. Hoarding of goods by ration shop owners to sell in the open market, especially those of the vulnerable low-income strata can paint a false picture of decreased offtake in the system. Stringent laws against the same is a must to combat it.

CONCLUSION:

The aim of the paper has been to analyse if the targeted system actually does uplift the lower-income strata for whom the public distribution system is often the source of sustenance. The various quantitative and qualitative analysis performed throughout this paper point to the fact that not only has the new targeted regimen failed to provide superior returns to the needy vis a vis the higher income groups, but has also been followed by an overall decrease in consumer gains in totality, These conclusions point to the need for a wide reform within the system with a special focus on increasing the number of beneficiaries from the lower income strata. Interestingly, the paper also shows that the movement away from a universal system with lesser quotas for the higher income groups did not increase the gains of those in the lower income groups. While this is not an argument for the state to return to its previous universal model, it does suggest that factors such as demonstration effect and social capital of beneficiaries also play an equal role apart from the price of goods when it comes to availing benefits of a system.

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AN ANALYSIS OF SRI LANKA’S ECONOMIC CRISIS - A MACROECONOMICS RESEARCH PAPER

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ABSTRACT-

Sri Lanka has been facing an economic crisis since 2019. A phenomenon of this level cannot be explained by just one or two factors. It has occurred due to the amalgamation of numerous policies, decisions, misfortunes and wrong predictions of the future. This paper looks into these various factors that might be responsible for the current crisis and dives deeper into Sri Lanka's economy.

KEYWORDS-

Sri Lanka’s economic crisis, debt build-up, double deficit, depleting foreign reserves

JEL CLASSIFICATION CODES-

E6

INTRODUCTION:

Sri Lanka is an island country in South Asia, situated in the Indian Ocean. -Its economy experienced a boom in the early 2000s and - continuously grew from there. -Its GDP -went from $16.8 million in 2000 to more than $84 million in 2021.

However, -to support this growth, Sri Lanka also stacked up on foreign debt. It owed $56 billion in international debt in 2022. Prices kept rising and shortages kept extending. More than 500,000 Sri Lankans went into poverty in 2022. They no longer have access to food, fuel, medicines and other basic life necessities in Sri Lanka.

This economic crisis has caused outrage among the citizens. Sri Lankans have taken to the streets to protest against the hardships and their President, Gotabaya Rajapaksa has resigned from his post. Sri Lanka is currently in an unstable position, both economically and politically.

OBJECTIVE:

This paper will be looking at various macroeconomic indicators from the past years to the present to understand Sri Lanka's present economic situation. Factors like debt, taxes, money printing and more will be considered to try to pinpoint the reason for the economic crisis.

The paper aims to analyse the Sri Lankan economy and ascertain the reasons for its downfall and to find out how a growing economy in a developing nation paved the way for hyperinflation and bankruptcy.

METHODOLOGY:

The paper aims to achieve its objective through the use of quantitative data provided by reliable sources and research papers from other authors.

To find out the reasons for Sri Lanka's economic crisis, we will be looking at the following factors:

- Tax cuts in 2019
- Balance of Payments deficit and fiscal deficit
- Foreign Debt build up and depleting foreign reserves
- Agriculture crisis
- Decline in the tourism sector

LITERATURE REVIEW:

Raagini Sharma (2022) in “Sri Lanka Crisis 2022: The Biggest Economic Debacle & Political Turmoil Since 1948” finds the correlation between political and economic issues in Sri Lanka. She talks of how the protests followed the increasing inflation and shortage of necessities in the country. It focuses on the foreign debt and depletion of foreign exchange reserves being the major driving force behind the economic crisis.

A.S. Hovan George, A. Shaji George and T. Baskar (2022) in “Sri Lanka’s Economic Crisis: A Brief Overview” have talked about the impact of the economic crisis on the Sri Lankan economy. They have pinpointed a few reasons for the crisis to have taken place. They feel that the shift to organic farming, tax cuts, government debt and fall in tourism led to the - crisis. The paper talks about the factors and their relation to the crisis, and whether they could have led to the economic crisis.

Dr Deepak S. Sharma, Dr Pankajkumar A. Anawade, Dr Amit Sahu, and Dr Monali Sharma (2022) in “The economic crisis faced by island nation - Sri Lanka: An empirical study” focuses on the impact of the economic crisis on Sri Lanka’s economy. It talks about the effect on inflation and exports due to the crisis. The paper points towards poor policy decisions by the government and international debt to explain the economic crisis currently taking place.

Soumya Bhowmick (2022) in “Understanding the Economic Issues in Sri Lanka’s Current Debacle” has tried to uncover the reasons for the Sri Lankan economic crisis. He has labelled six different but overlapping indicators as the reasons for the crisis. Tax cuts, foreign debt, fiscal deficit, a shift in agriculture policies, low tourism and poorly implemented programmes are the identified underlying reasons. Many of the indicators of this paper follow the path of the paper written by A.S. Hovan George, A. Shaji George and T. Baskar (2022).

Sultana, G. (2022) in “Economic Crisis in Sri Lanka: An Assessment” follows the depleting foreign exchange reserves issue and its impact on Sri Lanka’s economy. It also talks about the measures taken by the government and their efficiency. The paper also lists a few suggestions that the government of Sri Lanka can take to find their way out of the crisis.

RESEARCH AND ANALYSIS:

Sri Lanka is facing one of the worst economic crises since its independence. To see how it unfolded, we will be going through the following factors.

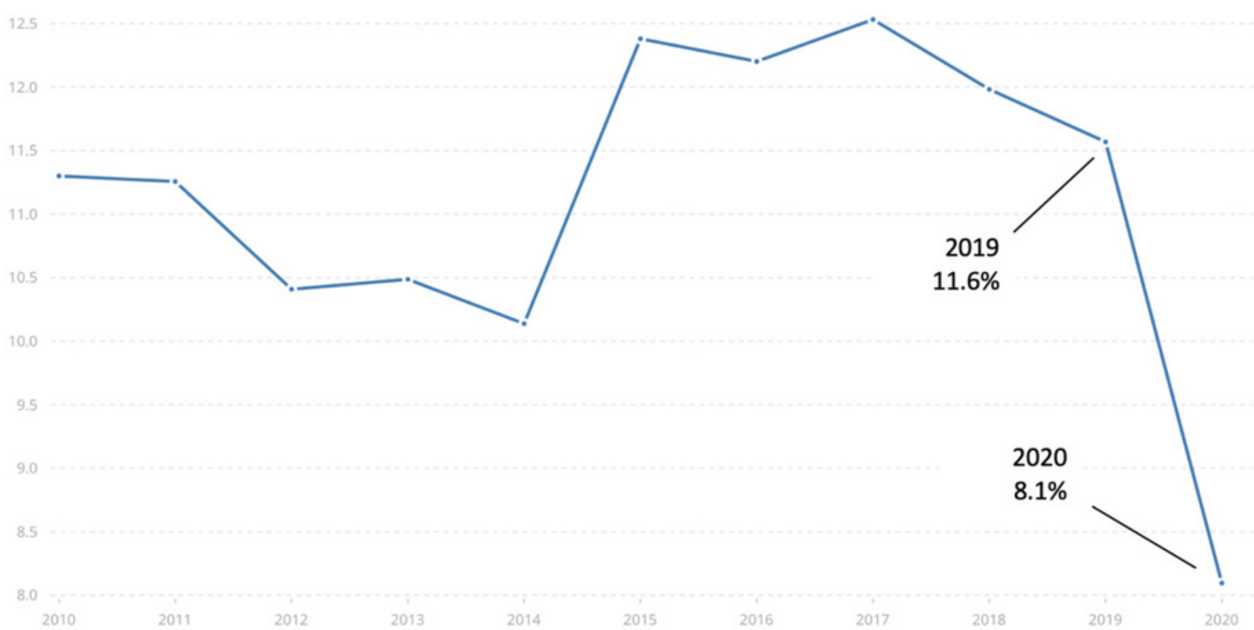
Tax cuts in 2019
In 2019, Sri Lanka saw huge tax cuts in multiple sectors. Value Added Tax (VAT) was reduced from 15% to 8% and seven other taxes were eliminated; the table below lists all of them:-

Table-1: Reduction in Taxes, 2019

Taxes	Changes
Value Added Tax (VAT)	Reduced from 15% to 8%
Nation Building Tax (NBT)	Abolished; combined with Ports & Airport Development Levy
Economic Service Charge	Eliminated
Debit Tax on Banking and Financial Institutions	Eliminated
Capital Gains Tax on Shares Market	Eliminated
VAT on Sovereign Property	Eliminated
Pay As You Earn Tax (PAYE)	Eliminated
Withholding Tax on Interest Income	Eliminated
Credit Service Tax	Eliminated

These tax reductions caused Sri Lanka to lose 10 Lakh taxpayers since 2019. In revenue terms, the government faced a drop in tax collections from 1.73 trillion dollars (in 2019) to 1.22 trillion (in 2020). As a percentage of GDP, Sri Lanka only saw a meagre 8.1% revenue from taxes in 2020.

Figure-1: Tax as Percentage of GDP (2010-2020)



(Source: World Bank, 2010-2020)

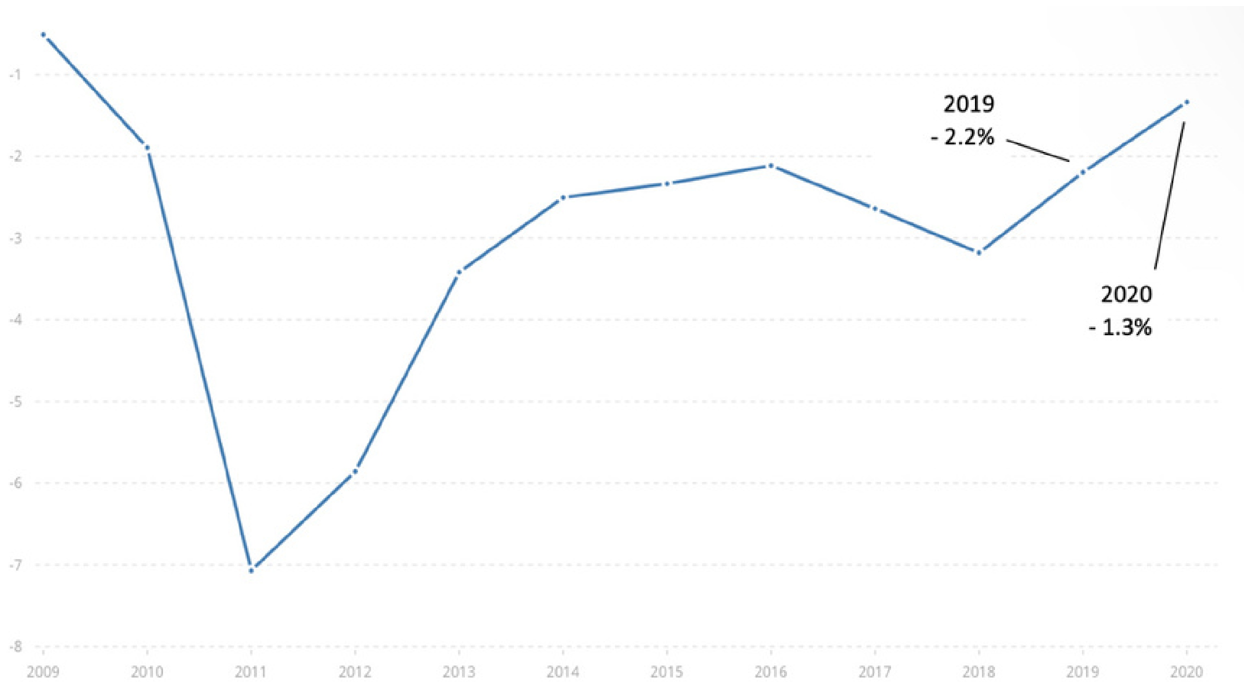
The tax cuts were made to give the citizens more disposable income to spend and invest in the economy. However, they did not have the intended effect. The cuts only lead to a reduction in government revenue and thus an increase in their budget deficit.

The government announced that it would increase the tax rates in 2022. The VAT would again be at 15%, corporate tax would be increased to 30% from 24% and the withholding tax would be put back in place. The government hoped that this would add more than $300 million in tax revenue in the coming years.

5.2 Balance of Payments (BoP) Deficit and Fiscal Deficit

Sri Lanka has faced a deficit on both sides, Balance of Payments (BoP) and fiscal. BoP has seen a negative value since the 1970s. In 2020, the deficit came up to $1.08 billion in value. A continuous BoP deficit is also causing the foreign reserves to deplete which is another cause for concern for the country.

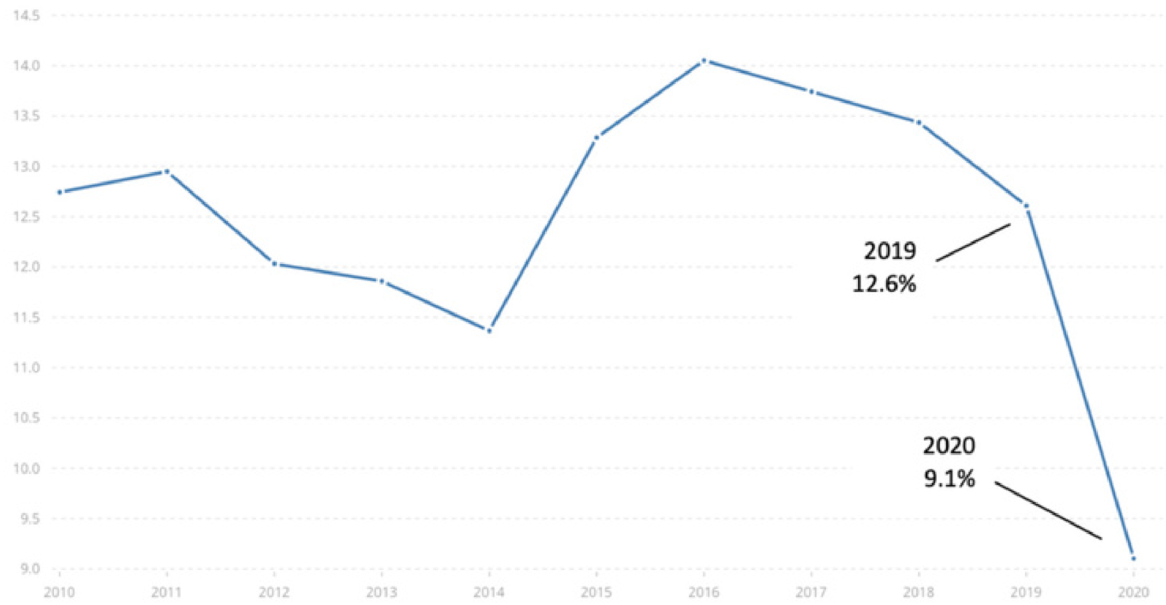
Figure 2: Sri Lanka's Current Account Balance as a Percentage of GDP (2009-2020)



(Source: World Bank, 2009-2020)

The government's revenue has been reducing at a high rate, and this was further pushed by the reductions in taxes. The below graph shows the revenue earned by the government through the years as a percentage of the GDP. The decrease in revenue and an increase in government expenditure due to Covid-19 have led to increasing fiscal deficits in recent years.

Figure 3: Sri Lanka's Government Revenue as a Percentage of GDP (2010-2020)



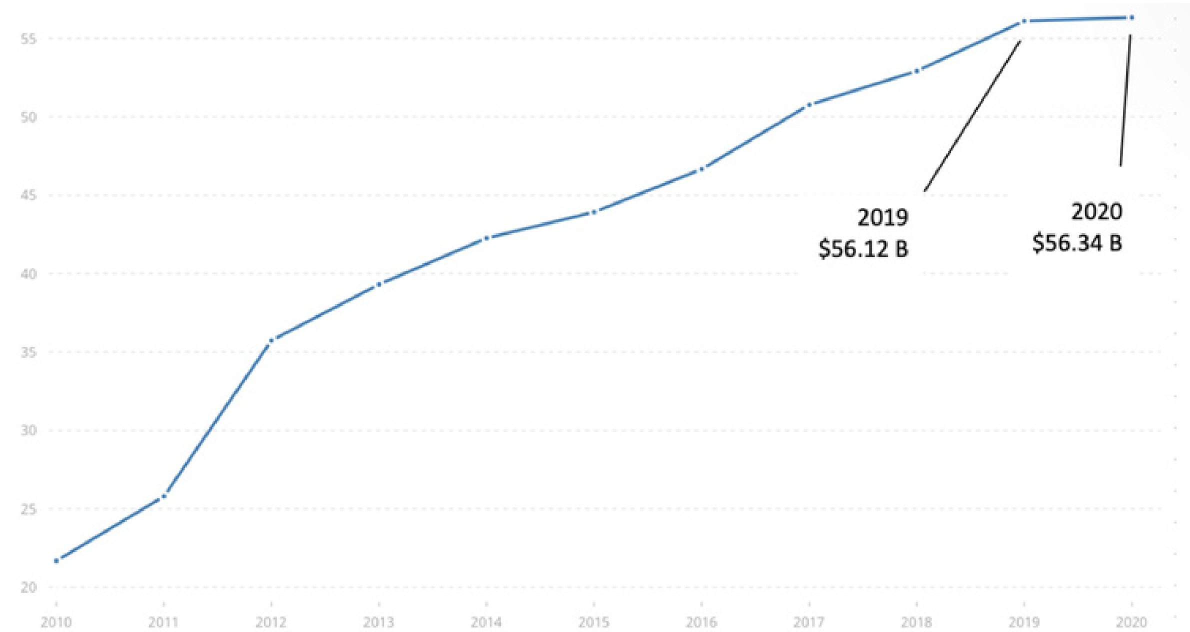
(Source: World Bank, 2010-2020)

Having a deficit in both accounts is called a double deficit. This means that the government is unable to meet its consumption by the revenue it gathers and has to rely more on foreign debt to meet its expenses.

5.3 Foreign Debt Build-Up and Depleting Foreign Reserves

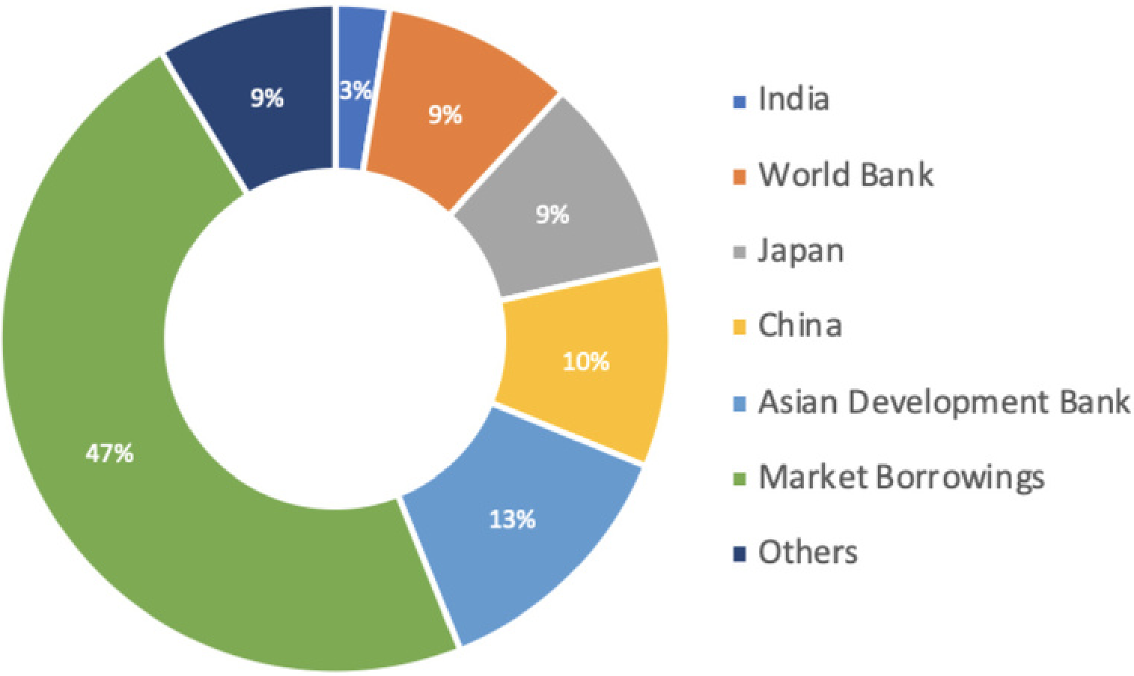
Sri Lanka's external debt has doubled since 2010. It has gone from $22 billion to more than $56 billion in 2020. The debt to GDP ratio has been increasing since 2010- it touched 116% (total debt to GDP) in 2021.

Figure 4: External Debt (2010-2020)



(Source: World Bank, 2010-2020)

Figure 5 Sri Lanka's Foreign Debt Composition (2021)

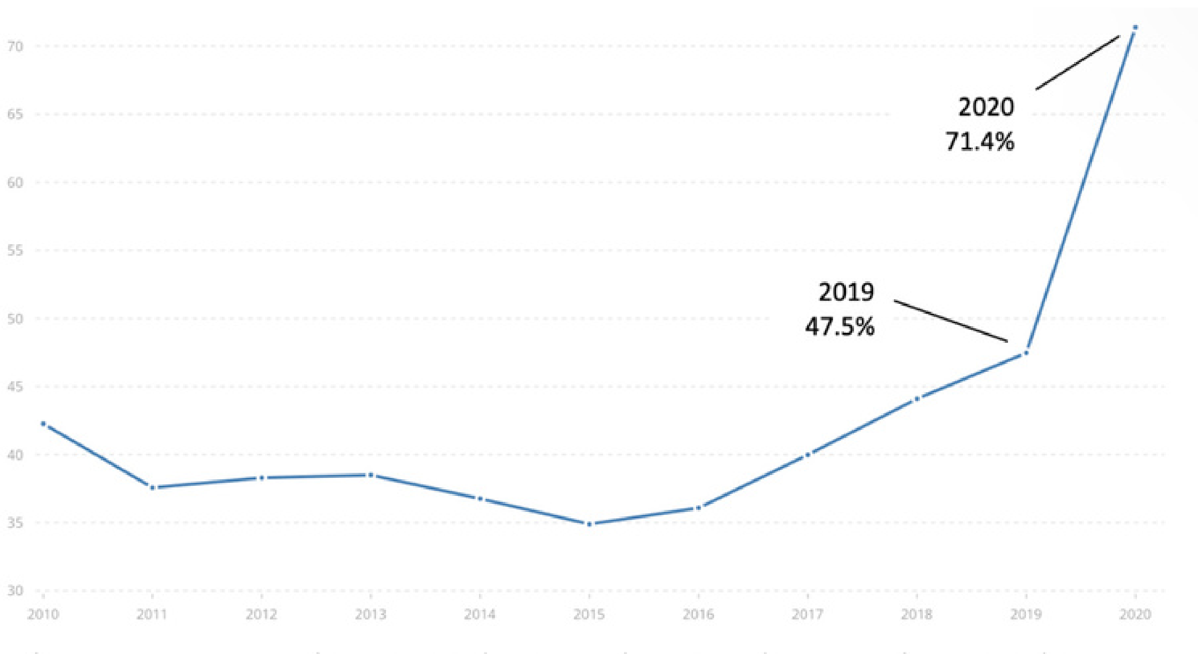


(Source: Department of External Resources)

Much of the foreign debt in Sri Lanka is market borrowings. This comprises ISBs (International Sovereign Bonds) which now make up almost 50% of the debt. ISBs are an instrument of capital market borrowings. They charge high-interest rates with shorter durations. This puts more pressure on the country to repay the loans and incur high-interest costs.

China only has an ownership of 10% of Sri Lanka's debt, however, some analysts worry that it has fallen under China's 'debt-trap diplomacy'.

Figure 6 Interest Payment as a Percentage of Government Revenue (2010-2020)



(Source: World Bank, 2010-2020)

Along with rising foreign debt, Sri Lanka faces the problem of depleting foreign reserves. The reserves have always been fluctuating, but since 2020, they have drastically reduced. Paying back loans with interest and increasing imports has drained the country of its reserves.

Figure 7: Foreign Reserves of Sri Lanka (2010-2020)

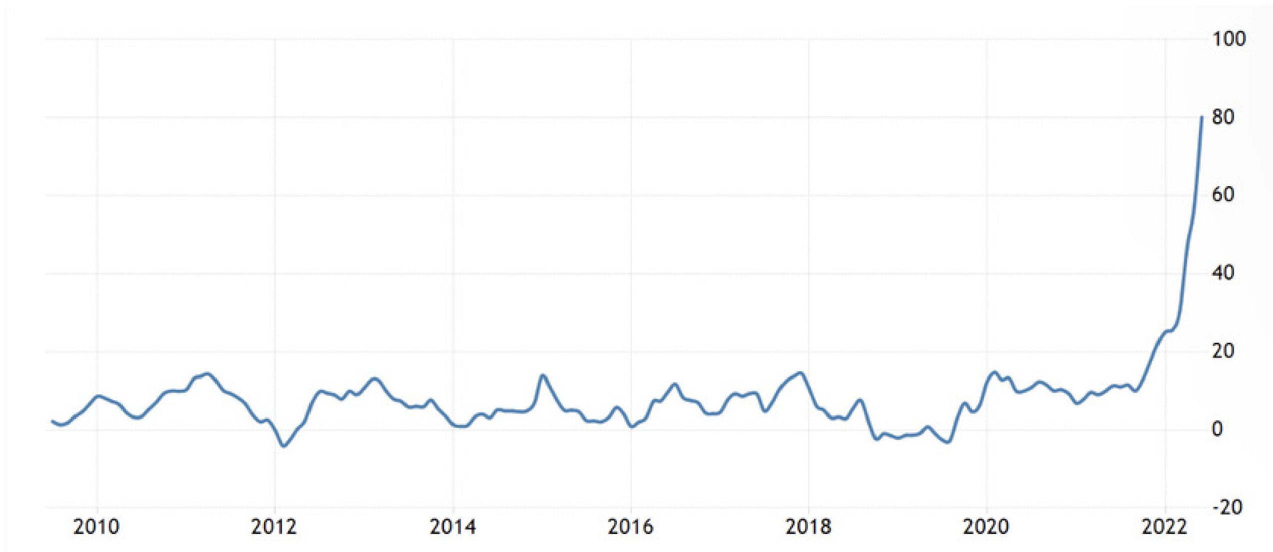
(Source: Central Bank of Sri Lanka, 2010-2020)

5.4 Agriculture Crisis

In April 2021, Sri Lanka's government announced a complete ban on inorganic fertilisers and pesticides. They only permitted organic farming; the government felt that it would be beneficial to health. It was also an effort to curb the depletion of foreign reserves in the country. Fertiliser imports were costing the government around $400 million annually when the ban was announced.

A sudden shift with no prior notice led to a fall in yields for various crops. Tea is a major export item for Sri Lanka, but its exports fell in 2021. Rice production also reduced by 20% and had to be imported from other countries. Food prices were increasing for every item due to a drop in their supply.

Figure 8: Food Prices Inflation (2010-2020)



(Source: Department of Census & Statistics Sri Lanka, 2010-2020)

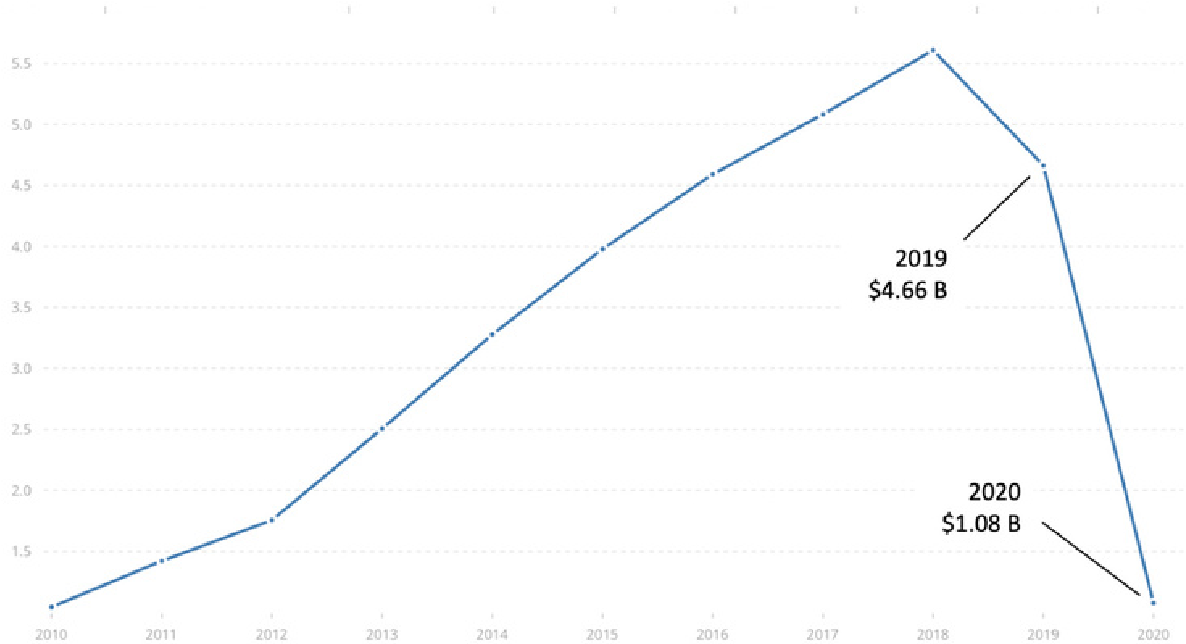
Increased food prices amidst a pandemic caused backlash and people protested against the government's decisions. Sri Lanka's government finally took back the ban at the end of 2021. It recently received a $55 million credit line for fertilizer imports from India to aid their food scarcity.

Furthermore, Russia is the biggest importer of Sri Lanka's tea exports. The Russia-Ukraine conflict has harmed these trade relations and affected exports. The tea exports, thus, would not be able to recover that quickly in the future.

5.5 Fall in Tourism Sector

The tourism sector alone contributes to 12% of Sri Lanka's GDP. It is the fifth largest source of foreign currency in the country. Due to Covid-19 lockdowns and restrictions, the number of travellers and visitors reduced significantly. The international tourism receipts that Sri Lanka saw in 2019 were $4.66 billion. In 2020, they dropped to just a billion. The GDP contribution of tourism in 2020 was just 0.8%.

Figure 9: International Tourism Receipts Sri Lanka (2010-2020)



(Source: World Bank, 2010-2020)

After the lockdown, when the country was trying to open up its tourism again, it was faced with another issue - the Russia-Ukraine war. Russia generates the second-highest number of tourists (following India) in Sri Lanka. Thus the Russia-Ukraine dispute affects the tourism sector in 2022.

CONCLUSION:

Sri Lanka is going through one of the worst economic crises after its independence. It is not the result of one lone mistake, but the aggregate of multiple faults over a period of time and exogenous factors.

The reduction of taxes reduced the government revenue at a time when they needed it for the country during Covid-19. The double deficit (BoP and fiscal deficit) is not a recent issue, but rather just a factor that has gotten worse over time. These deficits have made it easy for the country to build up debt and get stuck under high-interest rates. Combined with the falling foreign reserves, Sri Lanka's economic condition is very unstable. To add to these issues, the rushed implementation of the organic agricultural laws and ban on inorganic fertilisers and pesticides lead to a fall in the food supply, thus leading to inflation. This inflation went out of control in an unstable economy and is bordering on hyperinflation. Finally, the tourism sector, one of the biggest contributors to the GDP also had a big hit due to Covid-19 and the Russian-Ukraine war.

All these factors together contributed to the economic crisis and led the country to bankruptcy.

Recently the government has started to change and make policies to fight this recession. They have been increasing the tax rates again, removing the ban on chemical fertilisers and trying to open up the tourism sector again.

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POLICY ON PROSTITUTION AND NEO COLONIALISM IN THAILAND: THE POLITICAL ECONOMY OF SEX TOURISM

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ABSTRACT-

The Kingdom of Thailand has a set policy on prostitution: prostitution has been deemed to be illegal in Thailand since 1960. Despite this, Thailand exhibits one of the most robust sex work industries in the world, intractably enmeshed with the political economy of sex tourism in the State. This paper attempts to present a brief synopsis of the policies of the state in this domain. It states the major hindrances towards the ideal implementation of these policies to the political economy of Thailand which is dependent on tourism. It traces the historical underpinnings of the same and uses the postcolonial discourse to situate them within the context of neo colonialism and globalisation. It underlies the conspicuous compliance of the Thai State as a major hindrance.

KEYWORDS-

Sex work, Prostitution, Neo colonialism, Sex tourism, Political economy, Globalisation

JEL CLASSIFICATION CODES-

K39, Z130, Z390, P00

INTRODUCTION:

The Kingdom of Thailand has one of the most booming sex tourism industries in the world, with around 250,000 to even 2.4 million sex workers in the country. The Thai sex industry, one of the primary non legal avenues for generating revenue, contributes an estimated 10-12 percent to the nation's overall GDP. This is despite the fact that sex work has been criminalised in Thailand in a way that the sex workers are strictly penalised, and, in effect, thoroughly exploited by their customer, the police and the Thai State. The policies have failed to curb sex work or prostitution . The penalization of the sex worker marginalizes them economically, politically and otherwise. This paper seeks to understand and situate this failure through locating sex work within the political economy of sex tourism of the State. This paper uses a postcolonial perspective to accentuate the neo-colonialist agenda of the western discourse as it constructs the identity of the country as an "exotic sexcape", among other things. The paper mostly focuses on the experiences of the consensual sex worker and the western male tourist. The first section of the paper briefly discusses the two major legal enactments that constitute the policy through which sex work is regulated in Thailand. The second section of the paper delves into the political economy of sex tourism and the socio- historical conditions enabling the industry .The third section briefly looks at the impact of criminalization of sex work on sex workers. To conclude, the paper argues for the decriminalization of sex work.

Prostitution is the world's oldest profession. It was legal in Thailand between 1905-1960. The historical roots of the commercial sex industry can be traced back to the time when King Rama V abolished slavery. Many of the earlier slave women turned to sex work for subsistence as it was the only alternative available to them that offered a relatively convenient transition to wage labour. The state has regularly tried to regulate the growing sex work industry through a number of policies and acts. In 1901, the state passed the "The Control and Venerable Disease Act" that sought licensing fees for sex workers and brothel owners. The rationale and the intention of the state through the same was to obtain profit through the licensing fees. This act further introduced clauses to curb the growing parallel economy of human trafficking of women, especially from neighbouring Myanmar into Thailand. Nevertheless, the policy did not show effective results due to lack of political will in effective implementation of the act since red-tapism was conspicuous within the system. Another major hindrance to the implementation of this specific policy also lay in the political economy of the state. Within the purview of this law, distinctions were made within the perpetrators of human trafficking and the victims, where in victims were exempt from penalization and would be sent to a state reform home for a minimum of thirty days. Since, the specific policy was meant to target the vulnerable trafficked female victims of sex trade, breadwinners of their family, these provisions left such victims without an avenue to earn income for the said time period, further rendering them vulnerable. In 1960, the state passed the first major act that seeked to criminalize commercial sex work with the passing of the "The Suppression of Prostitution Act".

1. Hayley Stainton, "Sex Tourism in Thailand Uncovered" Tourist Teacher, Jan 27, 2023. https://tourismteacher.com/sex-tourism-in-thailand-what-where-and-why/
2. Angana Narula, " What you want to see is what you get: Realities, Representations, and Reputations of sex tourism in Thailand" https://blogs.lse.ac.uk/gender/2019/10/24/what-you-want-to-see-is-what-you-get-realities-representations-and-reputations-of-sex-tourism-in-bangkok/#:~:text=Thailand%20possesses%20the%20reputation%20of,12%25%20to%20Thailand's%20overall%20GDP
3. Kelley, Kristen, "Patriarchy, Empire, and Ping Pong Shows: The Political Economy of Sex Tourism in Thailand" (2015). Cultural Studies Capstone Papers. Paper 11.
4. Asia Rights Watch and the Women's Rights Watch, "*A Modern Form of Slavery Trafficking of Burmese Women and Girls Into Brothels in Thailand",* Human Rights Watch, 1993.

THE SUPPRESSION OF PROSTITUTION ACT, 1960:

The Suppression of Prostitution Act criminalised all forms of sex work, consensual and non-consensual. It rendered those trafficked women who were earlier exempt from penalization as liable to imprisonment and fines. Additionally, all institutional arrangements that facilitated sex work such as brothels, bars, etc. were also penalized, though the extent of punishment was considerably less as compared to the one inflicted on the sex worker herself. The social objectives that this act wished to fulfil was to impose the majoritarian, patriarchal perspective of comprehending sex work as a vice in the society. The political underpinnings behind the act, including an analysis of the level of stakeholder analysis shows that the act was not convened with a consideration of welfare of the sex worker. The act pushed the entire industry, consensual or non-consensual, further within the shackles of a parallel economy, rendering the sex worker politically, economically and socially vulnerable. Red-tapism, the overt State compliance and involvement in the sex industry gave an impetus to its growth. The sex worker was constructed as a criminal, making her bereft of the cover of the social safety net of the State. Meting out the same treatment to the vulnerable trafficked victim points towards the political arrangement that the State made with its own political economy. The policy was ill structured containing a substantial number of ambiguities such as a vague definition of "places of prostitution". Clearly the law left out the "customer" from the ambit of its penalization, exhibiting the patriarchal bias of the policy.

THE ENTERTAINMENT PLACES ACT, 1966:

The Entertainment Act was enacted in 1966, a year after which the American soldiers landed in Thailand during the Vietnam War through its "Rest and Recreation Policy". This act laid the ground for the entrenched foundation of the sex tourism industry in the country, which has been analysed in the paper in the later sections. Machiavelli states in "The Prince" that a policy is essentially an activity of sustaining power. For the Thai Government to maintain power, it had to deal strategically with the neo colonial American power where conflict was not very far from its borders. In this context, it needed to facilitate access to sex for the American soldiers. Hence, the new act seeked to regulate the spaces where sex work could be allowed. Sex work to some extent was decriminalized, although the sex worker still remained penalized. The policy was especially ill- structured, technically speaking, with no considerable stakeholder participation or intergovernmental consultations. The act gave tremendous power to the regulating authority, i.e. the local police to exert control as a surveillance apparatus that would exhort money from businesses in the guise of collecting license fees. The law effectively removed penalization for every other agent involved in the business except the sex worker. Simpkins explains this as: "In addition, the bureaucratic power of TAT reinforced sex work tourism enabling leisure travellers from high-income economies to consume the sexual services of Thai women in well-organized style without any fear of criminal accusations. Thus, sex workers' autonomy was weakened despite their increasing importance in the Thai economy."

Here had been contradictory policy frameworks adopted by the State on the issue. The failure by the Thai government to consistently and effectively enforce the laws that make the laws generally ineffective, which creates a situation where commercial sex is allowed to exist and flourish, yet the sex worker is left at risk due to being forced into work in an underground economy.

5. Niccolò Machiavelli, "*The Prince*", trans. George Bull, London: Penguin Classics, 2003.

The Human's Right Watch states: "As a result, inconsistencies and even contradictions emerged: the Penal Law [anti-rape legislation] severely penalizes persons who have sex with minors, the Anti-Prostitution law does not; the Anti-Trafficking law exempts women trafficked into prostitution from imprisonment or fines; the Anti-Prostitution law makes so such exemption; the Suppression of Prostitution Act penalizes prostitution, the Entertainment Places Act, at least indirectly, regulates and even taxes it." The tourism industry complies with the police to bolster sex tourism, hence feeding off from the same. Steinfatt explains that a sex worker's identification card may be required to be held in the front at the front desk of the hotel of the tourist during her visit, in order to ensure that she does not steal from her customer as well as to secure a side payment for the hotel by the customer for having an unregistered person in the room (not for providing a space for commercial sex). The police also do not want to upset foreign tourists, and therefore do not make arrests of sex workers in foreign oriented bars, unless the bar owner has neglected to keep up with their payments as required under the Entertainment Places Act.
The very basis for the failure of these policies is extremely entrenched and needs to be understood through the postcolonial discourse situated within the political economy of the State contextualised by the intricate labyrinth of imperialism and globalisation of the sex tourism industry.

THE POLITICAL ECONOMY OF SEX WORK IN THAILAND: NEO COLONILALISM, GLOBALIZATION AND SEX TOURISM

Sex work(exchange of sexual services for cash) is a critical part of many developing economies, and a unique one from a gender perspective. The arrival of American soldiers reshaped both Thailand's economy and its relationship with the west. According to Simpskins, militarization was a strong impetus for the development of sex industry in Thailand. Thus, Thailand's portrayal as an 'exotic sexcape' tourist destination constructed in the mind of the western male tourist is a function of imperialism and globalisation. Pettman states that, "There is a long and now well-documented international politics around military prostitution, from colonial times to the present, as colonial authorities and now foreign military commanders and local government officials negotiate to make sex available to soldiers, while reducing the local political impact". It's the function of colonialism to reduce the colonised to a commoditized entity, available for the western male tourist to consume. Edward Said's conception of "Oriental gaze" can be utilised to explain the legitimisation of this brand of neo colonialism especially over the Thai women's "gendered, racialised, sexualised and othered" body in the western discourse. For the western tourist, location of purchasing sex is more important and the act itself as they are willing to spend extra money to travel to Thailand to engage in sex rather than looking at cheaper options available at home. Needless to state, Thailand's tourism industry survives off its sex industry. In this context, what globalization brings for developing countries like Thailand, is a postcolonial structural arrangement that ensures that Thailand is forced to sustain its economy through sex tourism only. The bar owner, the hotel manager, the night guard, the fish vendor, the restaurant chef and every worker who sustains off the tourism industry is dependent on the sex worker to sell off her sexual labour , who in turn is dependent on the male tourist to buy her labour.

There are cultural as well as economic reasons that force women into sex tourism industry in Thailand. Historically, Thailand has had a matrilineal societal structure where women had played

6. Dulcey Simpkins, "*Rethinking the Sex Industry: Thailand's Sex Workers, The State, and Changing Cultures of Consumption*." Michigan Feminist Studies 12 (1997 1998): n. page. University of Michigan Library. Web. Nov. 2014.
7. Kristen Kelley, "*Patriarchy, Empire, and Ping Pong Shows: The Political Economy of Sex Tourism in Thailand*" (2015). Cultural Studies .Capstone Papers. Paper 11.
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10. Dulcey Limpkins," Rethinking the Sex Industry: Thailand's Sex Workers, the State, and Changing Cultures of Consumption" Michigan Feminist Studies vol.12, 1997-1998. For more readings on this, see Troung and Enloe.
11. Kristen Kelley, "*Patriarchy, Empire, and Ping Pong Shows: The Political Economy of Sex Tourism in Thailand*" (2015). Cultural Studies Capstone Papers. Paper 11

significant economic roles. Although traditional division of rural labour exists, the line between women's and men's work is flexible. In urban Thailand, women are prominent in trade and professional jobs. Cultural aspects embedded in Thai society compel the daughter to work and repay her parent's hard work through engaging in some economic role. In rural northern Thailand, economic inequality and poverty further accentuates the situation and compel the women to earn. Hence, migration to urban areas for income lands them in the throes of sex work. In Thailand's political economic space, women engaged in sex work earn more than women (and men) engaged in other professional roles. This can be traced back to an economic structure substantially sustained on sex tourism. Although for the Thai women practising sex work consensually, the globalization of the same, nonetheless limits their agency to have a choice. While Thai women are empowered in the way that they are able to profit off of the heteronormative ideologies of the sex tourism industry, it is forces such as poverty or the patriarchal structure that limits them from wage labour opportunities by which they are faced with the choice of prostitution as a means to provide for their family or earn substantial wages.

The Thai government's complicity in promoting the same is an obvious affair. Authorities are complicit in the local sex trade establishments. Businesses such as Karaoke bars, bath and tea houses, and massage parlours were deemed legal by the royal Thai government, despite common knowledge that these establishments are infamous for servicing and employing, and providing commercial sex services. These workers lack any agency to challenge any kind of abuse that they go through, especially from the police. Sexual assault by the police reinforce the powerlessness and marginalization of sex workers.

Hence, we see that there is a subtle politics behind keeping the sex tourism industry as a part of the parallel, underground economy.

MARGINALISATION THROUGH CRIMINALIZATION:

Criminalization of sex work stands in confrontation to the economics of the Thai tourism industry. Even though sexual consumerism is not illegal, the lack of access to health care by sex workers puts sex tourists at risk for contracting STIs. As Pettman describes this issue, "AIDS itself is conspicuously a part of this international political economy of sex, demonstrating how permeable state borders and people's bodies are to certain kinds of international traffic". Keeping the sex worker outside the purview of law has its own politics. It makes the sex worker more vulnerable to exploitation at all levels, taking away her autonomy and control in an industry where she could be made to feel the most vulnerable. In the same breadth, it is important to discuss the distinction and the distinct vulnerabilities felt by consensual sex workers and trafficked sex workers.

The myth that all the sex workers in the industry are victims of human trafficking is often perpetuated by Western discourse and can be very harmful to the sex worker's livelihood and working conditions. A differing feminist perspective might say that sex work can actually provide an avenue for women to escape patriarchal structures that regulate her sexuality. If decriminalized, sex work can be made safer.

12. Dulcey Limpkins," *Rethinking the Sex Industry: Thailand's Sex Workers, the State, and Changing Cultures of Consumption"* Michigan Feminist Studies vol.12, 1997-1998. For more readings on this, see Troung and Enloe.
13. Jan Jindy Pettman "Worlding Women: A Feminist International Politics". London: Routledge, 1996. 203.
14. Edward Said, 'From orientalism' Colonial Discourse and Post-colonial Theory: A Reader. By Patrick Williams and Laura Chrisman. New York: Columbia UP, 1994. 132-49.
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18. Martha Mensendiek, "*Women, Migration and Prostitution in Thailand."* International Social Work. SAGE, London, Thousand Oaks, CA and New Delhi. Vol. 40, 163-176 (0020-8720; 1997/04).

CONCLUSION:

Since the existing skewed framework does not make a distinction between the consensual sex worker and the forced sex worker, penalizing both in similar fashion, it follows that the proposed policy correction should be the decriminalization of sex work. Decriminalization of sex work would ensure that sex workers are entitled to basic human rights, reproductive rights, occupational mobility and legal protection. Decriminalization would significantly lessen the opportunities available to perpetrators to exploit the sex worker. It would grant her control and autonomy within the system. The complicit State and the regulating authorities shall come under the regulative purview of the law which will reduce red-tapism in the matter. The customer shall come under the purview of the law and would be liable to penalization in case of any exploitation caused on his behalf to the sex worker. It is equally necessary to curate effective rehabilitation policies for the forced victim and the alternatives to be made available to her should look beyond the conservative patriarchal bias. Poverty is the prime factor that forces women from rural areas to migrate to urban Thailand and practise sex work. This, in effect, was created due to Thailand's ineffective development policies that created massive disparity between the urban and the rural. Broadly seeking, we need more equitable growth to reduce disparities between the same and offer alternative and viable economic opportunities to women.

This paper primarily dealt with female sex workers, primarily from the perspective of a consensual female sex worker. Through the creation of multiple gender identities within neoliberalism, we now have the queer sex worker. Additionally, there are male sex workers in the scene. Future researches in the matter can analyse the politics of queer sex work, gay intimacy and its relation with sex tourism. Additionally, research must explore the oriental gaze function between the white female western tourist and the Thai male sex worker, situating them within oriental power politics. Additionally, more research can analyse the relationship between third world tourists and the construction of their identity as they interact with the Thai sex worker, using a postcolonial perspective. It would be interesting to note how the western male tourist would reconstruct his identity and define his attitude towards the " sexcape " Thailand when the decriminalisation of sex work takes away his colonial privilege to " have his way" with the now empowered sex worker.

19. Kristen Kelly, *Patriarchy, Empire, and Ping Pong Shows"* 18.
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22. Kristen Kelly, *Patriarchy, Empire, and Ping Pong Shows"* 35.
23. Jan Jindy Pettman," Worlding Women: A Feminist International Politics". London: Routledge, 1996. 203.
24. Kristen Kelly, Patriarchy, Empire, and Ping Pong Shows" 36.

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SRI LANKA'S SAMURDHI POLICY - TOWARDS PROSPERITY OR AUSTERITY

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ABSTRACT

Sri Lanka has implemented numerous social programmes throughout the years as a developing country. Among these, the 1995 Samurdhi initiative has become the most well-known. The objectives and feasibility of the programme are discussed in the opening paragraphs of this paper. Next, it examines the policy's detractors in the public. Finally, it discusses the central issue that drives the entire research—whether Samurdhi led to prosperity or austerity? Involving the populace in Sri Lanka's development to combat poverty was the main goal of this programme. Despite the government's best efforts in implementing the policy, Samurdhi has been criticised for its unaccountability, inadequate transferability, and targeting. This paper investigates whether the programme actually does what it purports to, that is, advancing the country toward prosperity, or whether its shortcomings actually lead to austerity. The research also identifies ways to improve the programme while strengthening ties between society and the state.

KEYWORDS

Welfare, Poverty, Policy

JEL CLASSIFICATION CODES-

I310, I380

INTRODUCTION

The Samurdhi1 Program was launched by the Sri Lankan government in 1995 with the primary goal of eradicating poverty in the country. It was run by its own ministry and the Samurdhi Authority and had a vast network of national and local officials administering its operations. The initiative had been fully implemented in 21 of the 25 districts of the nation by the end of the 1990s. Families with monthly incomes of under Rs. 1,000 were determined to be eligible for Samurdhi subsidies in 1995. The majority of the program's funds were delivered to households as food stamps, with eligibility determined by need, as the principal objective of the programme was to reduce poverty. Approximately one-third of the national poverty line was chosen as the household eligibility criteria in 1998.

This programme mainly includes two strategies, short-term and long-term. Components of the short-term approach include income support, social insurance, and social development initiatives that mitigate poverty. The long-term plan calls for social mobilisation, female empowerment, and integrated rural development.
Samurdhi is the nation's largest welfare program, accounting for more than 1% of GDP or roughly half of all welfare expenditures, excluding those for education and health [Glinskaya, 2000]. Since 2003, the World Bank has been offering non-lending technical assistance for the Samurdhi welfare reform in response to a request from the Sri Lankan government. Over the years, the policy has undergone significant changes. It has since been modified to now have two main parts: the empowerment programme and the relief programme. The cash distribution programme, nutrition programme, and social security fund are all part of the relief programme. The Department of the Commissioner General of Samurdhi (DCGS)2, which receives funding from many ministries and departments, conducted a kerosene assistance programme in 2008 and is also involved in the distribution of dry ration stamps for internally displaced people (IDPs)3.

Goals of the Samurdhi Programme

1. Forming small groups, establishing Samurdhi societies, and enhancing rural communities to recognize the potential of rural households.
2. By 2013, the urban, rural, and estate sectors should be developed through economic, physical, and social growth.
3. Coordination of regional, national, and international governmental and non-governmental groups to support provincial development.
4. Improving the micro-financial network to strengthen the economy as a whole.
5. Creating a technically sound organisation for the Sri Lankan Samurdhi Authority4

Feasibility

The programme is entirely funded by the Sri Lankan government and consumes over half of the country's total welfare expenditure (excluding education and health), or about 1% of its GDP (US$139 million in 1999).
Legally stated, the Sri Lanka Samurdhi Authority was founded by the Samurdhi Authority Act No. 30 of 1995, and it was carried out in accordance with the Social Charter of the South Asian Association for Regional Cooperation (SAARC)5.
In terms of human resources, the programme has about 25,000 officers functioning at various levels from the national level. The Samurdhi Task Force6 has an elected Executive Committee and additional members who represent both government and non-government organizations at the local level.

However, officials observed that in matters of child welfare and protection, penetration was still limited to metropolitan regions, with reduced penetration in rural areas, which face real challenges due to human and financial resource limitations.
These limitations negatively impacted the programme. The number of beneficiaries each Divisional Secretariat7 serves varies in accordance with the severity of poverty and the resources provided by the government. Due to lack of resources, a large number of potentially eligible households were not receiving the benefits of the initiative.
This is why Samurdhi has drawn criticism from international actors like the Food And Agricultural Organisation (FAO)8 for being a welfare strategy that encourages dependency rather than assists the socio-economic development of the Sri Lankan population. It is viewed by the FAO as a technique that makes the initiative challenging to maintain over time.

THE PUBLIC'S GRIEVANCES

Since the Samurdhi programme is a voluntary one, its benefits and activities are only available to those who apply (and are accepted into the programme). On the other hand, the politicization and favoritism that affect how resources are distributed are a source of public discontent. According to the Centre for Poverty Analysis (CEPA)9, "perceptions of bias, discrimination, and political influence emerged as the main causes of dissatisfaction with the delivery of state social safety programmes." Samurdhi's beneficiaries and applicants both expressed displeasure with the method used to choose participants. A few responses pointed out the specific instances when Samurdhi recipients had consumer goods and trishaws and questioned how they were chosen when others in the same division were obviously poorer but weren't receiving benefits. People from all across the country who applied for benefits but did not receive them claimed this was because of bias and favoritism.

According to some, those with certain political affiliations are given preference when choosing who receives Samurdhi benefits. The inclusion of a sizable number of households that are ineligible as a reward for political allegiance to the ruling party appears to be the main abuse. There have been reports of party organizers luring supporters with the prospect of Samurdhi rewards. In several areas, qualified Samurdhi recipients who do not support the ruling party were warned that if they attempted to cast a ballot in a forthcoming election, their names would be struck off the Samurdhi lists and their benefits would be terminated.

SAMURDHI POLICY (PROSPERITY OR AUSTERITY)

Sri Lanka has succeeded fairly well in the fight against poverty compared to its South Asian counterparts. The number of those living in poverty in the country has gradually decreased, from 1.3 million in 2012–13 to only 843,913 in 2016. In addition, the percentage of households with low incomes has declined from 5.3% in 2012–2013 to 3.1% in 2016. With a drop of more than 70% between the years 2006 and 2016 (PHCI 2006/7 15.2% - PHCI 2016 4.1%), the poverty headcount index (PHCI)10, which calculates the percentage of the population that lives in poverty, also shows a long-term downward tendency.

Samurdhi supports more than 1.8 million people. Samurdhi Bank11, the program's own financial institution, has strong support networks at all levels of government, from the federal to the village. The local focus of the activities enables direct participation by families and households in all aspects of the programme, from planning to monitoring.

According to some researchers, the "Samurdhi" initiative has made progress towards bridging the divide between the state and society (Department of External Resources, 2011). Several of its initiatives strongly include community leaders, employees, and the targeted families in decision-making, especially when it comes to project identification, targeting, and monitoring. In addition, they stress how government programmes are connected with community activities by various government sectors, which provide technical, managerial, and financial resources (ERD, 2011).

The programme significantly contributed to the empowerment of the poor and graduated them out of the "poverty trap (Nawaratne, 2010)." Other helpful strategies to help with vulnerabilities are the Samurdhi group-savings and intragroup credit systems (Salih, 2000).

But, ineffective targeting has been a serious issue for the organization. Low-income families should be the program's main target group. However, an examination of Samurdhi beneficiary homes shows that it also helps high-income families. As of 2019, over 33% of Sri Lankan households received Samurdhi subsidies12, which is much higher than the nation's current poverty statistics. Data shows that targeting has been worse over time, with fewer low-income households benefiting annually. As a result, there are concerns regarding inclusion (having excluded groups) and exclusion in the programme (having eligible groups excluded).

According to a 2007 study by CEPA, the Samurdhi food stamp programme, which accounts for 80% of the overall programme budget, "misses out on about 40% of the households in the poorest quintile while almost 44% of the budget goes to households in the top three quintiles." The World Bank stated in its appraisal of the project, "Based on the empirical examination of the distributional outcomes, Samurdhi does not emerge as an efficient transfer program." "Although it has a small success rate in reaching the targeted recipients, a sizable portion of its funds are given to non-poor people."

The problem of inadequate targeting can be highlighted by a comparison of the percentage of households served by the Samurdhi programme by per capita expenditure deciles. According to calculations made using data from the Household Income and Expenditure Survey (HIES)13, almost 60% of households in the two income deciles with the lowest incomes in 1995/96 were Samurdhi beneficiaries. Over 55% of households in the lowest decile who qualified for Samurdhi support did so during the 2006–2007 HIES period. This decreased to only comprise 45% of the poorest households in 2009–2010. This fraction represented only 36% of households as of 2012/13. Recent statistics show that in 2016, just 39% of households in the lowest decile received Samurdhi aid.

The total percentage of households getting Samurdhi has climbed from 16.4% in 2012/13 to 20.1% in 2016, according to a comparison of the two recent HIES survey periods of 2012/13 and 2016. Data also shows that, with the exception of decile 10 households, this increase is typical across all deciles (richest). As a result, although the poor will benefit from this increase, it has also shifted in favour of the wealthy, who are not qualified to receive aid under the Samurdhi programme.

The programme has an extensive structure that operates throughout the nation, but it is politically susceptible because it lacks a transparent control system and management, monitoring, and evaluation mechanisms. The political aspect may influence not just whether an evaluation should be conducted but also how it is carried out. Governments occasionally don't want to spend precious resources evaluating initiatives like Samurdhi.
Similar criticisms of the Samurdhi program have been leveled at it for providing insufficient benefits, vague eligibility requirements, and no entry or exit mechanism. Although the program has been improved over the years by modifications, the cost has significantly gone up.

CURRENT STATUS OF THE SAMURDHI PROGRAMME

The Sri Lankan Ministry of Economic Development14 currently oversees the Samurdhi Authority (SA), which carries out the Samurdhi Programme (SP). Over 27,600 people are employed island-wide by the Samurdhi Authority to carry out the programme. Around 24,000 of them work as Samurdhi Development Officers (animators), 2,000 as Samurdhi Managers, and the rest are employed in a variety of positions related to the Colombo headquarters (Samurdhi Authority of Sri Lanka, 2011). The Samurdhi initiative, according to Kesavarajah (n.d.), cost the government 1% of all government spending and 0.2 percent of GDP in 2009 (Jayaweera, 2010). The monthly Samurdhi allowance has been increased to an amount ranging between 5,000 and 7,500 rupees per month for approximately 1.7 million families currently. Apart from this, 5,000 rupees were provided per month temporarily to around 726,000 families who were on a waiting list to expect Samurdhi benefits. In addition, the stipend for aged, crippled, and kidney patients in Sri Lanka has been raised to 5,000–7,500 rupees, and 5,000 rupees has been set aside as interim help for those on the waiting list for this assistance.

The government has also created plans to assist the grantees for a period of three months using a portion of the US $ 300 million it received from the World Bank15. The Ministry of Samurdhi and the Department of Samurdhi Development are playing a vital role in the direction of this effort, which is being carried out under the guidance of the Prime Minister's Office and the Ministry of Finance.

In light of this, plans have been made to immediately credit each beneficiary's family's bank account with the monthly stipend, including Samurdhi recipients' families.

OTHER SHORTCOMINGS OF SAMURDHI

There is a need for an efficient administrative framework to build state-society energy. The collaborative connection between the state and civil society can be harmed by weak public administration institutions. Numerous researchers have noted that Samurdhi's effectiveness is severely hampered by the enormous administrative expenditures caused by its clumsy administrative structure. For instance, salaries and wages make up about 10% of overall spending. The uncompromising clash between political motives and development motives is one of the primary problems of Samurdhi. Political development disputes are mostly fueled by the program's cumbersome administrative structure.

Samurdhi's jurisdiction also frequently overlaps with that of other governmental entities, including the Department of Social Services, the Department of Agriculture, and numerous local government organizations. In addition, a lot of Samurdhi capital and enterprise development projects are organized and carried out in a spontaneous manner (ERD, 2011). As a result, investments have a propensity to be technically flawed, and the community is not as involved in preserving assets. Beneficiaries' "dependence attitude" is another weakness in the Samurdhi programme. According to studies, Samurdhi subsidies in some areas have also deterred the unemployed from looking for work (ERD, 2011).

WAY FORWARD

Since the Samurdhi programme is a significant government initiative to combat poverty, understanding how customers perceive and experience issues with service delivery can help to enhance both the programme and the service delivery system.

The introduction and implementation of a rating system for small groups, village societies, and bank unions, as well as the proper, systematic, and regular evaluation of officers, ensuring the timely delivery of circulars, and the officers' adoption of contemporary technology are some of the methods for ensuring more efficient and effective service delivery. Additionally, a lending programme should be made available to them through Samurdhi Banks.

It is also necessary to periodically assess the programme and its ramifications. Even though Samurdhi banks have been around for about 27 years and have improved clients' living conditions, consumer needs can change at any time. The Bank's programmes will therefore be improved by reviewing prior performance and detecting trends.

CONCLUSION

This study sought to ascertain how the Samurdhi initiative affected the decline in poverty, in addition to pointing out the programme's shortcomings. The people have issues with the policy since it is mostly unaccountable and vulnerable to political interference. It is the duty of the state to rebuild public trust and establish a strong relationship with its people. The Samurdhi Programme calls on the government to pursue economic policies that aim to develop Samurdhi activities in order to aid the disadvantaged population by giving them better opportunities for employment and income growth.

However, it is crucial to address the program's shortcomings and take the necessary measures while also taking into account the impoverished people's will, in order to further extend the program's positive consequences.

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FOOTNOTES

1. Samurdhi - Prosperity
2. It was established in accordance with the Divi Neguma Act No 01 of 2013
3. At the end of 2006, at least 520,000 people in Sri Lanka were victims of conflict-induced displacement
4. It carries out social and economic development projects to fulfill its primary goal of reducing poverty in Sri Lanka.
5. an economic and political regional organization of countries in South Asia set up in 19856 an elite paramilitary police unit of the Sri Lanka Police specializing in counter-terrorism and counter-insurgency operations.
6. The districts of Sri Lanka divided into administrative sub-units
7. International organization working to defeat hunger and improve nutrition and food security
9. a non-profit, non-partisan, think tank and research organization established in Washington, D.C., in 1988
9. the simplest measure of the prevalence of poverty in a particular area
10. A total of 905 Samurdhi Bank societies were established throughout the country.
11. Samurdhi Subsidy Programme for the Empowerment of Samurdhi Beneficiaries (1995) to provide assistance to people
12. Presents methodological descriptions of household income and expenditure surveys carried out between 1977 and 1990 in 86 countries
13. a former minister of the Government of Sri Lanka, and was a member of the cabinet of Sri Lanka.
14. Sri Lanka is on the brink of bankruptcy

ANALYSING INDIA'S GROWTH TRAJECTORY

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ABSTRACT-

India as an economy has shown incredible growth over the last 10 years, but generational changes like climate change are going to dictate growth for the foreseeable future. This paper aims to analyse whether India is going to be able to maintain this magnificent growth. A multiple regression model has been used to predict and analyse economic growth. We have hypothesised whether India is doing enough to predict climate damage while proving a positive correlation between sustainable debt issuance with GDP and HDI. Lastly, we have also analysed the qualitative factors affecting economic growth.

KEYWORDS-

GDP, Climate Change Performance Index, Human Development Index, Multiple Regression

JEL CLASSIFICATION CODES-

C3, E51, E58, I24, Q56

OVERVIEW

India has had exceptional growth in terms of infrastructure, industry and in breaking the social construct since independence. Counted amongst the top economies in the world today, India is self-sufficient in multiple sectors including but not limited to providing accessibility to food to most of its population, achieving industrial efficiency and raising the standards for general well-being

This raises the question, how do you measure this economic growth and more importantly, how can you predict this growth while accounting for extraordinary events or generational changes in the environment, for example, the covid pandemic and climate change. There are political and social factors that affect the economic growth of a country and are dependent on its growth for their future progress, not to forget the financial factors in terms of the stock markets and foreign direct investments.

Over the last 10 years, India has shown growth in all sectors of the economy, especially the service sector. Looking at the GDP growth rates of India and comparing them with the developed economies of the world, we observe that only China has shown the levels of growth India has.In this paper, we will analyse whether the predicted Indian economy growth rates are feasible or not.

All data has been taken from the World Bank website.

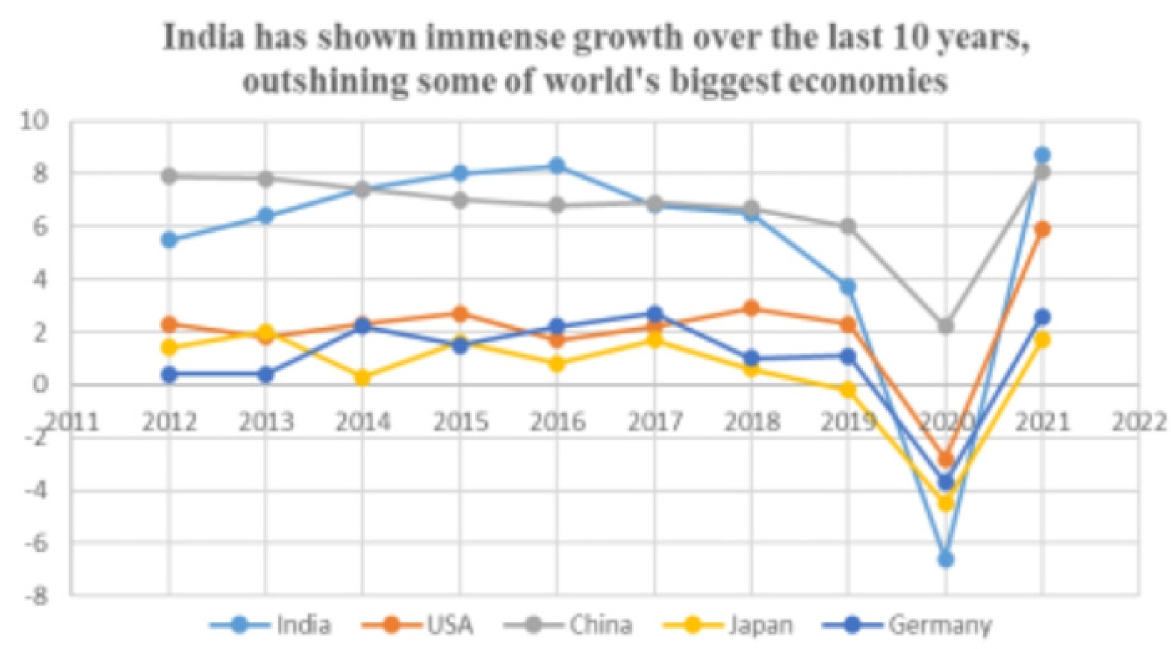

Exhibit 1: The GDP growth rates of the world’s strongest economies

The GDP only presents one facet of a multifaceted phenomenon – growth. In the context of the everchanging social, economic and business environment, we have to consider a major factor which will be instrumental to growth in the coming years – climate change. We have to consider the steps taken by the government to tackle climate change and its relationship with economic growth as a whole, to analyse the qualitative factors that quantitative economic indicators account for while describing growth.

In this paper, we aim to analyse whether this growth trajectory can be maintained by India in the coming years. Subsequently, this paper has been divided into three sections:
1) **Multiple Regression Model**: A multiple regression model has been used to compute, predict and analyse India's GDP growth rate.
2) **Indian Economy and Climate Change**: No economy can prosper if it neglects countering climate change and carbon emissions. Through hypothesis testing, we provide a mechanism for the analysis of economic growth and its intersection with climate change.
3) **Qualitative Factors Analysis:** We analyze effect of qualitative factors on the economic growth of a country in this section.

MULTIPLE REGRESSION MODEL:

METHODOLOGY:

<u>Rationale for the Model:</u>

When we compute the growth of a country through the monetary measure of Gross Domestic Product (GDP), we have to take into account the fact that the GDP itself is dependent on a host of factors.
The limitations of the measure of GDP in terms of not considering qualitative factors in its evaluation has been dealt with in another part of this paper.
In this paper, we try to establish a relationship of GDP with external factors whose growth is contingent upon and analyse whether the projected growth rate is indeed feasible.
Dependent Variable (Yi):
The dependent variable - Gross Domestic Product (GDP).
All data has been sourced from the International Monetary Fund.

India has grown on an average of 5.59% over the last 10 years.
2020 was the year when the covid pandemic hit and hence growth took a massive hit that year.

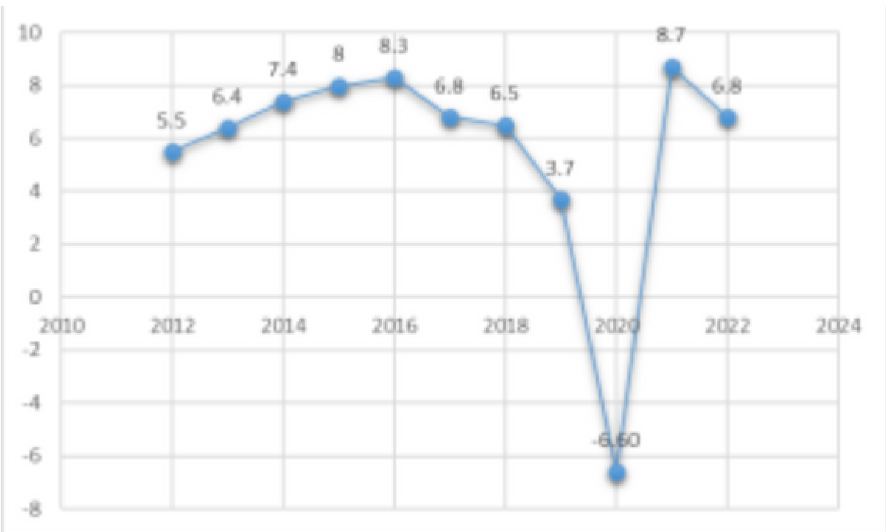

Exhibit 2: Real GDP Growth Rate of India over a 10-year period.

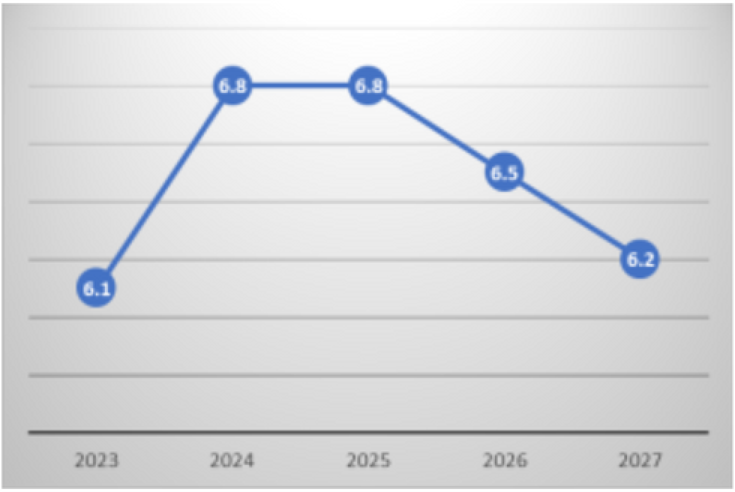

EXHIBIT 3: INDIA'S PROJECTED REAL GDP GROWTH OVER THE NEXT 5 YEARS.

Independent Variables (Xi):
The dependent variable has been regressed on the following independent variables:
1) BSE Sensex
2) Foreign Exchange Reserve
3) Repo Rate
4) Net Exports
5) Foreign Direct Investment

Data Collection

IStandard and Poor's is a creator of financial market indices. S&P BSE Sensex has been used to measure the overall prospects and environment for growth in different industries. Data related to the GDP has been collected from the International Monetary Fund's website while data for the S&P BSE Sensex has been sourced from its official website. Data for change in foreign exchange reserve and repo rate has been collected from the Reserve Bank of India's press releases and other official communications over the years. Data for Net Exports has been sourced from the World Bank's website and Ministry of Commerce and Industry. Data for FDI has been collected from the Department for Promotion of Industry and Internal Trade 's (DPIIT) official website.
All figures are in percentage terms (%).

	Y_i	X_1	X_2	X_3	X_4	X_5
Year	GDP	S&P BSE Sensex	Forex	Repo Rate	Net Exports	FDI
2012	5.5	25.05	-3.32	1.75	0.227	-34.24
2013	6.4	8.49	0.233	-1	5.28	17.08
2014	7.4	29.57	2.98	0.5	-0.811	23.06
2015	8	-4.97	12.29	-0.5	-11	27.27
2016	8.3	2.01	5.42	-0.75	5.48	1.022
2017	6.8	27.5	2.7	-0.5	13.33	-10.09

2018	6.5	5.89	14.7	-0.25	8.1	5.38
2019	3.7	14.08	-2.68	0	-1.74	20.17
2020	-6.6	15.48	15.37	-0.75	-5.7	27.17
2021	8.7	21.9	22.15	-1.15	36.18	-30.51
Average	5.47	14.5	6.9843	-0.265	4.9346	4.6312

Data Analysis on excel software

Multiple Regression Equation:

$$Y = 9.923 - 0.338 X_1 - 0.236 X_2 + 4.787 X_3 + 0.568 X_4 + 0.122 X_5$$

Y : Real GDP

X_1 : S&P BSE Sensex X_2 : Foreign Exchange Reserve X_3 : Repo Rate X_4 : Net Exports X5 : Foreign Direct Investment

Interpreting the negative coefficient for Forex:

There exists an inverse relationship between the GDP and the Forex Reserves which might indicate that these reserves are either being used as buffer stocks or that they are not being used to induce demand but rather to maintain the value of the national currency in the global market.

Interpreting the positive coefficient for Repo Rate:

TA positive relationship exists between repo rate and the GDP of a country. But this is a fast changing trend as the repo rate has been increasing recently.

Essentially, due to real GDP growth and to achieve the levels of inflation targeted by a central bank every year, the price level rises in an economy over the years. What's important here is that the rate of increase in real GDP far exceeds the rate of increase in repo rate thus justifying the positive relationship. We have to keep in mind that the rate of increase or decrease in repo rate is always going to be within a certain limit.

A pessimistic outlook:

Now, opting for a pessimistic approach, if we take the independent variables' values to be their average rate of growth over the the last 10 years, we get:

Y = 5.47%

Although practically impossible, trying to investigate this issue from a neutral outlook, if we assume the rate of growth of GDP to be constant over the next 5 years, here's what the comparison graph would look like:

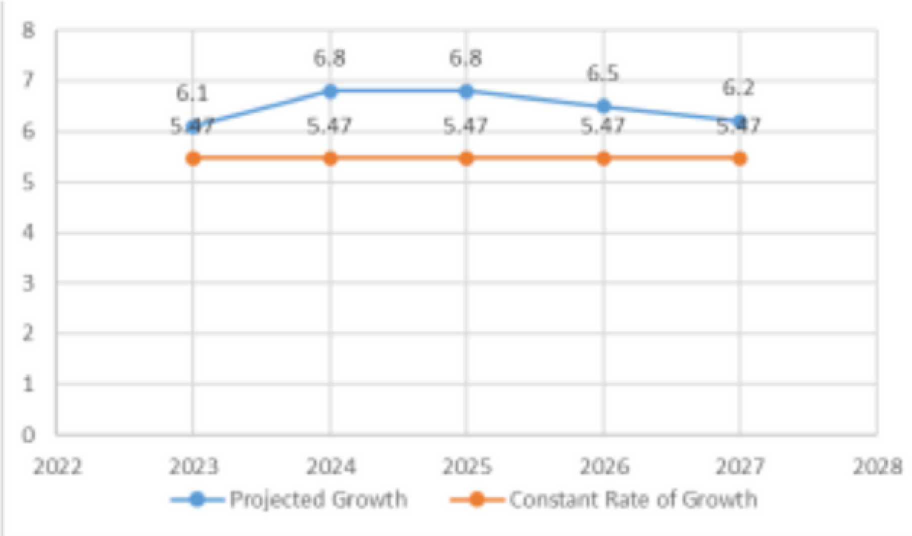

EXHIBIT 4: COMPARING GDP GROWTH

An optimistic approach:

We will now analyse this from a fairly optimistic point of view where we are going to assume a constant increase in the rates of growth for all our independent variables to compute the value of the dependent variable. For this, we take the average rate of growth and increase this by 1% for S&P BSE Sensex yearly while for all other independent variables, this rate of increase is 0.4%. This is followed for the first 3 years. Taking into account that extraordinary events like the covid pandemic can occur, the rate of increase in the growth of all the variables is changed as follows: S&P BSE Sensex decreases by 3% and the other factors also decrease by 0.5%. The former approach is followed for the next year.

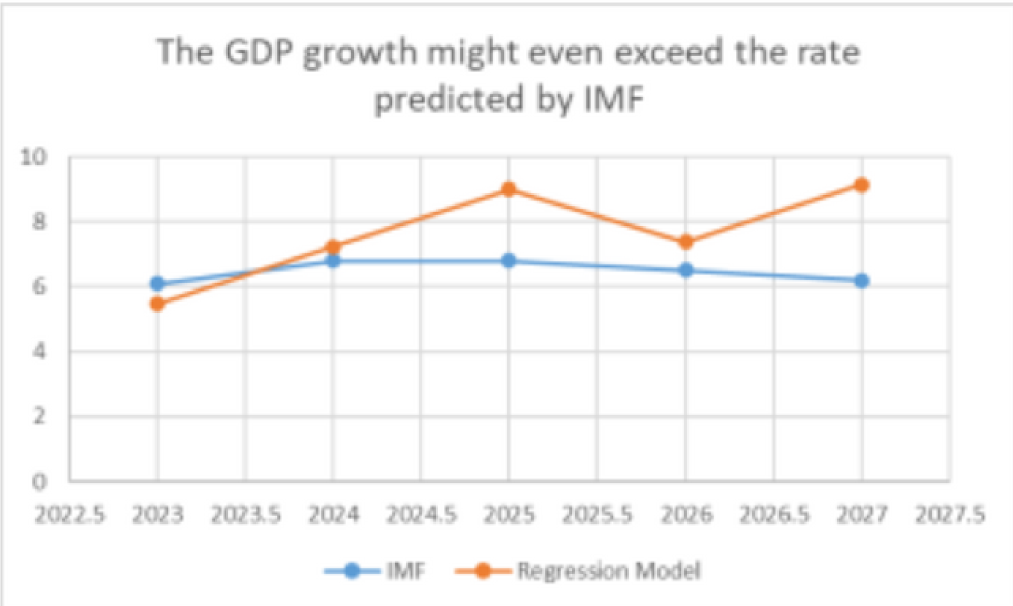

EXHIBIT 5: PREDICTING GDP GROWTH RATE OVER THE NEXT 5 YEARS

INDIAN ECONOMY AND CLIMATE CHANGE:

Climate change can reduce India's GDP by about 2.6% by 2100, even if global temperature rise remains below 2°C; thus, leading to a major shift in India’s growth trajectory. The indicator used to measure its impact is **Climate Change Performance Index, 2023**

Methodology used to calculate CCPI:

CCPI 2023 assessed and compared the climate performance of 60 countries, accounting for 92+% of global greenhouse gas (GHG) emissions. It provides a comprehensive and balanced assessment of various countries using 14 indicators under four major categories:

- GHG Emissions (40% of score)
- Renewable Energy (20% of score)
- Energy Use (20% of score)
- Climate Policy (20% of score)

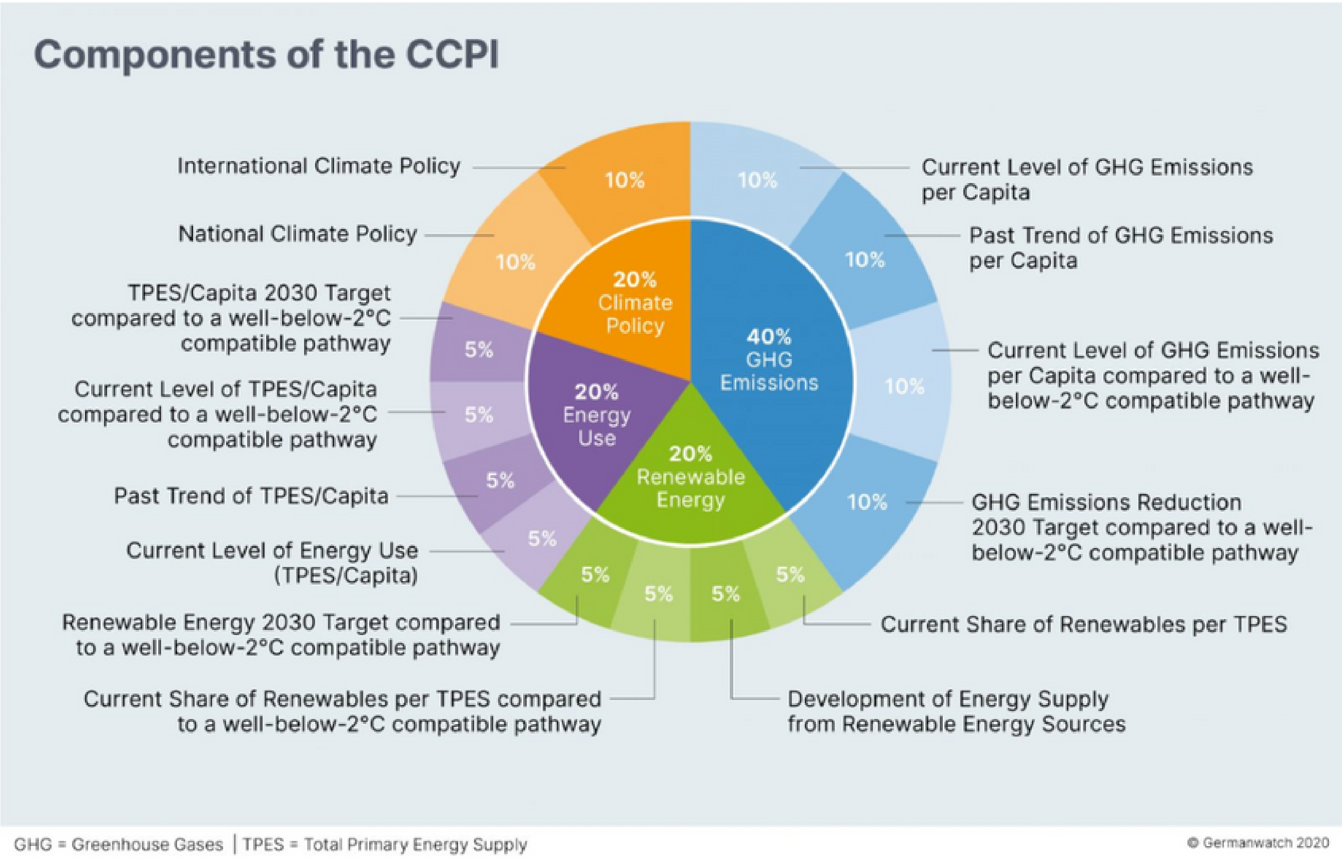

EXHIBIT 6: COMPONENTS OF THE CLIMATE CHANGE PERFORMANCE INDEX

80% assessment is based on quantitative data from international institutions like International Energy Agency (IEA), PRIMAP, the Food and Agriculture Organization (FAO) and the national GHG inventories. CCPI 2023 uses GHG Emissions data for 2021, relying on numerical methods and linear extrapolation to avoid 2020 COVID-19 related effects on emissions and to include rebounding emissions in 2021. The three quantitative categories of GHG Emissions, Renewable Energy, and Energy Use are each defined by 4 indicators: Current Level, Past Trend, Well-Below-2°C Compatibility of the Current Level, and Well-Below-2°C Compatibility of the Countries' 2030 Target. The remaining 20% of the assessment is based on the CCPI's globally unique Climate Policy section, whose indicators are National Climate Policy and International Climate Policy. A performance rating provided by climate and energy policy experts from the evaluated countries serves as the basis for this.

Assumptions of CCPI:

1. Only production-based emissions are used in calculation of the results because countries are accountable for the emissions they produce, not the emissions they consume.
2. Half of the CCPI ranking metrics are calculated relatively rather than absolutely. Therefore, even countries with high rankings have no reason to be complacent.

Conversely, the results show that efforts alone are not enough to prevent dangerous climate change, even if all countries work as hard as the frontrunners.

Hypothesis Building:

Hypothesis: Measures taken to combat climate change have to be improved for India's growth trajectory to be seen as an attainable future
Independent Variable = India's quantitative score of Climate Change Performance Index 2023
Dependent Variable = India's growth
Average CCPI Score of India (μ) = 67.35
(67.35 = 29.69 GHG emissions + 7.77 renewable energy + 16.03 energy use + 13.85 climate policy)

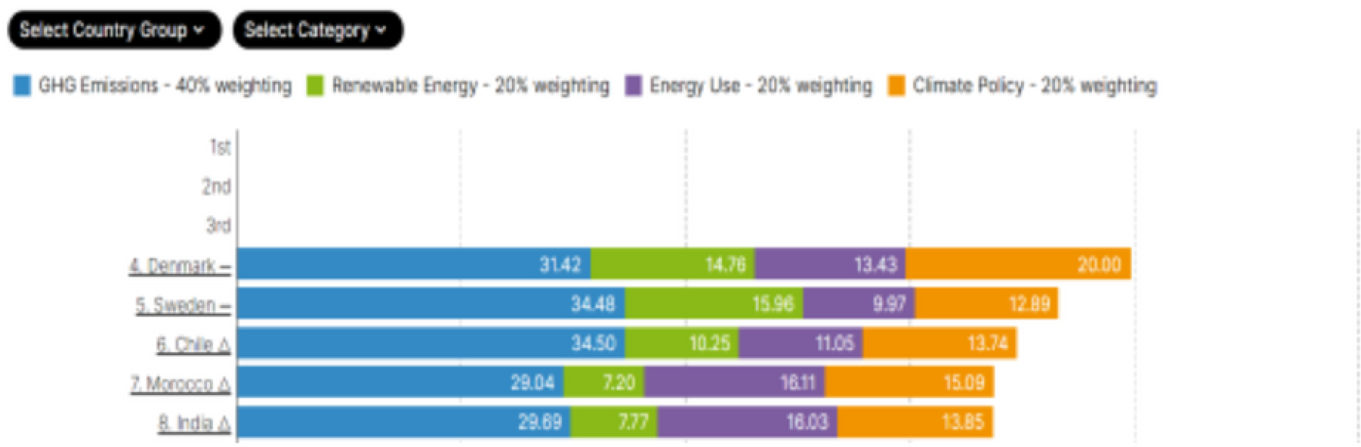

EXHIBIT 7: BIFURCATED CLIMATE CHANGE PERFORMANCE INDEX SCORES OF TOP 8 COUNTRIES IN 2023

Hypothesis Testing:

Null Hypothesis (H0): $\mu = 67.35$
(India is doing enough to prevent the dangerous climate change)
Alternate Hypothesis (Ha): $\mu > 67.35$
(India's CCPI score has to be greater than 67.35 to prevent the dangerous climate change and improve its CCPI ranking)
Confidence Interval = 95%
$\alpha = 0.05$
Mean CCPI score of top 5 countries ($\bar{x}$) = 71.44
Sample Standard Deviation (s) = 5.159
(Denmark, Sweden, Chile, Morocco and India are taken as samples)
Sample Size (n) = 5
Degrees of freedom (n-1) = 4

Applying t-test for testing the hypothesis:

Statistic:
t (calculated) = (71.44 - 67.35) / (5.159/5)
= 4.09/ 1.0318
= 3.9639
t (tabulated) = 2.132
Right-tailed test (since Ha: $\mu > 67.35$)

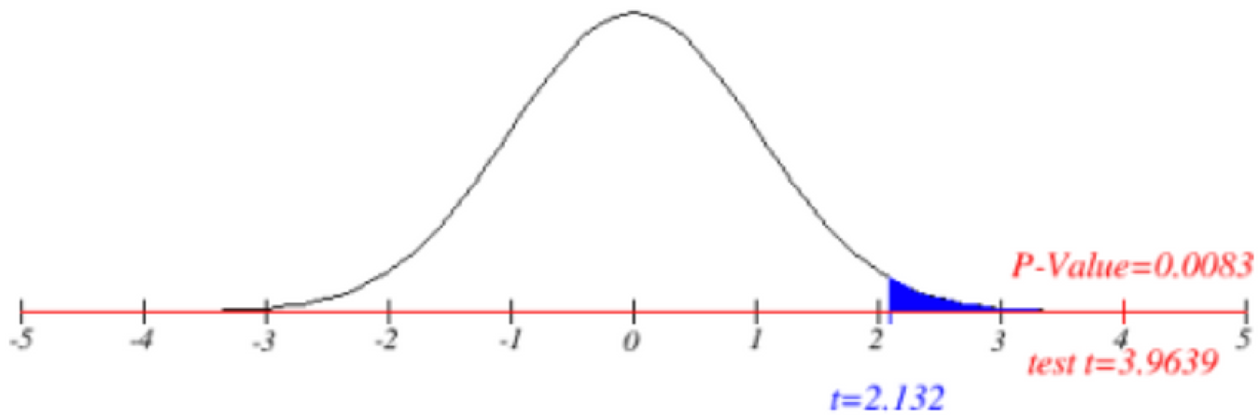

EXHIBIT 8: T-DISTRIBUTION HYPOTHESIS CURVE WITH SHADED REJECTION AREA

Interpretation:

Since 3.96 > 2.132, t (calculated) > t (tabulated)
Reject the null hypothesis
This suggests that India's current CCPI ranking is just an illusion on CCPI's part and is not on the cusp of returning to a high growth trajectory.

An optimistic approach:

India's jump of 2 spots higher, (8th rank) as per Climate Change Performance Index of 2023 reflects that India is implementing energy transition programmes at a much faster rate globally. Various demand flagship programs that have contributed significantly to improved ranking include UJALA Scheme, and Standards and Labelling Programme. It is a testimony towards addressing the issue of global climate change despite Covid-19 pandemic and tough economic times.

A pessimistic approach:

Due to relative scoring of the CCPI indicators, India's position can be considered better. However, the first, second and third ranks were not awarded to any country, which implies lack of efforts by all the countries globally. India's aim of reaching net-zero emissions by 2070 is one amongst the main climate targets, which seems vague in accordance with the fact that India has broken China's record of having the world's largest population. Urbanisation and unlimited human desires add to it, making India's growth to be seen as an illusion.

CORRELATION ANALYSIS:

Objective:

To determine the extent and nature of the linear relationship between the sustainable debt issued by a country and its GDP and Human Development Index. Through this, we aim to show how the issuance of sustainable debt (money used to finance renewable power projects having a specified fixed rate of return from the issuer) has led to an increase in the GDP of India and its HDI.

Methodology:

Data for sustainable debt has been sourced from the website of Climate Bonds Initiative. Karl Pearson's coefficient of correlation has been used to describe the nature and extent of the relationship and its value lies between -1 and 1.

Year	Sustainable Debt Issuance ($ billion)	HDI	GDP of India ($ billion)
2012	0	0.598	1,827.64
2013	0	0.607	1,856.72
2014	0	0.619	2,039.13
2015	0.16	0.629	2,103.59
2016	1.1	0.639	2,294.80
2017	2.7	0.644	2,651.47

2018	4.5	0.645	2,702.93
2019	6.7	0.645	2,831.55
2020	8.4	0.642	2667.69
2021	11.3	0.633	3176.30

R (Sustainable Debt, GDP) = 0.911 R (Sustainable Debt, HDI) = 0.559

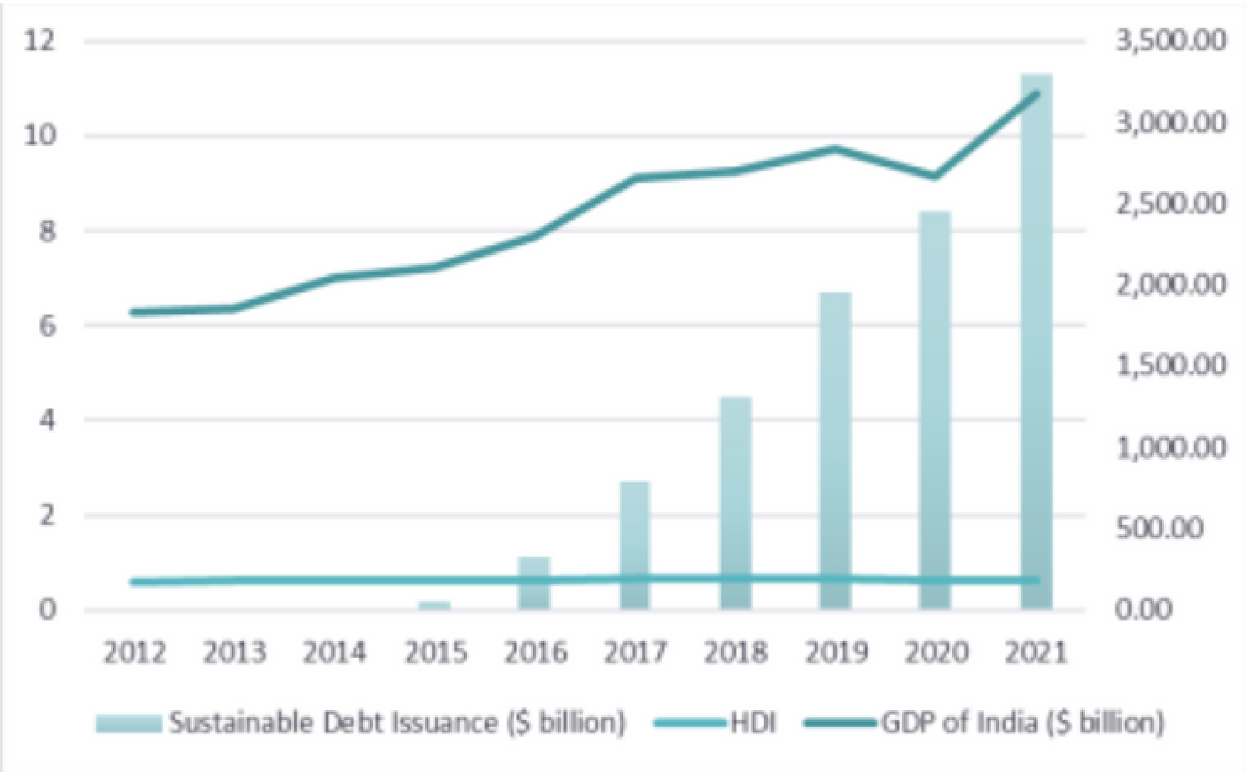

EXHIBIT 9: SUSTAINABLE DEBT ISSUANCE VS GDP & HDI

Considering that the first green bonds were issued in India in 2015, it is evident from the coefficient of correlation that responses to climate change are going to play a huge role in the economic development of a country.

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QUALITATIVE FACTORS AFFECTING ECONOMIC GROWTH:

India has advanced significantly in terms of social, economic, and infrastructure development, which has improved the standard of living for its people in recent years. The healthcare sector has made a substantial contribution to India's qualitative progress. To strengthen healthcare services in rural areas and ensure that all individuals have access to high-quality healthcare, the government has established a number of programmes and initiatives, for example, Ayushman Bharat- the biggest healthcare programme in the world. India has had qualitative growth in the realm of education as well. The national education system has seen several improvements thanks to government initiatives. The National Education Policy (NEP) 2020's introduction aims to overhaul the educational system and give all students equal chances. The improvement of road, rail, and air connectivity has been a priority for the Indian government, which has sponsored a number of initiatives and programmes. The government's emphasis on creating smart cities is another example.
The economy of India has likewise been expanding with a focus on inclusive growth. The government has introduced a number of programmes and efforts to encourage entrepreneurship and provide job possibilities.

HDI:

One of the key measures of both qualitative and quantitative growth is the Human Development Index(HDI). The Human Development Index is a combined statistical indicator of human development that is used to rank nations according to their level of development (Sagar & Najam,1997). The HDI considers three fundamental aspects of human development: access to information (measured by years of schooling and predicted years of schooling), a long and healthy life, and a reasonable standard of living (measured by gross national income per capita).

The United Nations Development Programme (UNDP) first established the HDI in 1990 as an alternative to exclusively economic metrics of development, such as GDP per capita. The HDI's goal is to offer a more thorough understanding of development that goes beyond economic growth and takes other significant factors affecting human well-being into account.(Milorad Kovacevic,2010)
Policymakers, researchers, and development professionals frequently utilise the HDI to gauge a nation's progress towards human development and to pinpoint potential areas for additional funding and policy action. The HDI has been criticised for its restricted focus on a small number of indicators and for failing to account for crucial development factors including political freedoms, gender equality, and environmental sustainability.

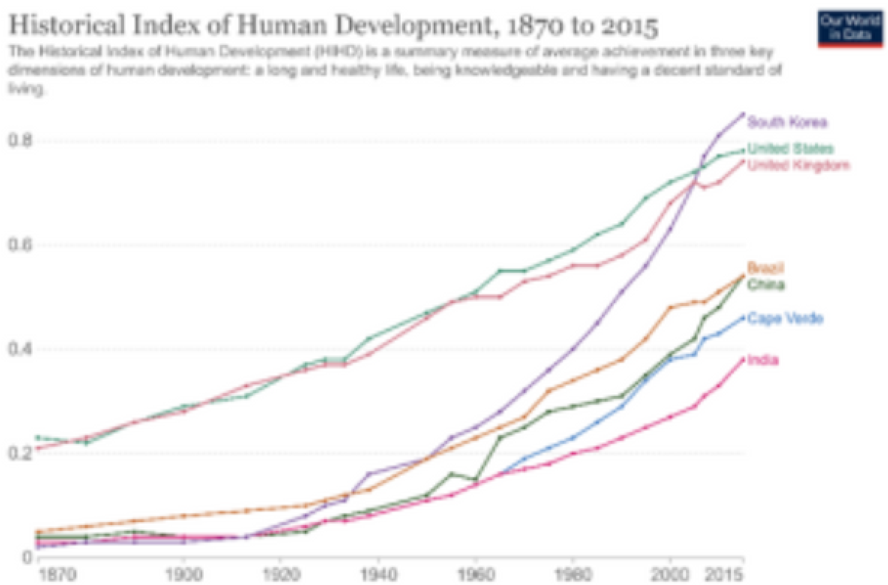

EXHIBIT 10: GROWTH IN HDI OF DIFFERENT COUNTRIES OVER THE PAST FIVE DECADES

How is HDI calculated?

		HDI	LEx	EDUx	GDPx	LE	ALR	GER	Ln(GDP)	GDP	Ln(LE)
All	Mean	0.739	0.725	0.798	0.693	68.5	83.6	72.3	8.77	13481	0.81
Range:	SD	0.174	0.170	0.176	0.216	10.2	19.0	17.3	1.33	15849	0.13
(0.340-0.971)	CV(%)	23.5	23.5	22.1	31.3	14.9	23.9	24.0	15.1	117.0	3.8
n=182	R/n	0.003	0.004	0.004	0.004						
Highest	Mean	0.932	0.896	0.948	0.952	78.5	97.4	89.6	10.39	35486	0.94
Range:	SD	0.031	0.042	0.040	0.051	2.7	2.7	9.7	0.42	15760	0.03
(0.870-0.971)	CV(%)	3.4	4.6	4.2	5.4	3.4	3.9	10.9	4.0	44.4	0.8
n=46	R/n	0.002	0.002	0.002	0.002						
Upper-Middle	Mean	0.822	0.799	0.890	0.779	73.2	94.3	78.6	9.3	11430	0.87
Range:	SD	0.027	0.047	0.046	0.064	3.1	4.9	8.6	0.4	4633	0.03
(0.772-0.868)	CV(%)	3.3	5.8	5.1	8.3	4.2	5.2	10.9	4.2	40.5	1.0
n=46	R/n	0.002	0.002	0.002	0.002						
Lower-Middle	Mean	0.713	0.710	0.807	0.623	67.6	85.6	70.9	8.34	5249	0.809
Range:	SD	0.052	0.104	0.093	0.100	6.2	11.5	7.9	0.60	4814	0.081
(0.593-0.772)	CV(%)	7.2	14.6	11.6	16.0	9.2	13.5	11.2	7.2	91.7	2.3
n=45	R/n	0.004	0.004	0.004	0.004						
Low	Mean	0.481	0.490	0.543	0.408	54.4	56.8	49.4	7.05	1385	0.630
Range:	SD	0.071	0.108	0.128	0.100	6.5	16.3	10.5	0.80	979	0.098
(0.340-0.586)	CV(%)	14.7	22.1	23.5	24.5	11.9	28.8	21.2	8.5	70.7	3.0
n=45	R/n	0.005	0.005	0.005	0.005						

EXHIBIT 11 :BASIC STATISTICS FOR THE HDI, ITS COMPONENT INDICES AND COMPONENT INDICATORS FOR ALL COUNTRIES AND THE QUARTILE GROUPS(MILORAD KOVACEVIC,2010)

HDI is a ‘mean of means’. It is calculated by taking the β-means of the aforementioned indicators. All of the three means range from 0 to 1. Thus, the formula of HDI can be written as follows
HDI = $\mu[\mu(h), \mu(e), \mu(y)]$
Let’s analyse the three indicators in detail.
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LIFE EXPECTANCY AT BIRTH

One of the primary elements of the Human Development Index (HDI) is life expectancy at birth. According to current mortality statistics, a newborn's life expectancy at birth is the average number of years they can expect to live.
Due to advancements in nutrition, healthcare, and other areas, India's life expectancy at birth has been continuously rising over the past few decades. The United Nations Development Programme (UNDPmost)'s recent figures show that India's life expectancy at birth increased from 67.9 years in 2010 to 70.15 years in 2023.
One major reason why we have observed this trend in life expectancy is investment in healthcare.
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HEALTHCARE

In recent years, India's healthcare industry has experienced substantial growth, with a focus on expanding access to healthcare services and infrastructure. Below are some graphs and statistics that illustrate this development.

The healthcare sector consists of hospitals, medical equipment, clinical trials, outsourcing, telemedicine, medical tourism, health insurance, and other related businesses. One can see the expansion of offerings, coverage, and financial commitments from both public and private entities

Technology advancements, the emergence of telemedicine, rapid health insurance penetration, rising incidence of lifestyle diseases, rising demand for affordable healthcare delivery systems due to rising healthcare costs, government initiatives like e-health along with tax benefits and incentives are driving the Indian healthcare market.

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Graphic© Asia Briefing Ltd.

EXHIBIT 12: TRENDS IN THE SIZE OF INDIA'S HEALTHCARE MARKET OVER THE PAST TWO DECADES

The Indian Healthtech industry was valued at $1.9 Bn in 2020. By 2023, it is expected to reach $ 5 Bn by 2023 at a CAGR of 39%. The digital healthcare market in India was valued at INR 116.61 Bn in 2018 and is estimated to reach INR 485.43 Bn by 2024, expanding at a compound annual growth rate (CAGR) of ~27.41% during the 2019-2024 period.

The Indian hospital industry accounting for 80% of the total healthcare market is expected to touch US$ 132 billion by 2023. (Healthcare Industry in India, Indian Healthcare Sector, I. . ., n.d.)

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HEALTH INDEX:

$$=\frac{(LE(i)-LE(i)(min))}{(LE(i)(max)-LE(i)(min)}$$

$$=\frac{(Actual\ value(years)-25\ years)}{(85\ years-25\ \ years)}$$

(Jyoti Kumari Sharma, 2010)

NUTRITION & SANITATION

The next important factor for life expectancy is Nutrition- since nutrition directly affects a person's general health and well-being,
Improving diet can have a big impact on life expectancy. This can be accomplished in a number of ways, such as encouraging wholesome eating practices, enhancing access to nutrient-dense foods, and addressing the underlying social and economic causes of malnutrition.
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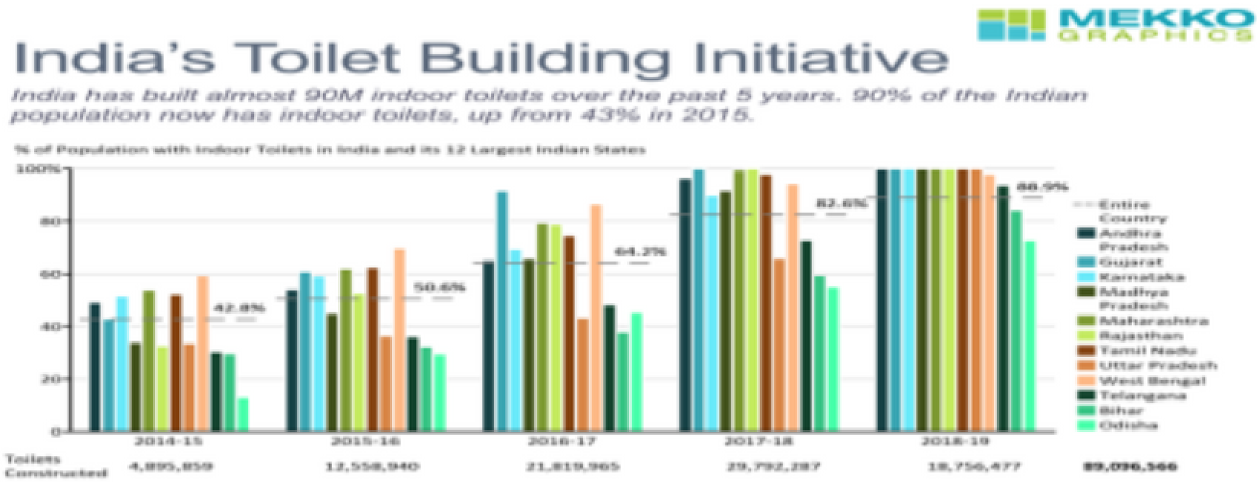

EXHIBIT 13: PERCENT OF POPULATION IN INDIA WITH INDOOR TOILETS V/S TRENDS IN THE 12 LARGEST STATES

In recent years, India's sanitation has substantially improved, but there are still issues with ensuring that everyone has access to facilities that are both safe and sufficient. The following facts and figures illustrate the development of India's sanitation system:
Around 100 million household toilets were built in India between 2014 and 2021, according to the Swachh Bharat Mission (SBM), the country's national sanitation initiative, increasing sanitation coverage to over 100% of households.
According to the Census of India, the proportion of households in India with access to better sanitation facilities rose from 21% in 2001 to 77% in 2011.
In India, open defecation has dramatically decreased during the previous ten years. The number of households using open defecation declined from 55% in 2006 to 34% in 2015–16 and even further to 22% in 2019–20, according to the NFHS-5.
Under the SBM, the number of districts in India that have been deemed ODF has climbed from from 38 in 2016 to 732 in 2021.

EDUCATION/ACCESS TO INFORMATION

Over the past few decades, India has significantly improved its human development index (HDI), and education has been a key factor in this development. HDI improvement was led by a 28.5%

increase in the education index, which ranged from 0.41 in Bihar to 0.92 for Kerala. Around a trillion Indian rupees would be allocated in total to the education sector's budget in fiscal year 2023, according to estimates. This was more than the about 818 billion rupees in the fiscal year 2018 before that. In 2022, India allocated around 3.1% of its GDP to education.
A crucial reason for growth in the education sector is the investments in Ed-tech. The test preparation market received the most funding overall for EdTech in India in 2021, totaling more than three billion US dollars. The online certification segment came next, with a funding total of more than one billion US dollars. With less than 270 million US dollars in funding in 2021, the enterprise Edtech market was the one that garnered the least investment.
In India, there were about 40 million students enrolled in higher education during the 2020 fiscal year. In the fiscal year 2035, this was projected to rise to 92 million. In addition, India's gross enrollment rate for higher education was 27.1% in the fiscal year 2021.

The education index is calculated as follows-

$$= \frac{2}{3}(\text{Adult literacy rate index}) + \frac{1}{3}(\text{Gross enrollment ratio index})$$

where,
Adult literacy rate index= 0.01(Adult literacy rate)
Gross enrollment ratio index= 0.01(Gross enrollment ratio) (Jyoti Kumari Sharma, 2010)

Focusing On The Marginalized Communities

7.7% of Indians were multidimensionally impoverished and educationally deprived as of 2021, according to statistics.y. A multidimensional poor person, according to the source, is deficient in at least one-third of 10 measures across three equally weighted dimensions: health, education, and standard of life. The two indicators of the education component are the number of years spent in school and attendance.

Samagra Shiksha Scheme

The Government of India introduced the Samagra Shiksha programme in 2018 to raise the standard of instruction at all levels, from preschool to senior secondary school, throughout the nation.(Jyoti Kumari Sharma, 2010) The program's objectives are to promote equity and access to education for all people and to offer integrated and complete assistance for school education.
The Rashtriya Madhyamik Shiksha Abhiyan (RMSA), the Teacher Education (TE) programme, and the Sarva Shiksha Abhiyan (SSA) have all been combined under the Samagra Shiksha system. The integrated programme encompasses the entire gamut of educational education, from pre-school to Class XII.

The programme offers money for a number of initiatives, including the building of new schools, the provision of school infrastructure, the hiring and preparation of teachers, the creation of instructional materials, and the promotion of ICT-based learning. The programme also emphasises enhancing the standard of early childhood education and supporting students' skill development through vocational education. The programme is administered using a decentralised methodology, giving states and union territories the freedom to plan and carry out their own interventions in accordance with their own requirements and objectives.

The overall budget allotted in India for the Samagra Shiksha Programme in the fiscal year 2023 was expected to be above 373 billion rupees. This was a rise from the fiscal year 2022 amount of almost 310 billion rupees.

STANDARD OF LIVING/INCOME LEVEL

The Gross National Income (GNI) is calculated as the sum of the value contributed by all resident producers, any product taxes (minus subsidies) that are not taken into account in the valuation of output, and net receipts of primary income (employee compensation and property income from abroad).(WHO) For comparisons between economies, GNI is typically converted from national currency to U.S. dollars at official exchange rates, though an alternative rate may be used if it is determined that the official exchange rate differs from the rate actually used in international transactions by an exceptionally large margin.

The World Bank employs a unique Atlas technique of conversion to tame pricing and exchange rate swings. In order to account for variations in inflation rates between countries and the G-5 countries through 2000, a conversion factor is applied that takes the average of the exchange rate for the current year and the two years prior
(France, Germany, Japan, the United Kingdom, and the United States). These nations include the Eurozone, Japan, the UK, and the United States as of 2001.(World Bank, Atlas method) Gross National Income (GNI) per capita, or the sum of all income a nation's citizens earn, is computed as the total population divided by the GNI per capita. A higher GNI per capita signifies greater economic prosperity and the ability to afford a higher level of living. India's economy has grown significantly over the past few decades, increasing Gross National Income (GNI) per capita. The expansion of the services sector, infrastructure improvements, and economic liberalisation are only a few of the reasons that have contributed to this rise in GNI per capita. There are several reasons behind the increase in Gross National Income (GNI) per capita in India in recent years(Ayushi Singh,2020):

Economic liberalisation: India started implementing economic reforms in the early 1990s with the goal of opening up the economy to foreign commerce and investment. As a result, the business environment improved, bringing in more foreign investment and fostering economic expansion.

Growth in the services sector: India's economy has switched from agriculture to services, with the services sector now making up the majority of the nation's gross domestic product (GDP). The rise in GNI per capita has been greatly aided by the expansion of sectors including information technology, business process outsourcing, and financial services.

Infrastructure development: India has made significant investments in infrastructure over the past few decades, including power plants, ports, and roadways. This has promoted economic expansion and drawn in outside capital.
India has a big and expanding young population, which has significantly increased the workforce and productivity in the nation.

Government initiatives: To encourage economic growth and development, the Indian government has put in place a number of initiatives, such as the Make in India programme, which aims to increase manufacturing there.

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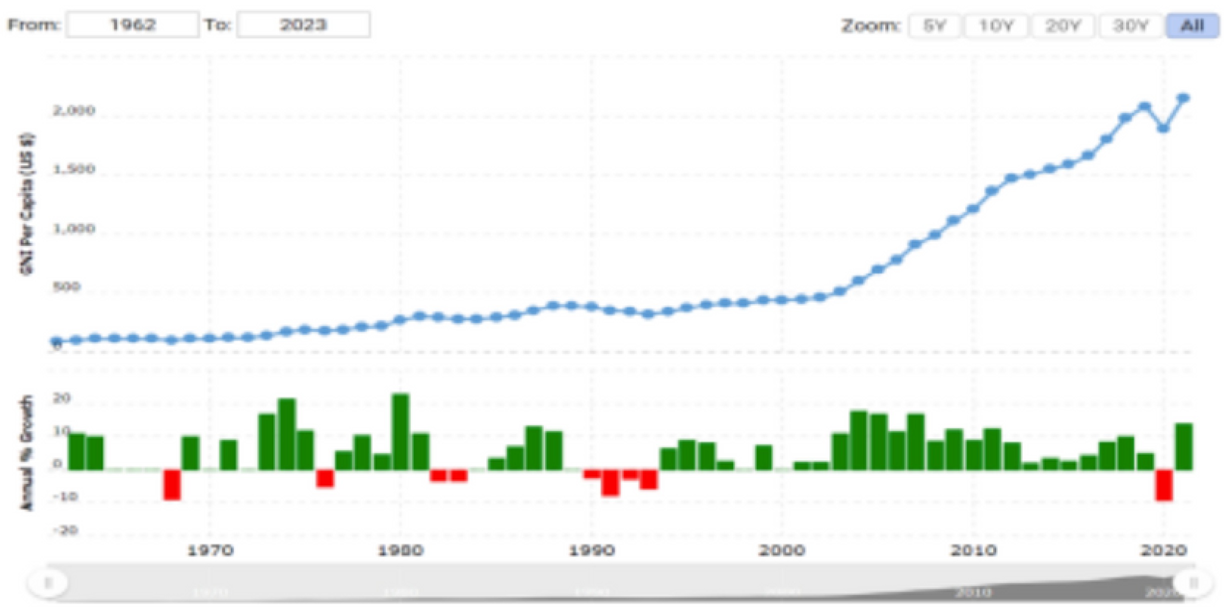

EXHIBIT 14: TRENDS OBSERVED IN THE GNI PER CAPITA OF INDIA OVER THE YEARS

CONCLUSION:

India has shown immense economic growth in the last 10 years. Using a regression model,, we found that this growth rate might not just be feasible but the growth rate might even exceed the rates predicted by the International Monetary Firm.

Through correlation analysis, we are able to establish a positive relationship between sustainable debt issuance and the GDP and HDI of a country, showing that in the coming years countering climate change will be integral to the economic growth of a country. We have also analysed whether the Indian government is doing enough to counter climate change through policy formulation.

The fact that India's HDI has been rising over the past few decades shows that the nation has advanced in a number of sectors, including income, healthcare, and education. India has made notable progress, in particular, in the areas of lowering poverty, raising literacy rates, and expanding access to healthcare.

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POWER SUBSIDY AND FISCAL PRUDENCE: THE FEASIBILITY OF FARM SUBSIDY IN PUNJAB

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ABSTRACT-

This paper analyses the current economic scenario of the state of Punjab- one of the most productive states in India which gives free power to its farm sector- and highlights the precarious fiscal scenario that follows the rampant and unsustainable subsidies. Power subsidies to the farm sector since 1997 have snowballed into serious problems such as reduced groundwater levels and production skewed in favour of cash-crops that the state is ideally not suited to produce. With an increase in cropping intensity and an uptick in the gross cropped area under water-guzzling crops, there has been a frightening dip in the water levels in 87% of wells, spanning 84% of the state. The paper highlights that paddy becomes lucrative for farmers in order to maximise the total per acre income received from growing a crop, given the subsidised electricity. This exerts pressure on groundwater and skews the cropping pattern, notwithstanding the burden on the exchequer. It is argued that power subsidies in Punjab should be withdrawn in an economically rational manner such that diversification and development of agricultural infrastructure commensurately subsidised. Directly giving farmers per acre funds to shift to other crops is suggested. A reduction in the monthly free electricity limit of 300 units to 150 units to make the scheme financially sustainable, while supporting bare minimum sustenance is proposed.

KEYWORDS-

Farm subsidy, Cultivation, Crop diversity, Groundwater, Irrigation.

JEL CLASSIFICATION CODES-

O13, Q14, Q15, Q18, Q25, Q48, H25

INTRODUCTION:

As a raucous democracy that is the world's most populous country, India witnesses a slew of welfare policies and populist schemes, both at the regional and union levels, particularly to support the needy sections of society. A vicious cycle, that begins with one party bringing in such schemes, goes on as people refuse to do away with the freebies and the successive bids get higher each time parties come with their manifestos- something which can be summed up as a 'freebie competition'.

We analyse the case of Punjab, grabbing attention by the fiscal burden it carries because of its rampant power subsidy to the farm sector in particular. Any populist measure, however beneficial or needful it may claim to be, has to be backed by solid, sound, and sustainable economic sourcing such that it does not interfere with and hamper the state's ability to fulfill other committed expenditures (mainly capital expenditure and social expenditure), ensures that there are long-run prospects- in terms of addition to human capital, employment generation, social upliftment and growth of GDP.

OBJECTIVES:

A rigorous analysis of data published by RBI and the Punjab Government reveals that Punjab, which used to be one of the most affluent states of India in its time, is gradually losing its glory in the economic realm. The most concerning reason that can be attributed to Punjab's economic regression is its outright and explicit distribution of freebies. It was given free of charge with the rationale to alleviate the marginalized communities since 1997-1998 (Karam Singh) but its definition has been remodeled. What started as a necessity, is now more than a luxury.

With this research paper, the futility of excessive power subsidy is vehemently brought out through stressing on the stark conditions (depicted through the infographics) pinching the Punjab government's pocket and subsequent recommendations. These include incentivizing farmers to shift to state-suited crops and a 50% reduction in the monthly free electricity limit.

LITERATURE REVIEW:

"Electricity Subsidy in Punjab Agriculture: Extent and Impact" by Karam Singh reveals that over three decades, the electricity consumption in agriculture has increased by more than 5 times, which amounts to an annual growth rate of 5.84 per cent in Punjab.

"Free Power, Irrigation and Groundwater Depletion: Impact of the Farm Electricity Policy of Punjab, India" by Disha Gupta has elucidated the differential increase in the number of electric-operated tube-wells and the horsepower load of pumps in Punjab in contrast to Haryana. The study reveals that the percentage deviation in depth of groundwater from the mean value in the baseline period was as high as 16 per cent. State governments have been obliged to raise industrial power tariffs to cross-subsidize agricultural and domestic electricity, hitting export competitiveness and industrial production. Many state-run electricity companies are deep in the red. "Aiyar, S., 2022. "Free Domestic Electricity Threatens State Finances in India" explains how such subsidies are pushing states into dire fiscal straits. Power subsidies have long been pursued at the expense of education, health, and infrastructure making Punjab, once India's richest state, fall to just above average.

RESEARCH METHODOLOGY:

This paper highlights the current economic scenario of the state of Punjab, one of the most prosperous and productive states of India, and the precarious fiscal scenario that follows rampant and unsustainable plans on freebies at the state level. It analyses the impact of free farm power in Punjab on 3 aspects- groundwater levels, cropping pattern and fiscal prudence. For this purpose, macro-level secondary data published by RBI, the Comptroller and Auditor General of India, the Ministry of Finance (Punjab), and the Department of Finance (Punjab) have been retrieved and analysed, followed by a policy review. The paper attempts to come up with an economically sustainable method of subsidising crop production and encouraging crop diversification.

Punjab has been providing its farmers with free electricity since February 1997, prior to which farmers had to pay a flat rate of Rs 50/horsepower per month. This subsidy was initially restricted to farmers with less than 7 acres of land but was later provided to all farmers. The ballooning subsidy that the state continues to provide has burdened the exchequer, raised questions on sustainability, and kept the state from investing more in capital, technology, and development.

We first analyse Punjab's precarious fiscal position, then shift to the case in point- the farm sector- and assess the trends of cropping pattern, crop diversity and groundwater exploitation.

The following table (Table-1) presents the key fiscal indicators of selected states- their relative size, debt, Interest Payments to Revenue Receipts Ratio (Per cent), Gross Fiscal Deficit, and Primary Deficit. With the colour bars reflecting the extent of concern and vulnerability the states are in, we find Punjab precariously placed with very high levels of debt and Interest Payment to Revenue Receipts (Per cent).

Table-1. Key Fiscal Indicators of Selected States
Source- RBI

The unpaid liabilities of Punjab amount to a whopping 24351.29 crores, marking a lack of fiscal prudence and inefficient management of finances- the highest unpaid liability being that of the 6th Pay Commission Arrears, followed by Power subsidy Arrears and others. (Table-2).

State	2020-21	2021-22 RE	2022-23 BE	Relative Size of States (in per cent)	2021-22 RE			
	Debt				Interest Payment to Revenue Receipts (Per cent)	Gross Fiscal Deficit	Revenue Deficit	Primary Deficit
Andhra Pradesh	35.5	32.5	32.8		14.3	3.2	1.6	1.4
Bihar	36.7	38.6	38.7		8.6	11.3	5.5	9.2
Chhattisgarh	26.3	26.2			8.0	3.8	0.3	2.1
Gujarat	21.0	19.0			14.2	1.5	0.0	0.2
Haryana	28.0	29.4			20.9	3.0	1.4	0.8
Jharkhand	34.4	33.0	27.0		8.4	3.0	-0.1	1.3
Karnataka	22.4	26.6	27.5		14.3	2.8	0.4	1.3
Kerala	37.1	37.0	37.2		18.8	4.2	2.6	1.7
Madhya Pradesh	31.0	31.3	33.3		11.7	4.2	0.6	2.2
Maharashtra	19.6	17.9	18.1		11.4	2.8	1.0	1.5
Odisha	20.0	18.8	18.6		4.3	3.5	-3.3	-0.6
Punjab	49.1	53.3			21.3	4.6	1.6	0.7
Rajasthan	40.5	39.5	39.8		14.9	5.2	3.0	3.3
Tamil Nadu	26.9	27.4	27.7		21.0	3.8	2.5	1.9
Telangana	25.2	24.7	25.3		11.3	3.9	-0.4	2.4
Uttar Pradesh	29.1	34.9	32.5		11.2	4.3	-1.3	1.8
West Bengal	37.1	34.4	34.2		20.8	3.5	2.2	1.1

← Higher Lower →

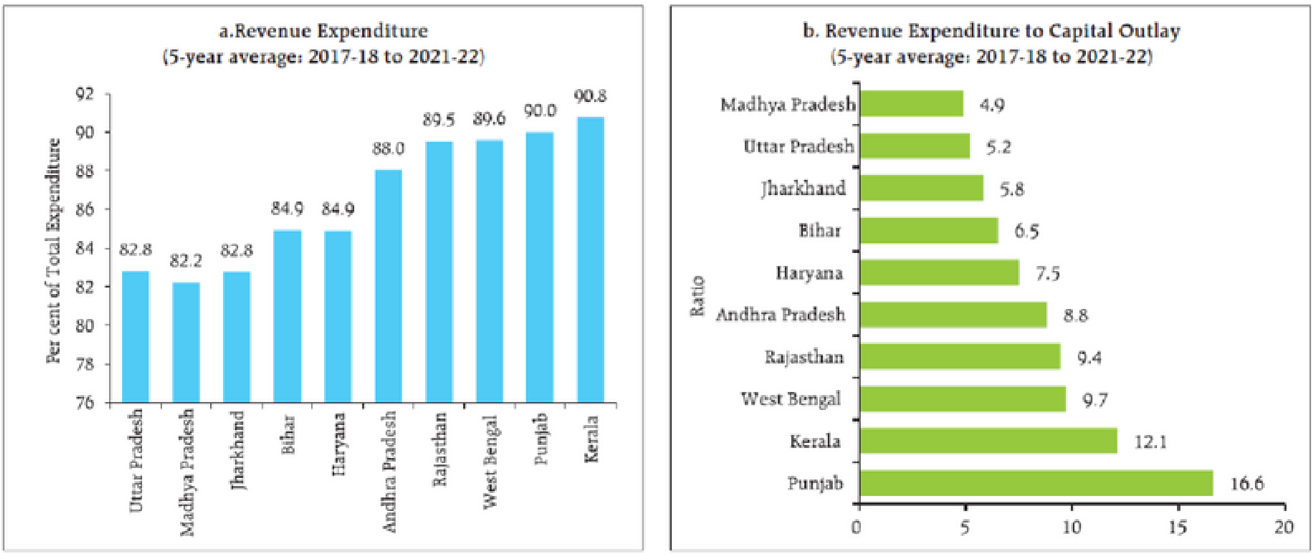


Figure-1. Revenue Spending and Quality of Expenditure;

Source- white paper on state finances

Figure-1 shows the inter-state analysis of Revenue Spending and Quality of Spending for a selected few states, as published by the RBI.

The expenditure profile of Punjab over 1999-2016 (Table-3), covering revenue expenditure, development, and non-development expenditures, interest payments, pensions, capital expenditure, and capital outlay as a % GSDP is shown in Figure-2

Figure-3 shows the composition of Punjab's Revenue expenditure over 2006-2021 (Table-4).

In comparison to the soaring revenue expenditure (Table-5), the state recorded miniscule capital expenditure, as is evident from Figure-4.

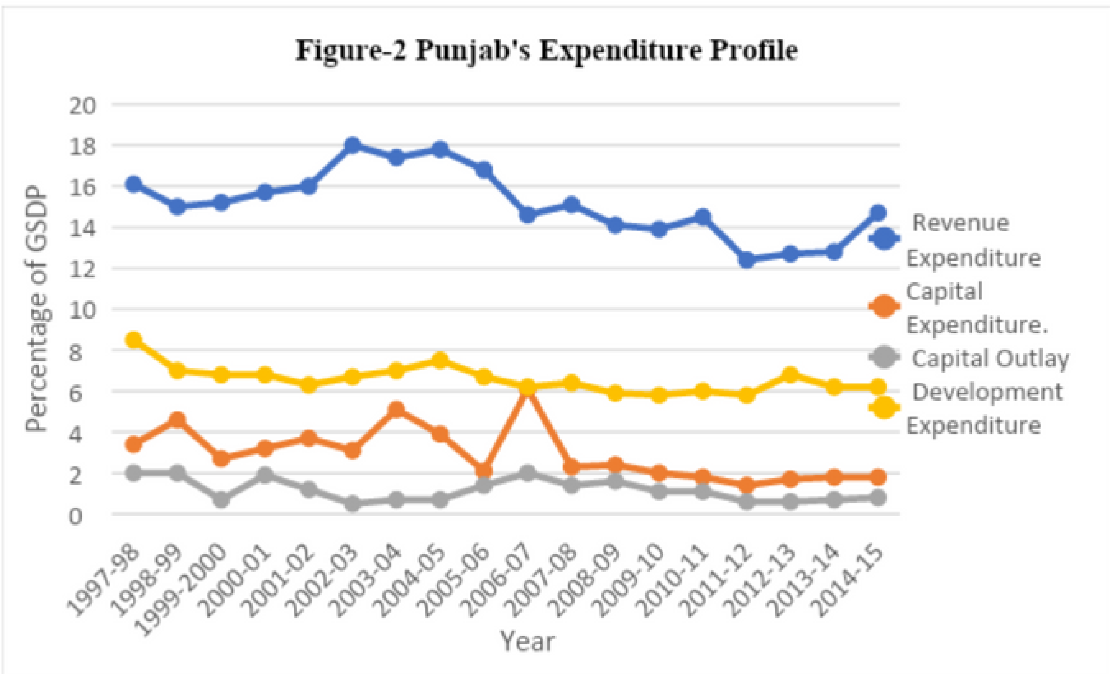


Figure-3: Capital Expenditure of Punjab

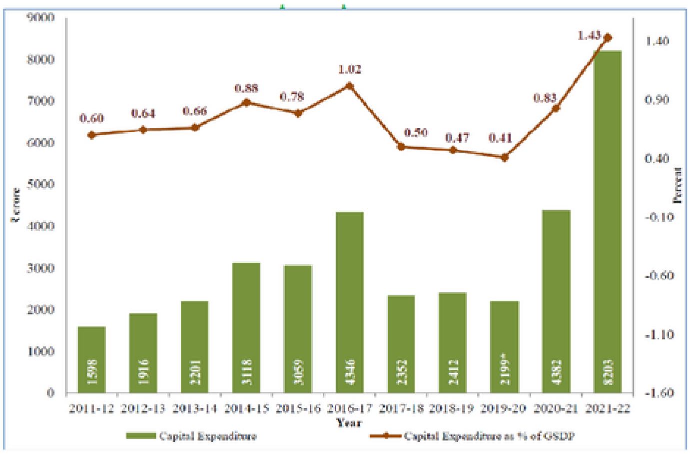


Figure-4: Revenue Expenditure of Punjab

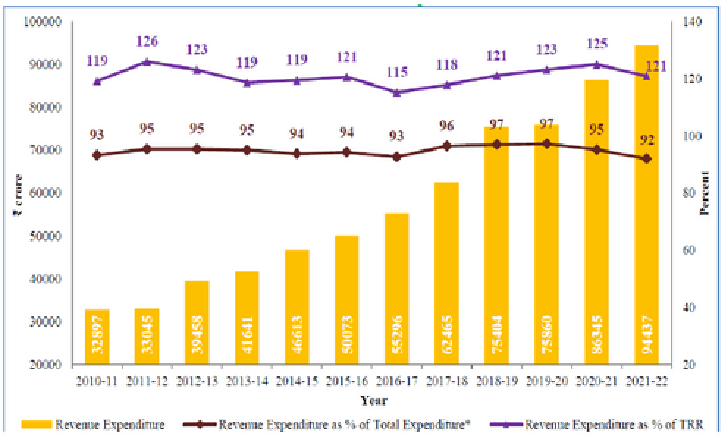


Figure-5 highlights the rising interest payments and power subsidy amount of Punjab over 2011-2021.

Figure-5: Interest Payments and Power Subsidy in Punjab

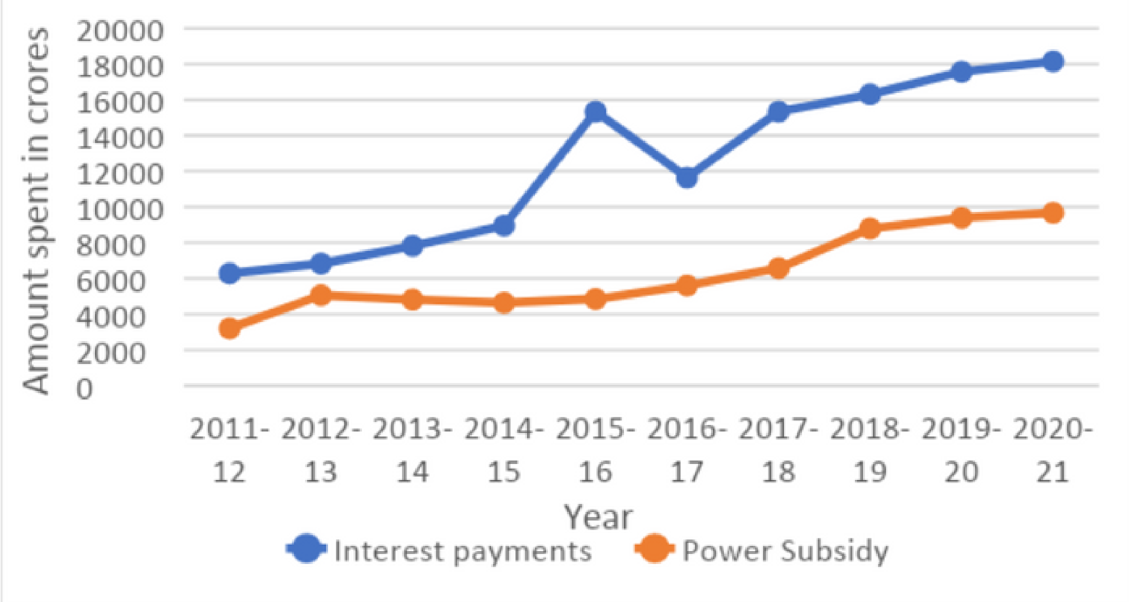
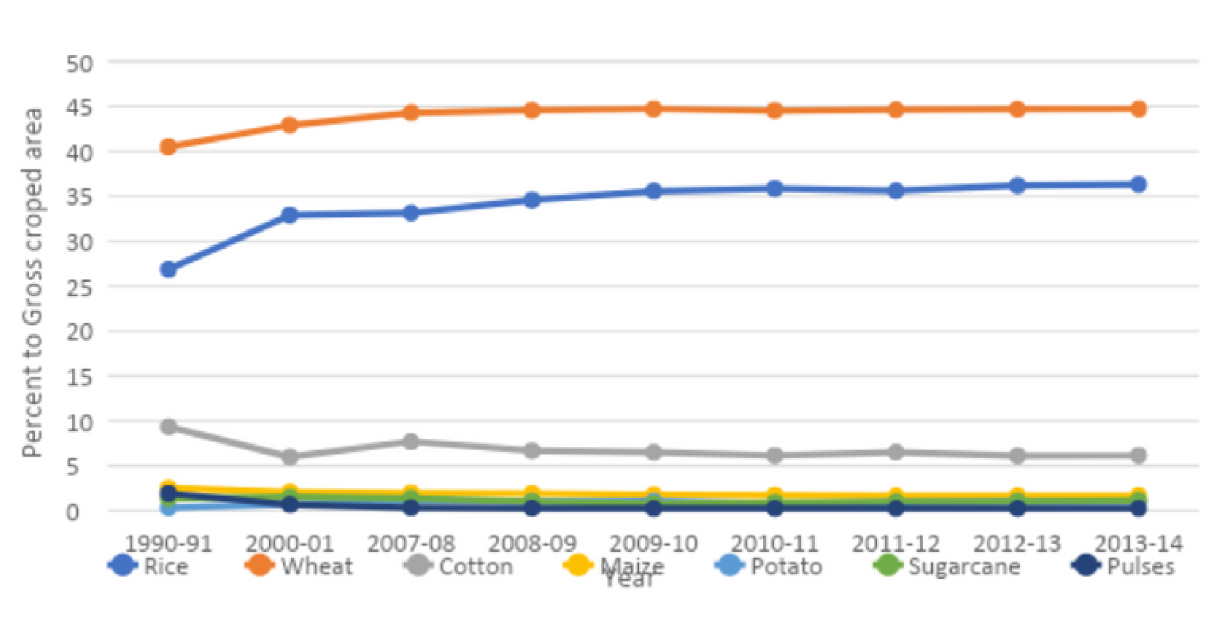


Figure-6 showcases trends in the cropping pattern of Punjab over the years 1990-2014. It depicts how the percent to gross cropped area has evolved for various water-intensive and less water-intensive crops over the time period (Table 6).

Figure-6: Trends in Cropping pattern



Tables 7 and 8 speak volumes on how this trend spiralled into over-exploitation of ground water in Punjab. Figure-7 presents the dismal picture of how more and more blocks of Punjab are falling under 'Over Exploited' category in terms of ground-water utilisation. Figure 8, 9 and 10 show the trends in the various aspects of Punjab's agricultural sector, focussing on indicators related to groundwater usage.

Figure-7: Distribution of Punjab's Blocks Based on Underground Water Resources

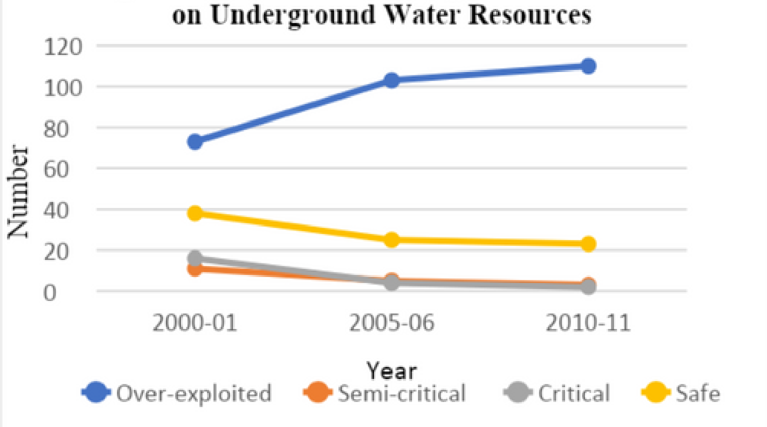


Figure-8: Number. of Tube wells (in lakh)

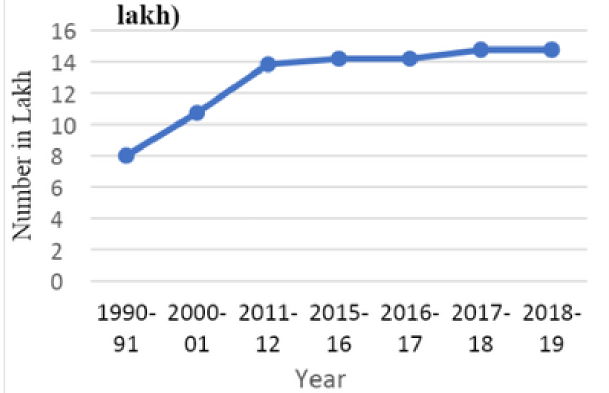
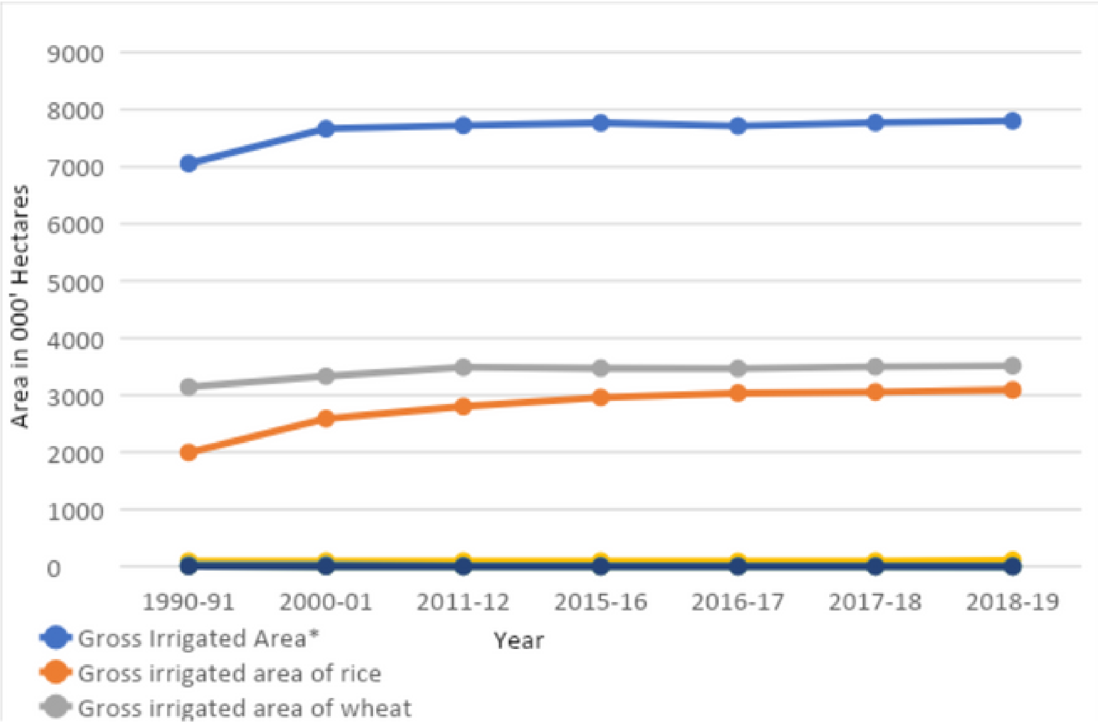
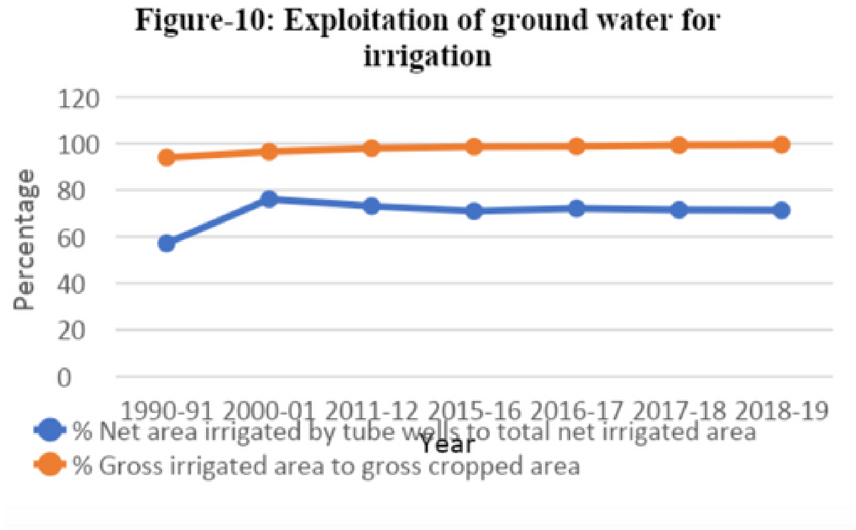


Figure-9. Gross irrigated area



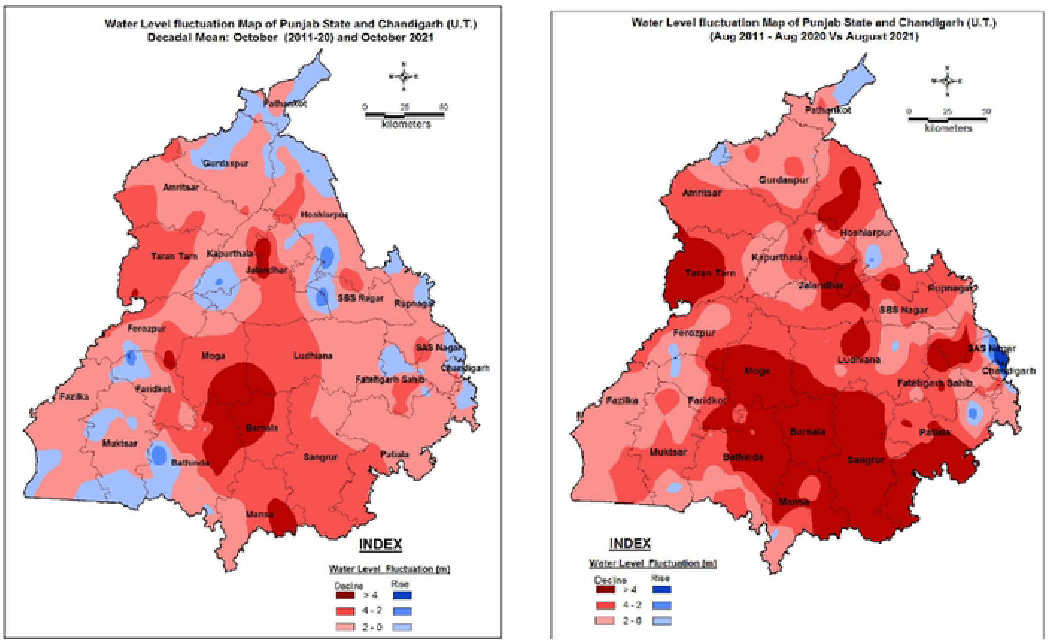


ANALYSIS OF THE ABOVE DATA:

The inter-state analysis of Revenue Spending and Quality of Spending reveals that Punjab witnesses the highest Revenue Expenditure (average of 5 years) only after Kerala, at 90% of total expenditure. The Revenue Expenditure to Capital Outlay ratio is the highest for Punjab at 16.6, surpassing that of Kerala. Throwing light on how debt-stressed Punjab is, relative to the other general category states, the RBI State Finances report shows how Punjab's outstanding debt to GSDP ratio is a mammoth figure, standing at 42.5%. The present value of this percentage is a whopping 2.63 lakh crore INR and is higher than states like West Bengal, Andhra Pradesh (known for its welfare schemes), Kerala, and others. The state's fiscal position has certainly been in the red zone which can be substantiated by a 409% increase in the revenue expenditure against the growth rate of revenue receipts.

Punjab's capital expenditure stands at Rs. 8203 crores. Unfortunately, that makes for a dismal 1.43% of GSDP only- explicitly reflected in the non-creation of infrastructure creating a vicious feedback loop that could have become a major source of revenue in the long run. The revenue expenditure of the state has increased at a distressing rate of 187% from 2010-11 to 2021-22 thereby leaving miniscule opportunities for developmental expenditure. The gravest factor responsible for all the backlash that the Punjab economy has been subjected to is the miniscule increment in capital expenditure as a part of total expenditure. 70% of fresh debt contracted every year is diverted towards revenue deficit financing, leaving barely any resources for substantial capital expenditure. The fiscal deficit as a percentage of GSDP has fallen from 12.37% to 3.54% but the revenue deficit has increased from 13.84% to 43.62% from 2016 to 2022. Interest Payments have increased from Rs. 6280 crores to Rs 17071 crores from 2011-22. The expenditure on power subsidy shows a similar trend with an increase from Rs. 3200 to 13443 crores in the same time frame. The expenditure might have increased at an increasing rate but the revenue receipts have not risen at the same pace, indicating an unhealthy pecuniary situation.

As per the Ground Water Estimation Report 2020, published by the CGWA, Punjab records the highest groundwater extraction vis-à-vis other states in the country, with 97% of ground water being used for irrigation, particularly paddy. Punjab is a largely semi-arid region which has witnessed a significant plummet in the ground water levels in the last few decades. The following maps show the colour coded water level fluctuation in confined and unconfined aquifers of Punjab, decadal mean (2011-2020)-2021, over 3 months- January, August and October.



Source- Ground Water Year Book of Punjab State & Chandigarh Ut (2021-2022)

A district's analysis of decadal data reveals that there has been a gradual decline in the water level in 67% of the observation wells. The decline has been observed in all the districts. It is deplorable to see that much of Punjab is already coloured red, indicating over-exploitation of ground water.

FINDINGS AND CONCLUSION:

Back in 2018, The Punjab State Farmers' and Farm Workers' Commission had suggested the withdrawal of free farm electricity to farmers owning 4 hectares or more of land, or paying income tax, in its Draft Policy. Although it is a politically sensitive issue, the idea behind it is economically wise and prudent. Given the fact that Punjab is not ideally suited for the cultivation of water-guzzling crops like paddy, but is one of the largest producers of it, farmers continue to depend on paddy for sufficient income. This has not only caused a plummet in ground water levels of Punjab, raising alarm bells for future desertification, but has also disturbed the crop-diversity balance, as is evident from the continuous decline in area devoted to other crops' cultivation. This problem should be looked at through 3 lenses-

1. Possible desertification of Punjab in near future
2. Skewness in cropping pattern
3. Unsustainable Fiscal burden on the State Exchequer.

Paddy has to be irrigated approx. 30 times in the cropping season, in contrast to a crop like wheat, maize, and cotton, for which these numbers are approx. 5, 6, and 6 respectively. Thus, the proportion of power subsidy going to paddy production is roughly 6 times that of wheat and 5 times that of maize and cotton. The 3 food grains form 99.8% of total foodgrain production and these 4 crops form 96.44% of the total crop production of Punjab (2016-17), we can make a rough estimate of the proportion of power subsidy consumed by paddy alone as 63.8% of the total power subsidy. This figure can be approximated as 4434.25 crores, given the total farm subsidy provided by the government is 6947 crores. Moreover, official figures tell us that Paddy is currently grown over 87% of the total area under kharif crops (June-October) in Punjab; in the current 2022-23 kharif season, paddy was cultivated over 3.13 million hectares out of 3.59 million hectares devoted to kharif crops. Instead of spending such unsustainable amounts on free power that further snowballs into other grave problems, the government should charge a bare minimum rate per KWh for farm electricity, and reimburse those farmers who shift from paddy to other, less water-guzzling crops, by paying them a fixed lumpsum amount (direct transfer) per acre, as has been proposed multiple times by renowned economist Dr. Sardara Singh Johal. This is because farmers tend to produce paddy as it is a cash-crop that ensures good income levels, and such a lumpsum amount would encourage them to produce crops other than paddy.

Instead of spending thousands of crores in providing free electricity to the farm sector, developing more efficient farming and irrigation methods, encouraging agricultural research, and investing in development of farm infrastructure- roads, cold storages, processing units, warehouses, etc.- can have high, sustainable and long-term pay-offs to the farm sector and the state economy as a whole, while making crop production more feasible and diverse. Diversification should be commensurately subsidised, and development of agricultural infrastructure should be pursued.

A similar scheme of providing free electricity to households up to 300 units per month has added to the impending financial crisis (that Punjab is likely to witness if it does not apply fiscal prudence). Reports have pointed out that Punjab will now shell out a whopping Rs 22,962 crore as a power subsidy to different categories with this scheme, which is a record payment to be paid to PSPCL.

However, the average household electricity consumption per month is only roughly 150 units, the double of which if provided free would dis-incentivise saving of electricity. The main aim of subsidy is to support the downtrodden/targeted social strata so that they are able to afford and sustain the bare-minimum power consumption. Instead of being free, power can be charged less at 1 or 2 rupees per unit-a more economically rational method. The government should use the funds to create means of employment generation and infrastructure development for the people such that they themselves are able to pay the bills.

For a semi-arid region with the threat of future desertification looming large, high dependence on groundwater has abysmal ramifications- a drop in water table and increase in the concentration of heavy minerals and pollutants given the increase in fertilizer consumption have necessitated an increase in the depth of tube wells, that will require even more power to extract water, thus increasing the farm power subsidy to be paid every year.

LIMITATIONS:

The paper dwells on secondary data published by various government institutions at different levels. The main focus has been on assessing the impact of rampant, fiscally unsustainable farm power subsidy on the groundwater resources of the state and cropping pattern currently skewed in favour of water-guzzling crops. The paper does not focus on the more indirect impact- loss of resource base for developmental expenditure- reports have found that due to lack of funds there was a delay in implementing the recommendations of the 6th Pay Commission, apart from the not being able to employ adequate number of permanent faculty in educational institutions.
Further research can take place on estimating the overall indirect pecuniary cost of unsustainable subsidies while taking into consideration necessary farm support.

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APPENDIX:

Table-2: Unpaid Liabilities of Punjab as of 2021-22

S. No.	Particulars	Amount (crores)
1	Atta-Dal Scheme	2274.43
2	6th Punjab Pay Commission Arrears	13759.00
3	Power Subsidy Arrears (claimed by PSPCL)	a
4	Crop Loan Waiver	1200.00
	Total	24351.29

Source- White Paper on State Finances, Punjab (2021), Finance Accounts of AG Punjab; 2021-22 (AG Initial Accounts)

Table-3: Punjab's Expenditure Profile, 1997-2016

Year	Revenue Expenditure	Development Expenditure	Non-Development Expenditure	Interest Payments	Pensions	Capital Expenditure	Capital Outlay
1997-98	16.1	8.5	7.5	3.8	0.9	3.4	2
1998-99	15	7	7.9	4.2	1.3	4.6	2
1999-2000	15.2	6.8	8.3	3.9	1.7	2.7	0.7
2000-01	15.7	6.8	8.7	3.1	1.5	3.2	1.9
2001-02	16	6.3	9.5	4	1.3	3.7	1.2
2002-03	18	6.7	11	4.2	1.6	3.1	0.5
2003-04	17.4	7	10.4	4.1	1.5	5.1	0.7
2004-05	17.8	7.5	10.2	4.1	1.6	3.9	0.7

2005-06	16.8	6.7	9.7	3.4	1.5	2.1	1.4
2006-07	14.6	6.2	8.1	3.3	1.5	6.1	2
2007-08	15.1	6.4	8.5	2.8	1.6	2.3	1.4
2008-09	14.1	5.9	8.1	3	1.6	2.4	1.6
2009-10	13.9	5.8	7.9	2.5	1.7	2	1.1
2010-11	14.5	6	8.2	2.4	2.3	1.8	1.1
2011-12	12.4	5.8	6.3	2.4	2.1	1.4	0.6
2012-13	12.7	6.8	6.2	2.3	2	1.7	0.6
2013-14	12.8	6.2	6	2.3	1.9	1.8	0.7
2014-15	14.7	6.2	6.3	2.4	2	1.8	0.8
2015-16	12.8	7.1	6.2	2.5	2	0.8	1.1

Source- Final Report of the Research Study on Fiscal Scenarios in Punjab: Past Trends, Future Prospects and Challenges, 2018.

Table-4: Interest Payments and Power Subsidy Revenue Expenditure of Punjab, 2011--2021

Year	Interest payments	Power Subsidy
2011-12	6280	3200
2012-13	6831	5059
2013-14	7820	4815
2014-15	8960	4642
2015-16	15334	4847
2016-17	11642	5601
2017-18	15334	6578
2018-19	16306	8795
2019-20	17567	9394
2020-21	18153	9673

Source- White Paper on State Finances, Punjab (2021), Finance Accounts of AG Punjab;2021-22 (AG Initial Accounts)

Year	Capital Expenditure (I)	As a percentage of GSDP
2011-12	1598	0.60
2012-13	1916	0.64
2013-14	2365	0.66
2014-15	3388	0.88
2015-16	3059	0.78
2016-17	4346	1.02
2017-18	2352	0.50
2018-19	2412	0.47
2019-20	2199	0.41
2020-21	4382	0.83
2021-22	8203	1.43

Table-5: Capital Expenditure of Punjab, 2011-2021

Source: White Paper on State Finances, Punjab (2021), Finance Accounts of AG Punjab; 2021-22 (AG Initial Accounts)

Crops	1990-91	2000-01	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Rice	26.86	32.89	33.15	34.57	35.58	35.85	35.61	36.20	36.30
Wheat	40.49	42.92	44.31	44.57	44.72	44.53	44.63	44.69	44.72
Cotton	9.34	5.97	7.69	6.66	6.49	6.13	6.52	6.11	6.13
Maize	2.51	2.08	1.96	1.91	1.76	1.69	1.65	1.66	1.67
Potato	0.31	0.75	1.14	1.04	1.05	0.81	0.89	1.02	1.01
Sugarcane	1.35	1.52	1.37	1.02	0.76	0.89	1.01	1.04	1.13
Pulses	1.91	0.68	0.34	0.28	0.24	0.25	0.25	0.25	0.24

Table-6: Trends in Cropping Pattern of Punjab

Source

Category	2000	2005	2010
Over-exploited	73	103	110
Semi-critical	11	5	3
Critical	16	4	2
Safe	38	25	23

Table-7: Distribution of Punjab's Blocks Based on Underground Water Resources.

Source- Jain, A. K., Department of Soil and Water Engineering, PAU, Ludhiana, Punjab

Table-8: Trends in Indicators of Ground Water Usage of Punjab

Indicator	1990-91	2000-01	2011-12	2015-16	2016-17	2017-18	2018-19
No. of Tube wells (in lakh)	8	10.73	13.83	14.19	14.19	14.76	14.76
Net area irrigated by tube wells*	2233	3074	2954	2936	2975	2948	2907
% Net area irrigated by tube wells to total net irrigated area	57.12	76.12	73.15	70.96	72.08	71.48	71.31
% Gross irrigated area to gross cropped area	94	96.5	98	98.64	98.8	99.3	99.5
% Net area irrigated to net area sown	93	95	97.9	99.9	99.9	99.9	98.9
Gross Irrigated Area*	7054.8	7663.8	7723.8	7765	7714	7769	7801

Gross irrigated area of rice	1997.9	2590.3	2802.8	2961.7	3038.0	3057.9	3091.8
Gross irrigated area of wheat	3144.3	3333.4	3488.8	3472.2	3467.7	3499.3	3515.2
Gross irrigated area of maize	96	97.9	98	97.1	92.4	98.1	112.6
Gross irrigated area of barley	31.1	30.4	12.6	11.5	8.6	7.7	6.1
Gross irrigated area of bajra	9.7	5.4	2.8	2.0	3.1	2.8	2.0
Gross irrigated area of gram	7	5.7	1.7	1.6	1.5	1.3	0.9
Gross irrigated area of other cereals and millets	0.1	-	-	1	0.6	0.6	2.2

Source- Statistical Abstract of Punjab, 2020. *in 000' hectare

ANALYSING THE CORRELATION BETWEEN THE US DOLLAR INDEX AND INDUSTRIES

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ABSTRACT-

Exchange rate fluctuations and strengthening of the US dollar against other world currencies have become a more common phenomenon in today's world. A natural implication of such a phenomenon is the impact on various industries. This paper aims at studying such relations and the economic explanations behind them. Five industries - shipping, oil refineries, media and entertainment, FMCG and financial services - have been taken for analysis. A correlation study has been carried out in the further sections of the paper and the study has been concluded by listing the limitations of this study.

KEYWORDS-

USDX, Shipping Industry, Media and Entertainment Industry, FMCG Industry, Oil Refineries, Financial Services, Correlation and Causation

JEL CLASSIFICATION CODES-

F23 (Multinational firms; International business), F31 (Foreign exchange), G10 (General financial markets)

INTRODUCTION:

A direct effect of globalisation in today's world has been a significant impact of exchange rate fluctuations on various industries. The degree of integration of a market with its global agents determines the corresponding degree of correlation between currency trends and firms. As the vehicle currency, the movements in the dollar stand to have the strongest impact on profitability and stocks. Drawing from this, the authors - in this paper - attempt to analyse the impact of the US Dollar Index on the stock prices of firms from various - characteristically different - industries.

The US Dollar Index is a measure of the dollar against a union of currencies that - at the point of its inception - proved important to American trade. These currencies are the Euro, the Swiss Franc, the Swedish Krona, the Canadian Dollar, the British Pound and the Japanese Yen. With the base of 100 - 100 being parity of currencies - an increase in the index indicates a strengthening of the dollar.

Industries with varying degrees of integration have been considered. A certain level of heterogeneity has been observed in the firms under each industry in terms of their market share and area of operations to ascertain the most general direction and degree of impact on representative companies. With globalised operations, firms can see trade fluctuations in time with dollar fluctuations. Consequently, past research has focused on a more derivative impact of the dollar on a variety of variables under each industry. The scope of this paper is limited to the effect on stock prices only.

METHODOLOGY:

Based on quantitative data, the authors have attempted to derive the degree of correlation between the stock prices of various companies categorised under five different industries and the movement of the US Dollar Index. Data points have been collated over a longitudinal time period of ten years - between 2012 and 2022. A total of five companies have been selected under each industry - FMCG, Financial Services, Media, Shipping and Refineries. The selection of these companies has been random, however, the authors have tried to analyse global firms in each industry so as to minimise the possibility of an isolated effect that a local player could presumably show.

Secondary data has been collected from financial coverage platforms - the daily closing price of the stock has been considered. The collected data has then been cleaned and monthly averages have been calculated from this data (using Excel) to acquire a reduced and equal number of data points for all variables. Inferential statistics has been used to carry out a simple correlation analysis between the monthly averaged prices of each company with the US Dollar Index to anatomize two factors:

- Is the correlation between a stock and the USDX significant enough to establish a causal relationship?
- If yes, then which way does the causation flow?

The correlation figure has then also been used to calculate the R squared between each stock and the USDX. A methodological limitation considered by the authors is the random selection of companies. While it can be hypothesised that global firms would have an affinity to be affected by a movement in the dollar, individualistic business and trading patterns can lead the results to vary.

LITERATURE REVIEW:

The paper by K. Akatsuka aims to study the different perceptions of foreign exchange risk in the shipping industry. The paper analyses the impact of exchange rate risk on companies from Japan and Norway. Furthermore, the paper identifies two problems - exposure in terms of net US dollar revenues and volatility of the exchange rate - for foreign risk in the shipping industry. The study is concluded with a regression study for the time period 1990-2000 and an analysis of the Asian financial crisis on the variables under consideration. (K. Akatsuka & K. Leggate, 2002)

The paper by Radhamés A. Lizardo and André V. Mollick tries to explain movements in the value of the USD against major currencies from the 1970s to 2008 due to fluctuations in oil prices. In the later sections of the study, the authors use a formal model of exchange rate determination and add oil prices to it. Furthermore, two sections of countries - net exporter of oil and net importer of oil - have been selected to understand the relation in greater depth. The study is concluded by summarising empirical results using various statistical tests. (Radhamés A. Lizardo & André V. Mollick, 2009)

The paper by Zakiya Begum Sayed and Gayathri Jayapa studies foreign exchange exposure in the IT and FMCG sector firms. Authors then dig into the definition of foreign exchange exposure and how different industries would face varying levels of it. Authors have used data from sectoral indices for the econometric model of capital market approach for measuring exchange rate exposure. The study is concluded by plotting the data of the two sectors and summarising the results along with the future scope of the study. (Zakiya Begum Sayed & Gayathri Jayapal, 2018)

The paper co-authored by Joanna Strycharz, Nadine Strauss and Damian Trilling studies the role of media coverage in explaining stock market fluctuations. Authors stress on how the distribution of information through various media channels play an important role in financial markets. In the further sections, three companies that are listed on the Amsterdam Exchange Index have been selected for applying OLS modelling. The paper concludes with a discussion of the variables under study - media attention, corporate sentiment and corporate topics - and limitations of the work. (Strycharz et al., 2017)

Nafiseh Keshtgar, Mosayeb Pahlavani and Seyed Hossein Mirjalili - in their paper - analyse the impact of exchange rate volatility on banking performance. The paper is a case study of Iranian banks in the period 2007-2017. Furthermore, authors have used the GARCH model for deriving exchange rate volatility. The results estimated using an econometric model for panel data indicated that uncertainty in the exchange rate leads to credit expansion and a decline in deposits and eventually leads to a deepening financial gap. (Keshtgar et al., 2020)

CORRELATION STUDY:

1. Shipping Industry-

Company	Correlation with USDX	R Squared
MSLOY	0.36077	0.1302
CICOF	0.24425	0.0597
Evergreen Marine	0.26077	0.0680
OROVY	0.36461	0.1329
MATX	0.52835	0.2792

Table 1 - Correlation between USDX and Shipping Industry

Mitsui & Co. (MSLOY), COSCO Shipping (CICOF), Evergreen Marine Corporation, Orient Overseas (OROVY) and Matson Inc. (MATX) are the companies under consideration. Correlation for the companies under study shows that there is a pattern in the movement of stock prices of the shipping companies and USDX but the correlation is not strong enough to prove any causation as the corresponding R square is fairly low. However, considering past literature, it can still be concluded that fluctuations in the USDX has a bearing on the stock prices of companies from the shipping industry. Based on the numbers it can be said that strengthening the dollar provides stability to profits of the shipping industry - and a consequent rise in the stock - which explains the positive correlation between the two.

2. Oil Refineries

Company	Correlation with USDX	R Squared
PARR	0.0131	0.0002
PBF	0.0972	0.0094
PSX	0.4069	0.1656
VLO	0.6398	0.4093
SHIIY	0.1116	0.0125

Table 2 - Correlation between USDX and Oil Refineries

Par Pacific Holdings (PARR), PBF Energy Inc. (PBF), Phillips 66 (PSX), Valero Energy Corp. (VLO) and Sinopec Shanghai Petrochemical Company Limited (SHIIY) are the five companies under study. Correlation and the related values of R square between stock prices of oil refineries and the USDX are very low. This means that the pattern of movement between the two variables is not strong enough to provide any economic explanation or to back up any existing phenomenon in the global markets. The expected reasons for such a result are - severe fluctuations in both crude oil prices (as crude oil is the most important input for oil refineries) and the USDX; and oil industry is impacted by other variables that are not captured in this study.

3. Financial Services

Company	Correlation with USDX	R Squared
AXP	0.4428	0.1960
HDB	0.5982	0.3579
GS	0.5196	0.2700
WFC	0.2763	0.0763
MS	0.5174	0.2677

Table 3 - Correlation between USDX and Financial Service Industry

American Express (AXP), HDFC Bank (HDB), Goldman Sachs (GS), Wells Fargo (WFC) and Morgan Stanley (MS) have been studied for the analysis. Correlation and subsequent R Squared analysis carried out between the USDX and a number of firms providing financial services shows a strong positive relationship. Past research shows an increase in credit creation with uncertainty in the dollar exchange. Drawing from this, it can be hypothesised that in the case of global financial firms, a strengthening dollar increases profitability and hence the stock prices of these firms. A fluctuating or falling dollar, on the other hand, can cause uncertainty in the market, followed by a general risk aversive behaviour of agents - leading to a loss in profitability.

4. Media and Entertainment Industry

Company	Correlation with USDX	R Squared
DIS	0.5136	0.2638
SONY	0.4912	0.2413
CMCSA	0.5424	0.2942
TRI	0.5536	0.3064
NFLX	0.4227	0.1787

Table 4 - Correlation between USDX and Media & Entertainment Industry

Disney (DIS), Sony, Comcast (CMSA), Reuters (TRI) and Netflix (NFLX) are the companies studied here. Literature on media and fluctuations in the dollar depict a causational relationship stemming from media and impacting the dollar. This analysis is specifically true for news channels. The analysis in this paper extends to not only media but also entertainment platforms like Netflix. Being global players in the field, the firms move in tandem with the dollar index i.e the analysis concludes a positive relationship between the two variables. While on the one hand, non US subscribers of these platforms would give a lower real return, the investment in non US content will also rise to incorporate reduced costs of filmmaking and a subsequent increase in profits (Roberts, 2022).

5. FMCG Industry

Company	Correlation with USDX	R Squared
JNJ	0.6331	0.4008
NSRGY	0.5208	0.2713
PG	0.5259	0.2766
UL	0.4415	0.1949
KO	0.6454	0.4165

Table 5 - Correlation between USDX and FMCG Industry

Johnson and Johnson (JNJ), Nestle (NSRGY), Procter and Gamble (PG), Unilever PLC (UL) and Coca Cola (KO) are the five companies studied. Research on the relationship between the USDX and commodity indices show an inverse relationship between the dollar and commodity prices. Low commodity prices allow FMCG firms to increase their profitability through not only increased demand but also through favourable conditions in trade. A subsequent rise in stock - and therefore a positive relationship of FMCG stock prices with the USDX can then be expected - and is shown in the empirical analysis of this paper.

CONCLUSION AND RESULTS:

A varying degree of correlation can be seen in every industry. However, firms chosen under each industry show a similar direction of correlation - thereby providing an all encompassing representative effect on the industry. While most industries under consideration show the impact of the dollar on stock, some industries account for a two way causal relationship - namely media and refineries (connected through fluctuations in oil prices). The effect of some components of media on the dollar is reflected in past research - and considered here.

The R Squared analysis provides results on the level of causation in each industry - it is relatively higher in Financial Services, Media and FMCG while significantly low in Shipping and Refineries. Each industry is affected through varying variables - some trade related, some revenue and cost related.

LIMITATIONS:

. A varying degree of correlation can be seen in every industry. However, firms chosen under each industry show a similar direction of correlation - thereby providing an all encompassing representative effect on the industry. While most industries under consideration show the impact of the dollar on stock, some industries account for a two way causal relationship - namely media and refineries (connected through fluctuations in oil prices). The effect of some components of media on the dollar is reflected in past research - and considered here.

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THE GUISE OF WELFARE: POLITICAL ECONOMY OF BIG TECHNOLOGY & STATE POST COVID-19

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ABSTRACT-

For the big technology giants, namely Google, Apple, Facebook, Amazon & Microsoft, the pandemic meant an unprecedented supply of behavioural surplus, data and opportunity to expand. In addition, it also pointed towards a resurgence of the elective affinity between public agencies and surveillance capitalism. For the consumers and citizens, it meant better optimisation but also restricted control over decision rights and privacy. Previous research in this field has dealt with the relationship between information technology, surveillance and its synergy with state agencies. Through this paper, I aim to understand the changing political economic relationship between the big technology giants and government through qualitative reading of policies and investment contracts through which big technology participated in pandemic control and offering new solutions. In doing so, we study how the structures of security, production, credit and knowledge (the four structures of power) have evolved to make space for big technology in an increased capacity.

KEYWORDS-

Capitalist Systems, Technological Change, Political Economy

JEL CLASSIFICATION CODES-

D82, O33, O38, P17

INTRODUCTION:

The synergy between big technology and the state has been a resounding theme of discussion in international political economy since the dawn of the 21st century. Network economies or the idea of nodes was initially an investment undertaken by the state. What was fostered and financed by the USA government lived to outgrow the wealth and power of perhaps many economies; and become one of the biggest and increasingly shock-resilient industries. As rightly pointed out, Big Technology is now marketed by a few private entities as a global public good, state-of-art military tool and a cultural force of change (Greene, 2018). All three of the listed criteria were effectively delivered upon during the pandemic as well.

It is important to understand that power can be both relational and structural in design. For this paper, we work with four primary structures of power – namely, control over security, production, credit and knowledge (Strange, 1988). Through the course of the paper, we shall study how such structures have evolved since COVID-19.

To set the context straight, big technology companies have been under the scrutiny of public watchdogs and governments in the near past for their monopolist tendencies and privacy concerns. Nevertheless, with the state of near emergency and stand stillness imposed by the lockdown, governments around the world started making futile attempts as state-sustained surveillance and fiscal policies aimed at re-financing. What resulted instead was a quid pro quo for technology giants to keep the economic running and the way of life functioning. This partnership is not of novel nature. We witness that post the 9/11 attack on the US territory, there was an “elective affinity” between the public intelligence agencies and surveillance capitalists. Caused by a long tail event, the post 9/11 attacks gave birth to a strong bond between the two agencies wherein privacy was compromised on multiple fronts and the relations between the Senate and the Silicon Valley improved (Zuboff, 2019).

Whilst the pandemic is incongruent with the listed event, it did create an unavoidable need for surveillance and internet technology. Necessity for remote working, contract tracing and cloud services became ground for interception of firms of Amazon and Google to assist the states. In doing so, often matters of consent and authority were either overlooked or defined in vague terms (Ahmad, 2020). And this is where the power of big technology becomes detrimental to growth in and of itself.

STATE OF AFFAIRS:

On Security

When concerns of security are highlighted, the primary factor to inquire into is surveillance. Building out from the historical narrative of how computer networking technology came to be a result of military aspirations of the United States government (Everard, 2000), technology has been a tool to collect and share intelligence since its dawn (Levine, 2018). Chief among the role of GAFAM is the rise of participatory Signals Intelligence (SIGINT), literally meaning an intelligence collection technique that governs data collected from electronic or communications devices—or foreign instrumentation data.

An example of participatory SIGINT would be contact tracing applications which proved an effective way to slow down the pandemic (Huang, Sun, & Sui, 2020). The only concern, as highlighted by many scholars, is that of the trade-off between privacy and effectiveness (Kleinman & Merkel, 2020) (Ram & Gray, 2020).

Up until March 2021, there are 120 contact tracing apps available in 71 countries. 45 of these apps now use Google and Apple's API, while 19 apps, with 4 million downloads combined, have no privacy policy. It is vital to note that a lot of countries initially made futile attempts at public-run digital contact-tracing; these states switched to the Google Apple API soon after (Sato, 2020) – subject to approval by Google and Apple (O'Neill, 2020). Additionally, reports of the pandemic that are emerging now indicate massive dealS between Silicon Valley and the Pentagon during COVID-19 for optimisation of information that could very well translate into surveillance (Brewster, 2021). Other initiatives included leeway into strengthening the Automated Targeting System (ATS), America's widely used criminal profiling tool (Brewster, 2020). In such cases, the purpose of both data collection and future use of the data is unclear (Madianou, 2020). The 3 main drivers of the growth of SIGINT identified so far are the "Trojan horse" of surveillance capitalism, politics of exception as moral imperative and endurance of emergency-implemented surveillance measures (Bernard, Bowsher, & Sullivan, 2020).

Moving on to another variable of security – traditional forms such as the military. The military industrial complex as highlighted by Mills has been strengthened under the Silicon Valley with numerous revolving doors into what might construct a war for profit business for the firms there (Powers & Jablonski, 2015). In the United States, Microsoft is the only significant big tech defence contractor; if we do not include the numerous multi-million-dollar Amazon Web Services awards passed through subcontracts. In fact, up until 2020, more than 7000 contracts and sub-contracts were signed with Microsoft, Google, Amazon and Facebook alone (inclusive of all subsidiaries and name corrections) (Poulson, 2020).

The nature of defence contracting makes it incredibly hard to acquire correct data or the number and amount of such contracts, given that these expand across the Department of Defence, Department of Homeland Security, separate Police Departments etc. Furthermore, defence production works in subsidiaries which often do not list parent companies which makes compilation of meta data even more difficult. However, direct contracts to Microsoft and other Silicon Valley firms are also present and have been consistently increasing over the years. To list a few, Amazon had been awarded contracts with a lifetime value of over £23 million, including contracts related to testing and tracing valued at £8.3 million (Pound, 2020). In addition, British spy agencies announced a contract thought to be worth £500m to £1bn for over a decade with Amazon – raising questions about security as all data will be managed by a US tech company (Jowitt, 2021). Moreover, a hybrid contract with a ceiling of $9 Billion to Google, Amazon Web Services, Microsoft and Oracle. Such and many more contracts sprawl over various domains from Washington Headquarters to the Navy and Air Force (US Dept of Defense, 2022). These trends are global in nature with the Ministry of Defence of the UK has reportedly assigned a £17 million contract to Microsoft without any competitive tenders or publications (Tech Monitor, 2020).

Lastly on matters of security, we have non-traditional forms of security such as improving public health systems. Big tech also helped public health authorities in epidemic modelling and public health communication in order to restrict misinformation about the coronavirus. While epidemic modelling has older roots, countries like Norway – where telecom companies restrained from using data due to public opinion on privacy – still had analysed Norwegian location data through a public-private cooperation (Storeng & Puyvallée, 2021).

On Production

The second structure of power we examine is that of production. This structure sums up all the arrangements determining what is produced, by whom and for whom, by what method and on what terms. It dictates who and what creates wealth in a political economy. During the pandemic years (2020, 2021) – it was straightforward that corporate bankruptcies had hit its decade's worst, restaurants, airlines, and all other forms of business shut down and millions of workers had been rendered unemployed. Even so, the tech industry flourished. It not only saw a boost in sales, but that wealth was so much that it worsened inequalities. Not only the stock market valuation of big technology companies soared but several companies went public – often earning huge amounts as and when they did so. Forbes calculates there are now 365 billionaires whose fortunes derive from tech, up from 241 before the virus (Streitfeld, 2021). The unequal distribution in gains is evident in Silicon Valley itself with the top 1% of householding almost twice the wealth of the bottom 50% in the region (Massaro & Young, 2023).

Of-course, production also takes into account the jobs that big technology platforms created and sustained during the pandemic. Primary informal job alternative for many individuals was to turn towards the gig economy, which observed new job openings as a result of COVID-19 (Umar, Xu, & Mirza, 2020). Gig workers crowded the customer service segment during the pandemic and essential services on platforms such as Amazon, Zomato, Swiggy, Uber etc. were a respite to unskilled labor in countries like India (Gugnani, 2022). During and after the pandemic, we observe that increasingly people rendered unemployed, lower income earners and manual workers (who are more negatively impacted by the pandemic) entered the food delivery service market during the recession (Hasegawa, Ido, Kawai, & Kuroda, 2022). Furthermore, Apple recorded a 15% increase in US jobs offered through iOS apps (Apple 2020) while Amazon saw a staggering increase of 400,000 workforce (Richter 2021).

As work becomes increasingly granular, contractual and flexible in nature, the labor right abuses associated with the same become difficult to counter. Not only is this detrimental for the state and health of the labor force but also affects their collective bargaining in front of technology giants. Illustrating the case of Uber Eats gig workers in Japan, researchers have pointed towards the "illusory freedom" that workers are faced with. During the pandemic, these systems of control exercised by the parent technology platform have grown in magnitude rendering the worker without both choice and fair working conditions (Umer, 2021). Similarly, unlike the western narrative of people entering gig work because of its flexible working hours, Japan also presents a different case which is more suited to the developing world. If low-income earners and unemployed persons are compelled to enter gig work as a result of the pandemic and are increasingly willing to accept low wages for the same – then means of job production by the big technology is faring so well as it is presented to be.

On Credit & Financials

Owing to the increasing wealth and power of Silicon Valley, rethinking taxation for digital economies was perhaps one of the most vital structural changes to incorporate in the post-pandemic world. One month after WHO declared COVID-19 a pandemic, the need for a global tax system to update our governance model – more precisely – a Bretton Woods-type model that would seek to mitigate the negative implications of the digital revolution to bring about inclusive prosperity was highlighted (Medhora and Owen 2020).

A major development of 2020 was the OECD-G20 minimum universal taxation for big technology – 15% floor under the corporate tax set to come into force from 2023 – covering firms with global sales above 20 billion Euros ($23 billion) and profit margins above 10%. This aims to bring tax havens like Ireland under regulation and is lauded as a strong move to curb the power of big technology. Median tax rate in 2020 was 17.4%, both Facebook and Amazon had paid below that (Grant & Horobin, 2021). Only, this is not without criticism. Countries like Canada, which initially had higher digital tax rates offer comparatively huge tax breaks to Silicon Valley giants under the new tax rules (Sanger, 2021). Furthermore, Oxfam points out that such a deal is well below the 20-30% rate decided by theUS Financial Accountability, Transparency and Integrity (FACTI) Panel suggested (Thériault, 2021). The effect of such a deal had spilled over to create tensions between states. The United States had reportedly opened trade investigations against countries ranging from France to Indonesia, claiming that their decision to levy digital taxes instead was unfairly singling out American companies (Christie, 2021). The OECD's decision also comes at a time when US contractors are offering ground-breaking tax cuts to big technology companies to deliver on the demand created for data centres during COVID-19 – a market which is predicted to value over $600 billion over the next five years (The Montrose Group, 2021).

News in circulation about Google, Amazon and Facebook also concerned multiple reports on lawsuit settlement. A 2020 settlement prevented a ruling that could have decided whether Amazon is liable for defective products – successfully averting a precedent (Beauge, 2020). This was not the first, nor the last settlement that resolved lawsuits dating as far back as 2016. In the case of Amazon, the company handed out millions of dollars in settlements around the world – $11 million to laborers in California (Saldana v. Amazon.com, LLC, 2020), $18.8 million to Japan (Kyodo, 2020), $61.7 million pleading not guilty with US antitrust watchdog (FTC, 2021) etcetera. Experts point out that such practice is unusual, for in major antitrust cases, 'ability to pay' is an issue which almost never seems to be the case. Instead, Amazon has been acting eager to resolve them instead (Vesoulis, 2021). This monetary flex is also evident from Amazon's policy change that no longer requires complainants to file for arbitrations – rather allows them to directly sue the corporate giant (Randazzo, 2021). Following along similar lines, Google also settled million-dollar class-action lawsuits pleading not guilty (Gamble, 2021) and looking to settle with monetary compensation (Meyer & Sazonov, 2021) (Davis, 2021) (Chee, 2021). In matters that don't seem to be solved with money, big technology has also threatened to stop offering its services (Clayton, 2021) (Purnell, 2021). They instead strike a deal with parties directly affected (Nicholls, 2021) (Pichai, 2020) or hire lobbying firms to protect their interests (Meade, 2021).

On the question of financials, it is imperative to study the monetary power of the firms via their response to legal proceedings as antitrust cases seems to be the only detriment that could account for the firms' behaviours. The American Bar Association had compiled an extensive list of all antitrust and anti-competitive proceedings of technology giants all over the world from 1905 – up until 28th June 2021 (American Bar Association 2021). The landmark 2020 antitrust proceedings were perhaps the only significant common ground between Democrats and Republicans in the United States of America. Europe witnessed similar trends, wherein the European Commission's began four cases concerning anti-competitive practices of big technology – more than it has done in time before 2020 (European Commission 2021).

To elucidate more on the matter, we narrow down our sample to cases/proceedings against only five companies – Alphabet/Google, Amazon, Facebook, Microsoft and Apple. The cases are divided into two broad categories, closed and open, wherein 'closed' refers to all the cases that are either closed, resolved, fined or settled and 'open' are still ongoing. For the latter, a striking number of 22 cases were charged in 2020 while 29 were charged in 2021. Amongst the former, we notice a declining trend of cases closed with a landmark 11 cases wrapped in 2019 to only 5 in 2020 and 2021 each – perhaps the delay is attributed to the pandemic. Considering this observation with our initial superficial review of news traffic on settlements – it would be safe to say that while Big Tech still has the monetary power to settle the cases, it falls upon the competition and public authorities to compile reports for the proceedings to move forward – which have been delayed either due to political reasons or pandemic restrictions. A total of 51 cases charged against the big technology giants speaks volume about the political gusto to rein these companies in – only this zeal might run in contrast to what happens behind the scenes. One example is the US National Security Agency. NSA and Big Tech have a thick relationship with revolving doors between officers working in either field. Recently 12 former NSA officials signed a petition to stop the anti-trust cases as it would harm the US tech race with China (Cardillo, et al. 2021) – some of them have been openly critical of Edward Snowden in the past. This move, thus, threatens the only leverage political agencies seem to have.

Lastly, the power to credit refers to the power of letting people exercise purchasing power and thus influence markers for production, to manage/mismanage the currency and to allow or deny credit. While the primary authority continues to remain with central banks, the advent of COVID-19 and subsequent digitalisation is expected to support fintech and big tech credit (Cornelli, et al., 2020). For instance, costs associated with cross-border remittances are often considerably lower via fintech channels. These channels were highly utilised by firms in Asia and the Pacific. While the pandemic adversely lowered GDP growth, empirical evidence suggests that fintech played an important role in offsetting macroeconomic losses to some extent (Mehar, 2022). Of course, this is not to say that Google and other firms listed in the paper own or operate such fintech companies but that only they become an indispensable facilitator of the same.

On Knowledge System

The last pillar of structural power we examine is knowledge which deals with what is known and perceived, what channels these thoughts and, who is excluded or included if that knowledge is shared, if at all. This is perhaps the pillar that is weakest for the welfare state at the moment for last informational asymmetries exist between the big technology and the state. Neither the executive nor the legal systems can keep up with such change.

The big technology market has far overtaken the state in the knowledge it possesses – so much so that Apple and Google choosing which governments are fit to use their technology puts states at the short end of bargaining. Much of the previous three structures we critically analyse cannot be viewed as exclusive of knowledge – for it is knowledge to produce, to deliver, to organise that gives big tech the power to influence. One might think that the pandemic has not changed anything as knowledge traditionally lies with the corporations – especially in the case of Silicon Valley. However, this knowledge came about because the state decided to channel money into propagation of such knowledge before all the institutions that were leading this sector privately, breeding a more convincing capitalist economy. It was knowledge that initially led to proliferation of big tech in state tasks after 9/11. We set the context of COVID-19 before, it is a time when governments are attacked with spyware, have failed to implement surveillance; big technology comes in as a saviour at a time like this. There is little information on how big data surveillance technology works – while companies deliver results, they do not share how they came to create such an algorithm. Like any other business, this is how big technology also operates. To counter this knowledge, states around the world have little to no legal enforcement today.

This invites the thought that since much of the functioning in a pandemic was possible due to big tech, what are the key bargains in such a situation? Bargaining works on the basic principle of tactic i.e. one thing must be exchanged for another. Power is derived from force, wealth or ideas. Based on our analysis, ideas are primarily dominated by big tech and their “pro-bono” work in the pandemic is only set to uplift their image. Furthermore, political ideas are now diminishing while techno-solutionism is on the high. The monetary power of Google, Apple, Facebook, Microsoft and Amazon is reflected in the political lobbyists they hire, the fines they get away with and the swelling capital they create. Furthermore, their growing power is reflected in the global OECD tax regime that is set to reduce EU country tax rates in half; strongly backed by Joe Biden in the US. The only credible force that states have is legal force exhibited in competition commissions that stridently keep charging big technology for their monopolistic practices. Doing so also helps governments feign responsibility onto technology giants as they avoid investigations into shortcomings of their governance.

Welfare states had long disappeared from the scene since neoliberal capitalist trends set in. But during the pandemic, we observe how big technology marketed their products under the guise of “welfare” and how without the technical and “network effects” power they possess, states were unable to counter the crisis on their own. Of course, much of it was possible because of the occupational advantage that Big Tech created for itself.

This brings us to what we began with – big technology worked hand-in-hand with the government to curb the crisis, but in the process, it presented glaring gaps in state power and authority to protect the interests of its citizens. Additionally, the current political regimes are techno-solutionism friendly. We do not say this is a negative development, but such a public-private partnership compromises on values that states should protect.

CONCLUSION:

We conclude that two contradictory forces of growth and conflict were pulling the states, in the heat of which the states accepted aid from big technology giants. However, such a dependent behaviour has birthed what could be a start of a weaker state in the form of lesser control over security, production, credit and knowledge. There are already rifts in the skill and knowledge governments around the world possess compared to their market counterparts, the pandemic merely highlighted them. The intimate ties of US security agencies and big technology only seek to threaten any political development to correct monopolistic practices. We observed that states are left with virtually little freedom to decide. Increase in the number of government data requests, tax cuts for data centres, defence contracting and public-health contracting opens new doors for the Big Five, while states seem to be losing control over functionality of all other doors.

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A SECTORAL ANALYSIS OF ECONOMIC GROWTH: STRUCTURAL TRANSFORMATION & ITS POLICY IMPLICATIONS IN THE INDIAN CONTEXT

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ABSTRACT-

The aim of this paper is to analyse the structural transformation in India from a sectoral point of view, analysing the relative impact of each sector and on the basis of the same, and suggest policy alternatives to overcome the weaknesses in the structural transformation process in India. We initiate a graphical analysis of the sectoral shares of output and employment, and identify the nature of this transformation. Further in the paper, we develop a linear regression model to identify the relationship of the three sectors with the growth rate of per capita GDP. From a policy point of view, we also conduct a Chow test to analyse if there is a structural breakpoint in the dataset in 1991, the year of the LPG reforms in India (thereby identifying its impact on the transformation process). On the basis of this analysis, we conclude the paper with relevant policy alternatives.

KEYWORDS-

Indian economy, Structural Transformation, Economic Growth

JEL CLASSIFICATION CODES-

O11, O47, J58, O55

INTRODUCTION:

India has experienced a noticeable economic growth over the past decades, especially after 1991, characterised by the liberalisation, privatisation and globalisation reforms. One possible reason could be the structural transformation of the economy as a whole. This paper aims to highlight this transformation which deals with the sectoral shifts of labour from one industry to another. Many theories and models have been given by numerous economists on the migration of labour from the agricultural sector to industries and eventually to services in developing economies.

There has been the usage of pictorial representations of the movement of labour in each sector post the LPG reforms. A gradual decline in the percentage share of labour in the primary sector along with a rise in the labour composition of both the secondary and tertiary sectors has been observed. The paper also paints a graphical picture of the composition of each sector in the GDP of the nation over the years using a stacked bar graph. It is visible that by 2020, more than 50% of the GDP was accrued to the services sector leaving the agricultural and industrial composition of the GDP at just 20% and 25% respectively.

The economy has become highly privatised compared to the pre-reform period. This privatisation has been undertaken in gradual steps. Before the 1990s, the economic structure of the country was highly concentrated in the agricultural sector. Post the turning point, there has been a shift in the contribution of the growth of GDP per capita from the primary sector to the secondary and tertiary sectors.

This structural transformation has been empirically analysed in this paper using multiple regression models. Econometric methods have been applied to study the patterns of the past, and a clear point in the timeline of the country is evident where there is a structural break. It is important to understand past growth trends to comprehend and predict the future of the country. There has been an application of the multiple linear regression model with the growth of per capita GDP as the dependent variable and annual growth rates of sectors as the independent variables to find which of the three sectors have contributed the most to the GDP over the years. Not only this but a test has been conducted to determine whether a structural break was evident with the formulation and application of the renowned policies and reforms of 1991 under the finance minister at the time, Dr. Manmohan Singh. This has been done using the concept of Chow test, the results of which are fascinating and very intuitive.

Lastly, there is a discussion on the impact of this sectoral analysis on the policy recommendations and its implications for India going forward, as a developing nation and a potential economic superpower. At this point, India needs to undergo a complete structural transformation from a low-productive agrarian setup to a highly productive services sector, where India has a considerable comparative advantage.

LITERATURE REVIEW:

The link between structural change and economic growth has been emphasised in classical development economics. Industrialization and reallocation of labour to high-productivity sectors are the spearheads of the growth process. Growth theories (Kaldor, 1957) have tried to provide the theoretical underpinnings of the growth process, while empirical studies have tried to establish concrete links between patterns of structural change and economic growth across developing countries.

The structural transformation of an economy can be understood by the Fisher-Clark thesis. Fisher (1935) and Clark (1940), were among the first that dealt with sectoral shifts in the composition of the labour force and suggested that there would be an emergence of a large service sector owing to economic progress. They took a three-sector model, consisting of primary (agriculture, fisheries, etc.), secondary (industries, manufacturing, etc.), and tertiary (services, business, etc.) sectors which is still in use today even though they were criticised on the basis of lack of theoretical depth between per capita income and proportion of employment in the tertiary sector by Bauer and Yamey (1951).

Lewis (1955) gave the first phase of this transformation, popularly known as the Lewis model, which focuses on the migration of workers from a lowly productive agricultural sector to a highly productive industrial sector, transforming the country's structure and ushering in economic development. He argues that the modern sector has higher wages as compared to the traditional sectors. This is indeed true as output per labour is also substantially larger in the former. Also, agriculture is often under-employed having low marginal productivity, causing a transfer of labour from one sector to another, which results in the productivity of the entire economy to not only decline, but also decreases the average productivity.

The second phase of transformation has been touched upon by many economists, which is the transfer of labour in the services or the tertiary sector. Kuznets (1966), and Chenery and Lance (1968) examined this structural transformation, with the former using no econometric methods and the latter being the first to analyse the patterns quantitatively. They have shown that the share of employment in agriculture has steadily declined whereas a rise has been seen in industries. There has been a steady increase in the share of employment in services, especially during the final half of the twentieth century, often termed the “deindustrialisation’ period for many countries that witnessed the decline of industries. However, all the papers above provide a generalised concept of structural transformation and do not focus on an Indian context.

Development of the Indian economy requires three key transformations in the form of movement of workers from agriculture to industry and services, the progressive shift of workers from informal to formal sectors within industry and services, and more rapid urbanisation (Bhagwati and Panagariya, 2012). In view of the works of these authors, the Indian economy’s rapid growth should be consistent with the structural transformation of it.

The Indian economy witnessed a sharp acceleration in the 1980s, while agriculture mostly stagnated. In congruence with the rising rural population and labour force, surprisingly India saw slow rural-urban migration. India’s structural transformation has been slow and atypical (Hans P Binswanger-Mkhize, 2013). There exists a low share of manufacturing in the economy, with a record of disappointing growth and employment shares.

On the other hand, the share of the agricultural sector in GDP has fallen, with the industrial and service sectors showing growing GDP shares. India has also witnessed low TFP growth in agriculture, in comparison to China. This has led to faster structural transformation in China. Even with the tightening of the rural labour market, there was an absence of rapid movement towards structural transformation in India. This has been attributed to the diversification of rural households into the non-farm sector (Hans P Binswanger-Mkhize, 2013). The structural transformation in India is duly stunted because it has generated informal employment with the caveat that workers do not receive pensions and health benefits.

A widening gap has been observed between India’s skilled and well-paid, and unskilled and mostly poor labour. This is expected to lead to dire implications for the social milieu and the sustainability of growth. The want of the hour is a uniform increase in labour productivity, funnelling an increase in income. If this process is circumvented, economic expansion grinds to a halt due to a lack of growth in demand, or skilled labour supply constraints.

India’s workforce is employed in relatively low-productivity, low-pay jobs even as the organised sector’s output has expanded over the last two decades (BN Goldar, 2014). Labour productivity in the organised sector grew slightly slower, leaving little room for additional employment. By 2005, more than 90 percent of India’s labour force was in the unorganised sector. Moreover, there are significant gaps between labour productivity in the organised versus unorganised sectors. The gap is even more astonishing if we compare labour productivity in organised with unorganised manufacturing.

As far as industry is concerned India has recorded poor TFP performance in comparison to China. Poor employment numbers and falling share of GDP have characterised this sector in India. Most experts have claimed that constrictive labour laws are behind manufacturing’s slow growth in India, especially labour-intensive industries, in addition to the absence of proper infrastructure, and land market reforms (Bhagwati and Panagariya, 2012). There have also been concerns about the credibility of real GVA growth in the manufacturing sector in the past but they have subsequently been allayed (Bishwanath Goldar, 2015).

In developing countries like India, the service sector has led to inclusive growth through backward and forward links. It has helped create employment opportunities and develop human capital.The expansion of India's service sector has attracted interest worldwide. Although economic growth has generally led to a shift from agriculture to industries in developed countries, in India there has been a shift from agriculture to the service sector. India has been considered an outlier among South Asian and other emerging countries as far as this metric is concerned. Existing literature attributes the growth of this sector to liberalisation and reforms. The expansion of IT services, facilitated by technological advancement and the availability of highly skilled labour, is also an important determinant.

Many studies have analysed the structural changes in an economy over the years and across the globe. One of the methods to sift through these changes is the Input-Output analysis, pioneered by Leontief and put to use in the study on technological and economic changes in the US economy by Carter (1970). In the Indian context, the Input-Output analysis has been put to good use in conjunction with Multiplier Product Matrix in a paper on structural changes in the Indian economy by Poonam Munjal (2007). The study aimed to critique the structure of the Indian economy through inter-industry “forward and backward linkages” that placed the Intermediate sector at the apex of the economic landscape. However, it placed emphasis squarely on linkages rather than gross value added of the 15 sectors it disaggregated the economy into.

However, papers discussing the structural change in the Indian economy and its linkages to India’s economic growth have been largely missing. This is not to say that the growth process in India has been entirely neglected. There is a silence in academic literature regarding the identification of patterns and drivers of economic growth, with the timing of India’s growth acceleration (pre-GFC) which is deafening. There has been some related discussion of structural change, but apart from Cortuk and Singh (2011), there has been no focus on econometric analysis to explicitly identify a connection between structural change and growth in India. Cortuk and Singh (2011), using standard definitions of structural change indices, have examined the connection between measures of structural change and growth in India, for the period 1951-2007.They find that the two-time series has a structural break, and that this break takes place in 1988.

Cortuk and Singh (2015) have examined this link through indices of structural change, using panel data analysis for India’s 16 major states. They have found a positive, one-way effect of structural change on growth during the 2000-2006 period using indices such as the Norm of Absolute Values and the Modified Lilien Index. They found that structural change led to growth but not vice-versa after the specification of error terms was carefully done. They allowed for heteroscedastic, autocorrelation of type AR (1), and cross-sectionally correlated error terms. Hence, this analysis provided more objective empirical support for previous informal assertions in the literature.

Similarly, Hasan et.al (2013) found a similar result using a measure of structural change that gave more weight to sectoral shifts into high-productivity sectors. On one hand where, Cortuk and Singh (2011) and Hasan et. al (2013) used an approach characterised by a quantifiable measure, rather than a more qualitative approach such as that of Lin (2011).

METHODOLOGY:

We have attempted to study the structural transformation of the Indian economy for the years 1980-2020. The data used in this study is taken from the World Development Index of the World Bank. Data for sectoral shares of labour and GDP have been used for analysis and comparison between the three sectors, namely, agriculture, industry, and services. Total factor productivity has also been analysed for the years under consideration. Data analysis tools such as stacked bar graphs and line graphs have been used for the same.

We have attempted to study the composition of India’s per capita GDP growth over the years, which can be ascribed to growth in agriculture, industry, and services sectors, by applying regression analysis to the time series data. A multiple linear models of regression has been used in the analysis.

Regression analysis is a method for determining the relationships between two or more variables. The growth rate of GDP per capita is the dependent variable in this study taken at constant dollar prices of 2015. The elements that may impact (might affect) the dependent variable are known as independent variables. The growth rate of the agriculture, industry, and services sectors are the independent variables. We will use regression analysis to see how India's growth in the 3 sectors influences the country's GDP per capita.

Regression analysis may help us understand how the dependent variable changes when one of the independent factors changes. A regression analysis model is mathematically based on the sum of squares, which is a method of determining the dispersion of data points. The model's aim is to get the lowest feasible sum of squares and create a line that closely resembles the data. R Square, the significance of F, and the P value are all included in the analysis.

Significance F value: It indicates how statistically significant the findings are. The model is acceptable if Significance F is less than 0.01 (1 percent). If it is more than 0.01, a different independent variable should be chosen. In this study, we will utilise multiple linear regression analysis to help us comprehend and illustrate the connection between the variables.

The null hypothesis that the independent variables have no connection with the dependent variable is tested using the p-value of the independent variable. If the p-value is ≤ 0.01 then the hypothesis is accepted and if the p-value is > 0.01 then the hypothesis is rejected, meaning that there is no significant correlation between independent variables and the dependent variable. The hypothesis is also subjected to other levels of significance.

The regression equation that has been used in this study can be specified as follows:

$$ggdppc = \beta_1 + \beta_2\, gragri + \beta_3\, grmanu + \beta_4\, grserv + \varepsilon_t$$

where,
ggdppc is the growth rate of GDP per capita ($ constant 2015),
gragri is the growth rate of agriculture,
grmanu is the growth rate of manufacturing,
grserv is the growth rate of services,
εt is the error term.

As a sub-objective, we have attempted to study the given data for structural breaks by applying the Chow test. The Chow test is commonly used to test for structural changes in some or all of the parameters of a model in cases where the disturbance term is assumed to be the same in both periods. The Chow test is an application of the F-test, and it requires the sum of squared errors from three regressions - one for each sample period and one for the pooled data.

$$\text{Chow Statistic} = \frac{\frac{RSS - RSS_A - RSS_B}{k}}{\frac{RSS_A + RSS_B}{n_1 + n_2 - 2k}} \sim F_{k,n-2k}$$

DATA ANALYSIS:

Figure 1 charts the sectoral composition of labour for the time period 1992-2019 for the Indian economy, using a stacked bar graph. Clearly, a pattern can be demarcated between the different sectors vis-à-vis the labour that is employed in them. There has been a steady decline in the share of labour used in agriculture during the given time period. This trend accelerated during the 2000s and tapered towards the end which was characterised by smaller declines in the labour force put to work in agriculture. The Industrial sector employed low levels of labour compared to the absolute numbers commanded by the agricultural sector. However, it witnessed a steady increase in the sectoral share of the labour force employed during the 2000s, with the increase eclipsing in the 2010s and turning into more or less constant.

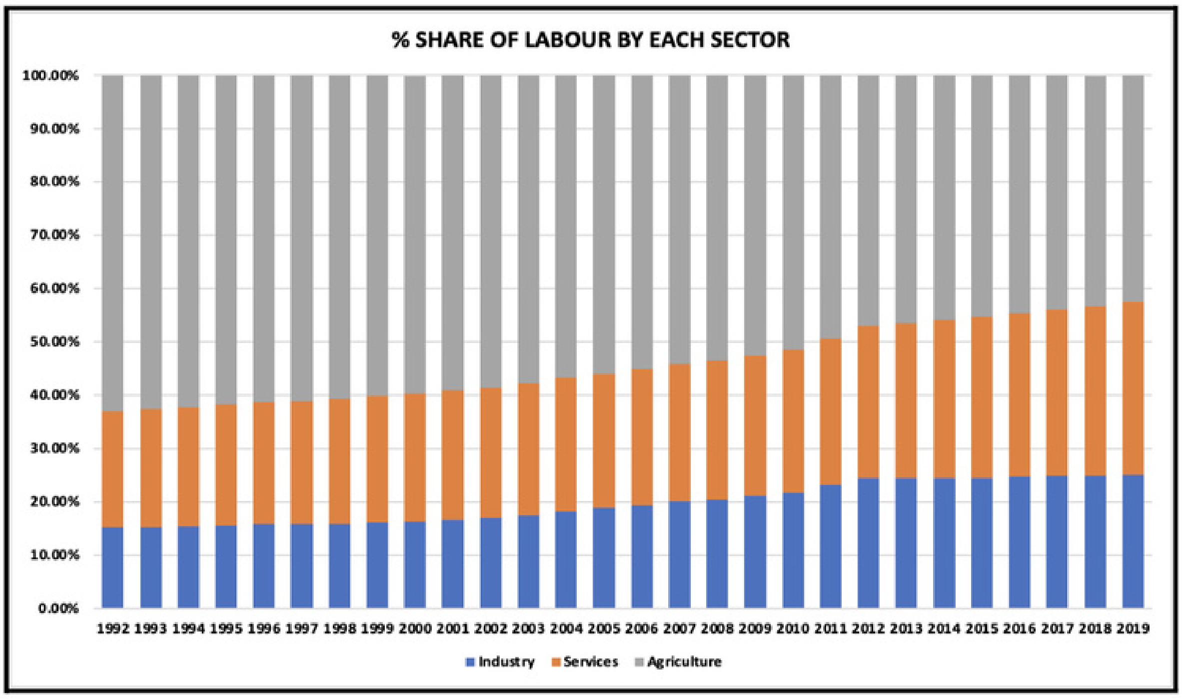


FIGURE 1 *Data Source: World Development Indicators, World Bank Data*

The Services sector recorded small increases in the sectoral share over the given time period. However, it commanded a bigger share throughout the 1992-2019 period compared to the Industrial sector, even as its shares were dwarfed by the agricultural sector. We observe that a greater share of decline in the workforce employed in agriculture has been absorbed by the service sector as compared to the manufacturing sector. We reserve the analysis of this phenomenon for the later section.

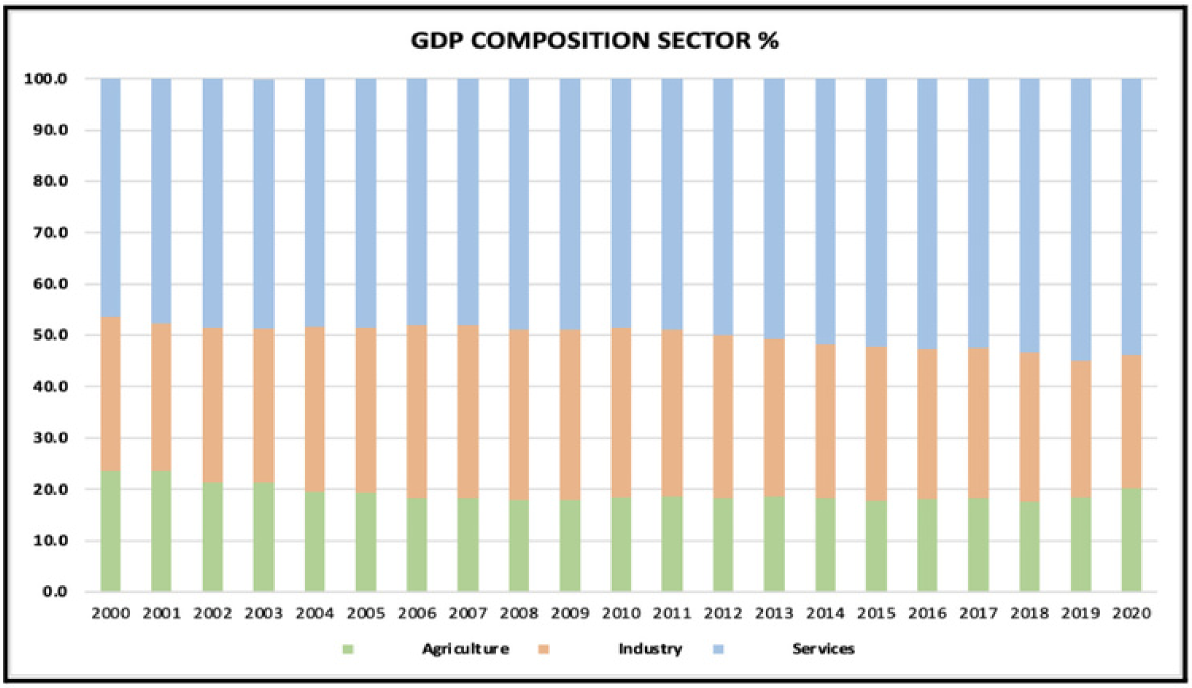


FIGURE 2 *Data Source: World Development Indicators, World Bank Data*

Figure 2 charts the sectoral composition of the GDP for the Indian economy during the period of 2000-2020 using a stacked bar graph. Services continued to account for the highest contribution to the GDP over the given time period. Moreover, its share continued to rise throughout the period reaching a high of about 55%. The Industrial sector came in second in terms of the sectoral composition of the GDP. It remained more or less constant over the specified period. The agricultural sector on the other hand recorded a decline in the share of GDP accruing to it, with a slight increase towards the end, between the years 2019 and 2020. It accounted for the least contribution towards the Indian GDP among all the three sectors over all the years considered in this analysis.

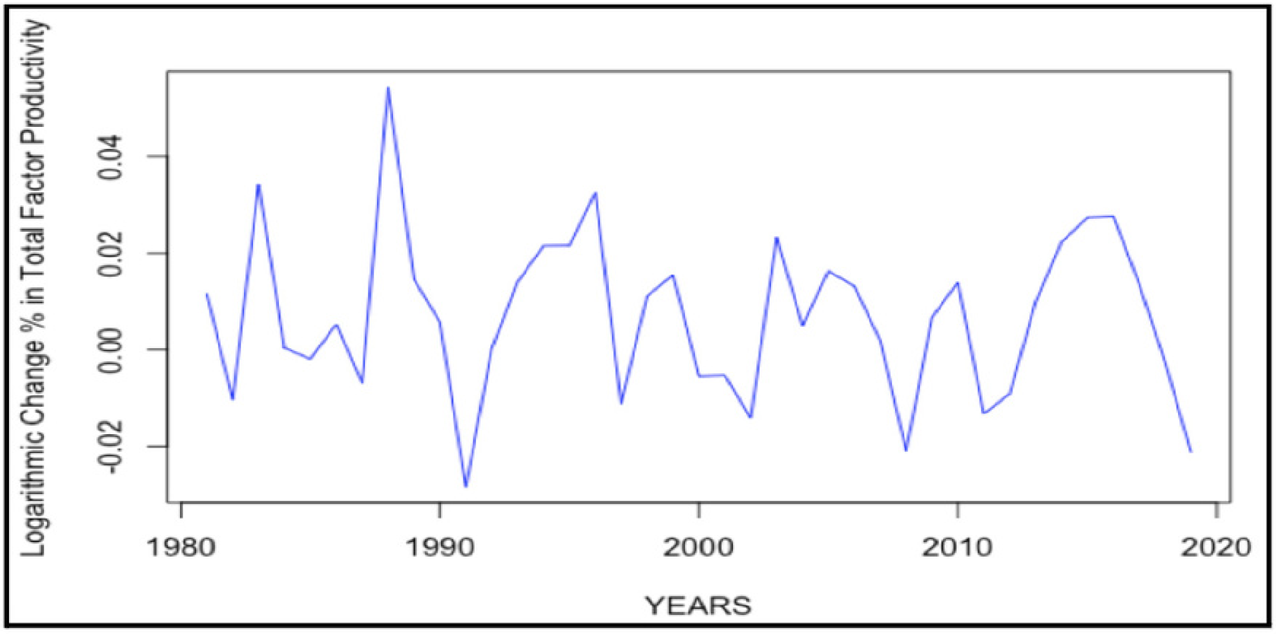


FIGURE 3 *Data Source: World Development Indicators, World Bank Data*

Figure 3 charts the logarithmic changes in total factor productivity for the Indian economy during the years 1980-2020. TFP growth has neither been consistently positive nor negative over the given period. It has gone through rapid troughs and crests, reaching its minimum points during the years 1990 and 2020. Malik et al. (2021) found that inflation and financial development have a positive and statistically significant impact on TFP in the long run. The influence of FDI, imports, and capital creation on TFP is determined to be positive but negligible. On the other hand, exports, government size, and natural calamities have a statistically significant, negative impact on the TFP. The paper suggests that these estimates are robust. The statistical results of this study have some policy implications for identifying and understanding what actually drove Total Factor Productivity over the years. In order to accelerate TFP, governments, and policymakers need to improve financial access to the private sector while ensuring price stability, as price stability has a positive effect on TFP. A strong financial sector is able to finance increased real domestic investment and absorb adverse shocks in the economy. Moreover, policymakers need to design and implement policies for enhancing economic integration in the global economy, in order to benefit from foreign investment flows, which bring in new technology. The export of high-value goods rather than low-value manufactured goods should be a priority for policymakers if they want to preserve sustainable growth. This analysis shows that with respect to India, the behaviour of total factor productivity over the years is in conjunction with the factors mentioned above and therefore, appropriate policy intervention is necessary to increase the total factor productivity.

Table 1:

	Dependent variable:
	ggdppc
gragri	0.251***
	(0.043)
grmanu	0.214***
	(0.046)
grserv	0.681***
	(0.069)
Constant	−3.151***
	(0.530)
Observations	40
R^2	0.849
Adjusted R^2	0.837
Residual Std. Error	1.135 (df = 36)
F Statistic	67.558*** (df = 3; 36)
Note:	*p<0.1; **p<0.05; ***p<0.01

TABLE 1

Table 1 lists the regression results of the study. Growth in per capita GDP is the regressand, and growth in agriculture, industry, and services are the regressors. A priori we should expect a positive relationship between the independent variables and the dependent variable. This is indeed observed in the results. The coefficients of all the regressors are positive and statistically significant at a 1% level of significance. The coefficient of ‘grserv’ is the largest in absolute terms. The coefficients can be interpreted as follows:

1. An increase in the growth rate of the agricultural sector by 1 percentage point increases the mean value of the growth rate of per capita GDP by 0.25 percentage points, keeping other variables constant.
2. An increase in the growth rate of the manufacturing sector by 1 percentage point increases the mean value of the growth rate of per capita GDP by 0.21 percentage points, keeping other variables constant.
3. An increase in the growth rate of the services sector by 1 percentage point increases the mean value of the growth rate of per capita GDP by 0.68 percentage points, keeping other variables constant.

The intercept is negative and carries no special economic significance. Moreover, the R2 value of 84% is pretty high and is statistically significant at a 1% level of significance as per its F-statistic. However, this could have happened due to the increase in regressors, and hence an adjusted R2 has also been calculated. Accordingly, the regressors explain about 83% of the variation in the dependent variable. The data has also been vetted to ensure that there are no problems of autocorrelation and heteroscedasticity (see Appendix) and that all assumptions of CLRM (Classical Linear Regression Model) are satisfied.

Furthermore, the Chow test has been conducted to test the data for structural breaks. The year of the break to be tested for is 1990. The results of the tests are as follows:

CHOW TEST	
RSS of first subsample (1980-1990), RSS_A	0.0007825
RSS of second subsample (1991-2020), RSS_B	0.00218731
RSS of the original sample (1980-2020), RSS_P	0.00463673
$RSS_A + RSS_B$	0.00296981
df of the numerator, k	3
df of the denominator, (n-2k)	34
$RSS_P - (RSS_A + RSS_B)$	0.00166692
$\{RSS_P - (RSS_A + RSS_B)\}/3$	0.00055564
$\{RSS_A + RSS_B\}/34$	8.73474E-05
Chow statistic	6.361268903
F statistic (3, 34)	4.42

TABLE 2 *Data Source: World Development Index, World Bank Data, 1980-2020*

Clearly, the Chow test statistic is greater than the corresponding F statistic with 3 degrees of freedom in the numerator and 34 degrees of freedom in the denominator. Hence, the null hypothesis of no structural break is rejected at a 1% level of significance. There was a structural break in the year 1990. Therefore, there is an additional benefit involved in running two separate regressions for the two time periods to receive more accurate results, one for the period 1980-1990, and the second for the period 1991-2020.

OBSERVATIONS:

The analysis in the previous sections shows that the increase in the share of the service sector has contributed significantly to India's per capita GDP growth rate; however, there are some concerns that are preventing the sector from contributing to inclusive growth. Most importantly, while the sector positively contributes to the growth rate of per capita GDP, this growth is not inclusive, in the sense that it does not lead to appropriate employment generation either in terms of the number or in terms of quality of jobs (Mukherjee, 2013).

As far as the manufacturing sector is concerned, we observe that an increase in the sectoral share of the manufacturing sector has a lesser impact on the growth rate of per capita GDP, as compared to the share of the agricultural sector. This can be greatly attributed to the significant proportion of the workforce still engaged in the agricultural sector and involved in disguised unemployment.

As the share of services in GDP has increased over time, agriculture has seen a decline. The share of services surpassed the combined shares of agriculture and industry over the last decade (Mukherjee, 2013). This came about due to the accelerated growth in this sector in the late 1980s resulting in the service sector becoming the fastest-growing sector in the 1990s. However, this growth is not all-encompassing. Different types of services have grown at different rates, leading to a variation in their performances. Business services, communications, and trade have grown faster than the overall growth of the service sector, whereas real estate, legal services, etc. have grown at about the same rate (Mukherjee, 2013). The growth in areas such as telecommunications and financial services have been major determinants of this growth process.

India's trade and investment in services have improved as a result of reforms and liberalisation, technical advancements, the rise of international corporations, innovative delivery models, and a sizable, untapped domestic market. India's trade in services rose significantly in the post-reform period. This was the result of the country's greater ability to compete internationally in the IT services sector. This helped proliferate exports and increase India's trade surplus. Service exports have boosted the number of well-paying jobs and redistributed labour to high-productivity industries, which has led to equitable economic growth. Moreover, service exports have raised tax receipts and boosted domestic demand, notably for infrastructure.

Current research demonstrates that the composition of commerce has moved away from traditional services like travel and transportation and towards knowledge-based and business services and that India has the ability to export labour-intensive, skill-based services. With a huge English-speaking, skilled workforce available at competitive prices, the country has created a niche for itself in exporting-based services but requires foreign investment and better management practices in infrastructure services.

In the post-liberalization period, the service sector has attracted significant foreign investment due to the availability of skilled labour at lower wages and the large and unsaturated domestic market. This has been attributed to the abundance of India’s human resources despite its poor business environment. As a result, even though multinational corporations have expressed trust in India, little FDI has been drawn to the nation. This may be because the reform program has slowed recently creating uncertainties. As a result, India has the potential to draw in more FDI in the future if the right policy initiatives are implemented and business challenges are overcome. Since the 1990s, FDI has increased significantly due to economic changes in general and the liberalisation of the FDI policy in particular.

CONCLUSION:

RELEVANT POLICY IMPLICATIONS AND WAY FORWARD

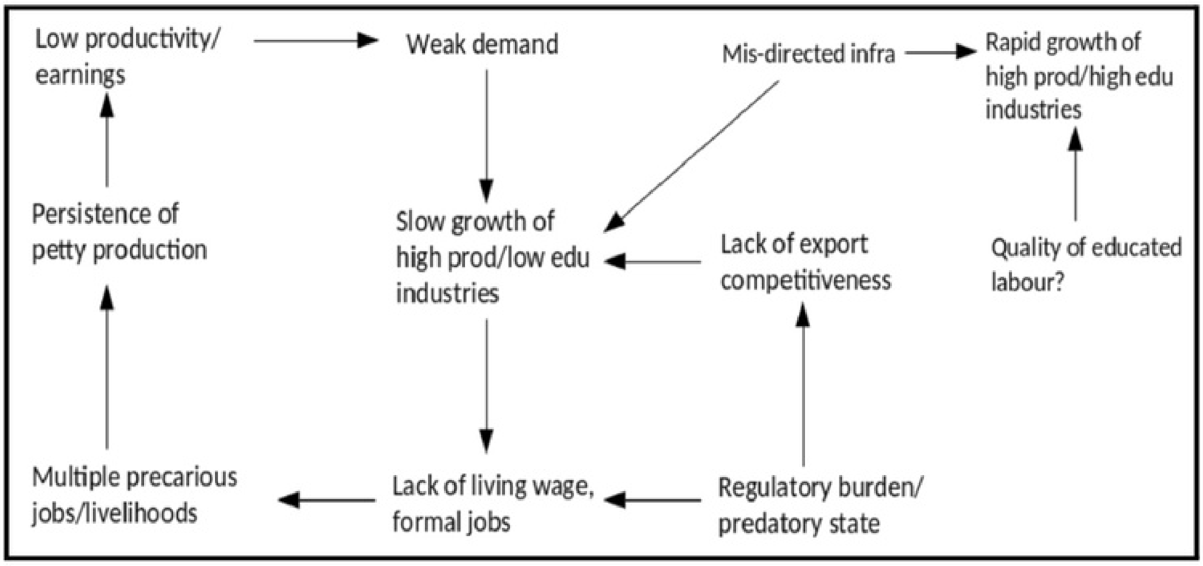
The need of the hour is to ensure that India undergoes a complete structural transformation as high levels of per capita GDP are not attainable and sustainable without a complete structural transformation from the agrarian sector (characterised by decreasing returns to scale) to the manufacturing sector (characterised by increasing returns to scale) and eventually to the service sector (characterised by constant returns to scale). The major reason for this, as our research suggests, is the lack of enough decent opportunities for the surplus labour to be absorbed by the high-productivity sector. That being said, according to Basole (2022), India’s performance in a comparative perspective has been as expected (in terms of its per capita GDP) in pulling out workers from the agricultural to non-agricultural sectors but the same cannot be said about pulling out workers from the informal to formal sectors. This brings us to one of the greatest threats India’s growth trajectory faces in the future: The increasing informalization of the workforce.

Historical evidence pertaining to structural transformation suggests the role of the manufacturing sector in absorbing the surplus workforce migrating out of agriculture, but in the case of India, we observe that this surplus is being increasingly absorbed by the service sector. The manufacturing sector has seen employment decline sharply over the last five years. “From employing 51 million Indians in 2016-17, employment in the sector declined by 46 percent to reach 27.3 million in 2020-21. This indicates the severity of the employment crisis in India predating the pandemic,” the report said. On a year-on-year basis, the manufacturing sector employed 32 percent fewer people in 2020-21 over 2019-20. It had seen a year-on-year growth of one percent in 2019-20. (“Despite Market Reforms, India’s Job Market Has Only Gone Bad To Worse,” 2022). In the global context, the growth of the services sector has always been in conjunction with growth in other sectors. However, in the Indian context, the growth of the service sector has been a result of poor absorption of the surplus workforce by the manufacturing sector. The surplus workforce present in the services sector has further pulled down the wages in this sector and acts as an impediment to increasing the formalisation in this sector.

The COVID crisis has further aggravated this issue. Post-COVID employment recovery is characterised to a significant extent by increased levels of informality. There has been a paucity of labour demand since both self-employment and casual labour markets typically expand to accommodate an excess supply of labour, via income and work-sharing norms. Data also suggests an unabated transition to informal work post-lockdown. In sum, on one hand, several of those who were employed prior to the lockdown have moved to more precarious forms of employment and towards sink sectors. There was also an exodus of workers, particularly from salaried wage work. On the other hand, many individuals who were not employed in the period prior to the lockdown entered the workforce - suggesting a replacement of the worker who was earlier employed. This indicates a high degree of churning both across employment arrangements and towards and out of the workforce (“State of Working India, 2021”).

In conclusion, we highlight that though the structural transformation process in India is occurring, it is relatively slower in comparison with its global counterparts. Moreover, while the role of the service sector in increasing employment and thereby generating economic growth is debatable, our analysis shows that the growth rate of the share of services has the maximum impact on the growth rate of per capita GDP, however, the same cannot be said about its relationship with employment (Basole, 2022). Furthermore, the growth elasticity of employment is declining in India and therefore, high economic growth alone cannot guarantee better living conditions for majority of workers (Basole, 2022)

There is a potentially vicious cycle holding back India’s structural transformation. This is a loop between the declining viability of subsistence production (and in particular of agriculture) and precarious employment in the modern sector, resulting in low earnings and inadequate demand which stimulates only a limited set of economic activities that do not generate productive employment for uneducated workers in the required numbers, perpetuating the reliance on subsistence activity for a livelihood (Basole, 2022).



Source: Structural Transformation and Employment Generation in India: Past Performance and the Way Forward

This calls for a proactive role of the State in ensuring that decent standards of work are maintained and provide for policies that can increase demand which is being limited by the above-mentioned perverse feedback mechanism. India's structural transformation alone can guarantee better per capita GDP but this does not automatically translate into higher earnings and decent standards of living for the majority of the population. It is very important to highlight that economic growth is not the end, it is the means to a better lifestyle, and to that extent, the State should introduce legislations that put in place strong transmission mechanisms (such as a National Employment Policy (Basole, 2022)) which ensure that high economic growth does lead to a better standard of living for the entire population.

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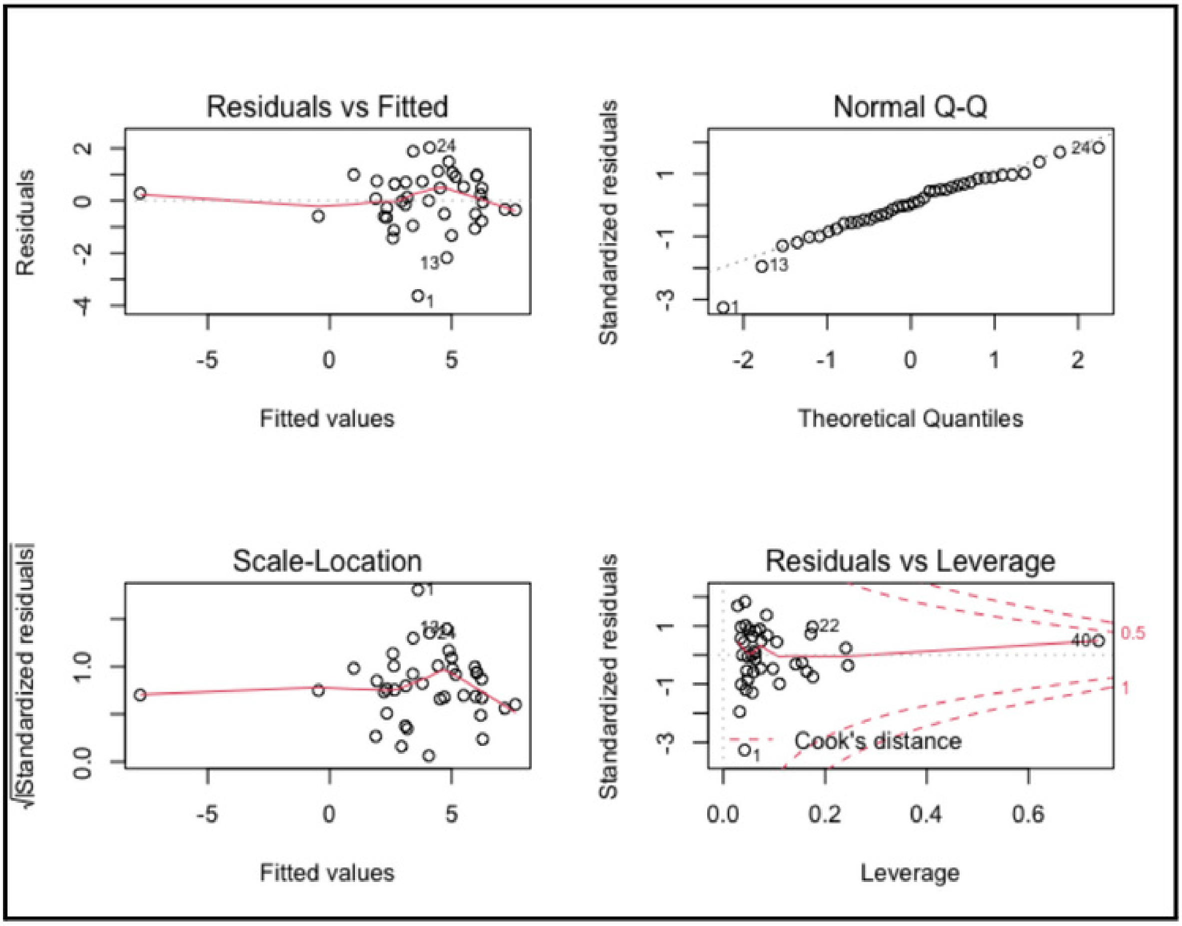
APPENDIX:



REGRESSION PLOT RESULTS

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        studentized Breusch-Pagan test

data:  regressioneq
BP = 0.86845, df = 3, p-value = 0.833
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BREUSCH PAGAN TEST FOR HOMOSCEDASTICITY

Statistic	N	Mean	St. Dev.	Min	Max
Growth Rate of Agriculture	40	3.284	4.254	−6.604	15.640
Growth Rate of Manufacturing	40	6.385	4.228	−2.907	17.788
Growth Rate of Services	40	7.055	2.834	−7.821	12.495
Growth Rate of GDP Per Capita	40	−1.853	44.639	−223.301	81.466

SUMMARY STATISTICS

RESEARCH ARTICLES

THE FOUR LABOUR CODES: CRITICAL ANALYSIS FROM AN INDIAN PERSPECTIVE

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The Indian Economy adopted reforms in the year 1991. The doors were opened to the world. The main aim behind this rejuvenation programme was to improve the life of Indians with the help of increased economic growth. This brought major changes in almost every aspect of life. A shift was seen in the way the economy was organised. There was a huge influx of foreign companies, the manufacturing sector shot up and the employer-worker relations . The globalisation forces pushed the neo-liberal policies to get absorbed and get reflected in the Indian market. The changing nature of labour laws -reflects in the manifestation of neo-liberal forces that made their way in the Indian context through globalisation.

THE CURRENT STATE OF THE INDIAN ECONOMY

The Indian economy is a good place to start with because the current labour laws and their larger significance can better be understood -with a brief glance over the current status of the economy. An economy is measured by the number of goods and services produced in the country; however, the quality of life of people is not totally dependent on a country's Gross Domestic Product (GDP). India became the 5th largest economy in the world, leaving the UK behind, a report of the world economic forum read. However, this growth has not been translated into ‘growth for all’. According to the World Inequality Report 2022, India stands out as a “poor and very unequal country, with an affluent elite”, where the **top 10% holds 57% of the total national income** while the bottom 50% ’s share is just 13%, a report of Deccan Herald cited. Therefore the growth is not equitable and this has increased with liberalisation (Netkalappa, 2022).

The report found that over 640 million people across India were in multidimensional poverty in 2005/2006 and that fell steeply to slightly more than 365.55 million by 2016/2017 - an impressive reduction of 271 million (McCarthy, 2019). India has reduced poverty but does that mean all those who came out of poverty can even afford the basic necessities of life? Does this mean they are now getting quality health services? Does that mean their children are getting quality education in government schools? Do the benefits trickle down to ground or is it just playing with the numbers?

India, despite being the fifth largest economy in the world, does not perform well when it comes to social indicators. We lack behind many of our neighboring countries when it comes to social indicators. India’s rank in Human Development Index (HDI) 2021 was 132 out of 191 countries. Although India has worked considerably in this direction yet, a lot is to be done.

The social indicators can be improved using two tools. The first one is giving quality social services to the people and the second is to increase the level of income. There is a third but an indirect way as well. Labour reforms. The labour reforms here means fixing a minimum wage rate, extending the social security programmes to provide a safety net.

(The simple logic is that labour reforms touch upon the worklife of people. Worklife is the source of income as well as a source of safety net because it provides social security. So if this aspect of life is taken care of, many things would improve in the Indian context. The social indicators would start reflecting the high economic growth level of the country and inequality would reduce. This is where the discussion of labor codes becomes important. However, this is not as simple and straight as it sounds. The results of a high economic growth level cannot be instantly seen on the ground. This has better been explained by Simon Kuznets, a Nobel Laureate in the field of Economics. He quoted “In the initial stages of development, as new opportunities arise, the richer take better advantage of them. At the same time, a large population of unskilled workers helps to keep wages down. Therefore, inequality goes up. It is unlikely, however, that this trend is an immutable feature of capitalist growth that cannot be tempered by social and economic policies of particular governments.” (Netkalappa, 2022). Therefore if liberalization has been introduced in the Indian context, it would be difficult to maintain economic growth and the welfare of laborers at the same time. This reflects the Indian reality. The Indian context cannot give quality work and employment at the same time in the initial stages. This can however improve, as Kuznet said, with government intervention in the form of economic and social policies. This was one complexity. The other being that employers have always demanded flexible labor laws (Jose, 2022, 53).

THE FOUR LABOUR CODES: A CRITICAL ANALYSIS

The above discussion gave an insight on how labour laws in general and labour reforms in particular can improve the social indicators. Hence, the provisions of labour codes can give a detail about how the lives of labour will improve which eventually might help India to improve its social indicators.

The Indian government has recently introduced the four labour codes. Code on wage, Code on Social Security, Code on Occupational, Health, and Working Conditions, and Code on Industrial Relations. They have been passed in both houses but have yet not been implemented on the ground.

The four labour codes that have been introduced as tools for a larger thing. They are not the end in themselves but they are trying to serve two ends at the same time. Their first end is the promotion of ‘ease of doing business’ and the second is ‘the improvement of the condition of labour’. However, these are two opposite things because ease of doing business reflects a capitalist mentality where there is no scope of thinking for labour welfare and the other is socialist remnant. This way the codes seem to balance capitalism and socialism at the same time. Through balancing they seem to cater to the demands of the modern context, which have the civil society and trade unions and therefore cannot be completely cruel to labourers and at the same time cannot be completely benevolent, especially in a developing society like India. The prima facie look will show they are trying to balance the two different aspects but on a closer look, it seems tilted towards capitalism.

A quick glance over some data related to the Indian workforce becomes important here to get a clear picture of the context of the discussion. The Periodic Labor Force Survey (2018-2019) said, 52% of the workforce were classified as self-employed and 95% of these self-employed were either own account workers (i.e., those who operate enterprises without hired labour) or unpaid family workers. Less than 5% of the self-employed were classified as employers. Approximately 24% of the workforce were employed as casual workers with no stability of income or security of tenure.

Regular wage salaried (RWS) workers constituted the remaining 24% of the workforce. These workers received a salary on a regular basis and not on the basis of daily or periodic renewal of a work contract but this does not mean they have social security or they are working in a formal sector. A mere 4.2% of the total workforce had jobs that offered the maximum possible protection and can be called a ‘good job’ or ‘decent work’(Kapoor, 2020, 2).

The data suggests that only 4.2% of the Indian workforce is secured from all angles but what about the rest? The labour laws are especially critical for that 24% of the casual labourers and those RWS who are at risk of being expelled anytime, who lack social security because out of the total RWS workers 80% lack social security. This reflects that the Indian economy is quite vulnerable and there is a need to protect these people and take care of their basic necessities. If not protected, a large chunk of the Indian population would not reap the benefit of economic growth and this would be imbalanced growth.

However, the stage on which the Indian economic drama is played has a different reality. The work of Kuznets again becomes relevant here. India shifted to informalization, meaning the workforce became informal, mainly because the agricultural sector had fewer opportunities and there was a rising manufacturing sector at the same time. This increased casualization and contractualization in the workforce. (Jose, 2022,) Further in order to keep the manufacturing sector booming it is important to provide them with contractual and casual workers because this gives employment opportunities to the people. However, the promise of providing a quality employment opportunity at a time when the manufacturing sector is so nascent, the agricultural sector is recording small growth and the service sector does not have enough opportunities, becomes shaky. The reason being first it is important to give employment to the people and then comes the discussion on quality employment. This is even more difficult at a point when the unemployment is at 45 years high and when the government is somehow struggling to lure industries and FDIs to ensure employment. Therefore in India it is important for the government to first provide employment to all the people seeking job opportunities and then gradually focus upon the formalisation of the workforce.

Formalization is a holistic programme ensured by insurance pensions, financial security, signed job contracts, working conditions, provision of occupational safety and health etc. The formalisation of the workforce is the second task which comes after assurance that the country has enough opportunities created for its population and the population has also upskilled to a level to become capable of working in the formal economy.

The labour codes are criticised but not all four of them are culprits. Even the code on wages, code on social security, and code on occupational safety, health, and working conditions are positive steps in the direction of formalisation of the workforce.

Code On Wage, 2019

The Code on wages has subsumed four existing laws. This has tried to reduce the lacuna in wage payment. This aims to strengthen the provision for a minimum wage rate. (*Code on Wages, 2019 Contexts, Overview & Implications*, n.d.). An inspector-cum-facilitator has been entrusted with the responsibility of compliance with the rules. The aim is to restrict the practice of employing workers at a lower wage rate than decided. This would reduce poverty and inequality in the society, however again this seems to be a step more towards ‘ease of doing business’ and less towards ensuring equality. This is because the government is not doing anything about the structural problem resulting in low wages and that is heavy competition. The government has only created a mechanism for corruption because the industries can easily employ workers at low wage rates, and the inspector-cum-facilitator can be fed with money to keep their mouths shut.

Code On Social Security, 2020

This code comes to the rescue whenever there is criticism of these reforms. This code aims to expand the reach of social security benefits for each worker in the workforce be it in an organised or unorganised sector. The provisions for social security in the organised sector existed earlier but that has become more holistic with these codes. It is important to note that gig and platform
workers have also been covered under this scheme, which is a very positive effect. The unorganised sector is however important to discuss because people are mostly employed there. The e-shram portal is an online database of workers working in the unorganised sector, following which an e-shram card would be created with the help of which the workers of this sector can avail the benefits.

The Central Government shall formulate and notify, from time to time, suitable welfare schemes for unorganised workers on matters relating to (i) life and disability cover; (ii) health and maternity benefits; (iii) old age protection; (iv) education; (v) housing. It will be funded by the government. So simply saying a domestic helper, a bangle maker, a small retail seller, a roadside barber can take benefit of all these things by registering themselves.

National security board would be established to oversee and enforce the social security measures. This, therefore, seems to be a positive step towards giving quality employment to the people. The best thing is it is making separate funds for the benefit of people working in the unorganised sector.

Code On Occupational Safety, Health And Working Conditions,2020

The code on occupational safety, health and working conditions is another good attempt to improve the working conditions and health security of the workers. This is not much debatable. The National Occupational Safety and Health Advisory Board has been established for setting standards, reviewing them from time to time, and supervising if the code is properly implemented or not. (*Occupation Occupational Safety, Health and Working Conditions: Genesis, Evolution and Context Setting Dr Ellina*, n.d.)

Code On Industrial Relations

This is the most hotly debated code because the rest has changed things here and there in a positive direction only, however this one clearly seems to disempower the workers and promote MSMEs and small-scale industries. Trade unions are at first place a business of the organised sector only. The most disputable aspect is that the bar has been raised to 300 workers for industries to follow the standing orders. To put it more clearly earlier the bar was 100 workers and those industries having 100 or less workers can hire or fire easily but this bar has now increased to 300 which means many industries having 300 or less workers can now hire and fire easily. This way an impetus is given to small-scale industries or construction activities to flourish but at the same time leaves the workers vulnerable at the mercy of employers.

The other controversial clause drains the trade union's bargaining power by mandating them to give prior notice of 60 days before going to strike and this makes the strikes nearly impossible. Earlier this clause was applicable only to industries providing emergency services but now it has been extended to cover all of them. (*Class for Judges on 19th*, 2019)

CONCLUSION

The labour codes have taken care of the unorganised sector. As per data the unorganised sector is the most vulnerable sector in Indian society, the people working in this sector are the ones who have poor standards of living. Since this sector makes up almost 90% of the Indian workforce, taking care of their social security aspect is surely a positive step in the endeavour to improve standard of living. Also fixing a minimum wage rate would help ensure their income aspect.

However, the way the labour codes were framed is a problematic thing. They were formed without even due consultation with the trade unions. They, therefore, felt like being prey to tokenism. The government merely paid lip service to tripartism. (Jose, 2022). Further, they were passed with minimal discussion in the parliament. This is the political aspect of how the labour codes are enforced in the country without due consultation with all the stakeholders. Also, the code on industrial relations is the major point of contestation.

Despite all the criticism and irregularities, Indian reality throws a different context, and to tackle its unique challenges, it is important to deal with them in a different manner. So instead of forcing the industry to give health insurance to the workers, the government can provide them. Similarly government can invest in social infrastructure heavily such that the children of informal workers can get quality education and skills to change their future. The inequality in the Indian context can majorly be covered by heavy investment in social infrastructure such that a large share of the deprived Indian population can reap the benefits of quality services.. The disempowerment of trade unions is a genuine issue but economics can give no normative argument over it because it has moved beyond counting monetary growth as the only development aspect. The formalisation of workforce is a long term process which will happen as the society economically grows. Until then the only solution to giving a good standard of living is government expenditure on social services.

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THRASIO MODEL: HOUSE OF BRANDS OR HOUSE OF CARDS

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Taking over, merging, and acquiring are a few business terms that pique everyone's interest. Well, who doesn't prefer to acquire a rival and eliminate it by gaining market share? Or using M&A to combine or integrate business activities and boost efficiency? Doesn't that seem intriguing? We can use Adani's most recent acquisition in the cement industry as an example to demonstrate the same. Adani astonishingly rose from having a 0% market share in the cement industry to being India's second-largest player, behind only UltraTech cement. This was only made feasible by its acquisition of Holcim's share in Ambuja and ACC, which gave them the ability to shift the dynamics of the sector with a single action.

The key takeaway from the aforementioned example is that acquisitions are among the most effective tools available to businesses for generating growth and creating lasting value. The components of a zero-sum game are also present in acquisitions. While there are still other ways to use it as a business strategy, it may also be shaped into a business model where the main activity of the company is linked to acquiring other start-ups with strong development potential. We refer to that as a Thrasio Model of conducting business. Although some brilliant start-ups appear to have entered the game already, it is a fresh concept that has not yet been adopted on a broad scale in India. So, first, let’s understand the business model in brief and shed some light on the current scenario in India.

Acquisition-Entrepreneurship Model: A Controversial yet PE-VC’s to be favourite model

Thrasio, a US-based consumer goods company, introduced the "acquisition-entrepreneurship model" in 2018, which has since become a global buzzword among start-ups and revolutionised the online marketplace for high-quality consumer goods. The business has impressively generated $600 million in sales and a $100 million profit in just two years of existence. With a $10 billion valuation as of October 2021, the company has demonstrated remarkable performance by breaking even in such a brief period of time, making it worthwhile to consider its advantages.

The company's strategy is fairly simple to understand. They locate and acquire small firms that sell market-leading consumer goods that are based on the Amazon platform. They purchase the businesses and incorporate them into their systems and marketing plans. As a result, individual businesses become more effective, and Thrasio benefits from economies of scale. The procedure is quick, and within a few weeks, Amazon merchants have the choice to shut down their operations.

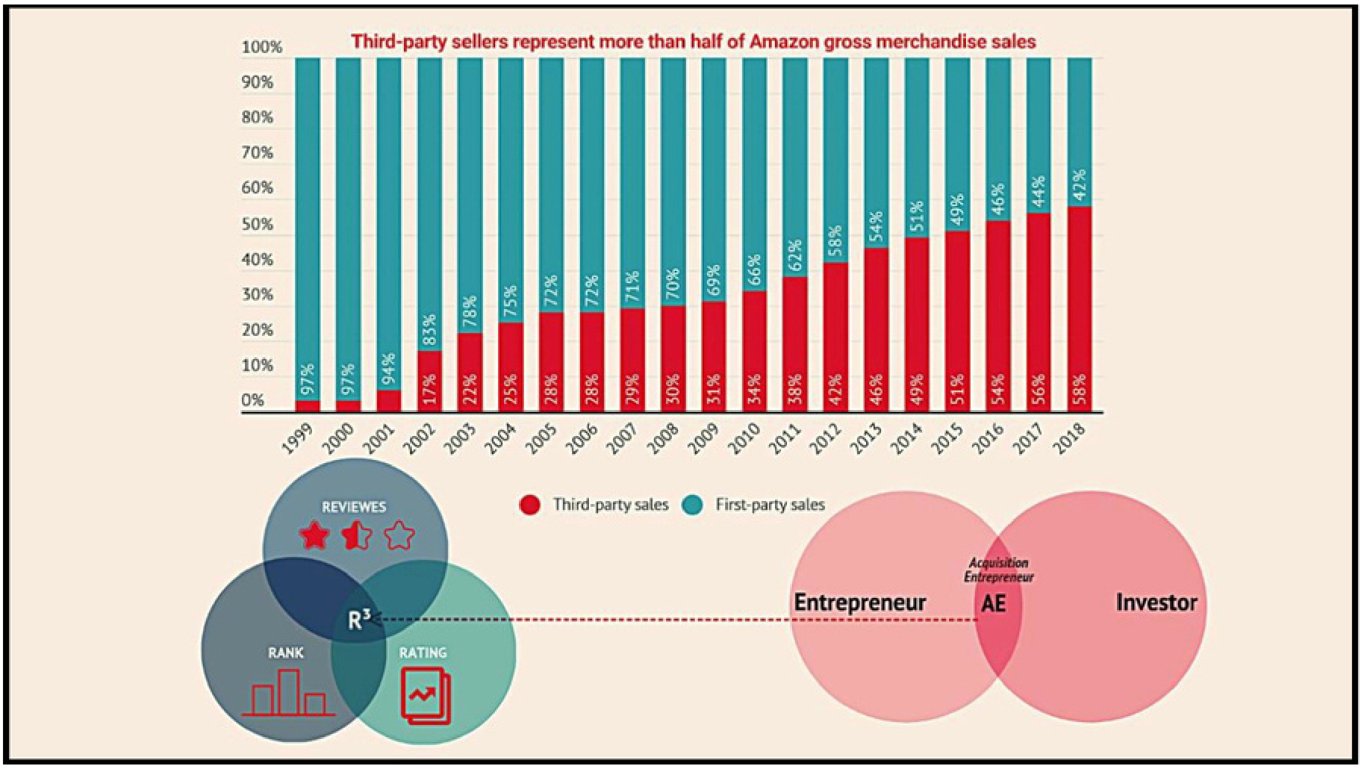

Figure 1

Clones with bold attitude budding in Indian Markets

The company is named after the idea of daring and fearlessness associated with the ancient Greek term *Thrasos*. We have observed several Thrasio clones receiving funding from the Indian market. The idea is referred to as bold since it entails the acquisition of young start-ups by other start-ups that are similarly young to the ones acquired.

The Bengaluru-based start-up 10 club, which pioneered this idea in India, recently rose to recognition after raising one of the largest first sums among all Indian start-ups to date. Its innovative business plan, which is based on the recently contentious Thrasio-style business model, can be partly responsible for this start-up's success, which has raised $40 million. But why is it contentious? Despite support from PE-VCs, it still involves a significant degree of risk. Most studies indicate that between 70 and 90 percent of acquisitions are unsuccessful. That's why many acquisitions don't live up to expectations. As a person may also benefit from another person's success, based on the same, the Thrasio model appears to be working well just now for start-ups relying on it, but it still assumes a tremendous level of risk in its concept
.

This could seem to be a significant disadvantage of this approach, but risk is something that runs through an entrepreneur's veins, particularly in India, which is gradually emerging as a worldwide hub with its start-ups as key drivers of economic growth. Therefore, let's have a look at the Indian players that have used this model thus far in this regard.

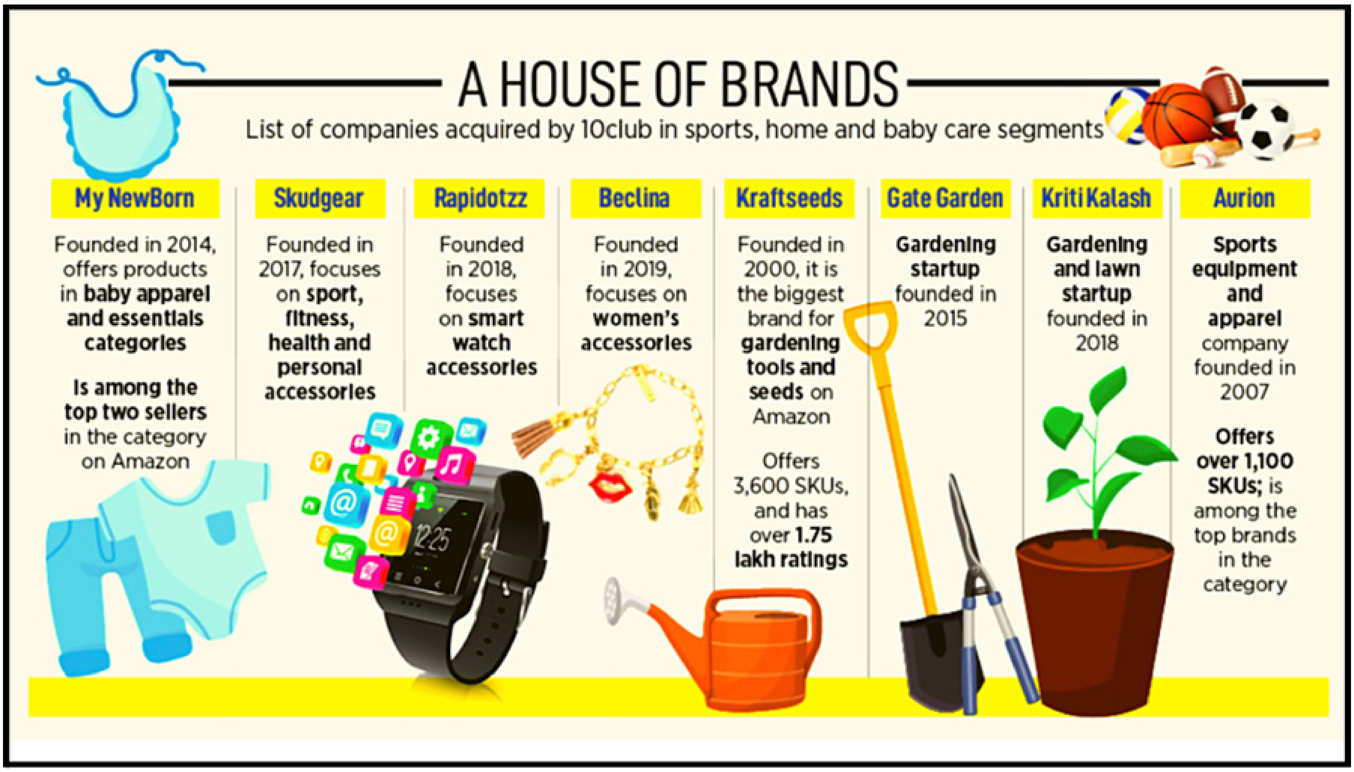

Figure 2

Along with 10 Club, the Thrasio model is used by Mensa Brands, G.O.A.T. Brand Labs, GlobalBees, Evenflow, Powerhouse91, and UpScalio. Each firm in the ecosystem has its own variation of the Thrasio model's strategy, and they have thus far raised a total of about $300 million in funding. An expanding market and investor acquisitions are what fuel the majority of these investments. In other words, every penny raised was obtained through promises and a compelling sales offer. In spite of this, these businesses are clamouring to acquire internet brands quickly in the coming years. While India has a sizable retail sector, it is important to note that the Internet market is much smaller. Online, seems to be the answer, but could also be a barrier in the future.

Indian Scenario

In recent years, India has experienced a proliferation in internet and smartphone penetration. This has provided a boost to the Indian e-commerce segment, which could outpace more mature markets to become the third largest market in the world with US$ 350 billion by 2030. India has between 100 and 110 million e-commerce customers, according to a 2020 Bain forecast. Over the following ten years, this is predicted to rise at a pace of 30-35 percent annually, although macroeconomic factors, notably an increase in per capita income, will also be important. With the booming E-Commerce industry in India, many experts believe that the Thrasio model could replicate its success in India to that in the US. India is home to 10000-15000 brands in total and while a house of brands strategy could not provide customers with a wide variety of options but will also be responsible for creating synergies among the firms.

Potential of the model

As the E-commerce landscape mushroomed in India and will continue to grow at a rapid pace, the capacity in digital and technological operations of the roll-up companies that are built on the Thrasio model facilitate success for their investments, beyond the well-established retail market space. Thrasio businesses snowball funding and attract merits from E-commerce investment firms. Businesses are set out to establish their house of brands to tap into the fast-growing e-commerce space in India which is estimated to reach 200 billion U.S. dollars by 2027. Brand owners can now pivot their resources on establishing products and generating brand awareness online. The online space allows businesses to cater to customers worldwide whose demands can be met by a reliable logistics solutions and delivery company. This kind of corporate expansion develops a worldwide ecosystem and has a generally beneficial effect on the economy. This is possibly one of the main factors causing the continued expansion of e-commerce. Covid has enhanced and fastened this growth for India. This is the correct time for e-commerce rollup businesses to enter India and disrupt the landscape in a positive way.

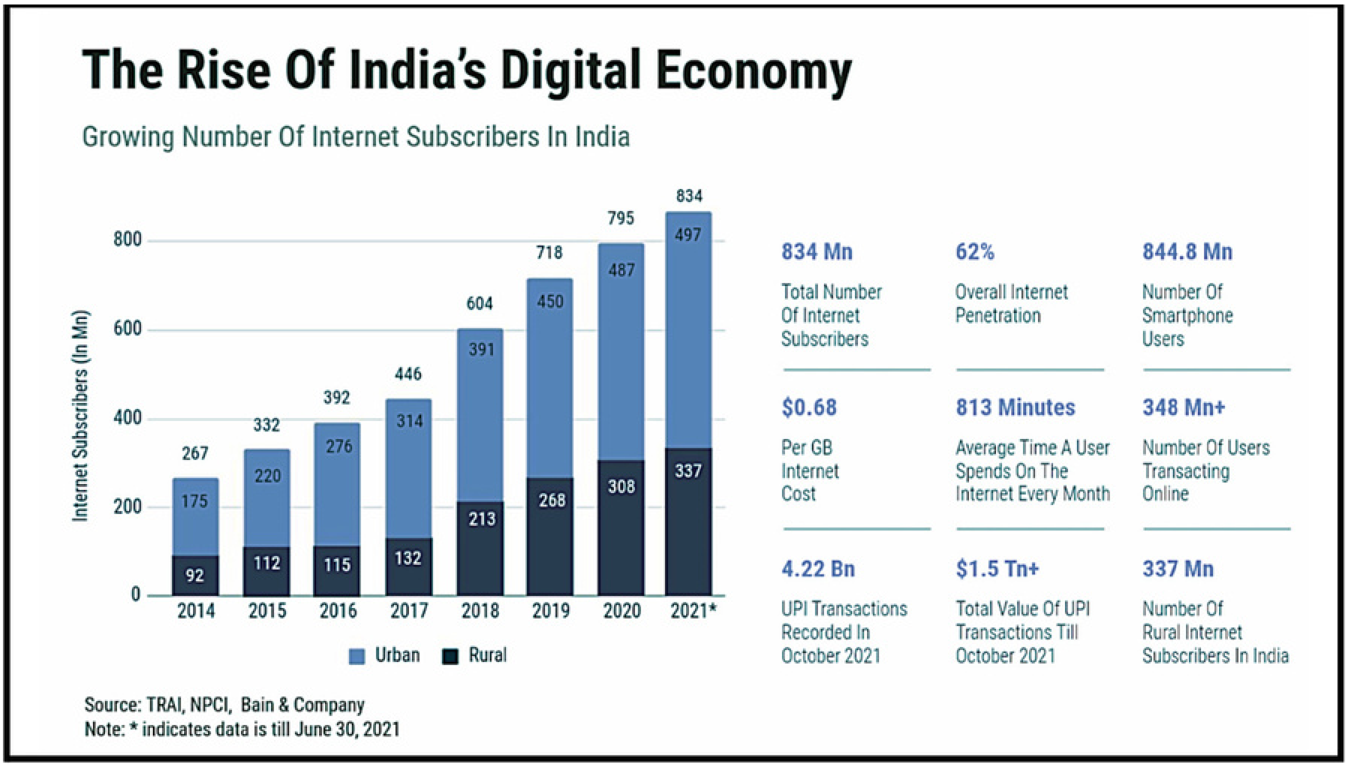

Figure 3

Is the Thrasio model here to stay or just an overhyped concept

According to most researchers, around 70 and 90 percent of acquisitions fail. The possible reasons for such failures could be an overestimation of potential synergies, underestimation of synergy complexities or execution timelines to delivery, especially in HR & Technology. The acquisition transaction is done at a blazing speed hence insufficient investigation (especially little or no strategic and operational due diligence), and failure to translate findings into actions, instead of the passionate founders, the brand manager takes charge of the brand. In many cases brand dilution starts as it becomes one of the brands for the company, the brand starts losing its identity and authenticity. Therefore it remains to be seen whether the Thrasio model will transform into a masterstroke or will be just another model in the long run. Some of the key factors which can cause a significant impact in the long-term success of the Thrasio model could be the formation of an internal innovation team potential to do brand pricing, the founder’s roles and responsibilities, prompt new product development and rollout, capacity to deliver on the promise of performance marketing. However, one factor which acquires the lion's share in the decision-making is valuation. The cost at which the brands are purchased and whether it is done with cash or debt will decide the fate of the model. For instance, debt is included in Mensa's $50 million funding round above $30 million. Companies like to use debt financing for purchases because share capital for buyouts is ineffective and overly weakens the founders' stakes.

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RUNNING ON EMPTY POCKETS: HAVE GOVERNMENT SCHEMES IMPROVED PROPERTY TAXATION?

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The 74th constitutional amendment provided local governments with some fiscal autonomy, consequently increasing dependence on property taxation for self-sourced revenues (Government of Karnataka 2020). Abolition of Octroi had made budgeting difficult, and the plight worsened further when other local body taxes were later subsumed GST (Udas_Mankikar 2021). Till date, many ULBs (Urban Local Bodies) and smaller *nagar palikas* lack the infrastructure and autonomy needed to effectively administer property taxes. The resultant fiscal imbalance puts their identity as the third tier of government at risk.

Maintaining regularly updated property databases is a costly proposition for local governments These governments also face staffing shortages and lack experience with ICT-based administration platforms. Land titles continue to remain uncertain due to various reasons, like gaps in the legal framework and legacy issues from the zamindari system (Mishra & Suhag 2017). Further, tax rates bear a weak relationship to municipal revenue requirements. There are large inter-city variations in property tax revenues as varied property valuation methods have been adopted. As per the studies done under the 13th Finance Commission , on one hand the Mumbai Municipal Corporation registered a per capita annual revenue of Rs. 1334, while the Patna Municipal Corporation registered Rs. 25 on the other (Jain & Joshi 2021).
After four years of implementation, only 1,885 projects worth Rs 5,075 crore (15 percent of the total target) have been completed, according to data provided by the Ministry of Housing and Urban Affairs.

One of the first central government schemes that addressed such urban issues was The Jawaharlal Nehru National Urban Renewal Mission (JnNURM). It was launched on December 3rd 2005 as the largest national urban initiative to surge the planned development of 63 cities. Being a reform-linked grant allowing access to central government funds, it also aimed at improving the performance of property taxes. The mission plan specified changes in the process and procedures for reforms. There were three mandatory reforms for simplification of procedures, which included e-governance, municipal accounting and property taxation (Grant Thornton 2021). At the local body level, it was made mandatory to achieve improvement in property tax coverage up to 85 per cent (of all properties), and improvement in property tax collection efficiency up to 90 per cent. The six optional reforms attempted to make changes in the system operations, one of which was the introduction of property title certification.

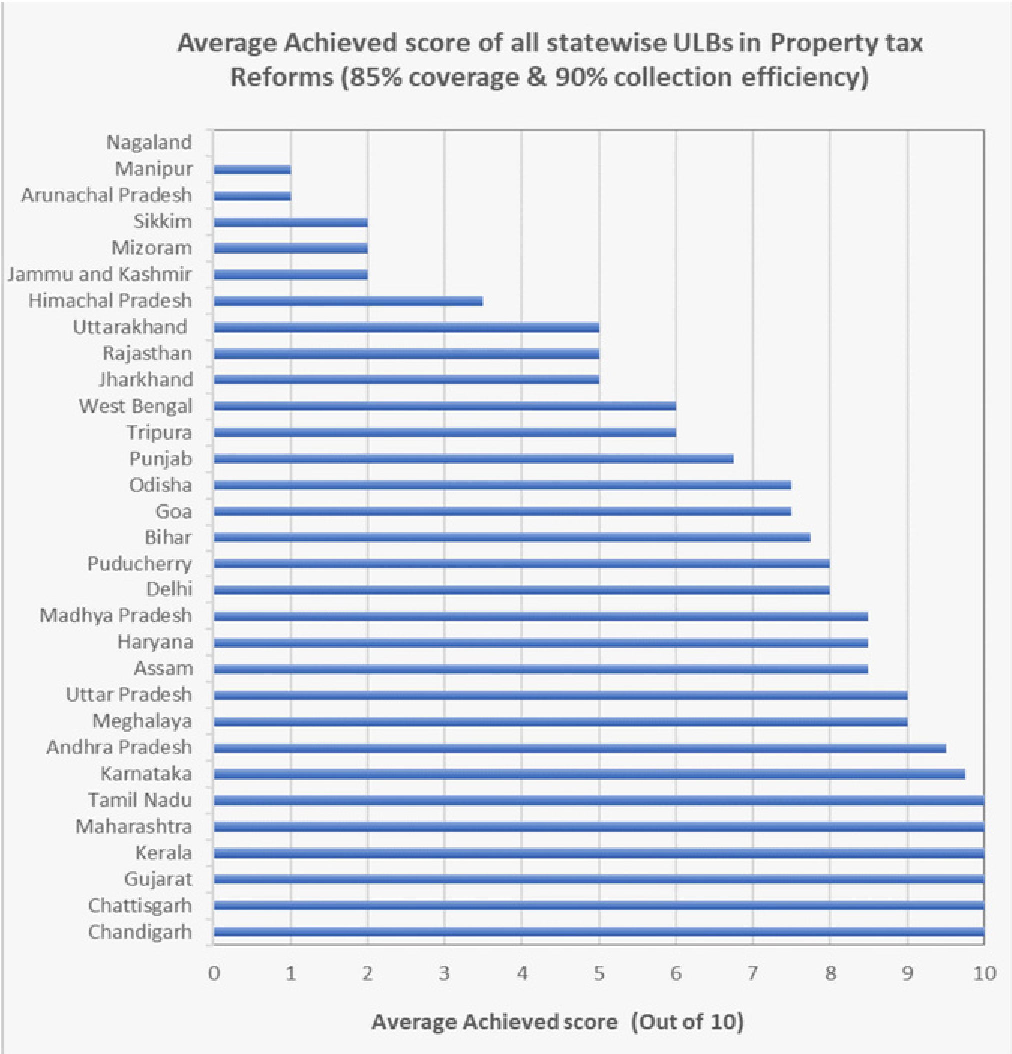

Fig. 1: Average achieved reform score (out of 10) of all state wise local governments in Property Tax reforms under JnNURM. Source: Ministry of Urban development, Government of India

Property tax coverage in most of the cities has improved after JnNURM. Compared to the rest, progress has been the slowest in the northeastern region. Nagaland's reform score of 0 is followed by the next four lowest scores, each of which belong to one of the northeastern sister states. Scores are notably low for Jammu and Kashmir as well.

Barring these exceptions, certain ULBs have shown notable improvement in revenues, despite incomplete adoption of GIS technologies. For instance, Greater Hyderabad Municipal Corporation's property tax revenue increased to 45% during JnNURM's impact period, as per the studies done under the 13th Finance Commission. However, not all municipalities have witnessed the same success. Despite the visibly high score, no tax being levied on the residential buildings in the Municipal Corporations of Chandigarh, Jalandhar and Amritsar, leaving a large portion of tax base unaccounted for (Grant Thornton, 2021). Regardless, there has been no effort to bring these properties under the tax net. Similarly, there is political unwillingness to carry out such reforms in

Rajasthan. The capital of Delhi too has a long way to go in terms of property tax collection efficiency.

In 2008, the central government implemented the Digital India Land Records Modernization Programme. It aimed to achieve complete computerisation of the property registration process along with digitisation of previous land records. However, the pace of transition to an online platform has been slow. Till September 2017, only 64% of the funds released under DILRMP have been utilized, as per the Department of Land Resources, Ministry of Rural Development. Computerisation of land records has been completed in about 86% of the villages; spatial data has been verified in 39% of the villages; and the survey/resurvey work has been completed in highly unimpressive 9% of the villages (Mishra & Suhag 2017). The slow progress can be attributed to the large volume of manually stored records. Further, the records fail to reflect the position on the ground (*Analytical Reports* 2020). For effective property taxation, the lack of updated and verified property records becomes another obvious hindrance.

Other than the exception of Tripura and Sikkim, states in the northeastern region along with Ladakh and Jammu and Kashmir have performed much worse than the rest in achieving complete computerization of land records. The states of Meghalaya and Arunachal Pradesh have barely made any progress with computerization of land records. Some states have successfully reported 100 per cent computerisation, which includes Madhya Pradesh and Telangana.

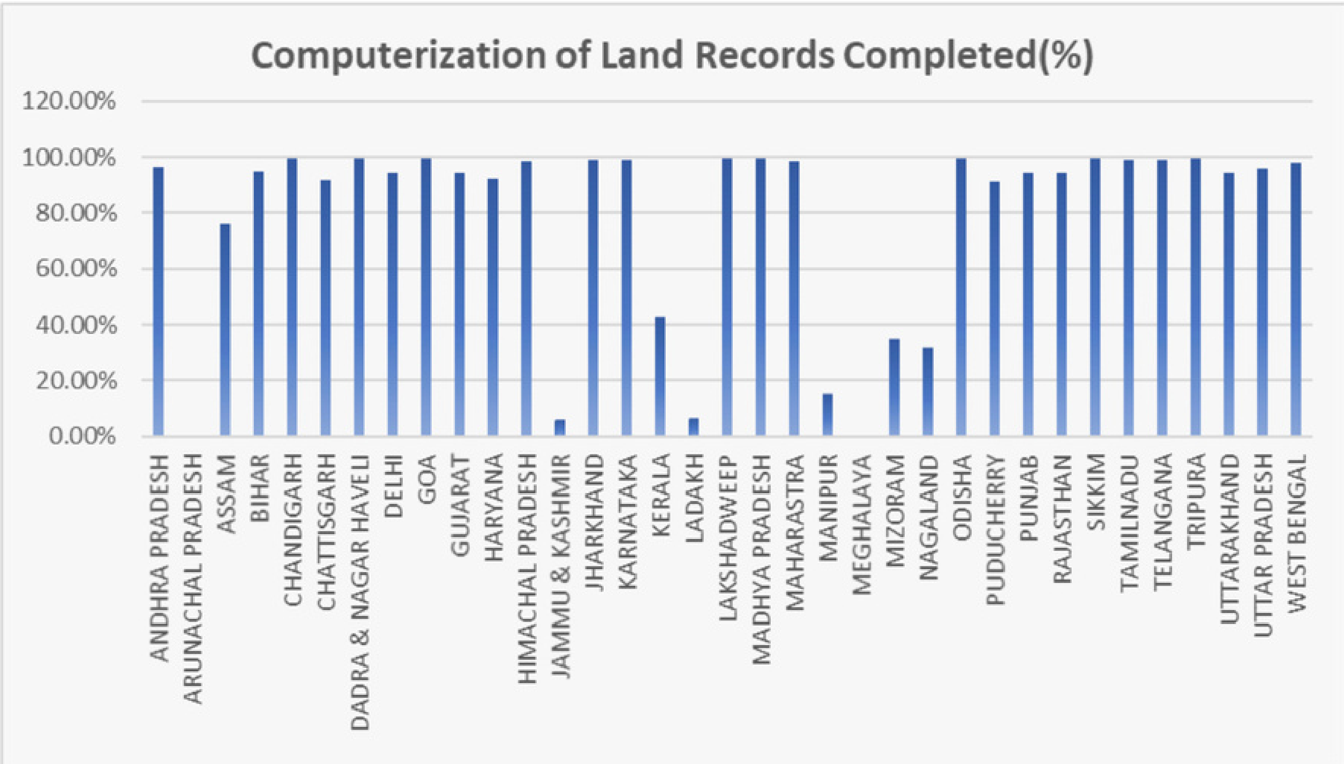

Fig. 2: Percentage of completion of the Computerization of Land Records. Source: State Governments/UT Administration and Department of Land Resources, Ministry of Rural Development(MoRD), Government of India.

Much later, the Atal Mission for Rejuvenation and Urban Transformation (AMRUT scheme) was launched in June 2015, to revamp basic civic infrastructure across 500 cities. As a successor of JnNURM with funding conditional on reforms, AMRUT planned an outlay of Rs 50,000 crore over a five-year period. While JnNURM was considered to have a big city bias, AMRUT has cast the net wider, reaching all urban centers with a population of one lakh and more. Essentially, its challenge lies in enforcing the reforms in the area where the JnNURM failed. The programme is linked to 11 mandatory municipal reforms that cities have to implement over a five-year period. Each ULB will get Rs 20 crore on an annual basis, of which 10% is the incentive for meeting targets. States will lose out on the incentive if their ULBs fail to implement the reforms, during the period 2015-16 – 2019-20 (Gupta, 2017).

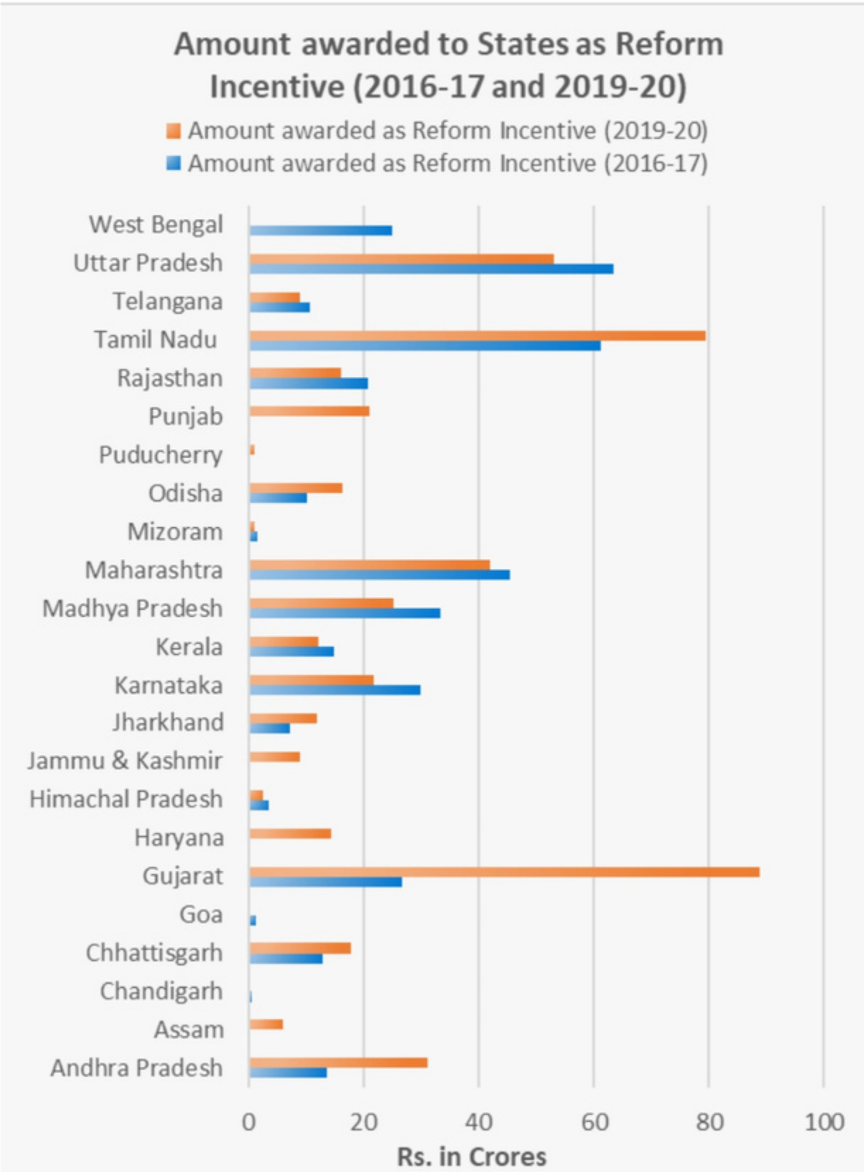

Fig. 3: Atal Mission for Rejuvenation and Urban Transformation (AMRUT) Reform Incentive awarded to eligible States/UT during 2016-17 and 2019-20. Source: The Ministry of Urban Development, Government of India.

After four years of implementation, only 1,885 projects worth Rs 5,075 crore (15 percent of the total target) have been completed, according to data provided by the Ministry of Housing and Urban Affairs. More than half of the projects remained under implementation. Most recently, the states of Gujarat and Tamil Nadu have been awarded the largest reform incentive amounts, but the rest of the 20 recipients fall far behind. Again, the north eastern states of Mizoram and Assam have been granted the lowest amounts. Odisha too has surprisingly failed to receive grants under the AMRUT mission (Udas_Mankikar 2021).

From a more nuanced perspective, property tax recovery in eight municipal corporations of Gujarat was over 90 per cent, while it was at only 50 per cent in the remaining 162 municipalities of the state. The larger municipalities; Ahmedabad, Surat, Vadodara, Rajkot, Bhavnagar, Junagadh, Jamnagar and Gandhinagar, are well administered (Nair, 2018). The smaller municipalities, many of which lie right next to the larger ones, lack the capacity to collect their resources, leading to large intrastate variation despite a high overall average. This partially indicates that the system has inherent faults that inhibit effective tax collection. Ultimately, the biggest contribution of these programmes is not that they have solved taxation problems, but that they have brought the root causes to the fore.

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NATIONAL LOGISTICS POLICY- AN ANALYSIS

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The National Logistics Policy was released on September 17, 2022, by Prime Minister Narendra Modi. The main aim of the National Logistics Policy is to develop a cost-efficient and technologically enabled logistics ecosystem for India's sustained and long-term economic growth. The policy addresses the need to reduce the cost of logistics in India and create an efficient support system that uses data strategically to foster better decision-making for businesses. This article analyses the policy implications and major drawbacks; and also suggests policy recommendations.

National Logistics Policy aims at developing a cost-efficient and technologically enabled logistics ecosystem for India's sustained and long term economic growth. The policy addresses the need to reduce the cost of logistics in India and create an efficient support system which uses data strategically to foster better decision making. The main targets of the policy include reducing the cost of logistics in India to be comparable to global benchmarks, while also improving India's Logistics Performance Index ranking, aiming to be among the top 25 countries, by 2030.

The policy is drafted to be implemented via the Comprehensive Logistics Action Plan (CLAP) which is divided into key areas including developing integrated digital logistics systems, standardisation and benchmarking of physical assets, a system for streamlined cross-border trade facilitation, and development of logistic parks in the country.

The Comprehensive Logistics Action Plan (CLAP) includes 8 key areas for implementation of the policy.

(i) Integrated Digital Logistics System- The main aim of developing an integrated digital logistics system is to provide a unified and streamlined system for obtaining data, and link multiple data sources to provide timely and accurate information to all stakeholders across different sectors to make informed and strategic decisions.

(ii) Standardisation of physical assets and benchmarking service quality standards: It aims to promote an exchange of information between different computer systems and software to provide seamless access to all data types and enhance productivity and efficiency in operations and also minimise handling risks. Improving ease of doing business is also one of the main targets, which is planned to be achieved via standardisation of physical assets to maintain consistency and benchmarking of service quality standards in logistics.

(iii) Logistics Human Resources Development and Capacity Building: This aims to develop a comprehensive logistics human resource strategy for better utilisation of human capital to facilitate efficient operational systems and management. It aims at developing action plans through a line of ministries to address skill development and internal capacity-building challenges in their respective sectors.

ministries to address skill development and internal capacity-building challenges in their respective sectors.

(iv) State Engagement: It aims at setting up an institutional framework to provide support for the development of state- or city-level logistics plans and keep track of the measures taken by different states.

(v) EXIM (Export-Import) Logistics: It aims to bridge infrastructural and procedural gaps in India's export-import connectivity and create a transparent logistics network for streamlining cross-border trade. It plans to enhance India's trade competitiveness in the international market and integrate operations in alignment with regional and global value chains.

(vi) Service Improvement Framework: It aims at improving the regulatory interface between different sectors to minimise procedural hassles and eliminate document fragmentation to promote formalisation and standardisation in the industry.

(vii) Sectoral Plan for Efficient Logistics: It aims to develop Sectoral Plans for Efficient Logistics (SPEL) in alignment with PM GatiShakti, for each sector to foster sustainability, resilience, and innovation. It aims at improving infrastructural, technological, and transportation facilities along with regulatory reforms, while also minimising duplication of activities. The shift towards multimodal infrastructure will also stimulate sustainability and long-term growth.

(viii) Facilitation of Development of Logistics Parks: It aims to develop logistic parks including Multi-Modal Logistics Parks, Air Freight Stations, and Inland Container Depots to ensure optimum utilisation and connectivity, and also encourage private investment.

To achieve the above-mentioned goals, a Unified Logistics Interface Platform (ULIP) has been conceptualised to provide an integrated platform to bring transparency in the logistics industry and create a single window to streamline information exchange. This platform can be used by various organisations and agencies to facilitate seamless information exchange on a timely basis and in a confidential manner to enhance operational efficiency. It aims to ultimately make India cost-competitive and make optimum use of economies of scale.

This policy will enhance India's logistics efficiency and foster economic growth and development. With a unified data system and seamless information exchange, it can be a game changer for the Indian economy as it can help in reducing costs through the utilisation of economies of scale and at the same time reduce losses due to lack of information or misinformation. The provision of support for better transportation facilities and inventory management and the identification of cheaper logistics modes also stimulates effective supply chain management. It also promotes ease of doing business and aims to enhance profitability by minimising the time lag between different operations by simplifying procedural hassles and documentation processes. Through data-driven decision making it can provide analytical and strategic insights into the course of future action and also support as a planning tool for making decisions, and enhance India's competitiveness in the international market by enhancing transparency and visibility.

Effective implementation of the policy will lead to a reduction in India's logistics costs from 13-14% of GDP currently to a single-digit number, which is targeted to be around 7-8%, just as in developed countries. With improvements in ease of doing business, consolidated documentation procedures, an integrated platform for information exchange along with reduced dependence on road transportation and a modal shift in logistics- it will lead to increased efficiency and profitability, to be evident in an increase in exports and an increase in India's growth rate in the future.

However, this policy fails to address the following issues-

1. Lack of Internet connectivity- Over 70% of rural India does not have Internet access, and we are far from achieving the goal of a Digital India where everyone has equitable access to the Internet and can make effective use of it. Unless basic internet connectivity is provided to people in rural areas, they cannot make use of integrated platforms like ULIP simply because of a lack of access to resources.

2. Lack of training, language barriers, and complicated interfaces- Due to lack of access to the internet and also a lack of knowledge and training among stakeholders, including shippers and truckers, it is difficult for them to get acquainted with a sophisticated interface and make use of it on a daily basis. Coming from all parts of India, there is a language and communication barrier between various groups of stakeholders that needs to be thoroughly addressed.

3. No mechanism to monitor coordination among states and reduce time lags- Day-to-day minor incompetencies and time lags can pile up and create huge gaps between the time of shipment and the time of delivery. There is no mechanism in place to address the basic problems faced by truckers, and shipment coordinators, which can lead to huge losses and inefficiencies.

4. Lack of infrastructure- Power generation, transmission, and transportation are the key problems that India is facing currently, and unless they are solved, the efficiency and functioning of logistics parks will be hampered.

Given the implementation challenges as mentioned above, effective implementation of the policy warrants that cost-cutting strategies encourage value addition in the economy, and also generate employment opportunities. It is also necessary to ensure the alignment of the policy across all states for coordinated implementation.

Due to the fact that over 70% of rural India does not have internet access, it is more important to gain a pace in Digital India before an efficient use of an integrated platform like ULIP can be made. Efforts should be made for providing a stable internet connection to people in rural and marginalised areas.

Due to lack of access to the internet and also a lack of proper knowledge among stakeholders including shippers and trucks, there is a need for their training, education, and skill development to make them acquainted with the functioning of the platform ULIP and its user interface- it is important to ensure that it does not conform to language or regional barriers and equitable access can be provided to all, which can make it convenient for them to make efficient use of it.

There is a need for a 24x7 support mechanism that can effectively coordinate operations between different states and provide logistical support and solutions with respect to day-to-day grassroot problems and inefficiencies. There is also a need for a strongly backed stakeholder support platform, working with ULIP to address base-level incompetencies and conflicts to ensure a streamlined and smooth functioning.
Sophisticated infrastructure and industrial development is needed before the implementation of this policy to serve as a base for logistical development. Power generation, transmission and transportation are the key areas that need to be addressed before setting up of logistic parks to ensure their full and optimum utilisation.

In conclusion, The National Logistics policy prioritises a unified policy environment that enhances competitiveness through cost minimization, infrastructural developments, and streamlined process of information exchange while boosting exports and eventually adding to the country’s growth. The New Logistics Policy is a transformative approach for economic growth and sustainable development, and the emergence of India as a global manufacturing hub.

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ANALYSING THE CAUSES OF THE EAST ASIAN MIRACLE

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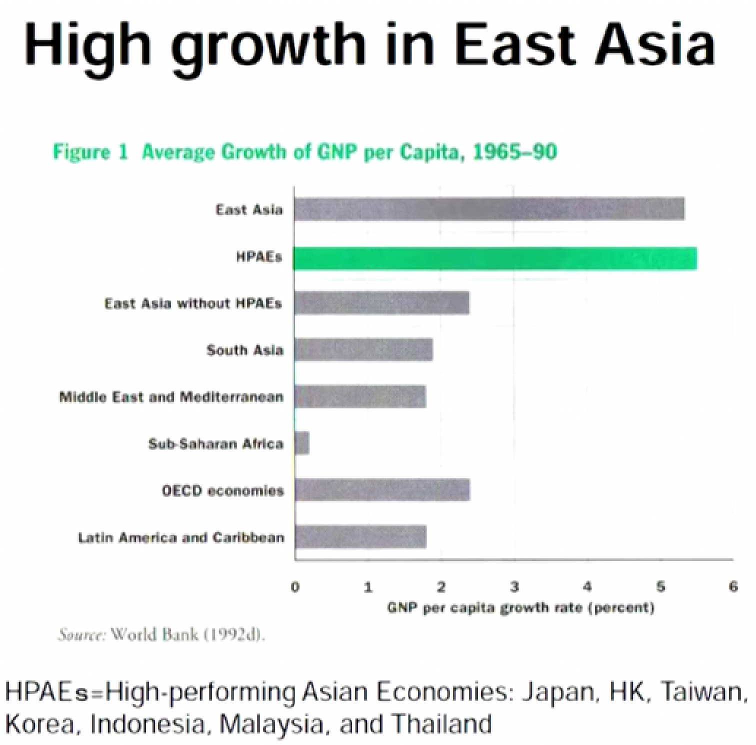
INTRODUCTION

A number of East Asian Countries have achieved a huge amount of development and a miraculous increase in their quality of life and standards of living, in the past four decades. Some, particularly the four tigers of the East- Hong Kong, Korea, Singapore and Taiwan have achieved a tremendous growth that took centuries for advanced economies of western Europe to achieve. While the average resident of a non-Asian country in 1990 was 72 percent richer than his parents were in 1960, the corresponding figure for the average Korean is no less than 638 percent (Sarel, 1996). How come a region devoid of natural resources made it possible to attain development at such a rate has troubled Economists and Policy makers enough to have cited various reasons that would've contributed to this growth. In this article the author has attempted to highlight some of the major reasons for the East Asian Economies to become synonymous with growth, some of which are still hotly debated upon, but to an extent widely accepted because it's backed up by data.



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In the beginning of the 20th century, most East Asian countries suffered not only from dictatorship but were also dirty, poor backwaters ravaged by famines. In 1960, South Korea's GDP was a mere

[27] Source of all Graphs: IIT Roorkee July 2018 (https://www.youtube.com/watch?v=TUqMFi652_A)

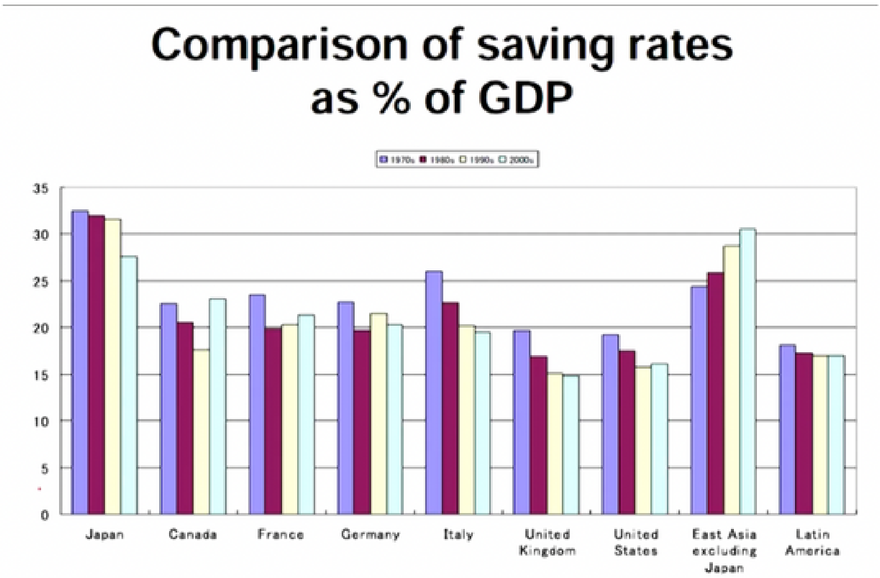
In the beginning of the 20th century, most East Asian countries suffered not only from dictatorship but were also dirty, poor backwaters ravaged by famines. In 1960, South Korea's GDP was a mere $158, Taiwan $150, Singapore $428, Japan $475, China $89 (World Bank). In the mid-20th century, Economists predicted low economic growth and development for East Asian economies, yet by the 1980s, the regions became one of the wealthiest on the planet. The Economic dogma that how come the countries that didn't enjoy democracy and liberty achieve this growth irked many but the authoritarian government made it possible by "lying" - yes, they lied. The authoritarian regimes are not subject to transparency as in a democracy, and the dictators misled the public into developing the economy by persuading them to invest in certain sectors. The government deliberately got the prices in certain sectors wrong to trick investments and it worked. In South Korea, the state gave false, more optimistic growth predictions and models in the electronics industry. They also granted cheap credits and subsidies to those who pursued electronic development. The result is what we witness now- the birth of their flagship brand 'Samsung'. Japan similarly used this tactic to enable growth in their car manufacturing industry.

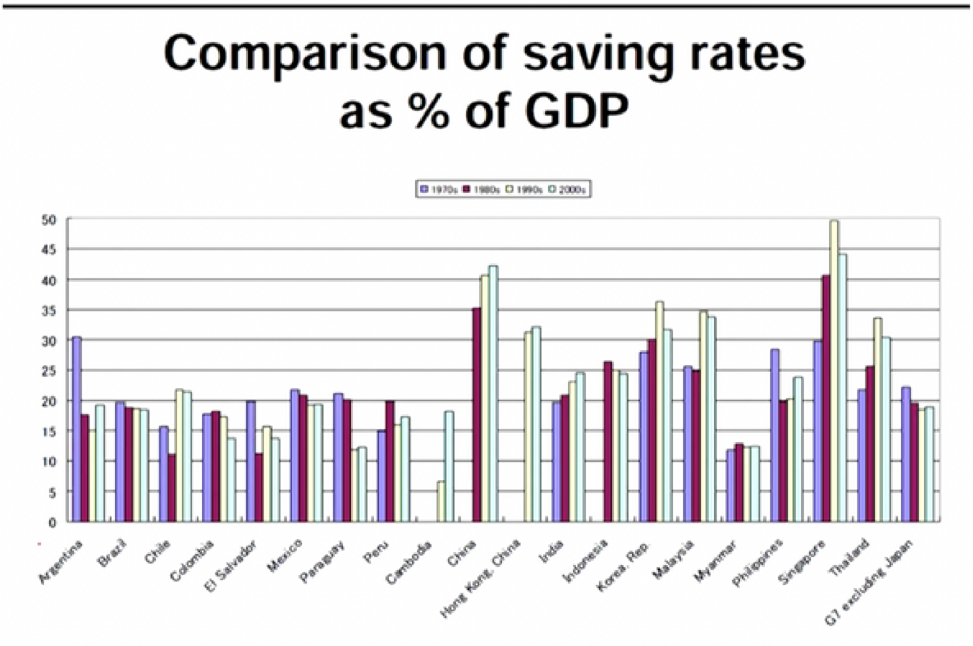
Alongside the **benevolent governance** that persuaded and incentivized the public to invest their time and money in certain industries, the government also closed the gates of the economy for imports. They introduced an **export oriented industrial policy that abandoned Import Substitution Industrialization (ISI)**. This strategy allowed these domestic countries to grow inside their respective countries without having to worry about foreign competition (Seric & Tong, 2019). Self Sufficiency forefront before engaging in trade outside was identified as an integral factor for development. One company would be chosen by the government in each industry, where they'll be closely monitored, once they perform well the government will give cheap credits and strengthen it before launching and opening the gate for it to trade in the international market.

The formulation of the Solow equation suggests that a reasonable and sustained rate of technological progress is the only possible way, over the long run, for an economy to achieve a sustained rate of growth in output per person (Sarel, 1996). The labour participation rate can be increased for a while and will increase production, but obviously it cannot increase indefinitely (since the economy at some point will achieve full employment level). More and more growth in capital than in labour ultimately leads to diminishing returns to capital, resulting in a fall in the growth of output even if capital continues to grow at a constant rate (Sarel, 1996). Therefore, in order to achieve permanent growth, an economy must continuously improve its technology (Sarel, 1996). As stated earlier, The East Asian economies knowingly or unknowingly invested and focused in the growth of technology which by the economic growth theories benefitted large scale development.

When an economy is performing too well already with most of its factors of production employed, there is automatically a reduced need for early employment as the labour force is far more than sufficient. This caused the governments to channelise their funds into the education sector. The Gross enrolment rate shot up in the East Asian Economies in the 1980s. Furthermore, when an economy experiences rapid technological change, the advantage of educated over uneducated workers will be greater than when the economy is stagnant. Therefore, there will be an increase in the demand for education by individuals who want a better job in the dynamic economy (Sarel, 1996). Going further, the well-educated human capital complemented technological growth. It was a causality and correlation effect that was witnessed in the booming economies. Tracing average growth of income per person in 41 countries during 1960-85 back to initial conditions in 1960, Rodrik shows that countries that were poorer, but that had good primary education systems and less inequality of income and land distribution around 1960, grew faster than the others during the following period (Sarel, 1996).

In developing economies, household savings are a major factor of development as the model of circular flow of the economy suggests, it is the household savings that is translated into investments into firms and the industrial sectors. The following figure gives a comparison of savings rate as % of GDP in the western countries, followed by the East Asian countries economies comparison.



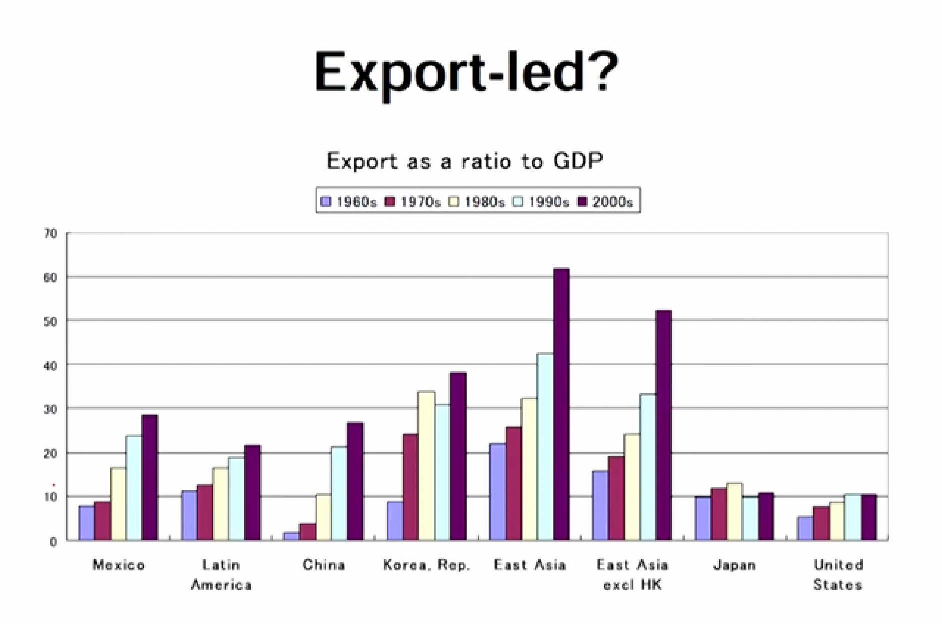


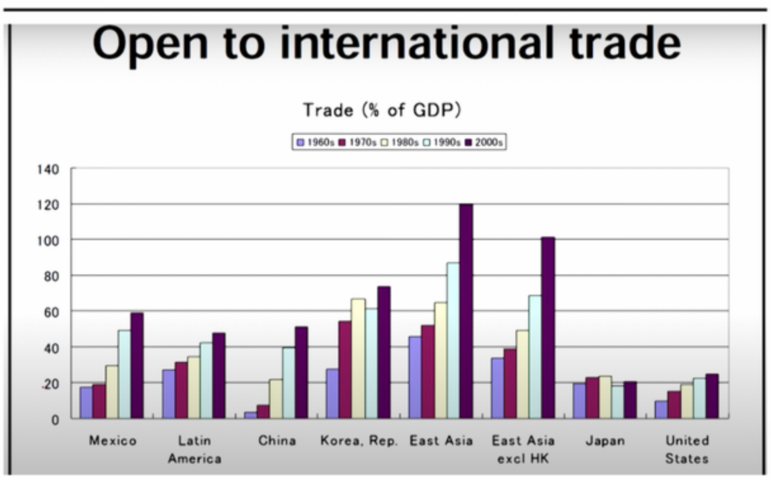
Another important factor relates to the credible and capable economic governance to ensure effective implementation of policies. East and South East Asian policymakers were generally committed to maintaining macroeconomic stability and a certain degree of fiscal discipline which was easy to regulate in the autocratic regime.

Outward-oriented industrialization model

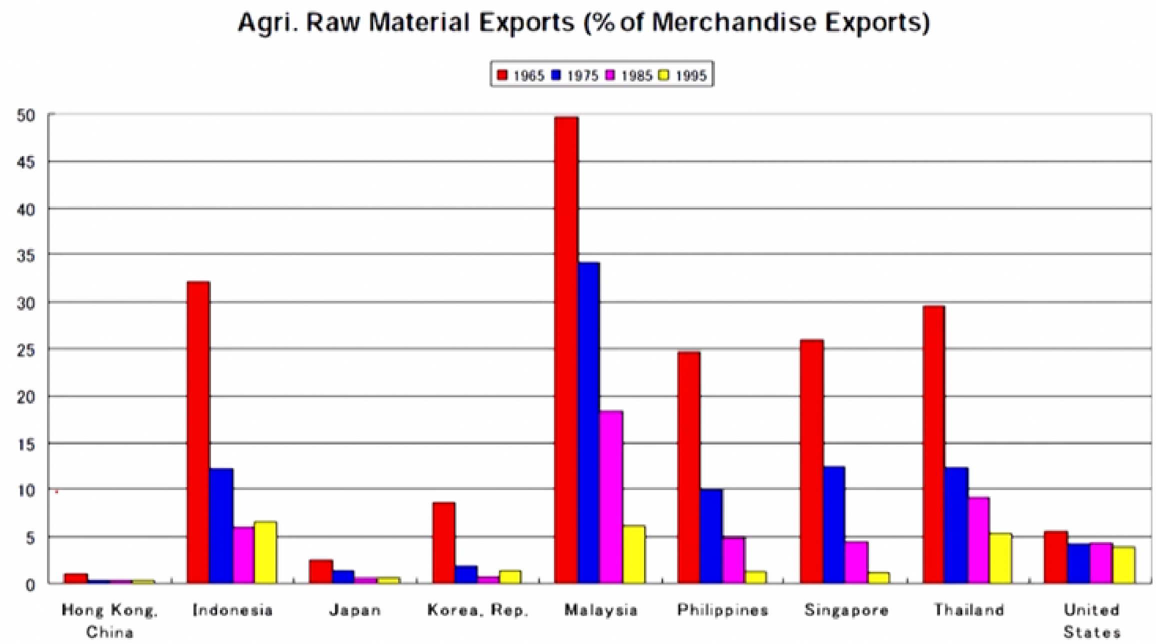
The case of East Asia portrays that there is a strong positive relationship between the economy's productive and trade structures. The countries in the initial period produced labor-intensive manufacturing goods and exported them in the world market. Between 1995 and 2016, the share of low-technology manufactured goods in the economies' total manufactured exports decreased and subsequently, the top export industries for East and South East Asia consisted of a number of high technology industries such as telecommunications, chemicals, office equipment, machinery and appliances, automotive and electrical apparatus. As mentioned initially, the government solely focused on one firm in a particular industry and made sure that their techniques of production were extremely cost effective by financing them. This gave a 'comparative advantage' of certain products over other economies to be able to perform well in the markets beyond the East Asian borders (Seric & Tong, 2019).

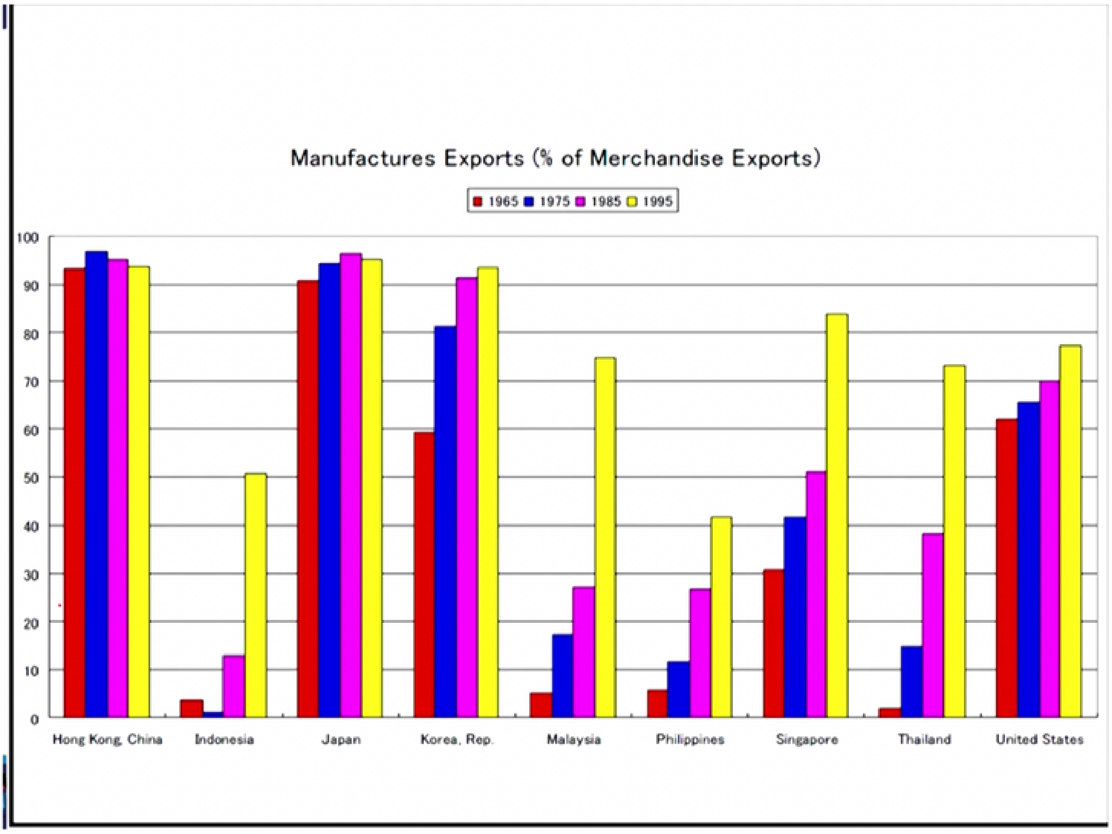
The figure below illustrates the openness to international trade, given the export led market.





It is not international trade that gave these economies an advantage but the shift of exports from agricultural raw material exports in 1965 to manufactured product exports in 1995 took a turn to merchandise exports, i.e. more value added goods at a cheaper price due to advancement in technology (intensive growth), improvement in human capital (education), induced investments and FDIs to sectors of prospects of growth stimulated by authoritarian leadership, increased savings rate lead to a spike in the exports as graphically depicted below.





CONCLUSION

In a famous study, Solow (1956) conducted a growth accounting exercise and found that accumulation of capital and an increase in the labor participation rate had a relatively minor effect, while technological progress accounted for most of the growth in output per person. Many economists have proved and validated this conclusion. Accordingly, the conventional view about the success of the East Asian countries emphasizes the role of technology in their high growth rates and focuses on the fast technological catch-up in these economies. In this perspective, these economies have succeeded because they learned to use technology (TFP) faster and more efficiently than their competitors did along with higher savings rate (investment rate), export oriented industrial policy (regulation of ISI) , success of the autocratic government in stimulating investments by faking predicted growth rates, financial infrastructure also complemented the miraculous growth of the East Asian Economy.

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TAXATION IS THEFT?

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INTRODUCTION

This article is an attempt on the philosophical analysis of the economic question 'taxation is theft?'
The relevance of this philosophical audit is to spot epistemological origins, ethical undertones, foundational inconsistencies, conceptual issues, choice problems and methodological irrationalities that arise in this question.
The question is whether our gross income (pre- tax) is ours to keep. Doubts in devising ways to balance between

- morality or legality or their sameness thereby
- individual welfare, equality or equity (what amounts to social justice?)
- state authority (enforced/ majority opinion) or consensus building in organizational issues
- economic efficiency and productivity or community upliftment

are explored.
It can be seen that the major question here is of the appropriation of resources.

Pay in market inappropriate

Since the pre- tax income is not reflective of money that is accrued to the worker commensurate to his/ her/ their labor (paycheck disproportionate to personal agency in the output/ product), it is the amoral due the market has accorded. Taking into account practical, organizational, structural, economic and political necessity, the state has to respect the whims of the market but has the duty to duly correct it by way of redistribution. Current pay ratios do not reflect 'desert claims'.

Not Deserved but Entitled

Claim on pretax- income could be based on the proposition that we may not deserve it but are entitled to it/ have a natural right over it. Two approaches to this view are as follows:

1. **Social Constructivist approach**: Property rights are a product of human convention and desire and their absolute nature cannot be identified with life itself. Hence, they can be amended to reflect our changing principle of public affairs and personal values.
2. **Un-qualified rights approach:** The market is a material world for free exchange among individuals of possessions they have natural property rights over (products in which they have 'mixed their labor') and hence taxing the proceeds of this exchange would be violation of my inalienable right.

Questions of ownership

Determining whose money/ resource it is in the first place is the dilemma which requires shared understanding. The toss is between citizens possessing money as recompense for their labor, government minting money and organizing the economy, or humanity which is the reason for money. It is the fight between whether the socially engineered product or generationally bequeathed resources are personal or universal. This is essential to answer for determining whether a state is claiming a ‘possession’ which it has ‘ownership’ over or extracting one’s property as a part of the individual’s obligation.

Collection rights of state

Political institutions are needed for maintaining stability in a socially integrated, organized community. Some believe that the State stems from the ‘nature of man’ and hence enjoy ‘vicarious divinity’ to hold the privilege of decision making. The difference is only between being justified by its beneficial office or its being.
Hence, the fee for economic security ensured by the state is political power and the tool of its implementation is funds collected in the form of taxation.
Apart from systematization, the need for a government is felt for enforcing the greater good (even if it is against the common will). An individual is generally tempted to betray/ abstain for individual reward rather than cooperate for mutual benefit which afflicts the creation of social security nets- even if there exist ‘equal incentives/return’ in both cases contribution towards optimal outcome for all seems less ‘worthy’. The concept is also explained by the Prisoner’s dilemma in the Game theory whose cornerstone is the empirical analysis of human psychology and instinct. The best case scenario for a citizen is generally that everyone except himself pays their share which is enough to provide the public good.

Social Contract between government and citizens

The payment of tax is incentivized by government services. However, this argument misses two points
1. Free rider problem and enforced charity model in a free market economy where merit may be basis of acquisition of deserved goods
2. And the unsolicited nature of these returns even if their value is greater than what is paid for

However, one can’t coherently favor property rights without funding a sustainable system for its enforcement in the form of institutional barriers (e.g.: judiciary, police, or tax tribunals themselves-law and order).

Question of privatization of services:

Privatizing sections of government services may lead to a drop in making/ delivering costs but not in buying price as the major incentive for private players is profit and not corporate social responsibility. Moreover citizens would not opt for certain services if not obligated to, leading to negligible monetary inducement for a private player.

What is just, may not always be legal

Some questions have no right or wrong answers, therefore cannot be answered in a straightforward manner by moral intuitions, and hence find their solution in the laws institutionalized for objectivity. Conversely, if the definition of theft depends on government ideated and articulated rules, then law is not so irrelevant to our moral intuitions after all. There exists a circular relationship between morality and legality in which both affect and are by-products of each other.

Tax avoidance means undertaking adroit legal transactions that reduce tax dues in a way contrary to legislative policy; however evasion would mean an outright illegal reduction. However, since both have similar essential characteristics with legality being the only exception, they can be put on the same moral pedestal.

Another issue is the non-consistent nature of the economic phenomenon despite stagnant laws. E.g.,: Direct taxation was a contingency/ emergency measure adopted during war and economic depression to be appropriated only from the wealthy but became a fixture of fiscal policy and there was no future relinquishment of the advantage.

Conflicting ideas of community ambition

The standard of justified usage of tax is not perceived to be the same. Classic examples of this dilemma are art funding and space exploration. It gives rise to the claim that 'taxation is slavery'- people are forced to fend for a cause that doesn't align with their 'ideas of development'.

Tax by needy for the privileged few

If the society fails to ensure tax compliance by the high- income bracket population (wages are a procedural part of government record but large incomes can be misrepresented in book- keeping or saved for legal ambiguities), the burden shifts to the less privileged. In essence, they pay for the services they were supposed to be facilitated with which are unaffordable for them as a result of inequity. This beats the purpose of taxation and can be called theft from the poor.

Lost valuable economic activity

The size of inheritance and income savings which may act as capital for business investments is significantly reduced leading to motivation choke for innovation and production.

Tax increases the cost of doing business and hence profit margins, consumer affordability and standard of living are reduced. The 'dead weight cost' increases significantly.

The production level of a nation is also dependent on the purchasing power of its citizens which gets affected due to tax burden.

Indirect taxes and its malady

Indirect taxes are referred to by anti- taxation circles as 'permission to live prices' or 'charges on existence' as they are included in prices of consumer goods (which are said totold be indicative of a state'sof state's confession of guilt due to hidden nature). Products have thus transformed from satisfactions to tax gatherers.

A tax on essential goods (E.g.- salt) accumulates more revenue than those on luxury goods (E.g.- diamonds), however small their percentage may be due to their universal consumption. And since the poor are more in number, the incidence of indirect taxation falls on them more heavily, despite them being affected more by the rising cost of living. This policy of tax appropriation assures certainty of collections but to an extent defeats the propounded purpose of redistribution.

Tax is paid in advance of sale and hence becomes a component of cost used for computing market price which increases the profit margin for the 'private collector' (percentage of profit calculated on total cost). Therefore, indirect taxes also become a source of gain from the consumer for the seller.

Monopoly and taxation

The consequences of taxation are different in a monopoly power seller and competitive industry. An industry with cut throat competition will have to pass on the burden of taxes to consumers (which may lead to a shiftto shift of choice of brand for buyers) to earn even the derisory profits it does. However, a sole player has leverage of absorbing tax blows in the long term by way of price increase or reducing quantity/ quality. This can also be bracketed as a form of social injustice if seen through the consequentialist lens.

CONCLUSION

Three major viewpoints that exist are:

1. tax is comparable to insurance or day to day trade for services (both socially and individually beneficial)
2. Its coercive nature is a disregard of freedom and justice principle in public affairs,
3. Use of compulsion removes taxation from the field of commerce and puts it squarely into the field of politics.

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THE NECESSITY TO EMBRACE OPEN INNOVATION IN THE 21ST CENTURY

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Open innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology- Prof. Henry Chesbrough, Father of open innovation

Defining open innovation, a tool for sustainable growth

If India has to tap its full potential of manpower, technology, logistics, infrastructure; the only way is to embrace open innovation with open arms. Prof. Henry Chesbrough defines it as, "… the use of purposive inflows and outflows of knowledge to accelerate internal innovation and expand the market for external use of innovation respectively." It is the business concept which encourages companies to acquire outside sources of innovation in order to improve product lines and shorten the time required to bring their products to the market, and to market or release internally developed innovation which does not fit the company's business but could be used effectively elsewhere. Not all smart people work for us. There is abundant useful information around us that we can access, absorb and then incorporate. Open innovation is especially helpful for organisations to solve their critical problems and at the same time build a positive reputation. It allows the talent outside your organisation to helps one reach new heights. In open innovation, we are doing something for profit, not entirely by ourselves, but by including the best talents in our system. For example, we take the technology from a Canadian start-up, funding from a Danish trade organisation, do the packaging and earn profits. LinkedIn offers 97 thousand jobs involving open innovation.

In the closed innovation funnel, we get the ideas from our current market, our new market and other firms' markets. After the moment of inception of these ideas, they are developed, evaluated, processed, filtered and finally marketed. Closed innovation is obsolete. Especially in India, where talent is scattered throughout the country, open innovation can help in sustainable growth.

In open innovation, our boundaries to get the ideas become semi-permeable. We imbibe internal as well as external venture handling. We have an external technical base and an external technical insourcing to know our funnel has become a holey one. It is not at all important that to create value and make profits, the organisation must develop, discover and supply everything on its own. We should judiciously use the internal and external ideas and unify the knowledge and win rather than having the attitude that we create the most and the best ideas and thus, we win. In fact, opening the door to outside sources of ideation i.e., the use of crowdsourcing can also provide possible solutions to a specific problem. It is mostly found that the solutions provided by these 'crowds' enable the management to think differently which is the need of the hour. The necessity to embrace open innovation in the 21th century has become an actual necessity and is no longer a luxury.

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In the 20th century, organisations focused on closed innovations, that is the ones in a controlled, secretive and closed environment. The firms' following closed innovation process led to breakthrough discoveries but due to their closeness, the other organisations couldn't explore these ideas for their growth and expansion. Initially, they worked well, however, gradually due to the change in the market trends, the establishment of start-ups with the help of venture capital, led to the rapid change in the technology and thus, closed innovations were no longer sustainable. For e.g., A paired comparison was made between rival attempts to develop the first continuous rolling mill for wide strip in the United States during the 1920s.Wide strip-rolling technology was developed by rival teams in the United States during the mid-1920s. The less successful team at Armco, Ashland, Ky was closed to outside influences. Breakthroughs came from Columbia Steel at Butler, PA, which pursued an open pattern of cooperation with equipment suppliers and thus its design could dominate the market for the next 80 years.

Open innovation is working beyond boundaries and collaborating globally. The large firms have begun to follow a growth mantra where they collaborate with small or medium sized specialised companies to fill up the capability gaps which motivates them to take bigger risks in innovation.
There is a lot of opportunity for businesses to profit from open innovation. The hassle is to find out what we know, what we have to look from outside and what to let go of, and the answer lies in the internal business world.

Rising popularity and beneficiaries

Prof. William Chesbrough wrote his first book on open innovation in 2003. He says that, in that year, there were less than 200 pages on open innovation on the search engine of Google. There was a leaps and bounds increase in the number pages in 2019, which was approximately 5 million. The world's business community has accepted this concept and now, it is India's turn to embrace it. However, India is a social country where people love to embrace other cultures but prefer to stay away where sharing business knowledge is involved. The reason is a risk averse culture, fear of loss of intellectual property and formal structures but initiatives like "Start-up India, Skill India, Atma Nirbhar India" with funding from venture capitalists, open innovation has become a buzz word in the recent years.
An exemplary role of open innovation in improving the lives of the rural poor, entangled in a series of problems like, poor skills, poor creditworthiness, poor soil conditions, limitation of funds and exposure due to the vicious circle of the middle men and so on is taken. Despite receiving help from the government initiatives, works of private philanthropists and by corporate charitable donations, the small villagers had continued to remain caught in a cycle of rural poverty. This outcome can largely be explained by reasons such as failure in upskilling, interventions of rampant corruption, etc. In an effort to find a permanent and a sustainable solution to the social problem, Professor Solomon Darwin started a drive to empower the villagers to access the markets and technologies and raise their income, under Sir Henry Chesbrough. They took up the 'smart village initiative plan' to make the small village, a community empowered by digital technologies and open innovation platforms to get an access to the global markets. The drive was to pass the high-fidelity test. The private companies tried to understand the villagers' needs and what they are willing to pay to solve them.

In a prototype village in Godavari district in Andhra Pradesh, 40 private companies were willing to invest out of which twenty were Indian. 80% of the initial funds came from the private companies. The government played a supportive role but not a driving role. The major industries here were rice, coconut and textiles. The small ones were cashew processing and shrimp farming. With his experiment, the women in the village got a huge market for their sarees and their profit margin increased from 10% to 35%. Google also made a sizable investment in fibre optics connectivity in the village. The farmers benefited from this initiative as their yields increased, their products reached the market at the right time, etc. Google benefited in a way that it got all the data which it could use in other settings. The success of one village in one state has driven the government to experiment in other villages as well.
Now, around 500 villages in rural India are getting benefits of open innovation.

COVID-19 had thrown up unprecedented challenges that required an entirely new approach to build solutions. The need for more and more collaborations and learning from each other to move ahead has become more pressing. Owing to the same, in March 2020, Siemens opened its additive manufacturing network for the production of medical equipment.

The four types of open innovation

The first is intra-company where you allow people to and from inside the company. Say, a doctor in a hospital is good at playing guitar so they can arrange a small musical evening for the patients.
The second is inter company, which is between two or more different companies. Phillips has an open innovation presence at the campus with their open innovation lab called, 'MI Plaza' where companies can develop their own applications with access to Philips's research and know-how, and in turn Philips can use their inventions to improve their own solutions.
The third is from the experts. The specialised people of their areas are invited to give the relevant input. They are outside consultants hired for a limited period of time. They are always professionals and usually very expensive. They outline the change process, primarily give recommendations and do not actually work on the implementation.
The last one is to be publicly open. In this type, all the people especially the consumers are involved regardless of their previous knowledge and stature. For instance, Facebook uses an interesting internal open innovation using hackathons to generate fresh ideas. The social media giant provides an excellent example of how to tap into the smarts from the internal crowd.Hackathon is for a group of programmers who work together on a collaborative project. There are competitions where several teams compete to create prototypes that innovate on a theme or improve upon an existing project.The Indian government also understands the value of open innovation and has organised Toycathon 2020-21 to challenge India's innovative minds to conceptualise novel toys and games based on Bhartiya civilization, history, culture, mythology and ethos.

LIMITATIONS

Every new idea has its own limitations. The idea of open innovation is no different. The major limitations include issues relating to management of intellectual property and other legal risks, difficulties in quick and efficient processing of ideas from outside sources and establishing an efficient internal structure to innovate openly. The others include, the possibility of information not intended for sharing being revealed, increased complexity and control due to filtering out of external ideas and the risk of the host organisations to lose their competitive advantage.

CONCLUSION

For any successful business, “customer is the king” is the key line. As the customers of the 21st century are becoming ever demanding, well aware, fastidious and younger, open innovation and managing the business using it is the sole way to sustain the business.
One can conclude by quoting Sir Flemming Besenbacher, Chairman, Carlsberg Foundation, “Sustainability is the Why, open innovation is the How.”

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A DEEP ANALYSIS INTO THE STRUCTURE OF THE SUGARCANE PRICE POLICY IN INDIA

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Sugarcane being an important cash crop for India has been subject to various policy changes over the years. This research article analyses the functioning of the sugarcane policies in India and suggests methods to improve the plight of the sugarcane farmers and sugar mills by overcoming the shortcomings of the stated policies. The study is based on secondary data collected from various sources including government reports, academic literature, and industry publications.

INTRODUCTION

The sugarcane industry is a vital sector in India's economy, contributing 1.1% to the country's GDP given that the crop is grown only in 2.57% of the gross cropped area (Sushil Solomon, 2016) which has only increased through the years. This industry impacts the rural livelihood of about 50 million sugarcane farmers and around 50 million directly employed in sugar mills (GOI, 2023). Sugarcane is a fundamental crop that gives multiple basic by-products needed by all. Despite the importance of the crop, the farmers face several challenges related to market volatility, lack of access to credit, rising input costs, etc. In order to ensure fair prices for the farmers and mitigate a major issue, the Indian government has implemented several policies over the years to regulate the prices of sugarcane. In lieu of several revisions, the FRP policy introduced in 2009 is the main policy in place to provide fair and remunerative prices to both the farmers as well as the sugar mills. However, this policy has been a subject of a lot of scrutiny since its implementation. Such arguments make one question the effectiveness of the policy in achieving its aim.

Sugarcane Policies in Detail

The FRP is based on a formula that takes into account various factors such as the cost of production, the recovery rate, and the price of sugar in the market. In India, the recovery rate is an important factor in determining the pricing policy for sugarcane. The recovery rate refers to the amount of sugar that can be extracted from a unit of sugarcane. This is expressed as a percentage and is calculated by dividing the weight of sugar by the weight of sugarcane used to produce it. The recovery rate plays a significant role in the pricing of sugarcane because it directly impacts the profitability of sugar mills. Higher recovery rates mean that mills can produce more sugar from the same amount of sugarcane, which increases their profits. As a result, sugar mills are willing to pay more for sugarcane with a higher recovery rate.

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Amendments under the sugarcane pricing policy:
The sugarcane pricing policy in India has undergone several reforms and amendments over the years. The pricing policy is governed by the Sugarcane (Control) Order, 1966, issued under the Essential Commodities Act, 1955.
Some of the key reforms and clauses of the sugarcane pricing policy in India include:

Fair and Remunerative Price (FRP): The government sets a minimum price called the Fair and Remunerative Price (FRP) that mills must pay to sugarcane farmers. The FRP is determined based on various factors such as the cost of production, sugarcane yield, and sugar prices.

State Advised Price (SAP): In addition to the FRP, some states in India also set their own State Advised Price (SAP) for sugarcane. The SAP is usually higher than the FRP and is set by the state government based on local factors such as input costs and local market conditions.

Cane Payment Arrears: The government has also introduced a system to monitor and regulate cane payment arrears. Under this system, mills are required to pay farmers within 14 days of cane supply. If the mills fail to pay within the stipulated time, they have to pay interest on the amount due.

Minimum Distance Criteria: To promote fair competition and prevent mills from overburdening farmers, the government has introduced a minimum distance criterion. Under this criterion, a mill cannot buy sugarcane from a farmer who is located beyond a certain distance from the mill.

The FRP of sugarcane payable by sugar factories for each sugar season from 2009-10 to 2022-23 is tabulated below:-

Sugar Season	FRP (Rs. per quintal)	Basic Recovery Level
2009-10	129.84	9.5%
2010-11	139.12	9.5%
2011-12	145.00	9.5%
2012-13	170.00	9.5%
2013-14	210.00	9.5%
2014-15	220.00	9.5%
2015-16	230.00	9.5%
2016-17	230.00	9.5%

2017-18	255.00	9.5%
2018-19	275.00	10%
2019-20	275.00	10%
2020-21	285.00	10%
2021-22	290.00	10%
2022-23	305.00	10.25%

Figure1: Adapted from GOI, Department of Food and Public Distribution Report, 2023

Public Reaction to the Sugarcane Policies

The public reaction to the sugarcane pricing policy in India has been mixed. On one hand, farmers have welcomed the minimum price guarantee provided by the FRP and SAP. However, they have also expressed concerns over delayed payments and inadequate enforcement of the regulations. There have been several protests by farmers demanding timely payments and higher prices.

On the other hand, some mill owners have criticised the pricing policy, stating that the minimum price requirements have made it difficult for them to operate profitably. Overall, the sugarcane pricing policy in India remains a contentious issue that requires careful balancing of the interests of all stakeholders.

Benefits/Impacts of the Policy

The study finds that the sugarcane price policy has had a positive impact on sugarcane production, farmers' income, and the sugar industry's profitability. The policy has ensured that sugarcane farmers receive fair prices for their produce, which has led to increased investment in sugarcane cultivation and higher production. The policy has also helped to stabilize sugarcane prices, reducing the volatility of the sugar industry. Additionally, the policy has led to increased sugarcane production, which has contributed to the country's food security. This in totality has secured the sugarcane industry to a great extent as far as pricing is concerned. Sugar being a basic consumer good, it becomes important to regulate its price for the benefit of all.

Limitations of the Policy

The policy has led to the over-production of sugarcane in some regions, leading to the accumulation of sugarcane arrears, this has negatively impacted farmers' income as they are not able to sell their entire produce. This has subsequently led to the concentration of the sugar industry in certain regions, which has led to the neglect of other regions where the production is relatively less.

One of the main issues with the sugarcane price policy is that it has resulted in a mismatch between the prices of sugarcane and sugar and its by-products. The price of sugar is determined by the market forces of demand and supply, while the sugarcane price is fixed by the government. This has resulted in situations where the price of sugar is lower than the cost of production, leading to losses for sugar mills.

Another issue is that the sugarcane price policy has resulted in the concentration of power in the hands of sugar mills. The policy has led to a situation where farmers have to sell their sugarcane to a few sugar mills in their region, leading to limited competition and bargaining power for the farmers as a result of which the price policy has a negative impact on the farmers.

Suggestions

About 51% of India's sugarcane production is produced from the tropical regions (Maharashtra, Karnataka, Tamil Nadu and Andhra Pradesh) and the remaining 49% is from the subtropical regions (Uttar Pradesh, Bihar, Uttarakhand, Punjab and Haryana), despite the latter having 55% of the total area under sugarcane (GOI, 2016). Different regions vary in their sugarcane productivity owing to a year of production, taxes and subsidies imposed on sugarcane sale as well as on various inputs of production, environmental conductivity of the region of production, monetary aids such as loans and allowances given or forgone etc.

These variations affect the sugarcane production and their consequent sales immensely. Thus, FRP and MSP should be formulated in a region-specific way with due consideration given to the aforementioned factors. This can be done with the help of taxes and subsidies. The market price for raw sugarcane and its by-products should be the same throughout the country to prevent overproduction in particular regions. This will ensure that the burden of price correction is borne by the government and not the poor farmers and mill owners. This will also correct the mismatch between the prices of sugar and sugarcane.

CONCLUSION

The study concludes that the sugarcane price policy in India has been effective in achieving its intended goals of supporting sugarcane farmers and ensuring the stability of the sugar industry. However, the policy has led to the overproduction of sugarcane in some regions, a mismatch between the prices of sugarcane and sugar, and the concentration of power in the hands of sugar mills, thus requiring a need for policy reform to address these limitations. The government should consider implementing policies to diversify the sugar industry and promote sustainable sugarcane cultivation practices

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A CASE STUDY ON THE ODISHA MILLET MISSION

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WHAT ARE MILLETS?

The global water crisis, alarming hunger rates, climate change and soil degradation has forced the world to move towards better and more efficient alternatives to current staples. Such a step will not only protect and sustain nature but the nutrient composition of the food we produce and consume will also prove to be detrimental for our survival in today's world of growing hunger, sickness and malnutrition. One such alternative, which is known to have astounding nourishing ability and climate resilience is millets. In a report by the World Food Program and as per the research by the Indian Institute of Millet Research (IIMR) the following benefits of millets have been discovered and documented:

1. Millets are excessively rich in Vitamin B, Calcium, Iron, Potassium, Magnesium, Zinc, etc and are also a great source of starch, protein and fibre, making them **high-energy** food. Most importantly, millets are **gluten free** and suitable for diabetic people.

2. Regular consumption of millets lowers the risk of cancer, diabetes and heart diseases. It strengthens the digestive system, muscular and neutral systems, improves respiratory health, increases the energy levels and detoxifies the health.

3. Millets are **highly climate resilient** crops as they can grow in arid regions with low rainfall, under non-irrigated conditions and are tolerant to floods, drought and excessive heat (up to 64 degrees Celsius). The WFP report recognises millets as the "**21st century crops**" as they are ideal for the changing climate conditions and depleting natural resources.

4. Millets also have nourishing properties that enriches the soil, helps in preventing soil erosion and maintaining soil integrity through its fibrous root system. Its less water requirements reduce the salt reaching the soil and the decomposition of leftover leaves and roots in the soil help in improving soil health.

5. The World Bank has declared India as a water stressed nation, having 18% of the world's population but only 4% of the water resources. Despite the massive water crisis in the country, almost 80% of the water resources are used for agriculture. This problem can be solved through growing crops such as millets which require very little water. For example, the water requirement of millet is 2.5 times less than that of rice.

ODISHA MILLET MISSION AND ITS OBJECTIVES

Millets have gained major traction in the past decade due to policy initiatives undertaken by the central government and the state governments, especially in Odisha. In 2017, the Odisha government launched a flagship program called "**Odisha Millet Mission (OMM)**", in collaboration with **Watershed Support Services and Activities Network (WASSAN)** and **Nabakrushna Choudhury Centre for Development Studies (NCDS).**

The hilly, arid terrains of the tribal parts of Odisha with their lack of irrigation and unmanageable climatic conditions led to the acceptance and popularisation of millets as the chief crops and created an opportunity for the government to implement OMM. It is an initiative with an overarching aim of "Reviving millets in the farms and on the plates" and providing food security. The program was envisaged with the aim to work towards and fulfil the following objectives-

1. The aim is to increase household consumption of millets by 25% to increase nutrition security and for creation of greater demand, with a special emphasis on children and women.

2. Setting up decentralised millet processing enterprises at the Gram Panchayat and block level to promote greater ease of processing at households and for value-added markets.

3. Research work to improve the crop productivity of millets and making them more profitable
.
4. Developing millet enterprises and establishing a link between farms and markets in rural and urban areas with special upliftment programs for women entrepreneurs.

5. Inclusion of millets in the Nutrition Programmes such as Public Distribution System (PDS), Mid-day Meals (MDM), and Integrated Child Development Services (ICDS) to tackle the problems of malnutrition and food security.

POLICY FRAMEWORK AND IMPLEMENTATION

Under the Odisha Millet Mission, the government and responsible agencies have created and implemented an intricate system of functions, activities and components solely aimed towards increasing the production of millets and creating a demand for the same. The policy framework contains the following components:

Policy- This includes direct incentives such as monetary transfer to the accounts of farmers after the completion of required agronomic practices such as seed treatment, pest management and application of manure. Secondly, **Minimum Support Prices** have been declared by the government for jowar, bajra and ragi (Rs 3150 per quintal in 2019-2020), and at a rate higher than those provided for paddy. Lastly, millets have been included in **food security schemes** such as PDS, ICDS and MDM either by channelling them to the targeted consumer through Fair Price Shops or making millets available to Angandwadis under the ICDS system after they have been converted to value added products such as laddus by Self Help Groups.

Production- This component of the policy focuses entirely on production of millets. This includes setting up **Community Seed Centres** (CSCs) partnered with research centres at the local level for producing, supplying and selling locality specific good-quality seeds in time to the farmers. Secondly, the policy includes agronomic practices such as System of Millet Intensification (SMI), Line Transplantation in Millets (LT) and Line Sowing (LS) for intercropping. For proper implementation of such practices, training programs are held and field verifications are conducted by concerned authorities. Lastly, **protective irrigation** is being introduced through setting up required infrastructure in order to mitigate the risk of dry spells

Farm Mechanisation- Various provisions have been created for farmers such as **Custom Hiring Centres** (CHCs) in addition to financial support to provide technological infrastructure and machines for greater productivity. The purpose of CHCs is to provide machines and equipment on hire to small, marginal and poor farmers at subsidised rates.

Specialist Human Resource Cadre- A **Community Resource Person (CRP)** is appointed at the ground level with responsibilities such as demonstration of agronomic practices, managing the Custom Hiring Services and Seed Management System, organising workshops and training programs, along with supervising the Farmer Registration process and millet procurement, among several other functions. The framework also creates provisions for **Farmer Producer Organisations (FPOs)**, which will be farmer-led groups created to ensure proper productivity and procurement, tackling problems and constraints, for collective investment, etc.

Consumption- Firstly, a training program will be created for a 10-member women campaign team in every district, with focus on types of millets, benefits, millet recipe preparation and strategies to create more millet awareness. Secondly, to increase awareness for household consumption, a four-day campaign (street plays, Rath and School Rally) will be organised along with documentary screening focusing on millet production, procurement, value addition, etc. Lastly, a fund called “Start-Up Capital” has been established to set up Kiosk for selling millet-based products preferably under the ownership of Women SHGs.

IMPACT AND RECOGNITION

The Odissa Millet Mission has entirely changed the agricultural scenario of Odisha and has led to massive developments in terms of farmer empowerment, improved soil quality, lesser burden on the water table, betterment of food security schemes, upliftment of women through SHGs and improvement in the nutritional diet of the people. Recently, NITI Ayog carried out a detailed study over the Odisha Millet Mission and through its report, it greatly acknowledged the success and the impact of the initiative. The report stated that there has been a 215% increase in the total value of millets produced per farmer household. The production of millets has increased to 47,190 ha in the state of Odisha. The policy has been successful in setting up 38 custom hiring centres and the inclusion of 30,285 farmers within it. The Odisha Millet Mission has also been greatly successful in implementing the policy in 15,292 villages of 81 blocks from 15 districts.

The OMM model has received great appreciation from the central government, so much so that the centre has asked all the millet producing states to understand and implement the policy framework of the millet mission. Additionally, the Odisha government has been lauded with the “Best Government Initiative” award on millet promotion by Mo-FPI-IIPF. Odisha has become the third state to include millets in its PDS framework. The program has been successful and impactful to such an extent that there is a rapidly growing trend of millet consciousness not just in India but also around the world. At the proposal of India, the UN general assembly at its 75th session in March 2021, declared 2023 to be the International Year of Millets. The program also garnered the attention of Cambridge University which subsequently entered into partnership with Odissa Millet Mission to explore the possibility of the design of OMM as an alternative to the Green Revolution Framework.

ROADBLOCKS

Several discrepancies in the Minimum Support Prices provided by the government for millets in the form of low MSP, procurement of only half the produce and untimely transfer of money hampers the production as monetary incentive is a major incentive for the farmers.Despite the increase in land under millet cultivation, ragi occupies 86% of the cultivated areas and hence minor millets which are similarly healthy constitute a very small proportion of the total produce.The coarseness of the grains, colour of the food and complex food preparation technique, makes millets highly unpopular among consumers, especially the Indian public who greatly relish the white, smooth textured rice and wheat.

CONCLUSION

The Odisha Millet Mission is a stark example of the potential that lies in millets and its ability to combat major global issues. The program reminds us of the need to understand the food crisis and to implement various developmental programs such as OMM in order to utilise the merits of alternative food crops such as millets in battling today’s issues.

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STORY OF THE SINKING LANDS

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IINTRODUCTION

Imagine that you are sitting in your house with your family and there is a sudden loud noise and you feel your house sinking inside the ground. This is the unprecedented situation that people living in Joshimath are experiencing and the phenomenon is known as land subsidence. Land subsidence, as defined by the National Oceanic and Atmospheric Administration, refers to the surface sinking as a result of subterranean material movement. It can occur due to a variety of manmade and natural reasons, such as exploitation of water, oil or other natural resources.

More than 600 buildings in Joshimath have developed deep cracks and many more buildings have been declared unsafe for living. Interestingly, this grave situation had been predicted in a 43 year old report by the MC Mishra Committee that had been appointed by the central government. The report had explicitly stated that Joshimath was located in a landslide prone zone and could sink due to brazen construction activity. The report also mentions that Joshimath is not suitable for a township and any construction activity in the area should be prohibited.

Through this article the author will delve into the economic impacts of land subsidence and the need for valuation of the impact of land subsistence. The author will conclude with a proposed model for undertaking such a valuation exercise.

Economic Impact Of Land Subsidence
The economic impact from land subsidence will be used as the parameters in the hedonic pricing model which has been proposed in this article as a valuation tool for measuring the impact of land subsistence.

The economic impact from land subsidence can be characterised into 2 main parts:

1. **The Market Impact**

Land subsidence causes direct damage to the critical infrastructure such as transportation facilities, energy infrastructure, telecommunication systems, buildings including houses, factories, public space like parks, gardens etc.

It also causes indirect damage which has a long-term impact on the economic system: increased flood hazard, loss of land near water bodies, loss of property value, lower overall agriculture production as drainage becomes more difficult or salinization occurs

.

For the companies there is an interruption of infrastructure and utility services due to an increase in O&M (operations and maintenance) work and failure risk.

2. The Non-Market Impact

The non-market impact of land subsidence is

1. Damage to landscape, natural environment and culturally historical objects.
2. Social disruption and stress caused by damage to private property, loss of property value and increased work.
3. Undermined trust in public authorities, institutions and the government.

Valuing Market And Non-Market Impact: A Necessity For Efficient Decision Making

The economic valuation of market and non-market impact due to land subsidence is necessary to ensure that the appropriate decisions are made in order to protect the public and the environment. Given the economic value of an impact due to land subsidence, it is important to accurately identify and assess the risks associated with subsidence. This allows businesses and governments to make informed decisions about how best to protect their interests. Additionally, by understanding the economic value of impact due to land subsidence the local governments can accurately allocate resources to address and solve the issues faced by the affected society at large. Economic valuation of the impact will also help in the process of providing fair asset compensation to the people who have been displaced due to land subsidence. Ultimately, an economic valuation of market and non-market impact due to land subsidence is necessary to help make informed decisions about the best course.

Economic Valuation Of Market And Non-Market Impact Using Hedonic Pricing

What is Hedonic Pricing?

Hedonic pricing is a model that identifies price factors on the basis of the hypothesis that price is determined both by internal characteristics of the good being sold and external factors affecting it. It considers environmental and macroeconomic factors to derive the good’s correct price. The Hedonic prices are known as implicit prices. It is known as implicit price because it cannot be directly seen in the market and relate to environmental attributes. The basic logic of Hedonic Pricing is that the price of a marketed good is related to its characteristics or the service it provides and the external environment. For example, the price of the car is related to its characteristics such as comfort, style, fuel economy, luxury etc. Thus, we can value the individual characteristics of a car or any other good by looking at how the price people are willing to pay for it changes when the characteristics change.

Let us take another simple example to understand how hedonic pricing is used:

The housing industry is the best example to understand hedonic pricing. The value of a house depends upon the carpet area, number of rooms, location, builder, floor number, transportation, railway station etc. Now consider 2 locations A and B.

-Location A:

Built by an established builder, a two bedroom house, nearby railway station, school and 5 minutes from highway.

-Location B:
Built by a new builder. It is a 2 bedroom house, 30 minutes from a railway station
In the above case A will be costlier than location B since the nearby railway station will impact the prices of both the houses. Location A will be preferred by the consumers since the transportation facilities are easily available. Since location B is far away from the railway station, the buyer would be tempted to pay more for location A as it is going to save a lot of time and money during the daily commute.

In such a situation the builder would be forced to push up the price for location A as a lot of buyers would look at it as their primary option. This premium that is charged to a site due to its external factors or characteristics is termed as hedonic pricing.

The hedonic price can be represented numerically as:
Value of a good= (value of attribute 1)(quantity of attribute 1) + (value of attribute 2)(quantity of attribute 2)

This value of attribute is known as the implicit price that has been explained above.

Why Is Hedonic Pricing Suitable For Economic Valuation Of Market Impact Due To Land Subsidence?

Hedonic Pricing is used to value environmental amenities that affect the price of properties. Hedonic pricing explores the degree to which every internal and external factor affects the property's price.

Therefore, this method has an important emphasis on determining the economic value of the environmental factors along with the property. Since land subsidence and other natural disasters have an impact on both natural/environmental factors and property, this method can be considered suitable for evaluating and valuing the degree as well as the amount of economic impact there has been on the property and the environment. This method can be used to value both the market and non-market impact of land subsidence. This method gives a complete 360 degree approach when we are trying to value the economic cost of the damage.

The hedonic pricing model we will be using to value the economic impact of land subsidence on Joshimath is as follows:

$LP = a0 + a1x1 + a2x2 + a3x3 + a4x4 + a5x5 + a6x6 + u$
LP is the land price
x1 is the vector of land characteristics
x2 is the vector of infrastructure (impacted infrastructure such as transportation, energy and telecommunication facilities which are referred in the direct market impact) characteristics
x3 is the vector of society characteristics
x4 is the vector of socio-economic characteristics (socio-economic characteristics here refer to the non market impact discussed above)
x5 is the vector of land subsidence characteristics
x6 is the vector of indirect market characteristics
u is the standard error

The event of Joshimath is a very recent one and the true impact of land subsidence will only be visible in the long term. The valuation of the economic impact in Joshimath in the short term will not be able to represent the true impact and damage that people of the Joshimath have suffered. This is because land subsidence is inherently a long-term process and doesn’t simply occur in one go. This is evident by the fact that Joshimath has been sinking at a high rate of 6-6.5 cm per year since the last 18 months. But it was only recently that we witnessed the true impact of the land subsidence that had been occurring there for many years. The true valuation of the impact can be done only when the situation has become stable and the rate at which land subsidence is happening has become low to such an extent that it can be said to not exist anymore. Therefore, the true economic valuation of impact due to land subsidence would also depend on how the gradual process of land subsidence folds out in the future. Hence evaluation of the economic impact of land subsidence in Joshimath should be done in the long-term using the above given hedonic pricing model.

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SAVINGS FROM THE SWITCH TO ELECTRIC VEHICLES (EVS) IN INDIA

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Transport is an integral part of the energy system, and the demand for transport has been ever-increasing with the increase in population. One of the main causes of climate change is greenhouse gas emissions from the usage of fuel in vehicles. A switch to Electric Vehicles (EVs) is a way to minimise such pollution. EVs have been started to not simply reduce carbon emissions, but also due to other advantages such as lower noise pollution, maintenance requirements and power consumption. However, EVs involve a high capital cost, which is why there remains uncertainty among the general public on whether or not a switch to EVs lead to savings. This paper aims to better understand the components that make up the cost of EVs and whether these costs are less as compared to fuel-run vehicles. This paper seeks to draw a regression and find a correlation between Savings and Distance Travelled for both Electric and Conventional vehicles. By comparing the costs incurred with the use of both vehicles, it should be seen that usage of EVs lead to substantially higher savings. The calculation of savings and cost is based on formulas and information provided by the Delhi Government (on their Switch Delhi portal), the Niti Ayog (on their E-Amrit portal) and tools available on the International Energy Agency (IEA) website. This calculation makes this study relevant to the Indian context.

INTRODUCTION

India is single-handedly responsible for contributing to 7.08 per cent of all global greenhouse gas (GHG) emissions. It ranks third amongst nations with the worst air quality. And transportation plays a detrimental role here. It contributes to nearly 305.3 MtCO2e (metric tons of CO2 equivalent) – 0.64 per cent of all GHG emissions globally. Therefore electrification plays an essential role in decarbonising the transport sector.
Two and Three Wheelers (2W and 3W) are the most important personal transport in India. The public adoption of EVs requires a policy mix of financial, behavioural and charging infrastructure incentives. India initiated a scheme of its own, the Faster Adoption and Manufacturing of Electric Vehicles (FAME) scheme. It was launched in 2015 to encourage electric and hybrid vehicle adoption by providing financial support for its purchase. The second phase, FAME II, aims to support the electrification of public transport by financing charging infrastructure and subsidizing electric buses, four-wheelers, three-wheelers and two-wheelers.

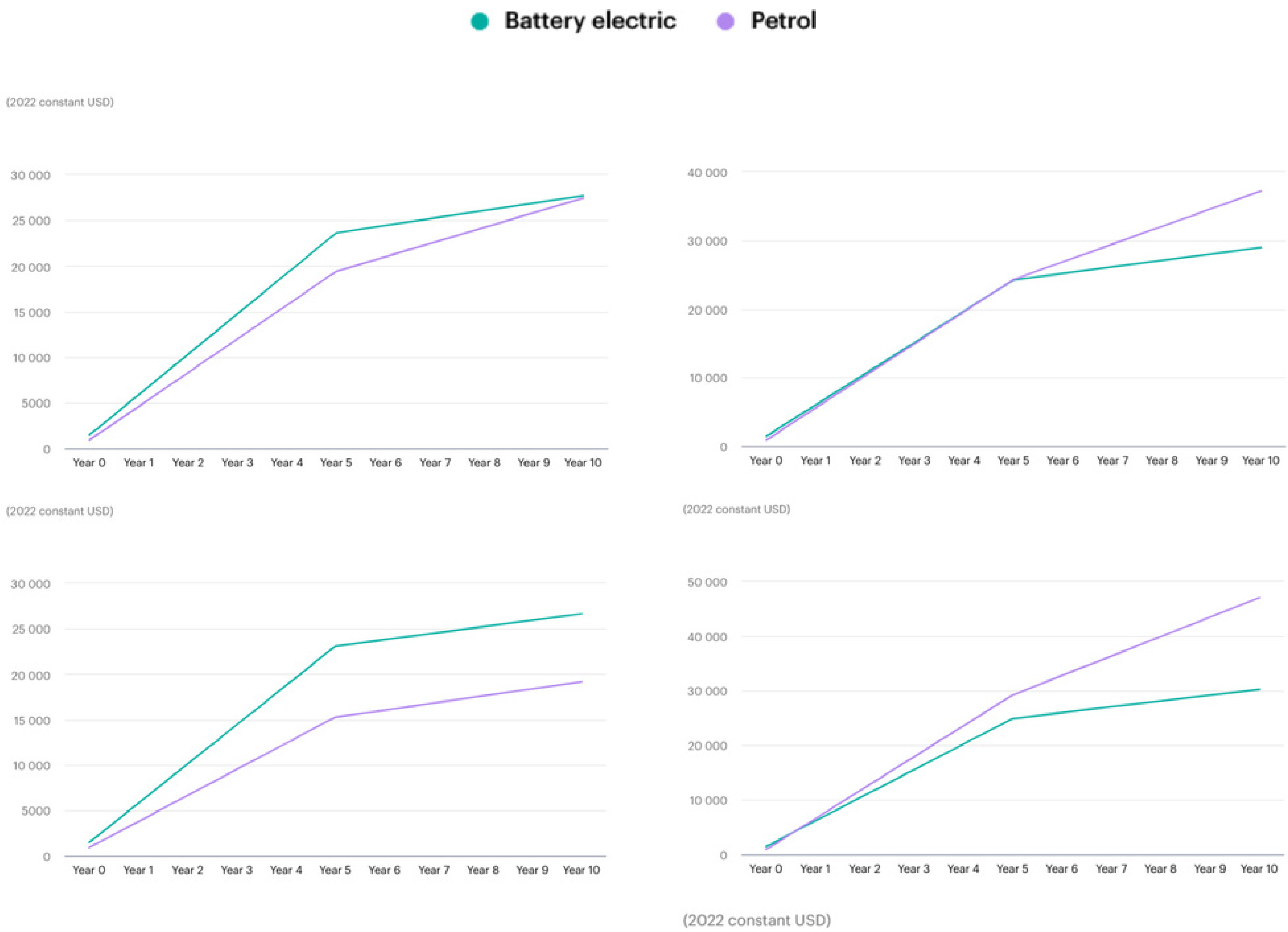
The Indian transport sector is responsible for 13.5 per cent of India's energy-related CO2 emissions, with road transport accounting for 90 per cent of the sector's total final energy consumption followed by railways and the aviation industry (IEA 2020). In addition to the GHGs, the transport sector is also responsible for a range of other harmful gases such as nitrous oxide and carbon monoxide. These result in adverse health effects and premature deaths. The growing population of India has greater transportation needs. But a further growth in transport emissions will exacerbate these health problems and put additional pressure on the already burdened healthcare system.

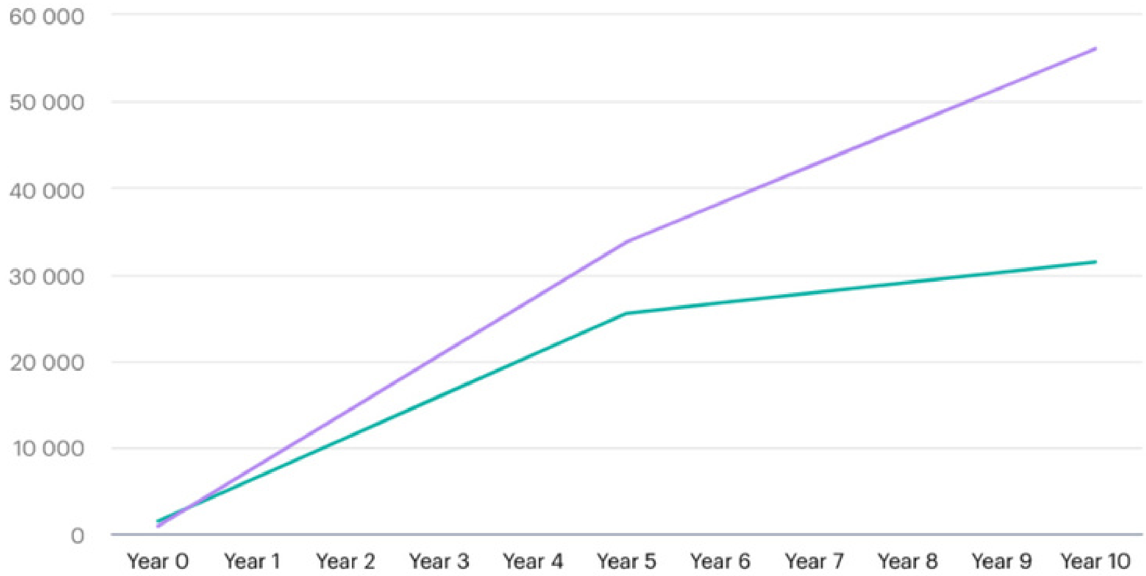
Thus, decarbonizing the transport sector in India can substantially help in reducing the ill effects caused by such emissions. It would also reap added benefits of improvement in public health, fuel savings, noise reduction, improvement in quality of life and reduction in commuting time of the public. Lower congestion also paves way for pedestrians and cyclists to make use of the roads.

EVs vs Conventional Vehicles

Due to the myriad benefits that EVs provide, a switch means moving towards a better, more holistic future. Yet there are apprehensions on part of the public to adopt EVs with regard to their cost. The following analysis seeks to compare EVs to conventional vehicles.
There are many variables that we must factor in. For ease of this analysis, we are comparing Battery electric vehicles to petrol-operated vehicles.

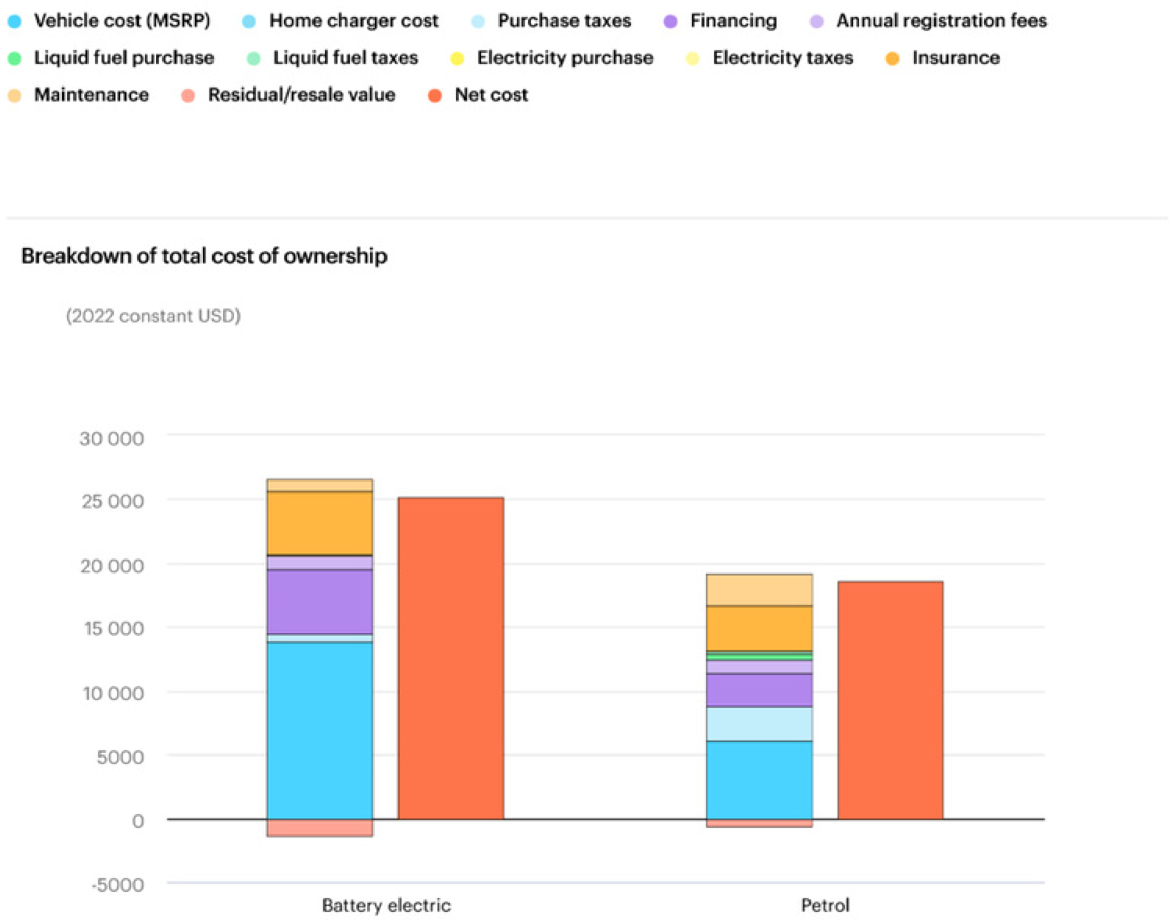
The calculation is done by using a Total Cost of Ownership Tool designed by the International Energy Agency. It has been used to calculate and compare the costs of owning and operating fossil fuel and electric vehicles and observe the impact that different variables have on the cost. For simplicity, we assume that the vehicle in question is a medium-sized car, the type that most of the country owns. The Operating Costs have been calculated keeping in mind that it is in the Indian context. The Electricity Day Cost (inclusive of Taxes) has been taken to be 0.07 USD/kWh (or 5.71 INR/kWh) and the Fuel Cost (inclusive of Taxes) has been taken to be 1.16 USD/L (or 94.61 INR/L).

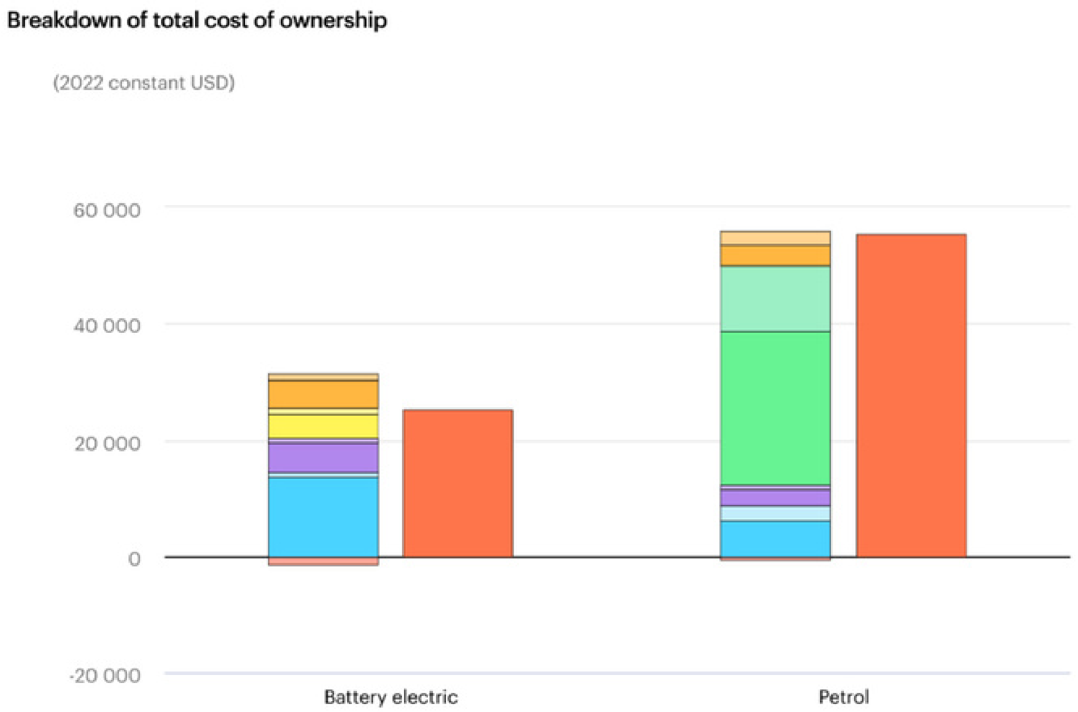




The above graphs show the relationship between cost over time for electric vehicles and petrol-operated vehicles. It is a cumulative cost curve that adds the costs in each year to the costs in the previous years. Here, both vehicles have upfront costs: the money paid to cover the vehicle price and other upfront expenses. Over time lower operating costs can compensate for higher upfront costs. So cost parity can be achieved. The reason for a kink in the middle is due to financing. Usually, a buyer doesn't pay the entire amount in one go, but rather the purchase is generally paid back over time using financing (or a loan). Different down payments, interest rates, and loan lengths, collectively known as financing conditions, will have different effects on how much is paid each year, and the total amount paid back at the end. As is the case with many alternative vehicles, the electric vehicle has lower operating costs but a greater amount of money must be borrowed to purchase one, as shown above. Combining the operating and financing costs gives us the Total Cost of Ownership.

The green curve represents the costs incurred from using a battery-operated electric vehicle and the purple curve represents the costs incurred from using a petrol-operated vehicle. The progression that we see from figures 1 to 5, is the variable of 'distance' changing. Figure 1 was obtained by taking the annual driving distance to be 1000km/year. Figure 2 was calculated using annual distance as 12000 km/year, 25000 km/year for figure 3, 37000 km/year for figure 4 and 50000 km/year for figure 5. By changing the average distance travelled variable we obtain very different results. For lower annual distances, the cost of ownership of an EV is higher than that of a conventional vehicle. As we increase the distance travelled in a year, we observe that the total cost of ownership of an EV is lower than the petrol-operated one. Thus making electric personal vehicles a viable solution only if one travels relatively longer distances annually.


Vehicle cost (MSRP)
Home charger cost
Purchase taxes
Financing
Annual registration fees
Liquid fuel purchase
Liquid fuel taxes
Electricity purchase
Electricity taxes
Insurance
Maintenance
Residual/resale value
Net cost
Breakdown of total cost of ownership
(2022 constant USD)
30 000
25 000
20 000
15 000
10 000
5000
0
-5000
Battery electric
Petrol


Breakdown of total cost of ownership
(2022 constant USD)
60 000
40 000
20 000
0
-20 000
Battery electric
Petrol

The above graphs show the decomposition of the total cost of ownership. It constitutes vehicle cost, home charger cost, purchase taxes, financing, annual registration fees, liquid fuel price, liquid fuel taxes, electricity purchase, electricity taxes, insurance, maintenance, residual/resale value and net cost. Figure 1 is obtained using 10000 km/year as the average annual distance travelled, whereas figure 2 is obtained using 50000 km/year as the average annual distance travelled.

Observing both graphs again tells us that the higher the distance travelled by an electric vehicle, the lower the total operating cost. We also see that the reason for the reduction in total cost for an EV is due to the fall in vehicle cost. On the other hand, the reason for the rapid increase in the total cost of a petrol-operated vehicle is due to a rise in liquid fuel purchases. As the average distance travelled increases, it also requires a higher quantity of petrol. As a result, the total cost of ownership of a petrol-operated vehicle increases.

CONCLUSION

It becomes evident from this analysis that although EVs might seem like the cost-effective outcome in most cases, it is only when our annual consumption needs are higher that reap benefits as compared to conventional vehicles. We observe that for an annual average distance travelled of more than 37000 km/year for an EV, the cost break-up fares well compared to conventional vehicles. So it makes sense to turn public transportation systems fully electric to reap such benefits in the long run. As policies aim to decarbonize the transport sector, we should see the movement of EVs from the margin to the mainstream. Since cost is one of the main apprehensions of the public, access to adequate capital is critical in kick-starting India's growth in the EV sphere. EV loans today carry a high rate of interest, making it difficult for prospective buyers to enter the market. Overcoming this problem by way of policy can enable better access to finance and thus provide a greater incentive for change. EVs are also currently an evolving technology. With time, the improved battery could bring down the cost of EVs and resolve the fire hazards associated with this sector – thus making EVs a safer investment, financially and otherwise. If India wants the transport sector to be revolutionized, innovative reforms need to be introduced with regard to vehicle ownership and financing. What might work for India is vehicle leasing, battery subscriptions and a pay-as-you-go model, which mitigate the risk that comes with the high cost of ownership. Policies that can induce a behavioural change in the public include – free parking to EVs, increased subsidies for the purchase of EVs and tax benefits for ownership and purchasing of EVs.

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INTERVIEWS

INTERVIEW WITH DR. SHAMIKA RAVI

Dr. Shamika Ravi is member of the Economic Advisory Council to the PM and a Non-resident Senior Fellow of the Governance Studies Program at the Brookings Institution Washington D.C. She was the former Director of Research at Brookings India. She is also our very own alumna. Her fields of expertise include health economics, Impact Evaluation, Gender & Democracy, Welfare & Poverty etc.

Q. In your article "Problem of Measurement" published in the Indian Express you write that "There is neither credible evidence of a jobs crisis in India, nor of its absence". Can you please elaborate on that by focusing on the statistical & data-related lacuna that persist in India?

Answer:
It is important to understand that India is a very young and dynamic economy, meaning its old systems, which worked quite fine fifty years ago have to quickly adapt to the fast paced world.To give you an example, consider the gig economy with thousands of people employed as delivery agents, something that never existed before. Several other aspects of the job market are changing at a quick pace. This necessitated a change in the regularity of the surveys which was earlier conducted only every 5 years, a period too long for a young economy like India. The current system of PLFS was brought in to keep up with the change in sampling and survey questions, and the advent of Cappy has computerised the system. However it is very difficult to use the old and new system in unison.On the job front, one just can't compare NSS & PLFS trends & analyse them together. It is almost like comparing apples and oranges as they are fundamentally done for different purposes. Policy decisions require real time data input as well as estimates which are atmost three-year-old or even two-year old, which makes measurement of data a very important aspect. In particular, when it comes to employment and jobs, you need real time data. And I think that is the movement we are trying to make.

Q. As we've read, a robust health and educational system holds utmost importance in any economy and particularly for developing countries. Your study on 'Missing female patients: an observational analysis of sex ratio among outpatients in a referral tertiary care public hospital in India' demonstrates how gender discrimination in access to healthcare varies with respect to distance from the facility and age. According to you, what are the reasons for the same and what logistical solutions and public policies can help reduce this gap?

Answer:
If you were to look at the data from the largest public health facility in the country- AIIMS, barring departments such as obstetrics and gynaecology which largely cater to women, it would appear that each department resembles a mini hospital. It is shocking to see that in many of these departments, 50% of the female patients are missing, which is odd considering the fact that after a particular age, women have a high probability of diseases such as cardio-vascular diseases according to the medical literature.So why are all these women not coming to the hospital? A commonly cited reason for reduced access

to healthcare is the prohibitive nature of costs. However AIIMS is practically free and does not discriminate in costs between men and women. Furthermore, it employs a good amount of female workforce (doctors and nurses) as well. So you see that the discrimination in terms of missing female patients does not arise from institutional causes but rather societal ones. People do not bring women to the hospital when they need in-patient care and this is exacerbated when the distance to the hospital increases i.e. a sick male patient will come to the hospital for the same distance cover, but a sick female patient is much less likely to come.

Here we have to go beyond the realm of obvious public policy as we are trying to get into the household and into the community to seek answers to questions like who is making decisions on behalf of women? And how do women decide whether to seek healthcare or not? This particular research helped us understand how acute the discrimination is within society, which means policy interventions now have to go beyond simple cost reduction and protocol changes in hospitals. We have to engage with families, communities, religious leaders and so on in order to sensitise people about the need for quality care and to empower women to seek care when they are sick.The power has to be restored in the hands of the women

Q. In your report, Medicines in India: Accessibility, affordability, and quality; you've extensively written about the scenario of health care in India. The NHP envisions the budget spending on health to be 2.5%, Yet the spending on health remains abysmally low (0.35% in 2023 Budget). Do you think private-public partnerships in healthcare would be beneficial?

Answer:
When we say privatisation of health care, it sounds wrong and people get worried but the reality is that 75% of our outpatient healthcare is private in India. Private healthcare is very much a reality of India's healthcare system. While one understands what the reality is, it is also important to understand how we got here and what the problem is. Healthcare is one of those areas where the market tends to break down. There can be a lot of cost escalation in say the facilities used, the medicines, etc. This should also help you understand why the USA, despite being the richest economy in the world and spending 18% of its GDP on healthcare, has one of the worst health outcomes in the OECD countries. Singapore spends 4% of its GDP on healthcare and has significantly better outcomes. So, it's not how much money you are spending; it is how you spend it.

What I'm trying to point out is that in the private sector, markets break down due to information asymmetry which leads to cost escalation and bad outcomes. The solution is that we have to strengthen public health infrastructure. Meaning when you have a well-run government hospital, people prefer to go there. And it is not true that the rich are going to private and the poor are going to the public. Wherever public hospitals work, people prefer to go there because the incentives are the same. But it is not to say that the private sector is bad. In the private sector we have very good super specialty hospitals. One of the fastest-growing segments of the economy is medical tourism. So it's a fast-innovating and fast-growing part of the economy that we have to regulate and improve the quality and grow it in the long run. That means we have to think of healthcare also as a segment of the economy. PPP is a very important part of it. We do need the private sector, and we do need the public sector, but we need to manage that balance and we should be able to regulate it.

Q. As you said that US spending 18% of its GDP still lacks, but obviously we read a lot of papers that say the budget spending has to be increased. It's very low in India. Should the budget spending on healthcare be increased?

Answer:
There is an internal commitment that we will continue to raise the budget spending on healthcare. The government spending on healthcare has to improve. The other side of this is that where do you increase? You have to invest in areas where the private sector is not going to go in. For example, Primary health care. It is the first point of contact for any citizen with the government health facility. The private sector has no revenue and business model for primary health care because the margins are very small. You can't make much money there. The fixed cost is so high and they don't have the necessary volumes which mean private business solutions to primary care do not exist. It has to be done by the government. Then you think of segments of the market like R&D and research, and development. The private sector will not necessarily invest in these avenues. After the initial research is done by the public then they use it and develop the medicines/process. Big Pharma spends on that but the majority of spending in R&D, in healthcare, etc has to come from the government. This is what I'm telling you where the market is failing, the government must intervene in healthcare.

Having said that, there is also a problem with financing. We must build the capacity among states to grow primary health care, R&D even in many cases, even tertiary care over time. In healthcare, there is a measure called out-of-pocket health burden. That is, for every rupee that is spent on healthcare, how much, what amount comes from the individual's pocket. And in India, we have been able to bring it down. It used to be 67 paise per rupee from private health care pockets, but it has been brought down to 48%. So there are many things happening in terms of the health sector overall, the financial burden of healthcare is concerning but we are very far from where we ought to be.

Q. You have written on various topics related to "Informed India" and "Well educated India" under the India 2024: A compendium of policy briefs from scholars at Brookings India. As an economics expert, where do you see the Indian economy next year and in the next decade?

Answer:
The global economy is experiencing a disruption due to the ongoing war, which is happening concurrently with a major realignment in global logistics and value chains. China's relations with other major economies such as the US and Europe are the cause of this realignment, and countries are looking for alternative places to source and outsource their work, leading to economic pressure as firms withdraw from China. In the midst of all this, the Indian economy remains the fastest-growing major economy, but it is essential to insulate ourselves from the outcomes and repercussions of the ongoing trade

and physical war. Our per capita income of $2,200 is much lower than that of other G-20 countries, and we are much poorer compared to these giants who are entering trade or physical wars. However, there is no alternative to growing, and we must continue to grow.

Our fundamentals are strong, and while inflation remains a concern, it is not as outrageous as in many parts of the G Seven, as our response to COVID was different. Our stimulus was mainly focused on humanitarian aid, including the distribution of grain and cash transfers, but nowhere near the scale of other countries. We are now focusing on emboldening 'Make in India' and strengthening manufacturing. We must build manufacturing not only for meaningful jobs but also as a growth path. As labour costs are becoming increasingly expensive in China, we need to fill the gaps they are leaving behind and provide the next several decades of cost advantage.

To achieve this, we need to make our policies, including monetary and tax policies, as well as the ease of doing business, simple and easy for businesses to grow and for new businesses to emerge. This is why there is a significant push for Startup India and Make in India. We are becoming business-friendly and introducing reforms to decriminalise many business decisions, which is a shift in mindset. We must also have a better and competitive taxation structure and better rules in general.

Q. Given the focus on climate change & environment, the terms like green finance & impact investing have surfaced in various academic discussions. In India, there is a financing gap of $565 billion to achieve SDGs by 2030. Can you elaborate on what are the major roadblocks for impact investing for developing countries, and especially for India?

Answer:
We know that India is a lower middle income country and that its population is still hungry and still wants to grow. So cutting down on growth is not an option; it is just not fair for it almost seems like a violation of fundamental rights of human beings to want to prosper and eat and do well in life, right? Despite all the perception one has of the developed world, they're highly polluting countries. Per capita their pollution is several tens more times compared to India, China, etc. What we are faced with is a public good, it’s a coordination problem that we are trying to resolve. So if you’ve learned your game theory well, you have to see how you can act in such a way that you come up with a solution or outcome that is socially optimal. It is not going to be easy. We have countries coming together to negotiate and make certain commitments towards reducing pollution. But one thing is very clear that we have to grow while creating a conducive environment for the green transition.

It is also noteworthy to point out that it is relatively easy for rich countries to adopt green technology, but the cost of making this transition is much higher for us as a developing nation. What we need is a mass movement just like we had in the past for agriculture where farmers adopted new and better technology during the green revolution to grow and become self-sufficient. While we should mobilise our domestic sources in order to make this transition and to make investments in green technology, we must also recognise the fact that we cannot easily achieve these goals ourselves; we require the rich countries to assist us in this journey of solving a public good problem.

It has often been observed that there is a huge gap between the commitments made during big conferences and meetings and the actual cash that flows into developing nations. Now this is an actual problem, for we need capital flow particularly from the G-7 to be able to achieve such utopian goals. Furthermore, business entails social objectives as well as environmental objectives. In fact, we are one of the very few countries that have a ‘social stock exchange’.

Governments are now beginning to measure green cover as well as diversity, which makes sense because only if we know the value of things can we trade in them. When you say carbon footprint and carbon credits, and when you think you should be able to trade in these, then what is their value? What is the value of the Amazon forest, or that of green cover and biodiversity? Measurement is essential for being able to trade and this requires capacity building at local levels too. We can see that in the state of Madhya Pradesh, in every district, we are measuring biodiversity and green cover. Meghalaya is doing it too. But while we all come together to make this transition, financing remains a key component.

Q. Your research in the field of elections and the veritable impact of EVMs on democracy and development has been commendable. As we know, the recent elections in Nagaland were a breakthrough given the fact that for the very first time, the state got a female MLA. Also noteworthy is that 19 State legislatures have less than 10% women members. While there is no doubt that female voter turnout has seen an uptick almost everywhere in India, such facts give us a harsh reality check in terms of democratic representation. What are your thoughts on the same?

Answer:
Well, I call it a revolution. The importance of this data analysis that we began doing ten years ago is that when you see figures supporting your ideas, you get to know the magnitude and seriousness of what is happening. That is why I call it a silent revolution. While our population sex ratio has stabilised over time, constituency by constituency, when we see women going out to vote, we feel empowered. There used to be a huge gap even 30 years ago, but it has been shrinking fast. There is miniscule difference between male and female voter turnout across states in India. You have to recognize what a big achievement it is, because this did not happen on account of a policy of ‘let's get women to vote’. Roads became better; the reach of electricity increased and the Election Commission also became very proactive. It's a combination of all of these factors.

We know that more and more women are coming out and voting, but is it making a difference? We used a natural experiment in Bihar in 2005 when an election was held and no party got a majority. Six months later, a re-election was held and a party did get a majority. What happened in those six months? It was found that between the February election and the October election in Bihar in 2005, the single biggest factor was that in each constituency, more women came to vote. It is a remarkable feature that in all those constituencies where women voters came out more in numbers, the probability of getting re-elected for a sitting MLA was miniscule. In fact, men have mostly preserved the status quo, voting the same way they voted last time. But women are agents of change. So one myth that the study broke is women don't vote like men - They vote distinctly.

Political leaders across party lines and leaders who have years on their ground are responding to women voters which explain focus on bicycle schemes, the widow pension, water supply and electrification drives. We say LPG indoor pollution is one of the biggest killers, but for whom? Lack of sanitation and toilets is a problem. For whom? Not the men. It's a women's problem. Same for drinking water, piped water. Why? Because women spend time getting water. When you see women voting and re-electing parties that have never got re-elected, you can understand that they are voting for these kinds of amenities.

Q. In your article, India 2024: A highly educated India, you've given many policy proposals, one of them being decentralisation and autonomy to educational institutions. Would you say that the hierarchy is destructive instead of constructive?

Answer:
The whole idea of the new education policy is to say that one size doesn't fit all. First of all, the nature of the real economy is changing the nature of jobs, that further translates into changes in the kind of skills that the market values. In India we have another peculiar problem- there is a gap between the degree and the skill that the market values.That's why we have the concept of graduate unemployment. We have tens of thousands of graduates who are holding degrees but the market doesn't value them. So clearly, we have to think of education and training in ways which we actually value and are willing to pay for. This requires us to break away from the highly centralised way in which we have perceived education for all these years.

I think the biggest tenet of the new education policy is that right from preschool up until PhD, and even training subsequently, it encourages and allows for experimentation. It creates a space in this old spectrum of education to try new things, bring new things into the classroom and try new curriculum. It gives greater weightage to skills which the market values.

Q. Women are highly underrepresented in economics, making up only about 30 percent of doctoral students—and that share has not grown at all over the past two decades. According to you, why is this percentage low & stagnant globally, and what can be done to encourage more women in economics & research?

Answer:
Indeed a personal question for all of us. A disheartening trend that you witness across careers is that over time you see a tapering; a lot of women drop out on the way .Since there is an increasing application of mathematical concepts, a traditionally male occupied field, in economics, there is a natural bias towards male candidates when it comes to

doctoral programmes. Hence the bias starts much before the programme itself. Moreover in case you are working towards making tenure in the first few years, it often collides with other familial commitments. This entire crunch of personal and professional decisions lie within the same 10-15 years. The profession will have to change so that women are able to balance both of these commitments.Additionally we don't want to train our girls to become boys. It seems quite natural nowadays to view aggression as a proxy for capability. This need not always be the case, We must know how to hold our ground without losing ourselves . Most importantly, policies must be gender sensitive and economics has a long way to go in this regard.

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INTERVIEW WITH MR. VATSAL NAHATA

" Mr. Vatsal Nahata is a research analyst at the International Monetary Fund. A graduate from Yale University and Shri Ram College of Commerce, he has also previously worked at the World Bank. His areas of expertise are macroeconomics, policy analysis and development economics."

Q. Your work with the IMF and World Bank involves interaction with a diverse set of political systems ranging from military rules to liberal societies. How does your research address these systematic variations - especially when looking at integral concepts of education and healthcare?

Answer:
From the point of view of the IMF, we deal directly with the authorities such as the Central Bank and the Ministry of Finance. These institutions are more technocratic and representatives of their government. Hence, we don't necessarily have a different outlook in terms of approaching a country or a country's authorities. We coordinate with them. In the case of Myanmar, we have a local team over there that sends us periodic updates. With regards to Thailand, we engage a lot with the institutional bodies like the Central bank, the Governor, the Ministry of Finance, etc. However, to account for the political variations, we capture these nuances by flagging the political risks differently. For example, impending elections in Thailand would put increasing focus on the decisions of the Constitutional Court. For Hong Kong, focus would be on the state of its relations with China and for Myanmar, the scope of military rule going away. Private market investors also account for these factors in a similar way. These factors are flagged as risks while talking to the authorities and in the preparation of reports. When it comes to engagement, we wish to be in constant touch with the relevant authorities and maintain a straightforward relationship.

Q. Given the current global economic scenario where the dollar is continually strengthening, it has been argued that subsequent rate hikes by the Federal Reserve will lead to more harm than good. Developing countries will have a tough time financing their debt and imports possibly leading to a global recession. What would be your take on the matter?

Answer:
There exists further scope for the Indian currency to depreciate especially since it is still quite overvalued in terms of nominal effective exchange rates. However one must note that the RBI has forex reserves worth around US$500 billion which can be deployed to curtail shocks in rupee movements. With regards to the real economy, our exports will get more competitive. Presently, Vietnam exports more to the US than India despite their economy and labor market being much smaller than our’s. A dollar appreciation will likely help us gain competitiveness and improve import substitution to some extent.
An important point is that India’s corporate debt to GDP ratio is not only low but its denomination is significantly lower in the local currency than in dollars. Hence the risks of companies losing out on their earnings and having to spend their profits and revenues in servicing debt is much smaller for India. Most companies that have relied on external debt have a very good credit worthiness. With regards to inflation and other dynamics, adverse impacts on the Indian economy is likely to be minimal as the country is not as linked to the global supply chains or financially integrated with the rest of the nations, as compared to its competitors in Latin America and South East Asia. The same reason holds true as to why India isn't impacted much by the 2008 financial crisis. However on the flipside, better integration creates more room for economic growth. On the other hand, in the case of Thailand, the country witnessed a significant currency appreciation as tourism boomed leading to investments flowing in. The dynamics vary depending on each country. However under the present scenario, the trend of a depreciating rupee is likely to continue.

Q. In one of your works, you have supported the claim to increase public debt. How viable would such a move be for developing countries and where should this increased government expenditure be used?

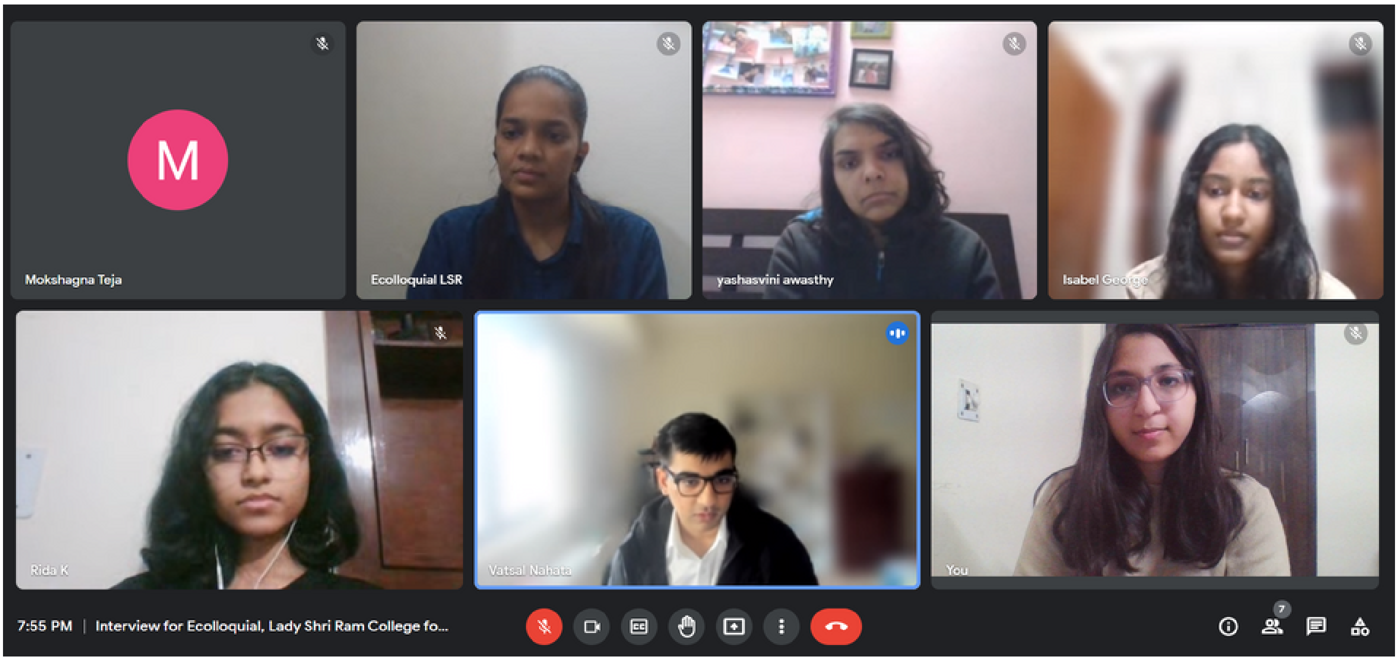
Answer:
With regards to the second part of the question, government expenditure should be used to finance capital investments more because if you look at data after the early 2010s, corporate investments in real machinery have not been as high as they used to be. Whilst we have public welfare programs that are catered to the bottom of the population, more capital investments should be encouraged. Such investment has a deeper multiplier effect which tends to increase the supply capacity of an economy. Another bottleneck pertains to political economy issues. If any state government wants to take on debt, it has to get approval from the central government.
Now onto the first part, I observe that public debt does not crowd out investment. What crowds out investment or consumption are other factors that we need to consider. Hence, we need not worry as much about high public debt. Moreover, India's public debt is primarily held by domestic entities - about half of which are public sector banks. Thus, when the government pays interest rate via the taxpayers money, that money gets flushed inside the economy itself - unlike China which depends on external conditions. Hence, my analysis was that there's room to take on more debt. If we look at Japan, China, and the US, their debt to GDP ratio is north of 130-150%. They run on debt. This is made possible by their strong credit worthiness and growth in their current development trajectory. However, India too has a robust record and its fundamentals have been strong for a long time now. With $600 billion in forex and a mammoth productive capacity, it ideally ranks above the BBB- credit worthiness that is currently given to it. And this concern has been resounded by Subramanian in his works as well.

Q. You have worked on the impact of ecology and religion on country level institutions and their impact on economic growth. What methodology have you adopted in this study to measure non quantifiable variables like ecology and religion and then what were your insights from the study? Lastly, how do you think India has fared in these parameters?

Answer:
The hypothesis is that in societies with a high variance in rainfall and temperature, there would be more religious or authoritarian regimes spread across a span of thousands of years. Research questions included whether religion played a role in controlling the population or if it could offer an explanation for environmental variations. We also tried to see if the weather and climatic condition of a place spread across hundreds of years facilitate or catalyze the kind of institutions that come up in that place.
In certain parts of the world, for example, Scandinavia, there is not much religiosity compared to other parts of Europe or Africa. Even in India, we have gods devoted for each season, for each type of weather or for each element of nature. We tried to quantify this data through latitude-longitude coordinates, temperatures and rainfall for the last hundreds to thousands of years. We analyzed the daily average temperature and daily average rainfall was. I was involved in collecting and collating the data, scraping it in python, and storing it in Excel. We then used natural language processing to determine the existence of any religious authority way back in 500 BC or 500 AD. This process was quite imperfect because we had to go through papers on Google scholar as per the keywords we input. Obviously, there's a lot of ways one can improve it. The research project still continues and now that the team has the data and have established whether or not a religious authority was there. They're trying to regress it and model it in a time series specifications on variables like human capital growth, economic growth and how institutions affect economic growth.

Q. Your experience in working with data has been quite extensive. For third world countries like India, which particularly have a large and diverse population, what is the importance of large scale data collection and processing in development? How do you think can this be done in a correct way?

Answer:
Data in development has increasing returns to scale. The more granular and minute data you have, the better you can make predictions and get insights. A lot of countries, particularly, in Africa, South Asia, Latin America, East Europe etc. do not have robust statistical offices established. India has an amazing statistical office which is well commended across the world.
One of the examples of the power of data is in a study by Hal Varian where he tried to predict gun violence in the US by analysing Google trends. He found out in which parts of the US and in what frequency are people searching- “How can I buy a gun?” , “Where to buy a gun from?” “Which type of gun is good?” and used this data to predict gun violence that may happen in certain areas.
Similarly, in a project that my colleague had done in the World Bank, they predicted and marked the accident prone areas in Kenya through data on traffic and speeding patterns. There’s also a paper written by Professor Joshua from UC Berkeley which uses satellite data in India. His paper tried to predict certain poverty related variables through the degree of illumination and the degree of thermal activity in a given district. There are a lot of novel and cool ways where you can predict and understand what's happening within an economy. This is also a reason why in the last 4- 5 years, there has been a great increase in the number of high frequency surveys. In one of the projects that I had worked on in Bangladesh with the World Bank related to education, we had conducted surveys in six month intervals. All these examples go on to show how powerful data can be, and I think the World Bank and IMF are both pushing for treating data as more of a public good and investing in data capacity within statistical offices, and creating the intellectual manpower to be able to analyze and process these kinds of data.



Q. Given the density effect of the Poverty Line, i.e., the crowding of households around the poverty line that sometimes turns into a chronic issue in developing countries. How do you think public schemes like PDS help in alleviating those people out of that particular segment of high density, say in a country like India?

Answer:
This question has been a part of policy circles and policy debates for a long time and these kinds of poverty line cut-offs apply everywhere, for instance, the cutoffs for getting into colleges such as LSR or SRCC which go as high as 98.25% and deny admission to a students scoring say 98%, despite them not being intellectually weaker than those scoring higher than the cutoff. However, what is very specific to the poverty line is that these types of poverty lines are very hard to move politically. So, if you establish a poverty line for the next 15, 20, 25 years, nothing is going to happen to that poverty line. It will stick in that one place and it will arbitrarily divide the society.
We also need to consider how resource constrained governments are. At this stage, I think more than addressing what we can do for people who are just below the margin, we still have to think about people who are making the cut off and being categorized as below the poverty line. We need to think whether we are doing enough for them, or is there a wastage of resources in that? For example, in the PDS system, if we are allocating an arbitrary amount - X tons of grains - to like X millions of people, the debate should focus more on ensuring there is no wastage. Right now, there is so much wastage especially in the PDS system! Once we're able to have a Pareto optimal outcome in that sense, then we can think about the higher-order question, for then we will be able to effectively target the needy and not waste resources.

Now considering the people who are just above that cut off, I believe that this very approach needs to be followed, notwithstanding that, in my belief, government welfare schemes are actually very helpful. I'm a big proponent of large public welfare schemes, for I think it's essential for a country like ours that rice, wheat and kerosene are provided at extremely cheap rates. This is because, as a country with a huge population to take care of, only when we meet their basic needs can they think about higher order needs like education or health, or trying to have a higher dimensionality to how they perceive themselves as human beings? So, if your stomach is not filled, you are not able to think about higher order things that a lot of us take for granted.

BOOK REVIEWS

SENSE AND SOLIDARITY: JHOLAWALA ECONOMICS FOR EVERYONE

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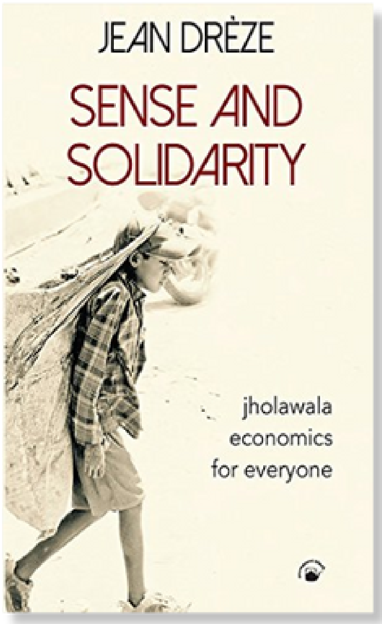

"Sense And Solidarity" by Jean Drèze is a refreshing and thought-provoking book that challenges the conventional economic theories and practices that have failed to address poverty and inequality. The book is a collection of essays, written over two decades, that offer an alternative approach rooted in solidarity with the poor and marginalised.

Drèze's writing is accessible and engaging, using anecdotes and case studies to illustrate the principles of "jholawala economics." In one of the essays, Drèze shares his experience of working with a group of volunteers in a remote village in Rajasthan, India. He recounts how some of the volunteers joined the group for their selfish motives, such as adding it to their CV or finding a romantic partner. However, as time went on, they became more involved in the community, and their commitment to the cause grew stronger. This anecdote highlights the importance of genuine solidarity and how it can transform individual motivations into collective action for the betterment of society.

He further contends that the effectiveness of public services hinges on education and knowledge of citizens' rights and that a strong educational system is essential for promoting widespread education. He underscores the crucial role of women's empowerment, as societies with informed and active mothers, teachers, voters, and leaders tend to be more receptive to education. Drèze also emphasises citizen participation as a vital aspect of economic policy-making. He advocates for a participatory development approach that involves people in both the design and implementation of policies, thereby creating more sustainable and inclusive policies that address the needs of disadvantaged groups.

Drèze challenges the notion that impoverished parents do not value their children's education. He cites the PROBE survey, which indicates that a significant majority of parents, including those from underprivileged backgrounds, prioritise their children's education. This finding highlights the critical role of education in reducing poverty and promoting human development. The survey revealed that 98% of respondents believed that it was essential for boys to attend school, contradicting the assumption that parents in poverty-stricken areas do not value education.

In addition, the book addresses the problem of hunger and malnutrition, which Drèze sees as a hindrance to building a decent society. He stresses the importance of robust social protection measures, such as the Public Distribution System (PDS) in India, which offers food and vital goods to millions of individuals. Nonetheless, Drèze acknowledges the drawbacks of such schemes and advocates for a more precise allocation of resources to those who are most in need.

Despite his well-reasoned arguments, Drèze's proposals have frequently encountered opposition from those who label him as a "jholawala economist," dismissing his ideas as unrealistic and idealistic. For example, some of Drèze's critics, such as Surjit Bhalla, have resorted to name-calling, calling him and his colleagues "liars," "arrogant," "ignorant," and "brazen." Similarly, Swapan Dasgupta and Tavleen Singh have used the "jholawala economist" label to discredit Drèze and his colleagues, insinuating that economists who carry a jhola instead of a corporate briefcase are somehow indecent or misguided. However, he contends that this label misrepresents his approach and urges economists to prioritise human well-being over market forces. Drèze posits that an economy based on solidarity and social justice can be more equitable and sustainable than one focused solely on profit and competition.

Overall, "Sense And Solidarity" is a must-read for anyone interested in poverty reduction, human development, and social justice. Drèze's essays are accessible and well-written, making complex economic concepts easy to understand for readers of all backgrounds. The book provides a hopeful vision for a more just and equitable society, challenging the status quo with compelling arguments and evidence through “activism-driven” economics.

END THIS DEPRESSION NOW!

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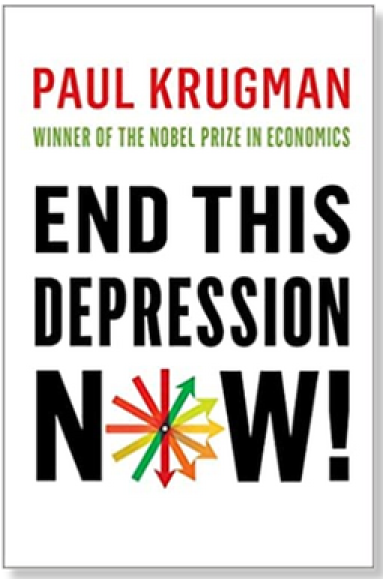

This insightful work in Economics has been authored by the Nobel Prize winner Paul Krugman. It was published in April 2012. The author highlights ‘The Great Recession’ of 2007 and the economic repercussions that followed. The author highlights the USA's situation, which had experienced two successive recessions from 1979 to 1982. Though its GDP dropped sharply at the time, the economy gradually recovered. In all such ups and downs across the globe, what bothers the author is the inaction on the part of the government and the economists. He cites John Maynard Keynes when he says that in the long run all of us are dead, so action should be taken in the short run.

The author also supports the idea of Keynes’ analogy of ‘magneto trouble’. The term means that it is not always necessary that there has to be the presence of some big reasons for big problems. Even a minor error is capable of creating huge disorders, just as a small technical problem can make a machine go haywire. So, sometimes, solving such diminutives can burgeon the growth rate of our economy. After the depression, while most economists were of the view that the U.S. must spend less, cut its costs and pay its debt, Krugman strongly disagreed. He believed that the macroeconomic cost of spending less exacerbates the situation. So, there must be someone who spends more, that ‘someone’ being the government.

Whilst cutting debt is important, depressions and recessions are the worst time to do so. It not only decreases the money income of the people, but also induces large unemployment and poor consumption habits. Ergo, the correct time to cut debt is not when the economy has already faced a lot, rather it should be done when at the time of full employment, when the economy is thriving. So, the author calls for expansionary policies that could ameliorate the situation. To strengthen his point he gives the example of World War II. At the time of the war, the increased military spending by the government increased the income of the people, also leading to an increase in spending on them. This is how the economy made a bolt for stable growth from the shocks of The Great Depression.

The author is quite correct when he says that the tools of learning that we have had after experiencing some of the world's greatest depressions and recessions to combat such things in the future were ignored by the world governments in the period of 2007-2009. While we cannot dissent from the suggestion given by him that the times of slumps call for stimulus relief packages by the governments from around the globe, one can also not deny the flaw in his argument that he tends to blame the government for spending less than the requisite amount when the government spending does not seem to suffice.