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STRIDES - A STUDENTS' JOURNAL OF SHRI RAM COLLEGE OF COMMERCE

ISSN 2581-4931 (Print)

Shri Ram College of Commerce is well known for its academic excellence and dedicated approach towards dissemination of knowledge in the academic world. The college appreciates the role of research in education and is committed to developing an inclination towards research in both faculty and students. In this pursuit, the college has taken the initiative to launch a new Journal named 'Strides - A Students' Journal of Shri Ram College of Commerce'.

ABOUT THE JOURNAL

It is a double blind reviewed bi-annual Journal launched exclusively to encourage students to pursue research on the contemporary topics and issues in the area of commerce, economics, management, governance, polices etc. The journal provides an opportunity to the students and faculty of Shri Ram College of Commerce to publish their academic research work.

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Abstract

The abstract should capture the essence of the article and entice the reader. It should typically be of 100 -150 words, and in Italics.

Font type and word limit

The research paper is to be typed on A-4 size paper with single line spacing. The complete length of the paper should not exceed 5000 words including endnotes and references. The font size should be 12 and font style should be Times New Roman.

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Declaration

As part of the submission process, the student and mentor needs to declare that they are submitting original work for first publication in the Journal and that their work is not being considered for publication elsewhere and has not already been published elsewhere. Again, the paper should not have been presented in any seminar or conference. The scanned copy of duly signed declaration by the students and their respective mentors has to be emailed along with the research paper.

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Principal's Message

It is with immense satisfaction that I introduce Volume 7, Issue 2 of Strides, our prestigious student research journal. Since its inception, Strides has become a hallmark of academic excellence at Shri Ram College of Commerce (SRCC), offering our undergraduate scholars a unique platform to demonstrate their research acumen, guided by the insightful mentorship of our esteemed faculty. I am reminded of the Journal's launch by Shri Prakash Javadekar, the Hon'ble Union Minister of Human Resource Development in the year 2017, which laid the foundation for the high standards we continue to uphold.

At SRCC, we view research not merely as an academic requirement but as a crucial instrument that hones the analytical and problem-solving capacities of our students, equipping them with the intellectual tools to engage with and address pressing real-world challenges. Through this Journal, our students contribute to the broader academic discourse, delving into topics of contemporary relevance across a spectrum of disciplines.

This issue, Volume 7, Issue 2, exemplifies the breadth of intellectual curiosity that defines our student body. From critical analyses in economics and governance to innovative explorations in sustainability and cultural studies, this edition features thought-provoking papers such as "Understanding Wheat Price Dynamics," "Analysis of Labour Productivity across Developing and Developed Economies," "An Openness to Protectionism: Varying Lenses," "Fintech Startups & Conventional Banks Allies or Contenders," "Comparing Government Policies in Manufacturing in India and China," and "The Advent of Capitalism in India." Each contribution has undergone a rigorous review process, ensuring that the journal continues to reflect the academic rigour that SRCC is known for.

I extend my heartfelt congratulations to Mr. Saurabh Gupta, Editor of Strides, and to all the students whose exceptional work is featured in this edition. Their scholarly contributions embody the spirit of excellence that defines our institution. It is my hope that more students will embrace this opportunity to contribute to future volumes and further enrich the academic landscape of SRCC.

Best wishes to all our students for continued success in research and all their future endeavours!

Prof. Simrit Kaur
Principal

Founding Editor

Shri Ram College of Commerce is well known for its academic excellence and dedicated approach towards dissemination of knowledge in the academic world. The college appreciates the role of research in education and is committed to developing an inclination towards research in both faculty and students. In this pursuit, the college has taken the initiative to launch a new Journal named 'Strides - A Students' Journal of Shri Ram College of Commerce' to encourage students to pursue research under the guidance of the faculty of Shri Ram College of Commerce.

It is a bi-annual Journal launched exclusively to publish academic research papers and articles by the students on contemporary topics and issues in the area of commerce, economics, management, governance, policies etc.

In order to maintain the high standards of publication, COPE (Committee On Publication Ethics) has been constituted. The COPE shall be the apex authority to take all the decisions related to the publication of research papers and articles in Strides. The decision of COPE shall be final and binding.

To maintain the high academic standards, academic ethics and academic integrity, a rigorous process of double blind review of research papers is followed along with screening of plagiarism of each manuscript received by the COPE for publication. The research work published in Strides is original and not published or presented at any other public forum.

The foundation issue of the Journal "Strides - A Students' Journal of Shri Ram College of Commerce, Volume 1, Issue 1, 2016-17" was successfully released on 91st Annual Day of SRCC held on 13th April, 2017 by Shri Prakash Javadekar, Honb'le Union Minister of Human Resource Development, Government of India.

The successive Issues of 'Strides - A Students' Journal of Shri Ram College of Commerce' shall be bi-annually released.

I congratulate all the students whose research papers are published in this Issue of Strides and express my sincere thanks to their mentors and referees.

Dr. Santosh Kumari

Founding Editor

Editor's Message

Greetings!

It is with great pleasure that I present to you Volume 7, Issue 2 of Strides, the student-led journal of Shri Ram College of Commerce. Strides remains a beacon of academic achievement, offering an avenue for our talented students to explore complex issues within the domains of commerce, economics, and related fields through their insightful research and scholarly articles.

This edition brings forth a collection of work that highlights the spirit of inquiry and intellectual depth that defines our institution. Each piece in this issue reflects the diverse academic pursuits of our student community, delving into topics that range from cutting-edge business strategies and economic policies to shifts in consumer behaviour and societal trends. Our contributors have once again demonstrated their ability to present nuanced perspectives that are not only thought-provoking but also rooted in thorough analysis.

In a world marked by constant change and growing interconnectivity, it is essential to cultivate a culture of critical thinking and informed dialogue. Through Strides, we aim to capture the essence of these transformations, offering our readers a blend of forward-thinking ideas and foundational knowledge that bridges theory with practice.

I would like to extend my sincere gratitude to everyone who contributed to the successful release of this edition—the dedicated editorial team, faculty mentors for their steadfast guidance, and, above all, our student authors for their hard work and dedication. Your contributions continue to enhance the stature of Strides as a journal of distinction and excellence.

As you peruse through the pages of this issue, I hope you find inspiration and fresh perspectives that spark your own academic pursuits. Let's continue to embark on this journey of discovery, push the boundaries of knowledge, and take confident strides toward the future.

Saurabh Gupta
Editor

STRIDES-A STUDENTS' JOURNAL OF SHRI RAM COLLEGE OF COMMERCE

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RESEARCH PAPERS

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Understanding Wheat Price Dynamics Across States

Abstract

India has not only different soils but also variations in the climatic conditions of the country, and both factors favour a wide range of crop production. High soil fertility of the northern plains adds to the national food security, and the surplus allows the government keeping some buffer stocks of wheat. Such over-supply usually leads to excess demand, which is called dumping. The government offers a lot of economic support for these farmers, such as fertilisers and pesticides, including capital investment in machinery. It is in this respect that the study considers economies where the final market sales are little affected by the government through direct procurement using the MSP framework. This is much limited to the northern region trend compared to other parts of the country where government support decreases and reduces to just framing of laws and regulations for free and fair trade.

This, however, does not significantly affect the earnings of farmers, as the most liberal markets have recorded the highest wholesale per quintal price for the crop. While digging deep into understanding whether these regional economies are cointegrated, we find out the government supported economies are cointegrated, but more liberal and market-oriented markets were not.

Keywords: *Cointegration, Crop Production, Government Support, Soil & Climate Variations*

Introduction

Being the sector that employs 45.76% of the working population and contributes 15% to Gross Value Added, the agricultural sector in India is viewed as very critical for economic development[1]. It operates under various constraints that are directly affecting the livelihoods of the working population. Over the decades, both the central and state governments have taken many steps to ensure productivity improvements. These northern regions are the largest wheat producers but usually quote their produce at prices lower than average. Quoting the highest prices for their produce are states in the southern region, which do not have the opportunity to benefit from the active government support by MSP. This study was therefore conducted to ascertain if the economies of these areas cluster as a result of influencing each other's prices.

Market Structure

Market structure, which is conventionally defined by a transactional relationship of a supplier and a buyer, faces numerous economic transitions as government policies dictate prices and other major dynamics of consumption. The paper carefully analyses three major market structures, emphasising how major stakeholders, namely buyers and sellers, interact in facilitating price determination processes. The first structure of the economy, that relates to the welfare of farmers, results in a highly regulated environment which practically drives away all possible influences of the predictive indicators of an economy. This structure involves very pervasive government intervention and support in all dimensions, beginning from procurement for farm inputs to the announcement of MSP and government procurement at a massive level. This stabilises the price for the farmers and hence it will be easy for them to change their produce into cash after production. Punjab state in India is one of those that has an economic framework and has been using this

[1] 09-12-2023, Munda A., Lok Sabha Starred Question No. 288 – Answer, Page No. 1-2

economic advantage by running rigid policies of the government.

Moving from the schemed structure, we have another fundamental economic framework of the agricultural sector that allows the price set up to be ascertained using the market forces. The first phase involves government support in the form of subsidised inputs; however, over time, the market starts opening up and private players become the major buyers of agricultural produce. This kind of economic framework is common in the northern belt of the country except for Punjab and it actually reflects a less tight regulatory environment in which market prices are determined through the law of supply and demand. These economic structures help in understanding the role of government intervention in agricultural markets, and their overall effect on price stability and farmers' welfare. Above all, it continues to bring a revelation over the meaning of the balance between regulation and market freedom for optimum results within the agricultural sector.

The agricultural economies of Kerala and Karnataka are examples of such systems where the government helps farmers to sustain their livelihood in a low-price market. This support acts to keep the cost of the farmer's production low and secures a safety net under them. Yet another economic model operates under a laissez-faire context, in which the government does not provide direct support in terms of input supply or product procurement. Rather, the government is limited to regulation in the form of a watchdog over free and fair trade through enforcement of rules and regulations.

Market Integration

Market integration is necessary for proper market structure, as it carries price signals both spatially and vertically. If markets are well integrated, this sends correct price signals, resources can be allocated in the right manner with a view to the right price signals being sent. Poorly

integrated markets cause distorted price signals and resource misallocation. Spatial price variations result from several factors: lack of transport infrastructure, access to market information, and government-imposed measures that prevent the smooth running of markets in agricultural commodities. Put differently, the price of a commodity differs across markets because of variations in production and consumption centres.

Therefore, the spread and correlation between wholesale prices of a

commodity in different markets are key indicators of the degree of efficiency in the marketing system. The price inter-relationship of price movements in two or more markets is very much influenced by the nature and degree of competition. Study of these interrelationships gives deep insight into the overall efficiency of the marketing system. There are appropriate statistical tools that we use to ascertain and study underlying factors responsible for such disparity in India between states within regions.

Literature Review

Recent trends in the liberalisation of food markets, combined with the recent advances in time series econometrics, have greatly expanded recent literature on food market integration across a range of countries, such as Slade and Gray, 2018, 1995, Dercon, 1995, Alexander and Wyeth, 1994, Faminow and Benson, 1990, Ravallion, 1986 etc. But despite this increasing body of research, empirical assessments on the integration of food markets in India using these advanced techniques remain sparse.

Historically, the predominant methodology for gauging market integration has been to estimate the bivariate correlation coefficient between price changes in different markets. Simple though it may be, this approach came under a great deal of criticism regarding its methodology (Blyn, 1973; Heytens, 1986), mainly on the danger of common periodicity such as agricultural

seasonality, or autocorrelated and heteroscedastic residuals in regressions using nonstationary price data. To resolve these problems, Palaskas and Harriss-White (1993) adopted a technique applied by Engle & Granger (1987), for cointegration testing market integration. Applying the same test on weekly price series of rice, potato, and mustard of three markets in Burdwan district of West Bengal for the period November 1988 to August 1990, they found that most pair prices are cointegrated between Central and Peripheral markets. In India, Jha et al. (1997) used Engle-Granger (1987), Engle-Yoo (1987), and Goletti-Ravallion (Goletti, 1994; Ravallion, 1986) methods in testing binary and multivariate cointegration for integration of rice and wheat. On analysing the monthly wholesale prices for rice and wheat over the period January 1980-December 1990, it was found that each pair of I(1) prices (order of price integration i.e. stationary in their differences) of both rice and wheat were cointegrated. Also, it was observed that the I(1) prices of both crops taken together exhibited a cointegrating

relationship. Such findings helped in concluding that there was high integration of the food markets across India. However, Madhusudan Ghosh (2003) employed Maximum Likelihood (ML) method of cointegration and concluded that the prices of wheat, when considered collectively, exhibit integration; however, they are not pair-wise cointegrated, particularly in the states of Haryana, Punjab, and Rajasthan. Despite the geographical dispersion of regional wheat markets, the analysis demonstrated that these markets are spatially linked in the long run, both within and across state boundaries.

Apart from these, there are other factors as well that exhibit differences in the prices. Subsistence farming greatly influences the produce reaching the mandi or the APMC—when a good part of the farm household's produce is consumed by themselves, no surplus is actually carried to the APMC. According to a report by the NSSO (2013), approximately 50 percent of farming households in India were under subsistence farming. The report therefore recognizes

subsistence farming to be irreplaceably important since its main stakeholders are small-scale and marginalized farmers. "Net production" is variable because of differences in farming style; therefore, the net residual quantity that reaches the APMC becomes the actual surplus intended for urban consumption.

Another factor that influences the pricing of produce is the dumping effect. This effect is whereby farmers are forced to dispose of their farm products in the market at a price below the cost of producing them. This happens more during harvest periods because farmers find it difficult to store their produce for long and, therefore, they are forced to release it in the open market. This is where market prices are reduced by a huge margin due to over-supply of agricultural commodities. Such pressure on the general price level gives rise to minor oscillations in the prices, which turn out to be either slightly higher or lower than the MSP set. In so doing, therefore, this spells out a significance for the market prices of the agricultural produce. Given these considerations, the cointegration of wholesale prices between two states from different regions has not been extensively studied. This study will address this gap in the subsequent sections.

Methodology

For the study that aimed to understand the linkage in price across state economies within the same region, two states from each region were

selected: northern (Uttar Pradesh and Rajasthan), southern (Karnataka and Kerala), western (Gujarat and Maharashtra), and central (Chhattisgarh and Madhya Pradesh). For this, datasets were accessed for all states within the purview from government-recorded per-quintal weekly prices.[2] The time series data was in modal weekly prices and showed reduced variability; the moving average method was adopted to fill in for missing weekly prices.

Technique for Analysing the Data

Co-Integration of State Market Economies:

In combining the price data from two states within each region, the co-integration approach was used in an attempt to identify if there exists any long-run equilibrium between the economies. The use of time series data makes it rather difficult to predict the long-run relationship between the two economies using linear regression; hence, it was considered unsuitable. The test of Granger and Engel (1987) will provide a unique long-run equilibrium for two non-stationary time series. This is because the full transmission of price influences from one market to another is captured[3].

To conduct the analysis, data were transformed to make them stationary in nature. Stationarity means the data-generating process is in equilibrium around a constant mean with constant variance over time.

If the mean was not constant over time and the variance changed, then the series was termed as being non-stationary. ADF test for each of the markets was conducted to establish stationarity, with the null hypothesis of the time-series data being non-stationary, tested at a 5% level of significance, and Akaike Information Criterion (AIC) being used to determine the lag length. If at the level form, time series data could not reject the null hypothesis, then we took out the first difference of the lagged values and accordingly rejected the null hypothesis for all the prices in first differences. It was conducted through the Johansen test, Granger Causality Wald test based on whether it was stationary or non-stationary at level form; in the case of non-stationary data, it was translated to stationary at the first-order difference form.

In effectively integrated markets, prices would be expected to be correlated, allowing for possible differences in transportation charges

[2] "State Wise Wholesale Prices Weekly Analysis", AgMarket, Connecting Farmers to Market, Government of India, *https://www.agmarknet.gov.in/PriceTrends/SA_Week_Pri.aspx*

[3] Team, C. (2023, November 21). Cointegration. Corporate Finance Institute. *https://corporatefinanceinstitute.com/resources/data-science/cointegration/*

and other related factors. It reflects perfect spatial price integration where unity is reflected in the correlation coefficient of prices for a commodity in any pair of markets. The correlation coefficient amounting to 0.90 or more is thought to illustrate a high level of inter-market relationship. The calculated weekly wholesale prices for market pairs chosen for wheat crop were put through to obtain the correlation coefficients.

Results and Analysis

The pairwise correlation table of average weekly wholesale wheat prices across all selected markets demonstrated a high integration among some of the markets belonging to the same region. Such high levels of the correlations between these markets imply a large amount of integration and interdependence. Forces that lead to this are the move of wheat among markets driven by price differentials that result in synchronised price changes across states. Further reinforcement of this integration occurs due to competitive conditions and arbitrage opportunities. Efficient transportation networks and rapid information dissemination reduce the disparities in prices. Similarity of the common influences such as the climatic conditions and government policies towards the wheat market prices in each state is uniform. Supply and demand dynamics in the regions and periods of harvesting in these regions are also synchronised, thus influencing prices in these states similarly, given that wheat arrive at the market at the same time.

Pairwise Correlations Coefficient

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Chattisgarh	1.000							
(2) MadhyaPradesh	0.422	1.000						
(3) Karnataka	0.060	0.044	1.000					
(4) Kerala	0.174	0.170	0.510	1.000				
(5) Gujarat	0.436	0.867	0.037	0.246	1.000			
(6) Maharashtra	0.253	0.406	0.276	0.300	0.473	1.000		
(7) Rajasthan	0.461	0.904	0.067	0.238	0.874	0.537	1.000	
(8) UttarPradesh	0.392	0.731	-0.054	-0.003	0.539	0.296	0.731	1.000

The ADF test results show the p values for the level form of various markets, indicating whether they are stationary or not. Markets with p-values below the 0.05, such as Kerala, Karnataka, Chhattisgarh, and Maharashtra, are considered stationary at their level forms which rejects the null hypothesis of a unit root. These markets do not need differencing to become stationary. Markets like Rajasthan, Uttar Pradesh, Madhya Pradesh, and Gujarat have p-values above 0.05 which indicates non stationarity. To address this, these markets were

transformed to their difference forms to achieve stationarity so as to ensure their time series data could be used appropriately in further analyses.

ADF Test for order of integration (p-values)

Market	Level
Kerala	0.0000
Karnataka	0.0001
Rajasthan	0.8852
Uttar Pradesh	0.5448
Chhattisgarh	0.0000
Madhya Pradesh	0.5490
Gujarat	0.9822
Maharashtra	0.0000

The results, from Granger causality Wald test, show a significant causal relationship from Karnataka to Kerala, with a chi squared value of 8.595 and a p value of 0.014. This suggests that past values of Karnataka's market can predict Kerala's market movements. But Kerala does not Granger cause Karnataka, as shown by a chi squared value of 0.164 and a p value of 0.921 which implies no significant causal effect in the reverse direction. Additionally, the tests reveal no overall causality from all markets combined to either Kerala or Karnataka, as the p values in these cases are not significant. These indicate a unidirectional influence from Karnataka to Kerala.

Granger causality Wald tests

Equation	Excluded	chi2	df	Prob>Chi2
Kerala	Karnataka	8.595	2	0.014
Kerala	ALL	8.595	2	0.014
Karnataka	Kerala	0.164	2	0.921
Karnataka	ALL	0.164	2	0.921

Northern Region

The results of Johansen cointegration tests for the wheat prices in Rajasthan and Uttar Pradesh, after data transformation into its

difference form for stationarity results, are given as follows. Using the Akaike Information Criterion (AIC), one lag was taken as optimal for the differenced data. The Johansen test with this lag structure ran to give the test output, which helps infer that both the trace statistic and maximum eigenvalue statistic at rank zero exceed their respective critical values at the 5% significance level. Precisely, the value of the trace statistic is 88.4652 at rank zero, exceeding the critical value of 15.41, while the maximum statistic is equal to 62.9431, also exceeding its critical value of 14.07. These results suggest at least one cointegrating relationship between the wheat prices of Rajasthan and Uttar Pradesh. Cointegration suggests the existence of a long-term equilibrium relationship between the wheat prices in both states, which indicates that though prices may diverge at the short run, they tend to move in the same direction over the long run.

Johansen tests for cointegration

Trend: constant — Number of obs = 93
Sample: 1960w4 - 1961w44 — Lags = 2

maximum rank	parms	LL	eigenvalue	trace statistic	5% critical value
0	6	-964.79657	.	88.4652	15.41
1	9	-933.325	0.49176	25.5221	3.76
2	10	-920.56395	0.24000		

maximum rank	parms	LL	eigenvalue	max statistic	5% critical value
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Western & Central Region

The results provide some of the insights concerning interdependencies with the considered study states on the result of Granger causality test for wheat prices of Gujarat, Maharashtra, Chhattisgarh, and Madhya Pradesh. This shows that within the Western region, after making it a stationary series, one can observe that Gujarat does not Granger cause the wheat prices of Maharashtra. The chi squared value comes to be 1.359 and the p value equals 0.507. Similarly, Maharashtra does not Granger cause Gujarat with a chi-squared value of 1.935 and a p-value of 0.380. The p-values for all these is greater than 0.05; hence it implies that an important causative relationship between the wheat prices in Gujarat and Maharashtra could not be established. At the centre, the wheat

prices in Chhattisgarh also do not Granger-cause differenced wheat prices of MP (diff_MP) as its chi-squared value is 1.959 with a p-value of 0.376. Differenced wheat prices of MP do not Granger-cause the price of wheat in Chhattisgarh as well, as its chi-squared value is 5.368 and its p-value is 0.068, which is again close but significantly higher than the conventional threshold of 0.05. This indicates evidence of Granger causality but is weak and not statistically significant.

Granger causality Wald tests (West)

Equation	Excluded	chi2	df	Prob>Chi2
diff_Gujarat	Maharashtra	1.359	2	0.507
diff_Gujarat	ALL	1.359	2	0.507
Maharashtra	diff_Gujarat	1.935	2	0.380
Maharashtra	ALL	1.935	2	0.380

Granger causality Wald tests (Central)

Equation	Excluded	chi2	df	Prob>Chi2
Chattisgarh	diff_MP	1.959	2	0.376
Chattisgarh	ALL	1.959	2	0.376
diff_MP	Chattisgarh	5.368	2	0.068
diff_MP	ALL	5.368	2	0.068

This paper has examined the cointegration in Indian wholesale wheat markets. Findings revealed that the wholesale market in the north region is cointegrated. There is another aspect that needs to be brought up: Kerala behaves very differently from all the other states. The maximum and minimum of the divergence are high; this is only attributed to the non-production of wheat in the state. On the other hand, high production regions, the level of price as well as the variation was, in general, lower compared to the north. In the monthly price indices, there is a clear seasonality that suggests volatility is hugely

influenced by market arrivals, i.e. post-crop harvest. Some of the factors for this price divide among prices in the south and the north are:

1. Wheat sowing area:

In terms of wheat cultivation, the southern region, particularly Karnataka, has witnessed a relatively low sowing area. Specifically, the allocated land for wheat cultivation by farmers in Karnataka amounts to 162,000 hectares, which is significantly lower when compared to the wheat sowing areas in northern states. This discrepancy sheds light on the scarcity of wheat supply in the southern region, leading to higher wheat prices in comparison to other regions. This phenomenon is particularly evident in the case of Karnataka.

2. Climatic differences:

Wheat crops have wide adaptability. It is not limited to just tropical and subtropical zones, but can also be grown in temperate regions and even in the cold tracts of the far north, beyond the 60-degree north altitude. Wheat has the ability to withstand harsh cold and snow, and when warm weather arrives in spring, it resumes its growth. It can be cultivated at various elevations, ranging from sea level to as high as 3300 metres. The quality of wheat is greatly influenced by the weather conditions it experiences during its growing period. The best wheat crops are typically found in areas that have a favourable combination of cool, moist weather for the majority of the growth phase, followed by a dry and warm period that allows the grain to ripen properly. For ideal germination, wheat seeds prefer a temperature range of 20-25°C, although they can still germinate within a range of 3.5 to 35°C. However, excessive rainfall immediately after sowing can hinder germination and promote seedling blight. Therefore, areas with warm and damp climates are not well-suited for wheat cultivation. During the heading and flowering stages of wheat, extreme temperatures (both high and low) as well as drought conditions can be detrimental to the crop. Rust attacks are more likely to occur in cloudy weather, characterised by high humidity and low temperatures. At the time of ripening, wheat plants thrive in an optimum average temperature of around 14-15°C. The temperature conditions during rainfall are crucial for the final yield. Temperatures above 25°C during this period tend to negatively impact grain weight. High temperatures lead to increased transpiration, resulting in a loss of energy for the plants and subsequently, poorer grain formation and lower yields.

3. Average land size holding:

Farmers are classified into different categories based on the farm land size owned by them which is typically measured in hectares. In states like Karnataka and Kerala, households engaged in agricultural activities generally have land holdings below 2.00 hectares. To be more precise, the average land holding size in Karnataka is 1.35 hectares[4], while in Kerala, it is 0.18 hectares[5]. Consequently, the presence of marginal and small farmers dominates the agricultural sector in these regions. In contrast, the northern region of the country, with a few exceptions, tends to have a higher land holding size. This is primarily due to the prevalence of large-scale farmers in those areas.

Sl. No.	Category	Size-Class
1	Marginal	Below 1.00 hectare
2	Small	1.00-2.00 hectares
3	Semi-Medium	2.00-4.00 hectares
4	Medium	4.00-10.00 hectares
5	Large	10.00 hectares and above

4. Marketed surplus:

The southern states usually have a smaller marketed surplus compared to the northern states. This is mainly because there is a significant number of marginal farmers in the south, which results in higher levels of self-consumption. Due to their limited land holdings and the need for immediate cash for the next crop and other expenses, small and marginal farmers in the south face challenges in accessing institutional credit. Consequently, they are compelled to sell their produce right after harvest. Moreso, since a small percentage of total produce is available in the market for sale, which results in driving the prices of wheat up due to limited supply.

5. Irrigational facilities:

The yield structure of agricultural crops has been related to the

[4] The Hindu Bureau. (2023, December 19). *Karnataka CM meets PM, seeks ₹18,177.44 cr drought relief from Centre.*
[5] Baiju, Nanda (2021). *Economic Analysis of Rice Based Integrated Market System Models in Kuttanad*

irrigation coverage in the respective states. When it comes to irrigation intensity, the northern states have been fortunate, with Punjab leading at an impressive 99.81 percent of net irrigated area to net area sown for the year 2018-19. Following closely behind are Haryana at 90.89 percent and Uttar Pradesh at 87.03 percent. On the other hand, the southern states, as a whole, have lower irrigation coverage compared to the national average. However, within the southern region, Tamil Nadu has the highest coverage under irrigation at approximately 55.98 percent, with Andhra Pradesh not far behind at around 46.22 percent. Karnataka, unfortunately, lags behind with a relatively low coverage of irrigated area at 37.81 percent, while Kerala holds the unfortunate distinction of being the least irrigated state in the South, with a meagre coverage of only 19.89 percent. These figures are abysmally low as compared to the national average of 51.35 per cent.[6]

[6] Irrigation schemes. (2022, March 21). *https://pib.gov.in/PressReleseDetailm.aspx?PRID=1807860*

Conclusion

The study brings out the dynamic market structures in the agricultural economy by underlining the effects of government policies and market forces on price setting mechanisms. Three different economic frameworks: the highly regulated system as found in Punjab, the semi-regulated structure seen in the northern belt, exclusive of Punjab, and a laissez-faire model as followed in states like Kerala and Karnataka. Both reflect different levels of government intervention and market freedom, thus showing disparity in price stability and farmers' welfare. The prime revelation of the findings is that without market integration, there could never be any efficient allocation of resources and proper signalling of prices. Properly integrated markets buffer spatial price differentials and increase the efficiency of the marketing system as a whole. Empirical evidence from the study thus indicates high significance of wholesale price cointegration in the northern region, confirming the benefits of market liberalisation against government intervention. The conclusion that appears from the empirical analysis is: with reduced government intervention and encouragement to the private traders to participate, the objectives of price policy may be achieved. Regional food security shall be ensured through this approach, stabilising foodgrain prices via natural balancing of demand and supply in the regions. And as a result, the burden of unnecessary inter-regional restrictions on foodgrain trade would be lessened in a manner that provides for optimal market performance with minimum administrative costs without a corresponding sacrifice in the efficiency of the markets.

Policy Implications

Our study, based on empirical findings, thus justifies the requirement for liberalisation of foodgrain markets and minimization of government intervention in the food economy. This is because the objectives of price policy can be achieved only by keeping government intervention to the minimum level and allowing the maximum contribution of private traders in the integrated markets. It is the market forces that will automatically ensure food security at the regional level and region-wide stability of foodgrain prices in integrated markets by regulating demand and supply between regions. Inter regional foodgrain trade should, therefore, not be subject to any avoidable restrictions to enable such markets to perform this function efficiently. The government could reduce its intervention to this extent if there was a need to lower administrative costs without an appreciable decline in the functioning of the market. The integration of food markets supports regional food security by ensuring a balance among food deficit, food surplus, and non-food cash crop producing regions. But where there is no market integration the local scarcities of food remain as the markets in deficit fail to send the right signals to surplus markets to attract supplies of foodgrains. It, therefore, also points towards policy recommendations such as the use of dynamic pricing models that to avail real time data analytics to represent current conditions of supply and demand with considerably more accuracy, which can reduce arbitrage and promote market efficiency. Creating regional trade hubs with logistics and storage facilities will also further work at reducing the post-harvest losses while increasing market access. However, in other regions, the results reveal that there is yet scope for perfect integration of markets to stabilise prices of wheat. It would create a favourable and healthy competitive environment in the markets. This may easily be achieved by strengthening services like market information and intelligence systems, storage facilities, and market infrastructural facilities.

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Analysis of Labour Productivity across Developing and Developed Economies

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Abstract

For a nation to prosper, it is important that the productivity of labour is improved over time. The paper aims to study the variables which have a causal relationship with productivity. We first list down the factors which affect productivity. It incorporates capital to labour ratios, human capital, financial development, openness, technology and inflation among other determinants of productivity. We have studied a mix of developing and developed countries of the Asia-Pacific region over the period of 1980 to 2019. The results of the analysis are then studied for the developed and developing countries separately. We have then tried to explain the empirical outcomes and check whether they actually align with the theory.

Introduction

The composition of world GDP is undergoing a structural shift with new emerging countries showing tremendous levels of growth and productivity.

Increasing input productivity is a principal approach to boost growth, therefore it's critical to look at the elements that have contributed to this rise in productivity and, consequently, to these economies' overall growth.

The IMF divides all of the world's nations into two categories: the developed and the developing countries, based on their respective levels of development.

In our paper, we study the Asia Pacific region. India and Indonesia are two of the major low income countries in this region, and Malaysia and Thailand are two important medium income countries. Together, these four economies form the developing countries of our sample. On the other hand, Japan, Singapore, South Korea, and Australia are chosen to be the developed countries in our research.

The aim of our study is to analyse the factors affecting labour productivity and verifying their correlation with productivity using regression analysis. We want to quantify the impact of various factors affecting productivity in order to provide policy recommendations to the stakeholders to further improve productivity. We have also tried to explain the cause and effect relationship between variables and productivity. For instance, trade openness in the developing countries in 1991 allowed FDI inflow in the respective economies and exposed the local producers to global competition, thus leading to innovations in products and technology.

While the productivity levels of the growing Asia-Pacific economies have increased significantly and are now on par with those of the developed Asia-Pacific region and other areas of the world, a sizable portion of the economies still consist of a relatively unproductive agriculture sector. Compared to industrialized countries, these economies rely heavily on the agriculture sector, which employs a sizable share of the labour force and contributes significantly to their GDP. Thus, it becomes essential to look at the factors influencing production in industrialized and emerging nations differently.

Thus, the factors influencing labour productivity in developing and developed Asia-Pacific economies are contrasted in this study. A broad range of variables, such as capital to labour ratio, human capital, technology, financial development, institutional quality, and inflation, are taken into consideration as potential drivers of productivity.

Literature Review

The paper by Loko and Diouf (2009) emphasizes key determinants of productivity growth, including macroeconomic stability, trade openness, human capital development, and institutional quality. Their study highlights the impact of inflation and government size on productivity growth, with mixed findings on the relationship between government spending and productivity. Trade openness and FDI play crucial roles in enhancing productivity, while the transition from agriculture to higher-productivity sectors and female labour participation are also significant factors.

Fajnzylber and Lederman's study on 18 Latin America and the Caribbean countries from 1950-1995 finds that total factor productivity (TFP) growth was significantly faster during reform periods compared to non-reform periods. They show that the contribution of TFP to GDP growth was on average negative or insignificant during "no reform" periods, but became positive and substantial during reform episodes. The authors note that while the impact of reforms on TFP growth was positive in some countries, the results were heterogeneous, likely due to differences in the specific reform policies implemented across the region.

The study by Belorgey et al. (2006) examines the determinants of labour productivity growth and levels across a panel of countries. The authors find that changes in the employment rate have a negative effect on productivity growth, supporting the hypothesis of diminishing returns. They further show that public infrastructure, human capital, financial development, and stable macroeconomic conditions are important determinants of labour productivity.

Hall and Jones (1999) emphasize that differences in productivity, rather than physical capital or educational attainment, are the primary driver of variations in output per worker across countries. They find that a one-unit increase in their measure of social infrastructure leads to a 5.14\% difference in output per worker. The study suggests that differences in social infrastructure can explain a significant portion of the variation in long-run economic performance globally. The research underscores the critical role of social infrastructure in promoting economic productivity and highlights the importance of understanding institutional determinants of productivity differences among nations.

Facts and Trends of Cross-Country Labour Productivity over the Years

Although the emerging economies, in particular, India, and Indonesia, have shown remarkable growth since the middle of the 1980s and have grown to become some of the largest economies in both Asia and the world, the developed Asia-Pacific economies still make up a significant

portion of the global GDP. Additionally, the per capita income in these economies varies, which makes them a good sample for the study.

Whereas the established economies of the Asia-Pacific region had started their major economic reform processes in the 1960s and 1970s and finished them by the start of the 1980s, the emerging and developing economies began theirs in 1980 and later. For instance, early in the 1980s, programs for unilateral trade liberalization were introduced in Malaysia, Indonesia, and Thailand, marking the start of their economic reforms. On the other hand, the economies of South Asia—India, Pakistan, and Bangladesh—started implementing significant liberalization measures in the early 1990s.

The Asia-Pacific region's developed and emerging economies are at varying levels of their respective national technical advancements. For example, although R&D spending makes up 2.38% of the GDP on average in affluent nations, it only makes up 0.88% of the GDP in Asia-Pacific's developing economies (WDI, 2022).

Figures 1 and 2 show the trends of output per unit worker of the developed and developing countries over the years 1980-2020.

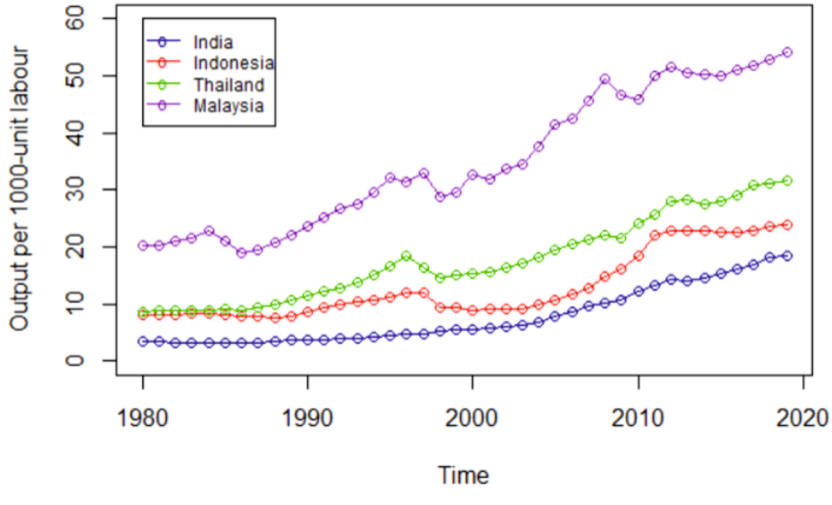

Figure 1: Output per 1000-units of labour in developed countries.

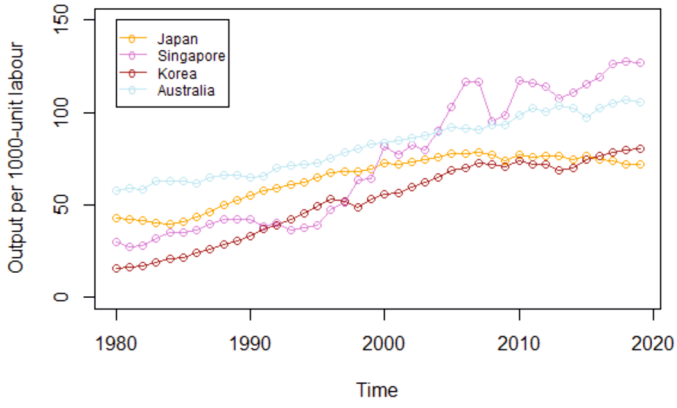

Figure 2: Output per 1000-units of labour in developing countries. SOURCE: Authors' calculations.

It shows that economies of Singapore, Malaysia and Korea have experienced steep rises in labour productivity over the years. Despite beginning at a very low level, Singapore managed to rise to the top in terms of labour productivity. In 1980, Japan was among the top at the beginning, but by 2015, it came to the lowest among the developed countries. This suggests that, in comparison to other economies in the region, its productivity growth between 1980 and 2015 was stagnant. Among the developing countries, we can note that Malaysia held the top spot from the beginning and continued to do so during the study period.

Before moving on to the empirical results, we should also examine the capital to labour ratio of these economies, because it will turn out to be one of the most important determinants of labour productivity. This information is presented in figures 3 and 4.

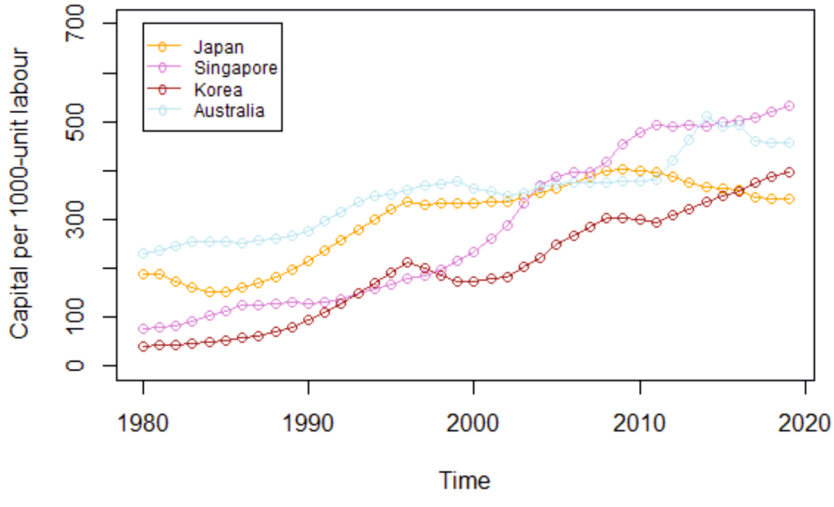

Figure 4: Capital per 1000-units of labour in developing countries. SOURCE: Authors' calculations.

We can immediately observe that both Singapore and Korea have invested a large amount of capital over the years, which can possibly explain their steady increase in labour productivity. The developing countries are at a very low capital to labour ratio, as compared to the developed nations. This may partly be due to the sharp increase in population of developing countries, which pull down the capital-labour ratio, despite equal increments in capital. Despite this, we see that the Indonesia and Thailand, in spite of starting out very low, almost being at the level of India, presently have a capital-labour ratio double than that of India.

Econometric Model

In this paper, we measure labour productivity by output per unit labour input. This may be affected by a large number of economic variables. Here, we focus on eight important ones.

We start with the Cobb-Douglas aggregate production function with constant returns to scale,

$$Y_t = A_t K_t^{\alpha} L_t^{1-\alpha} \tag{1}$$

where, *Yt* is the output in period t, *Kt* is the capital employed in period t, Lt is the "effective labour" employed in period t, and At is the technological parameter, or the total factor productivity, which depends on the knowledge base of the economy. Further, and 1 are the elasticities of output with respect to capital and labour, respectively.

Effective labour Lt has two components, employment and human capital:

$$L_t = N_t H K_t \tag{2}$$

where, Nt is the employment in time t and HKt is an index for human capital, or the skill of the workforce.

Taking logarithms on both sides in equation (1) and using equation (2), we get

$$y_t = \alpha k_t + \log HK_t + \log A_t \tag{3}$$

where, yt is the log of output per unit labour, or productivity of labour, and kt is the log of capital per unit labour.

Thus, from the production function alone, we get an idea how productivity of labour depends upon capital stock per unit labour, human capital and the level of technology.

Several studies look at how the variables in equation (3) affect the labour productivity of different industries and discover that the effects might differ. For example, G. Efthyvoulou (2012) discovers that an increase in capital per unit labour has a greater effect on production sectors relative to services sectors, which could be explained by the fact that the former, such as manufacturing, industry, etc., require more capital than the latter. According to certain research, the influence of human capital varies depending on the sector.

Furthermore, Sondermann (2014) discovers that between 1970 and 2009, R&D spending had a greater effect on the manufacturing sector than on the services sector. This could be the case since the manufacturing sector invests a lot more in research and development (R&D) than the services sector does. As a result, it stands to reason that the manufacturing sector would be more affected by increased R&D activity in terms of productivity.

Apart from this basic model, we also want to look at some other factors that might affect labour productivity.

1. **Fiscal policy variables:** A rise in government size *(G)*, a fiscal indicator, could boost investment and productivity in specific industries by acting as a complement to private company investment in those industries. However, government spending may even have a negative effect on productivity if it is not done effectively and hence discouraging private investment. Therefore, depending on which influence is more prominent, a growth in government size may have both a positive and a negative effect on a sector's production. We measure this directly by the ratio of government expenditure to output.

2. **Trade openness:** Trade openness plays a significant role in determining an economy's level of productivity. One argument is that capital goods imports help the host economy embrace cutting-edge technologies, which boosts productivity. However, export-focused businesses could experience more intense rivalry, which boosts their output.

Trade openness is predicted to increase productivity overall, while the effect may vary depending on the industry. As a result, we also take an economy’s trade openness into account when determining the labour productivity. We capture this by the ratio of the sum of exports and imports to output.

3. **Financial Development:** An economy's ability to channel savings into the economy will improve with financial development, leading to increased capital accumulation and technical advancement, that is, investment starts getting channelised into more productive uses (Levine, 1997). Therefore, more financial development in an economy raises productivity. As a result, we also view financial development as a productivity determinant. In our model, this is captured by the availability of credit in the economy as a percentage of total output.

4. **Financial Openness:** When an economy's financial system is accessible to the outside world, it can be said to be financially open. As a result, there is a cross-national capital exchange involved. Productivity may rise as a result of more financial transparency, both directly and indirectly. Increased financial liberalization through increased foreign direct investment immediately contributes to the productivity of the host economy by bringing in more sophisticated technology. In contrast, more open economies typically have stronger domestic financial markets, institutions, and macroeconomic policies, all of which may boost productivity (Koseet al., 2009; Mishkin, 2006). This is measured by the FDI inflows into the economy as a percentage of GDP.

5. **Inflation and Monetary Policy:** An increase in inflation) creates uncertainty, which either forces entrepreneurs to postpone making investment decisions or results in an inferior combination of inputs. Moreover, higher inflation shifts resources from productive to non-productive endeavors (expenses of combating inflation), which has a negative impact on labour productivity (Jarrett & Selody, 1982). Since, an increase in money supply shows up as a one-to-one increase in inflation, the government monetary policy variable ( ) is not recognised explicitly in the model. However, changes in monetary policy affect interest rates as well, and that is captured indirectly through the amount of credit created in the economy. An increase in money supply lowers the interest rate and stimulates investment, which may cause productivity to rise.

We thus want to estimate the following regression model using standard OLS estimators.

$$y_{it} = \beta_0 + \beta_1 k_{it} + \beta_2 hk_{it} + \beta_3 g_{it} + \beta_4 tr_{it} + \beta_5 cr_{it} + \beta_6 fdi_{it} + \beta_7 tech_{it} + \beta_8 \pi_{it} \quad (4)$$

All the variables are in natural logarithms, except inflation. Thus, their coefficients) may be interpreted as the respective elasticities.

The variables and their corresponding data sources are summarized in the following table.

VARIABLE	DESCRIPTION	DATA SOURCE	EXPECTED SIGN
y_{it}	Log of the ratio of real GDP to the employment, GDP measured at constant 2017 US$.	*Penn World Table (PWT) 10.01* Developed and maintained by scholars at the University of California, Davis and the Groningen Growth Development Centre of the University of Groningen	
k_{it}	Log of the ratio of the total capital stock to the employment, capital stock measured at constant 2017 US$.		+
hk_{it}	Log of the human capital index based on years of schooling and returns to education.		+
g_{it}	Log of the government purchases as percentage of GDP		+/-
tr_{it}	Log of the sum of exports and imports as percentage of GDP		+
cr_{it}	Log of the ratio of private credit by deposit money banks to GDP	*World Development Indicators* The World Bank	+
fdi_{it}	Log of the foreign direct investment, net inflows as percentage of GDP		+
$tech_{it}$	Log of the total factor productivity	*Penn World Table (PWT) 10.01*	+
π_{it}	Inflation rate corresponding to the GDP deflator	*World Development Indicators*	-

Data. In this paper, we use data of 8 countries from the Asia-Pacific region. We have selected four major developing economies – India, Indonesia, Malaysia and Thailand; and four developed economies – Japan, South Korea, Singapore and Australia.

The time period under study is from 1980 to 2019. This choice is due to the unavailability of data for some countries before 1980, and because of the fact that we wanted to exclude outliers from our study that may have

arisen due to the Covid-19 pandemic since 2020.

Empirical Results and Findings

First, we analyse the data from the developing countries, which yield the following results.

Coefficients:

	Estimate	Std. Error	t value	p value Pr(>|t|)	
$intercept$	4.750850	0.118516	40.086	< 2e-16	***
k_{it}	0.462245	0.012856	35.956	< 2e-16	***
hk_{it}	0.460658	0.049201	9.363	< 2e-16	***
g_{it}	-0.044740	0.022131	-2.022	0.04504	*
tr_{it}	0.071736	0.012377	5.796	4.04e-08	***
cr_{it}	0.058436	0.012194	4.792	4.02e-06	***
fdi_{it}	0.011674	0.004263	-2.738	0.00695	**
$tech_{it}$	0.834990	0.023799	35.085	< 2e-16	***
π_{it}	-0.003570	0.001093	-3.267	0.00136	**

*Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1*

Residual standard error: 0.04666 on 146 degrees of freedom-
Multiple R-squared: 0.9964, Adjusted R-squared: 0.9962
F-statistic: 5039 on 8 and 146 DF, p-value: < 2.2e-16

And the data from the **developed countrie**s give the following output:

Coefficients:

	Estimate	Std. Error	t value	p value Pr(>|t|)	
$intercept$	3.966585	0.339638	11.679	< 2e-16	***
k_{it}	0.487127	0.030166	16.148	< 2e-16	***
hk_{it}	0.721353	0.094051	7.670	2.36e-12	***
g_{it}	-0.121995	0.037934	-3.216	0.00161	**
tr_{it}	0.071780	0.015801	4.543	1.16e-05	***
cr_{it}	0.037000	0.017764	2.083	0.03903	*
fdi_{it}	0.015768	0.005486	2.874	0.00467	**
$tech_{it}$	0.534321	0.068603	7.789	1.22e-12	***
π_{it}	-0.001344	0.001906	-0.705	0.48168	

*Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1*

Residual standard error: 0.0617 on 144 degrees of freedom
Multiple R-squared: 0.982, Adjusted R-squared: 0.981
F-statistic: 984.6 on 8 and 144 DF, p-value: < 2.2e-16

All the variables affect productivity (statistically) significantly. The signs of all the variables conform to the theory and the discussion. We discuss separately the impact of each variable for both developing and developed economies.

1. **Capital per unit worker.** The findings indicate a positive correlation between an increase in capital per worker and higher labour productivity, supporting the theory that greater capital investment—such as additional machinery and advanced technology—enhances productivity. This suggests that augmenting capital stock can improve worker efficiency and output.

The elasticity of the variable comes out to be 0.462 for developing economies, and slightly higher at 0.487 for the developed economies. From equation (3) this is, in fact, the estimated value of the production parameter .

2. **Human capital.** The positive and significant coefficient of human capital underscores the importance of education in driving long-term productivity growth. A skilled workforce is positioned to achieve higher productivity levels, aligning with theoretical expectations. This emphasizes the crucial role of education and skill development initiatives in promoting sustainable economic advancement. In our study, the human capital index is based on years of schooling and returns to education.

It is important to note the emphasis placed on education and human capital development by countries such as India through various schemes. For instance, Figure 5 compares the human capital index in India over time with that of Thailand and Singapore. Despite receiving its highest-ever allocation in Budget 2023, India's spending on education remained at a modest 2.9% of the country's 2022 GDP.

Another interesting fact to consider is that the elasticity of labour productivity with respect to human capital is 0.460 in developing countries, compared to 0.721 in developed countries, indicating a stronger relationship with productivity in the latter. Factors such as the quality of education, institutional support, and investment in research

and development likely contribute to this disparity. These elements result in a more dynamic and adaptable workforce in developed countries, with a higher elasticity of human capital in driving productivity improvements.

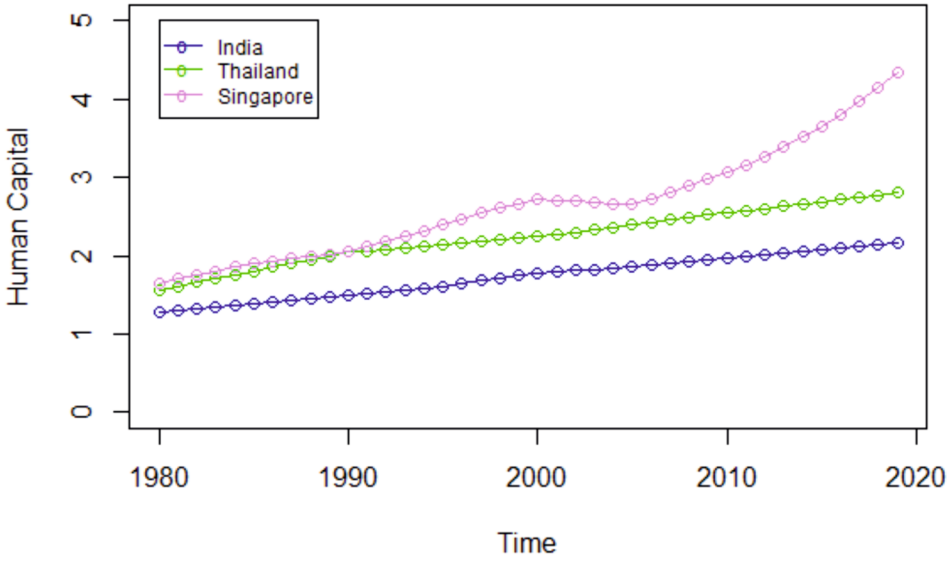

Figure 5: Human Capital index of India, Thailand and Singapore over time.
SOURCE: Authors' calculations.

3. Government expenditure. The research indicates that an increase in government consumption expenditure might lead to a decline in productivity in the long term. While acknowledging the crucial role of government in an economy, excessive intervention could introduce inefficiencies that negatively impact productivity. Therefore, it is advisable to maintain a balanced approach to government involvement, ensuring it supports economic growth without impeding productivity through excessive bureaucracy or market distortions.

The elasticity of productivity with respect to government expenditure is more pronounced in developed countries (-0.121) compared to developing countries (-0.044). These results indicate a stronger reduction in productivity in developed countries with increased government expenditure. This difference arises because, at the initial stages of development, government intervention is typically more active, with the private sector playing a secondary role. As a country develops, the private sector is expected to take the lead in driving growth. Continued government interference beyond certain levels of growth can lead to a crowding-out effect, where limited capital

availability hampers private sector investments, thereby preventing optimal productivity.

4. Trade openness. The study finds that increased international trade openness positively impacts productivity, indicating that integrating with global markets facilitates technology adoption and enhances productivity. The elasticity is, on an average, 0.07 for both developed and developing countries. This result is particularly significant for the developing economies in the sample, which began liberalizing trade during the 1980s and 1990s (see Figure 6). The positive effect of trade openness on productivity highlights the success of liberalization reforms in promoting productivity growth in the developing economies of the Asia-Pacific region.

In the context of India, trade openness began with the 1991 reforms, known as the LPG (Liberalisation, Privatisation, and Globalisation) reforms. These reforms introduced free trade and stiff competition, providing local investors and producers with opportunities to innovate and become net exporters of goods and services. The overall process, which increased competitiveness and facilitated the free flow of technology, led to a significant increase in labour productivity.

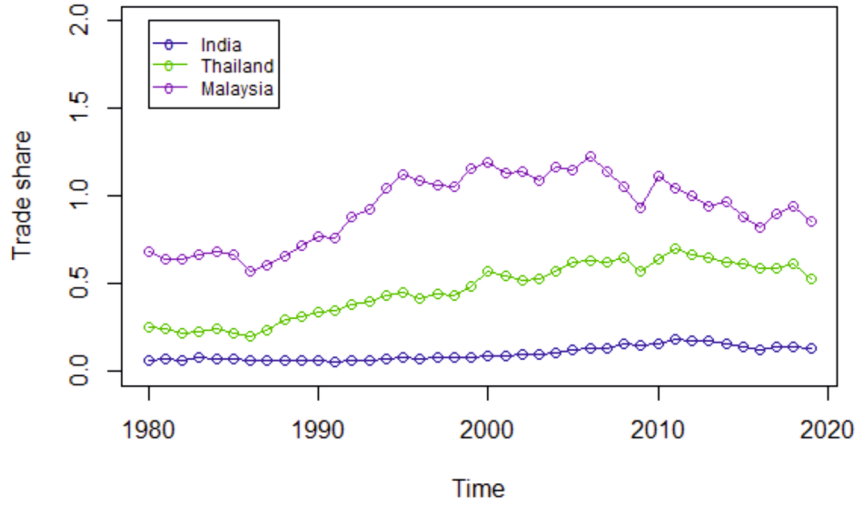

Figure 6: Trade share of India, Thailand and Malaysia over time.
SOURCE: Authors' calculations.

5. Financial development. Financial development spurs productivity by strengthening the financial sector, optimizing capital allocation, and granting businesses credit access, facilitating tech investment and expansion. Robust financial systems also foster

entrepreneurship and innovation, driving further productivity gains. In our model, the coefficients are statistically significant for both developing and developed nations. The elasticity is slightly higher for developing countries, indicating the need for a stronger financial system in such countries.

6. Financial openness. Financial openness enables greater cross-border capital flows, technology transfers, and access to international markets. The inflow of foreign direct investment (FDI) has a significant positive impact on both developed and developing countries.

7. Technological progress. Technological progress serves as a fundamental catalyst for productivity growth, empowering firms to innovate, automate, and refine processes. Advancements in technology drive the creation of new products, services, and production methods, thereby enhancing efficiency, reducing costs, and elevating overall productivity.

In our analysis, the elasticity of technology stands at 0.834 in developing countries, compared to 0.534 in developed countries. This high relationship in developing countries underscores the imperative for them to prioritize capital-intensive techniques to enhance overall productivity. Moreover, labour should be equipped with the knowledge to effectively utilize new technological innovations, thereby maximizing the benefits of these advancements.

8. Inflation. Inflation exerts a negative impact on a nation's productivity, although the extent of its impact is relatively very small in both developing and developed countries; and is statistically insignificant in developed countries. This leads to the conclusion that inflation is not a primary determinant significantly affecting the productivity of the countries under examination.

Conclusion

Our study tries to understand and analyse the variables associated with labour productivity with the help of data of the major developing and developed economies of the Asia-Pacific over the period 1980-2019.

In contrast to research focusing on a limited number of factors, this study presents a comprehensive model of labour productivity, examining various determinants. Specifically, we investigate how domestic technological progress, trade, and financial development impact the productivity of developing countries, alongside physical and human capital.

The study's econometric findings reveal that the productivity of both developing and developed Asia-Pacific economies is notably affected by factors including capital-to-output ratio, human capital, domestic technology, trade and financial openness, government size, and institutional quality.

The directional findings in both developed and developing countries align, although there are variations in the magnitudes of the elasticities. For instance, human capital exhibits a higher elasticity in developed countries compared to developing ones. Conversely, the elasticity of technological progress is notably higher in developing countries relative to developed ones. Similarly, differences in elasticity regarding government expenditure stem from the crowding-out effect prevalent in developed countries and the superior resource optimization by private entities.

Technological and financial openness are pivotal factors in the development of both types of economies. Empirical analysis suggests that trade openness has contributed positively to the growth of developing economies. The reforms implemented by India in 1991, known as liberalization, privatization, and globalization (LPG), yielded favourable outcomes for the Indian economy. Similar reforms were also enacted in other developing countries during the 1990s.

In developed countries, the industry and services sectors hold a dominant share, whereas developing countries still rely heavily on the agricultural sector. The paper suggests that the growing economies in the Asia-Pacific region, experiencing structural transformations as resources transition from less productive sectors like agriculture to higher productivity sectors such as manufacturing and services, could yield benefits for the overall productivity of these economies. Given the presence of disguised unemployment in the agricultural sector, there is a necessity to transition the workforce from agriculture to manufacturing and tertiary sectors to enhance labour productivity.

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An Openness to Protectionism: Varying Lenses

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Background

Apples are the third highest fruit produced globally; it is certainly true therefore that the apple business means big business. However, the lofty aspirations to make endless profits do not exist in a vacuum but co-exist or often coerce the humane and ethical sentiments which surround the 'Big Business' operations.

This research paper aims to specifically look at the question of higher tariffs for imported apples as demanded by apple growers in the state of Himachal Pradesh. The apple production in Himachal Pradesh which stands between 5000 to 6000 MTi is the backbone of the state economy along with tourism. Apple growers are hence also an important voter group who enjoy visible, vocal, and active political support from the leaders of the state.

Throughout the years, the level of productivity and total farmer incomes have fallen in Himachal Pradesh due to

various factors. All of this has been exasperated by the overflow of apples from Iran and Turkey along with illegal imports from Afghanistan. This along with the inflow of American apples, especially from the US state of Washington has dampened local growers' ability to sell their produce at decent rates.

In response to the Trump administration's heightened import duties on aluminium and steel during its trade wars with China, India was forced in retaliation to increase import duties on several American goods by considerable margins, import duty on apples was increased to a whopping 70%, much to the delight of local growers who were otherwise unable to compete with the American produce. Since then, import tariffs on US apples have been reduced again much to the sorrow and anguish of domestic producers. We all are aware of the benefits of the reigning global order of free markets and liberalization as established in the post-Cold War era.

Even though there is no ideological opposition to the rather awesome idea of heavily deregulated markets, despite this its biggest challenger surprisingly remains the capitalist system itself. Prime examples of this would be the East Asian economic crisis, the Plaza Accords forced on a phenomenal Japan, the Global Financial Crisis, and the recent Silicon Valley Bank Crisis. China's strength as a manufacturing hub,ii which manufactures almost everything in the world has forced scholars to rethink the narrow concept of specialization and reconceive trade as a function of exploitation be it through the instruments of cheap labour or risky capital.

Amidst this restructuring, countless losers have been created whose businesses and incomes have dwindled into oblivion with the onslaught of foreign competition. Abhijeet Banerjee and Esther Duflo, economists from MIT talk in detail about these losers in their book, "Good Economics for Hard Times," analyzing the creation of many domestic losers in the United States because of China opening itself to the global economy.

Since then, demands for protectionist policies have risen globally, especially in the USA which was forced to enter a trade war with China due to the latter's non-conventional and often hostile economic policies that have defied the forces of demand and supply through considerable state intervention. In this sense, protectionist policies fly right in the face of Ricardian theories of international free trade and specialization, yet somehow the political impetus to implement them is rising globally as

politicians aim to court domestic sentiments by favouring what economists would clearly describe as disastrous economic policy.iii Anderson and Martin (2006) *"note that it is ironic that agricultural policy is so contentious despite agriculture's declining role in the world economy."*

Amidst all the debates on political opportunism, crony capitalism and market favouritism, the broader and fundamental issues of the 'losers' are essentially ignored by both politicians and economists in the media and broader academic scholarship.

Research Objective/Question & Methodology

Farmer incomes in India have dwindled considerably over the years,iv especially for small and medium agricultural and horticultural farmers. In a situation like this, it is imperative to analyse the effects of low import duties on agricultural goods and horticultural goods for domestic producers.

This research paper would specifically look at apple farmers from the state of Himachal Pradesh and assess whether their demand for the introduction of a 100% import duty on foreign apples is reasonable or radical. In doing so the research paper does not state that free trade is devoid of any ills or that to the contrary absolute protectionism must be upheld for safeguarding domestic producers, rather it aims to settle for a balanced view which would look at all stakeholders and the need for a middle ground. In proposing the same it does not aim to sit on a fence and add nothing to the pre-existing literature but instead hopes to make a fact-based analysis of all prevailing conditions and then suggest appropriate policy responses to resolve the problems being observed.

In doing so, the research paper would delve deeply into the nature of the problem by identifying its causes, effects, and solutions (both operative solutions and aspirational solutions). It also plans to look at nations which either experienced or are experiencing similar issues and how they have worked through such demands and their core roots. The resulting comparative analysis would be used to find broader inferences and provide policy recommendations that are contextualised for the nature of our specific research question.

Like most debates within the field of international trade, our area of interest is also marred with the question of the so-called 'winners' and 'losers.' In such a situation do we now choose to ignore the losers, placate the losers, redistribute the rewards of international trade among the

winners and losers or turn the pre-existing winners into losers are all questions that branch out from this debate. It opens a plethora of questions whose dichotomy is etched within the field of political economy. The answer to whether a certain solution is correct or not must then be viewed from the point of view of immediate beneficiaries and immediate adversaries as well as long-term implications on different groups. In doing so, comparisons can be drawn between similar nations with appropriate contextualisation to achieve meaningful insights or inferences. Pre-existing government regulation or aid as well as lack thereof would also be scrutinised through a lens that is deeply sympathetic to the plight of small and medium-sized rural farmers in Himachal Pradesh while also respecting industrial and consumer sentiments.

Literature Review

The Banana Trade Wars

Though the original banana wars are steeped within the question of state sovereignty and corporate control which led to the creation of the so-called 'Banana Republics' in Central America, the Banana Trade Wars are a little different.

The European Union slapped heavy import tariffs and quota restrictions on Central American nations to create exclusionary favouritism for ACP (Asia, Caribbean, Pacific) nations, these more than seventy nations spread across the world were former colonies of the French, British and Dutch empires. The former colonising nations wanted to ensure the 'development' of their local economies by the employment of higher tariffs on imports from more developed banana markets, especially in the Central American region. This however was completely against the rules of the World Trade Organisation, the flagbearer of free markets.

As top US firms such as Chiquita Inc., Dole and Del Monte are the major producers of bananas in Central America the US government was lobbied into fighting the case against the EU on its restrictive trade policies despite not being a direct adversary, the WTO oversaw the whole issue and declared the US stance as correct, the European Union was still not ready to comply and therefore continued with its high import duties on bananas from Central America. This pushed the US to retaliate by imposing high tariffs on almost 200 EU goods, most of which were luxury goods such as Scottish Cashmere and French Champagne, products that have a huge market in North America. As a result of the

same, the European Union was finally forced to comply and reduce tariffs on Bananas coming from Central America thus ending what is often described as one of the longest trade conflicts in the world.

Winners and Losers?

There has been countless research on the effects of global trade liberalization in developing nations. Important references are Aksoy and Beghin (2004), Ingco and Winters (2004), Ingco and Nash (2004), and Anderson and Martin (2006), all of which have found a positive impact of trade liberalization on developing countries.

Using rational economic assumptions, we can ideally state that markets which operate on the principle of demand and supply given there is no 'stickiness' in prices and costs along with none to minimal state intervention function efficiently.

The entire idea of market efficiency is at the heart of economics, for as long as aggregate demand meets aggregate supply the market is in equilibrium and hence producing the optimum amount of output. The new trade theory developed by Paul Krugman further draws from this.

The whole idea behind India's economic liberalisation in the nineties was also based on the idea of reducing state control and letting free markets decide welfare outcomes (even though the immediate reasons were somewhat different). The notion that an open and tariff-free trade between a developing and a developed nation leads to beneficial outcomes for both countries would imply that the macroeconomic impact of trade preference erosion would benefit ACP nations and their producers in the same way as EU consumers would benefit from a fall in prices due to increased supply.[v]

It has long been argued that protectionist policies which favour certain sectors or nations lead to market distortions causing the final price of a good or service to not be reflective of its true value. The short-term gains in production for local players which are achieved by protectionist policies lead to long-term negative implications as resources are unable to move into more desirable economic activities. In 'Protectionist Response to the Crisis: Global Trends and Implications' Matthieu Bussiere Et al. (published by the European Central Bank) found several key inferences detailing the negative impacts of trade protectionism from a fall in Real GDP to a reduction in competitiveness in the medium run for the EU Market Zone.[vi]

In terms of market efficiency, the price of bananas in the EU market zone was considerably overpriced when compared to the global average price of bananas. The same can be extrapolated using Figures 1. & 2. respectively.

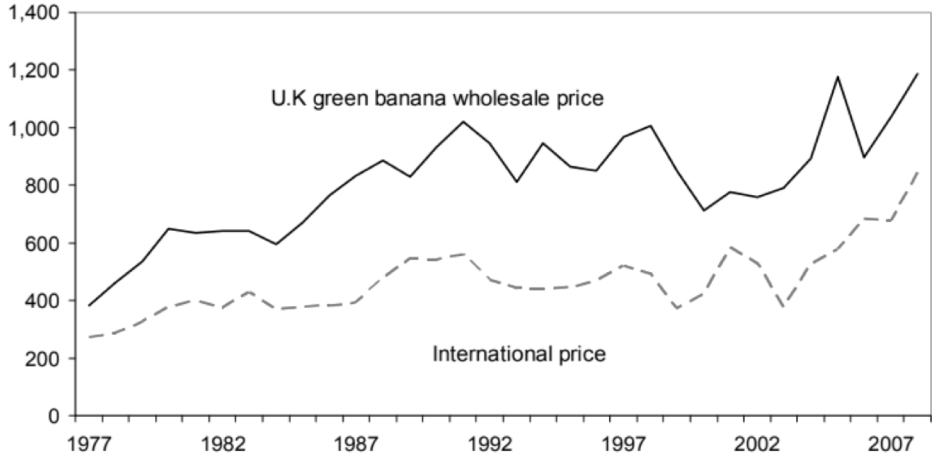

Figure 1. Evolution of Banana Prices, Data Source: IMF Commodity Price System & ECCB 1.1

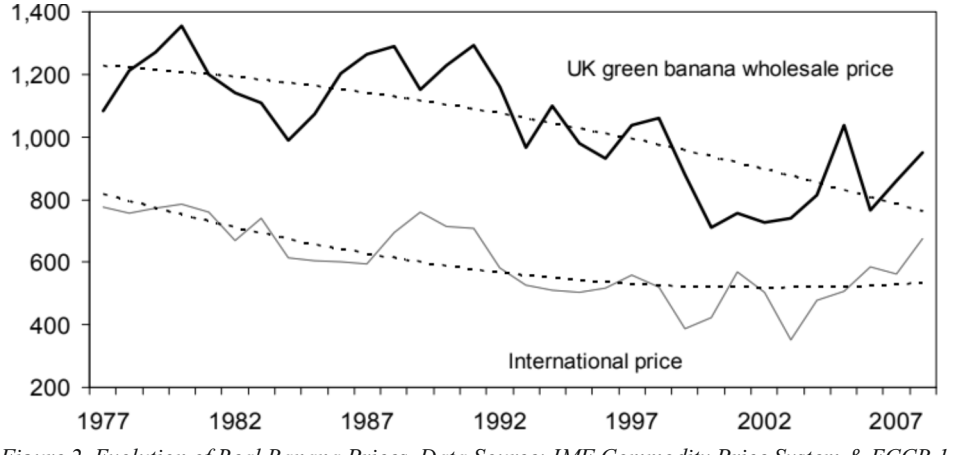

Figure 2. Evolution of Real Banana Prices, Data Source: IMF Commodity Price System & ECCB 1.1

Let us treat UK banana prices as a proxy for domestic prices in the EU. We can see that during the period in which trade favouritism was highest for ACP nations, the domestic banana price was much higher than the global average within EU nations. A convergence in prices was beginning to show effect at the tail end of 2007, as trade tariffs against Central American nations were brought down and trade quotas were completely done away with.

On the output side, the evolution of banana export volumes from the main ACP nations over the past three decades has a unique bell-shaped

curve. Exports "steadily rose by nearly 270 per cent between 1977 and 1990 to peak at about 275,000 tonnes"–virtually the same increase as that of nominal UK prices. Thereafter there was a steady decline in export volumes of about 5 percent per year on average. Total volumes exported in 2008 were lower than those of 1977. This fall can be attributed to the erosion of trade preference which was extended to these nations from the 1970's onwards till about the early 2000s, when the same policies were slowly and gradually phased out in compliance with WTO regulations. As a result of the same, trade volume and production output fell gradually for ACP nations who found it harder to compete with foreign banana imports into the EU. The same can be seen in Figure 3.

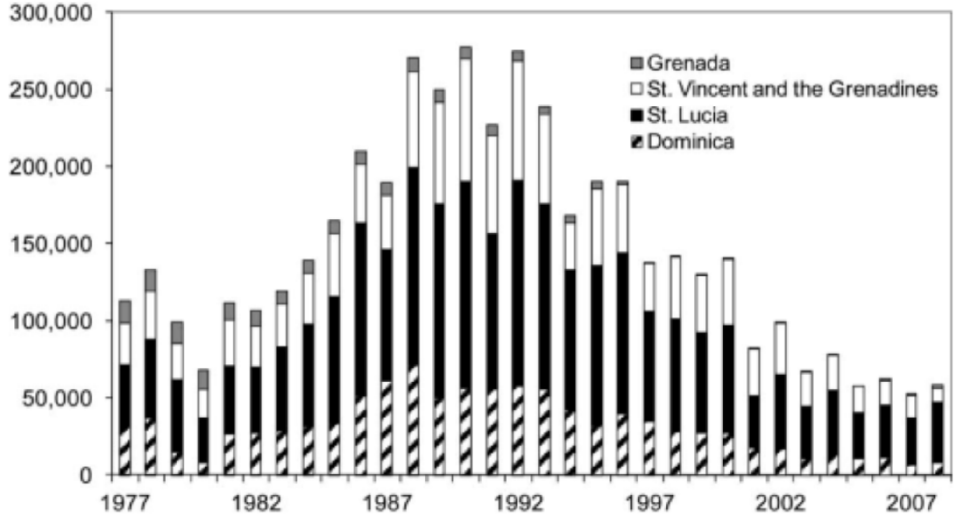

Figure 3. Windward Islands: Banana Export Volumes, Data Source: WIBDECO, IMF Staff Estimates 1.2

In *Caribbean Bananas: The Macroeconomic Impact of Trade Preference Erosion*, which was published for the IMF in 2010, it was explicitly discovered that there have been wide-ranging adverse effects on the economies of the Windward Islands in respect to various important national aggregates after the EU phased out protectionist policies. At the same time, domestic banana consumers in the EU have benefited greatly as doing away with protectionist policies has reduced banana prices to a great extent.[vii]

Prima Facie, the reduced banana prices in the EU are in line with economic rationale and logic, however, the fact that the otherwise favoured nations have harmed key aggregate measures seems to paint a conflicting picture about the overall benefits of international trade. In

that case, is the creation of losers along with the winners always inevitable? Let us try to see if the same is true consistently across the ACP nations themselves to better understand the outcomes.

A Holistic Review: Weighing the Positives

Indian Agriculture in a Globalizing World by Ashok Gulati is an important paper that looks at Indian agriculture's competitiveness in the global economy. The paper specifically investigates the competitive advantage in Indian agriculture by empirically mapping the effective rates of protection for various crops over a period from 1980 to 1993. By estimating these rates for five to fifteen years, the analysis minimises the impact of abrupt price fluctuations. The study categorises protection into nominal, effective, and effective subsidies, examining their implications under the importable hypothesis.

A key finding is that a crop is deemed competitive if its protection coefficient is below unity. This analysis reveals that rice and wheat, the largest crops in Indian agriculture, have consistently shown competitiveness with protection coefficients below unity in most years.viii Cotton also demonstrates a competitive advantage, whereas other coarse grains such as maize, sorghum, pearl millet, and pulses exhibit mixed results but generally remain competitive on average. In contrast, oilseeds like groundnut, rapeseed, soybean, and sunflower show a clear competitive disadvantage.

The paper also explores comparative advantage through domestic resource cost (DRC) or resource cost ratio (RCR), which values primary production factors like land and labour at their shadow prices. The findings suggest that apart from oilseeds, most other crops possess a comparative advantage over imports.

The study highlights significant trends and potential outcomes with trade liberalisation. For instance, if India were to completely liberalise its agriculture by removing all import and export controls, it could lead to substantial exports of rice, wheat, and cotton, and notable imports of edible oils, thereby improving the agricultural trade balance by about 40% compared to the 1990-1993 period. However, actual events between 1995 and 2000 show a more complex scenario. For example, India's rice exports surged following liberalisation in 1994-95 but attempts to liberalise wheat exports faced domestic price pressures, leading to a temporary ban on wheat exports and a reduction in import duties. The East Asian crisis further complicated matters, causing a

global price collapse that led to significant wheat imports despite bumper domestic crops.

Similarly, the reduction of import duties on edible oils in the 1990s initially led to marginal imports but as global prices dropped, imports surged, necessitating a substantial increase in import duties to protect domestic producers. This sequence of events underscores the dynamic nature of agricultural trade and the impact of global market fluctuations.

A Constant of Trade Sorrows

It is interesting to note that of all the ACP nations, the Windward Islands have experienced the most adverse impacts because of trade preference erosion. The main reason behind the same is that a considerable chunk of the GDP of such nations came from exporting bananas. A strong dependence on the UK and Europe as an export market as well as a high degree of preferential access granted by the European Union are prime reasons behind why the magnitude in terms of overall impact has been bigger for these nations. It is estimated that *"Since 1992, more than 20,000 of 25,000 farmers have gone out of the business" (Fairtrade, 2009)*. The situation is so dismal that the income from banana production has gone down from 20% of GDP in the 1990s to less than 5% in recent years. Though exports remain an integral part, incomes from the same, as part of the GDP have dwindled considerably. Another important reason behind the impact is poor land consolidation, with most farms being less than 10 acres in size on steep hillsides and narrow valleys. The vicious interaction between all these variables has consistently led to lower yields for these specific nations when compared to the broader basket of ACP countries. A glaring exception among all these nations is the Dominican Republic, which turned in favour of organic farming to ensure the preservation of its banana industries.

Another interesting Ex post result is that ACP exporters have not been fully wiped out from the banana exporting business in the EU. However, the perceived idea that pre-existing companies in the Central American region would surely perform better has not exactly materialised either.[ix] The likes of Chiquita Inc. and Dole have experienced a reduction in their overall market share in the global banana business despite the complete opening of the biggest banana-consuming region of the world through the mechanism of their lobbying efforts. These broader impacts when removed from the very radical nature of the policy change seem to signify a smooth transition of an otherwise inefficient EU market which

was marred by protectionist policies into a more developed, integrated and eventually efficient market for both producers and consumers globally, even though occasional losers have been generated as discussed in detail before.

In assessing these post-policy results, it is fascinating to see that the market dominance of some of the biggest companies in the MFN region has decreased considerably, while at the same time, several smaller multinational companies have emerged as successful players in the region. The same can be attributed to the simplification of trade caused by the complete liberalisation of the EU market. Other nations in the region which were expected to lose out, diversified their industries while others saw prominent government intervention to consolidate public organisations which are active in representing the interests of smaller farmers through marketing and processing.

Overall, the trade concentration of the banana business and its subsequent involvement in the trade wars forced supermarkets across Europe and the US to directly reach out to producers and look at different regions for sourcing bananas. The complete liberalisation of the EU market as well as technological advancements led to an acceleration and further ease in ensuring a somewhat decentralised banana market within a space which had historically been notorious for producing some of the most toxic corporate behemoths (the so-called banana republics). The entry of smaller players in the pre-existing scheme of affairs would have been close to impossible but the onset of easier international trade due to a more favourable EU policy regime has ensured not just their survival but also their success. The competitiveness in the banana business and market has increased globally, leading to much more efficiency as resources are allocated judiciously for the broader welfare of all consumers and producers.

Despite this, the overall impacts on several ACP nations shine like a sore thumb amidst all this talk of heightened 'efficiency.' To make sense of the same we must now divert our attention closer to home as we focus on the demands of 100% import restrictions which are being made by apple growers of Himachal Pradesh on the government.

A Tale of Many Apples

To understand the demands of apple growers from Himachal Pradesh, it is imperative to understand the nature of an average apple farm in the state. The overall productivity of the apple industry is also necessary to

assess general competitiveness concerning major global producers of apples such as the USA, New Zealand, and China.

Background

Historically, apples were not grown commercially in Himachal Pradesh. The state gradually increased the amount of land under apple cultivation during the 1970s as it attained full statehood in 1971. With a more defined state identity emerging, political will and leadership also began to take shape within the state. Like most political movements, the prosperity and security of the primary sector were given great importance. As a result of considerable state intervention throughout the 1970s and 1980s, followed by an increase in the minimum procurement price of apples in the 1990s, the apple growers benefited tremendously. Apples have since become closely associated with the state's identity as an efficient means to provide livelihood for small and medium-sized farmers.

Apple production is an economically significant sector. With an annual turnover of around 6000 MT, apple production contributes a decent 10-15% of the state's overall GDP. The area under apple cultivation has slowly but steadily risen from around 500 hectares in the 1950s to around 100,000 hectares in 2009-10, a considerable jump. Before the expansive trade reforms of the 1990s, apple growers enjoyed considerable state support from the government through the establishment of a separate horticulture department and a horticulture university in the state along with peripheral measures which would help smaller farmers in processing and marketing their produce.

As a result of their climate and terrain, the districts of Shimla, Kinnaur, Kulu, Chamba and Mandi in Himachal Pradesh have historically had a comparative advantage in the production of apples. The fact that such a large amount of land in Himachal Pradesh has been converted for apple production since independence is in tandem with this notion. However, capitalist landlords and rich peasants who own more than 10 hectares of cultivable land in the state account for a meagre 0.03% of the total apple farmers, most apple farmers in the state are poor and middle class with minuscule land holdings.[x]

Land in Himachal Pradesh is scarce. Further fragmentation of otherwise bigger farms throughout the generations is another challenge for consolidating land holdings, this coupled with the low productivity of apple production in comparison with international standards has

caused apple production to not reach its ideal levels within the state.xi However, despite all these factors, India is still the fifth-largest producer of apples globally.

In international trade as iterated at the start of this paper, a region must produce those goods which it has an edge in terms of production. In the case of Himachal Pradesh, this criterion is met adequately, in divergence with the ACP nations case. In this regard, the state is different from ACP nations as it already has a much higher production potential due to its natural endowments in the form of favourable climatic and terrain conditions. In this regard, India and specifically Himachal Pradesh is more like the nations in the Central American region, in the sense that among all the Central American nations that possess a considerable edge over the production of bananas, variation in production capacity is then dependent on domestic policy as well as favourable internal decision making.

This realisation is an important one as it largely trivialises the strong internal demands for controlling external factors in determining the outcome of domestic apple markets in India. The graph below shows the dismal productivity of apple production in Himachal Pradesh as the area under cultivation hasn't risen in tandem with production.

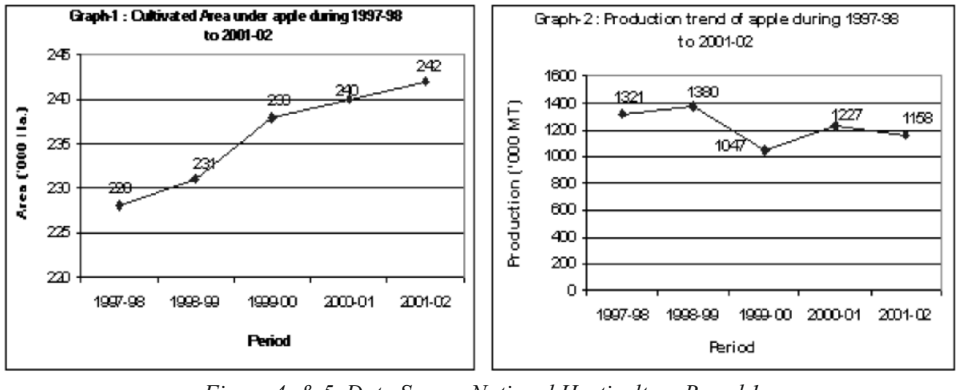

Figure 4. & 5. Data Source National Horticulture Board 1

Need For Import Restriction? Valid or Excessive

At the outset, it seems that the answer to the woes of apple farmers in Himachal Pradesh seems to lie within the ambit of the state and national government's will to provide a viable political and economic solution. Despite this obvious fact, the demands for import duty reduction continue to remain among the most vocalised and material demands of apple growers from the state of Himachal Pradesh, why is this so?

As implied earlier, 90% of the state's apple growers are poor farmers with very small land holdings, the same has led to a continuous decline in the productivity of apple production within the state. In this regard, despite the competitive edge that their geography can afford, these farmers are unable to produce apples efficiently because of an inability to reach economies of scale in their production leading to a lack of production expansion. The prime objective of a much freer apple import regime would essentially turn these farmers into the 'losers' that they so fear becoming. As bigger private players would be able to acquire control over more and more farms, the smaller farms that rely on apples would essentially disappear in place of larger commercial farms. Not so surprisingly, this was exactly the kind of fear that led to the eventual repeal of the three farm laws that the central government had rolled out in 2019-20. An absence of a minimum support price to ensure the livelihoods of smaller farmers would essentially force them into moving towards other economic pursuits.

At the same time, a consistent over-dependence on unproductive agriculture or horticulture ends up hurting the overall economy of the state and contributes to the under performance of the state in apple production when compared with international players who possess a similar 'edge' in apple production.

A Question of Conflict

Reaching this stage within our analysis clarifies a certain question we started with. The demand for apple growers to not reduce the apple import price is steeped within a conflict. The conflict between heightened productivity at the expense of the majority of poor farmers as against the conflict of providing a basic livelihood for the farmers at the expense of the competitiveness and productivity of apple production within the state. These conflicts open a question of political economy, one which is marred by the creation of the so-called winners and losers. Should a policy maker allow for the continuation of a production which has become highly inefficient or rather strictly opt for market forces to determine outcomes thereby freeing up capital and labour to move into more suitable economic activities? Should a policymaker indeed consider doing so, then what would be the fate of the 90% of apple growers who are engaged in the production of apples within the state? It is certain in this regard, that the situation of the apple growers may not be completely divergent from those in the ACP nations.

In the case of the Windward Islands within the Caribbean region, the impact of trade preference erosion has had a largely negative impact on incomes from banana production as a share of GDP because these farmers possessed much smaller land holdings. This in tandem with the inability of the government to provide better safeguards against the immediate shocks caused a largely negative impact on the economic livelihoods of the farmers from the said region. A similar situation is likely to occur in Himachal Pradesh.

To better understand how this can take place, we must realise that a solution to the problem as implicatively posed by our research question can be judged temporally. For instance, if the import prices for apples are further reduced considerably, in that case, the immediate adversaries would certainly be the smaller and medium-sized farmers of the state, who being unable to compete with the more efficient global players are bound to go under. On the other hand, as resources are bound to efficiently move into more desirable economic spheres, the economic growth and productivity in apple production are going to rise. The 'stickiness' which prevents the judicious reallocation of resources would essentially disappear in the medium to long run reaping long-term benefits for the consumers and producers. Doing so however would leave the smaller farmers in essential ruin, with no other immediate means of livelihood to sustain themselves. If the previous system is continued then the trend given below marked by negligible to very low levels of productivity would continue to play out.

Policy Recommendations

Policymakers must understand that there would certainly be further pressure to reduce apple tariffs on imports in line with the WTO policies in the future. In the face of such mounting external pressure, it is advisable not to go for an immediate reduction in tariffs but rather phase them (preferential policies) out within a stipulated time frame, the length of this interval should ideally be based on the recommendations of technocrats who may belong to the field of economics and horticulture alongside the opinions of apple growers. The same has been suggested to avoid absolute misery and destitution for the smaller farmers of Himachal Pradesh (and even Jammu and Kashmir for that matter) because of reduced tariffs on apple imports.

Doing so would insulate smaller and medium farmers by giving them time to understand their situation and improvise. The government and

especially technocrats must also realise that the vague and rather aspirational goals which they wish to achieve for apple production within the state do not make sense to small farmers. If anything, such policies seem counter-intuitive. It is not to say that such policies are economic nonsense but rather highlight the inability of small farmers to understand economic rationale, theories, and the whole notion of complex international linkages which define the modern world in its present form. For smaller farmers and apple growers, it is a question of their livelihood being threatened which prompts them to put forth their relevant demands to not be forced into destitution.

However, it is indeed actually more beneficial from an economic point of view that markets should be liberalised, otherwise, the gains from international trade would not be manifest. The government should make a policy that prevents these 'gains' from turning into the 'discontents of globalisation' as given by the noted economist Joseph Stiglitz. Doing so would require the government to address an important question that goes beyond apple production and productivity. There should be a broader realisation that the lack of security nets and cushions as a result of institutional voids and negligent government intervention are among the prime causes that exasperate fear among smaller farmers in the face of heightened import competition.xii Though the MGNERGA and the Public Distribution System are important government schemes that provide a considerable cushion to people who so need it, the same does not imply that these schemes are exactly devoid of any ills or inefficiencies either, especially on the implementation front. Even though they are flagship programs of the government that essentially reach the last mile of the country, their main goal is focused upon ensuring nutritional security and manual labour work support.xiii Most of the smaller farmers who are making demands for greater import tariffs are middle-class to lower middle-class and do not necessarily view the insulation provided by such schemes as adequate to safeguard their livelihoods and dignity. It is not the stagnant socio-economic mobility which harrows the usual farmer but rather the fall from their respective position within the pre-existing system which causes concern and anguish. The same poses an even more vile and dehumanising threat for the smallest apple growers or farmers within the state.

What India and therefore all its states and small farmers need is a comprehensive social security scheme which can help cushion blows from the well-meaning impacts of heightened deregulation and

liberalisation. An inability to provide a proper social security system in the country allows for politicians to make economically risky promises such as freebies and increased subsidies, along with other popular measures which are bound to increase the fiscal liability of the government in the future. The same has been on the rise in several Indian states recently.

Our constitution, in its directive principles of state policy, imagines not just a political democracy but also a social and economic one. The Supreme Court has held consonance with this view in multiple landmark judgements and thereby instructed the relevant law-making bodies to make necessary legislations to achieve these ends of social and economic democracy. Despite all of this, India's social security system is in complete tatters leading to not just economically inefficient outcomes but also socially and politically inefficient outcomes at the same time. The idea behind phasing out trade preferential policies as stated in the beginning would yield no stabilising results if the government does not work on a strong social security system for its smaller farmers. The paper openly assumes the stance that a lot of policymakers enjoy the lack of a proper social security system within India and its various territories because it ensures greater dependence on such politicians as caused by the ensuing desperation and vulnerability posed by the absence of a strong social security net. If all the well-thinking and often wise lawmakers of this nation are quick to sponsor and implement exotic macroeconomic policies with little to no proven positive impacts within the scientific literature then what exactly prevents them from taking up policies which are known to be more beneficial in the long run should certainly be up for scrutiny and investigation. Such misgivings are perhaps rooted in the demotivation that a long-term solution would essentially emancipate the people and help in focusing political synergies on issues which should ideally be more important from a welfare point of view. Short-term solutions by their very nature are preventive, they do not offer the much-required cure for the broader problem at hand, forcing people to constantly turn to politicians and the so-called leaders for ensuring economic and social welfare which is otherwise granted constitutionally and should be provided without contest.

CAP and EU, Valuable Policy Insights.

The Common Agricultural Policy formulated by the EU was based on the

idea that domestic agriculture in a post-world war era faces considerable pressure from more developed markets.xiv To revitalize its agricultural sector, the EU implemented a variety of protectionist measures to prevent its domestic agriculture from collapsing. Over the past thirty years, these protectionist measures have been almost entirely phased out, replaced by various parallel policies and instruments. Consequently, the agricultural sector has demonstrated considerable robustness and growth in recent times. Let us examine the three main tools within the CAP more closely.

Banana Stabilisation Mechanism

For EU banana growers, protectionist policies were among the most contentious. To mitigate the negative impacts on domestic producers due to the removal of protectionist policies, the Banana Stabilisation Mechanism (BSM) was introduced. Gradually phasing out the protectionist measures, rather than abruptly abolishing them, allowed for a smoother transition and reduced panic. The BSM expired on December 31, 2019.

POSEI Programme

The European Agricultural Guarantee Fund supports banana growers through the POSEI Programme. The POSEI scheme provides targeted measures for the agricultural sector in the EU's outermost regions. It allocates substantial amounts of income support to farmers in member states who are most likely to be negatively impacted. This program acts as a sophisticated social security net, balancing farmers' interests with the EU's international obligations and consumer needs without necessarily creating any losers.

Rural Development Aid

This aspect of the EU's broader CAP is particularly significant. Recognizing that most farms, due to their rural nature, have a unique rural character, the policy allows for the creation of measures specifically tailored to the development and empowerment of rural areas. Given that stakeholders most affected by the erosion of trade preferences are located in rural areas, it is logical to provide these economies with sufficient opportunities for mobility. However, such opportunities for changing livelihoods or expanding production will not manifest unless rural economies are financially autonomous and receive adequate assistance.

"The programmes are drawn up in accordance with the priorities and needs of the ORs and include support measures aimed to restore, preserve and improve biodiversity in agriculture and forestry, and promote economic development in rural areas. Risk management and quality systems are also included among the actions available to banana producers."

Relevance to the Indian Context

In India, rural and local governments are notorious for inefficient administration and poor financial autonomy. Many issues faced by local farmers stem from the centralized nature of executive authority and revenue distribution between various levels of government. Since independence, numerous commissions have recommended a more robust functioning of local governments. Although laws now exist to ensure greater devolution of power and finances to local governments, actual implementation and realization of these goals remain unmet. This research paper suggests a renewed focus on financial and political federalism by the government. Such a policy focus is crucial in an increasingly liberalized Indian economy lacking uniform and strong social security nets. Empowering local farmers to have a significant voice in policy-making would ensure their socioeconomic survival and reduce uncertainty and fear induced by the government's anti-protectionist stance.

Other Measures

The government should incentivize the development of an efficient processing industry in Himachal Pradesh through initial tax cuts and simplified business startup processes. Credit unavailability for aspiring entrepreneurs is a recurring problem in India. Improving the ease of doing business within the state will help existing farmers reduce costs and enhance productivity. Diversification into other ventures should also be seriously considered by the government. Over-reliance on apple production and tourism, alongside a lack of other sectors and industries, has created an over-dependent economy in the state. Supporting smaller farmers in better marketing their produce is crucial.xv The government should consider either abolishing the HPMC or revamping it to better represent and support smaller farmers. Cooperative societies have been a major success in India's economic journey, with Amul being a prime example. State intervention and technological assistance during the white revolution enabled small milk sellers to market their products

nationwide, leading to both social and economic prosperity.

Conclusion

We praise the neoliberal system in today's unipolar world for its marvellous discovery of the invisible hand that allocates resources and ensures maximum welfare for all economic agents. However, for stakeholders that have been discussed in this research paper, there is no invisible hand awarding gifts but rather a very daunting visible hand which keeps delivering hard blows to the small apple growers and their aspirations for a dignified life.

Economics as a discipline should not simply be concerned with increasing the wealth of big bankers and businessmen, the discipline holds a great obligation in fulfilling the hopes of every member of our

society. As a social science foremost, its efforts should also equally be relegated to finding solutions for social problems that seem painful and complicated even if such solutions require a political will or an answer that is in the throes of political economy. Economics must remain an important voice in deciding the fates of stakeholders who stand to benefit or lose greatly from these solutions.

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Fintech Startups & Conventional Banks

Allies or Contenders

Introduction

The terminology of fintech has emerged since the 1990s, and the era of startups began in 2008 worldwide. India is among the fastest growing fintech markets in the world, and its market size was $50 billion in 2021 (according to Investindia); it's estimated at $150 billion by 2025. Digital payment segments like Paytm, PhonePe, BharatPe, etc. are the main reasons for the growth of the fintech ecosystem in India. In today's world, there is a decline in the use of traditional banks due to advancements in technology, as it face challenges with low interest rates in many parts of the world. But traditional banking has gained loyalty from customers due to the service and their habits.

While FinTech has been viewed as a disruptor, it has also fostered collaboration with traditional banks. Recognizing the potential benefits of FinTech innovations, established banks have formed partnerships and alliances

with FinTech firms. As FinTech startups continue gaining market share, traditional banks face threats to their revenue streams and business models. Customers increasingly turn to FinTech companies for convenient, user-friendly, and cost-effective solutions. Banking veteran KV Kamath's speech at the Global Fintech Festival last week for lenders who did not update their technological prowess and subsequently risked losing market share to agile fintechs

Some of the areas where banks and fintech partnerships are expected to grow more are lending, deposit, collections, payment rails, investment rails, mutual fund, and wealth management segments, says Pay near by Founder Anand Bajaj. This collaborative approach is being followed by others also. "The evolution of bank and fintech partnerships is such that it has become a matter of collaboration rather than competition.

This research paper aims to establish the rise of fintech startups in the Indian economy and the consecutive impacts on the traditional banking sector in India. With every section unfolding into the working, market segment, compliances, etc of both fintech startups and conventional banks, we have tried to make inferences about the interrelation between the two as allies or contenders? This clearly justifies the title of the research paper "Fintech startups and conventional banks: Allies or Contender?"

Further, the research aims to comprehensively analyse the challenges, opportunities, performances, & results of collaborations of fintech startups and conventional banks to optimise the future prospects of the two in Indian economy in near future.

To ensure the research objectives are achieved, and the research questions are answered thoroughly, the right methodology is necessary. For this reason, this study was designed using a set of approaches and analysis that were felt to be most appropriate to answer research questions. This study involved secondary data sources in obtaining an accurate and comprehensive picture from reliable sources.

In general, this research activity was designed as a descriptive-exploratory research. It is directed at exploring information and providing an explanation of the dynamics of fintech occurring in India. The data and information used are qualitative and quantitative.

The study begins with close examination of fintech startups and conventional banks in India, their performances and working. Further,

we have used the quantities and figures to analyse the impacts of fintechs on conventional banking and what were the rate of change in the growth of each of the two on collaborations and mutual benefits to each other. The procedure aims to optimise the future prospects of the the fintech startups and conventional banking as allies or contender

This research paper provides a comprehensive overview of the dynamic relationship between fintech startups and conventional banking. It explores their performance, collaborations, and disruptions, shedding light on the opportunities and challenges presented by the evolving financial landscape. A proper analysis we have covered under this based on every aspects of them. The evidence-based insights and case studies presented in this paper offer a valuable resource for stakeholders in the financial industry and researchers interested in the fintech-banking ecosystem.

Additionally, real-world case studies of successful collaborations between fintech startups and conventional banks are presented to highlight the practical implications of these partnerships.

LITERATURE REVIEW

A fintech startup refers to any company that offers financial services or applications that rely heavily on technology. Fintech companies use technology to change how consumers interact with the financial industry. This often includes expanding access to financial products, lowering fees, and providing faster, more personalised service. (Trificana,2023). The phrase "fintech" first appeared in the 1990s, and the global startup period started in 2008. The fintech sector experienced exceptional growth from 2012 to 2021.

According to Invest India, the fintech sector in India was valued at $50 billion in 2021 and is projected to reach $150 billion by 2025, making it one of the fastest-growing in the world. The primary drivers of the fintech ecosystem's expansion in India are the digital payments sectors, such as paytm, phonepe, bharatpe, and others. Fintechs have embraced a number of industries in India, including lending, wealthtech, insuretech, neobanking, and so on. (2023)

However Banks' financial performance was hampered in 2011-12, owing primarily to higher deposit costs in an environment of rising interest rates. During the Covid 19 pandemic, it impacted India's economy at a time when the country's growth rate was at its lowest in the

previous ten years. In recent years, the Indian economy has been trying to get back on track by recovering at a slow pace. However, the recovery process has been severely hampered as a result of the pandemic.

The Indian banking sector's preparation for economic impact of the Covid-19 pandemic is dependent on the virus's long-term viability; it also depends on the nature and severity of the shocks delivered to the economy. In this pandemic era, the future of the banking sector is primarily dependent on policy design and implementation. The RBI's proactive approach and stabilising role is urgently needed. However, the RBI's main goal was to lower repo rates and increase liquidity in the economy. Fiscal measures to meet demands will undoubtedly contribute to an increase in NPAs by pumping funds into the banking system without proactive assessment. According to the most recent CRISIL report, the banking industry will suffer an 11.5% increase in bad loans by March 2022.

According to McKinsey, mobile banking channels increased by 20-50% during the first few months of COVID-19, and this trend is expected to continue even after the pandemic is over.

The covid 19 pandemic has created new opportunities for fintech, resulting in a drop in bank performance. Due to complex regulation in the banking system, it tends to be less innovative in the early twentieth century, and this is where fintech innovates. The COVID-19 has accelerated the development of peer-to-peer lending fintech.

During the peak of the pandemic, the relative rate of daily downloads of fintech applications increased by between 29.2 and 32.8 percent, according to the statistics. While many banks and financial institutions launched online loan application services in response to the covid 19 pandemic, only a few have been able to match the efficiency of fintech firms' online loan application verifications. This increased public interest in fintech contrasts with banks' performance throughout the pandemic.

Conventional banking dating back around 2000 BC with taking deposits and lending money to borrowers being its main duty. Traditional banks are becoming less prevalent in today's culture as a result of technology breakthroughs and low interest rates in many parts of the world. Nonetheless, due to the services' simplicity and customer behaviour, traditional banking has seen an increase in devoted patrons. In order to stay competitive with digital-only banks, traditional banks continued to

engage in digital transformation to enhance the customer experience. Recent innovations in the banking industry include direct involvement in economic activities and money channelling. Banks have always created financial innovations to boost their profits (Scott et al. 2017), and more recently, they have embraced digital services as a new growth engine (Barrett et al. 2015). Financial innovations are positively correlated with bank expansion, as demonstrated by Beck et al. (2016).

Customers' preferences have changed as a result of the introduction of digital payments and mobile banking platforms. Customers now expect frictionless, real-time interactions, forcing traditional banks to invest heavily in digital infrastructure to compete with FinTech offerings. Furthermore, FinTech has reimagined the traditional concepts of credit and lending. Peer-to-peer lending platforms and alternative credit scoring models have allowed previously underserved populations to access credit, posing new challenges to traditional banks. (Dexnova,2023)

While FinTech is seen as a disruptor, it has also encouraged collaboration with traditional banks. Recognizing the potential benefits of FinTech innovations, established banks have formed alliances and partnerships with FinTech companies. These partnerships enable banks to benefit from FinTech's advanced technologies, agility, and customer-centric approach. Traditional banks have been able to integrate FinTech solutions into their existing systems thanks to collaborative partnerships. Banks, for example, have integrated mobile banking apps, digital wallets, and AI-powered customer service tools to improve their offerings and customer experiences. They have found a new way to compete in a rapidly changing market by collaborating. (Dexnova,2023)

The relationship between banks and fintech companies has evolved to the point where cooperation is now valued over rivalry. According to internal policies and the regulator's standpoint, the regulated organisation has a defined set of tasks and obligations," explains Federal Bank ED Shalini Warrier.

Through a co-branded credit collaboration with One Card, Federal Bank is aiming to attract tech-savvy, first-time bank customers. Due to the agreement, the banks' credit card issuance increased by about five times during the June quarter and their client spending increased by nearly twelve times. For the purpose of mobilising deposits, the lender has independently established partnerships with Jupiter and Fi, and with

Paisa Bazaar and Fi for personal loans.(Shukla, Ramanathan2023) President of Kotak Mahindra Bank Group Virat Diwanji had similar opinions, stating that banks would be more than happy to collaborate with fintechs wherever they can provide value. He also noted that the relationship between banks and fintechs has improved over time. These kinds of collaborations are most effective when they are used to enhance last-mile reach, fraud prevention, customer support, and customer experience. There are no simple answers to the ongoing debate over customer ownership in bank-fintech partnerships.(Shukla, Ramanathan2023)

(Tomych,2023) Given the abundance of opportunities for fintech in banking to be profitable and successful. It's time to explore how this actually functions in the real world, based on instances where top banks and fintech companies have partnered to improve consumer happiness and income growth.

1. American Express and i2c: To facilitate their entry into the fintech market, American Express teamed up with digital-first payments and banking platform i2c, Inc. Through this partnership, fintech companies worldwide can create and expand payment solutions on the American Express network. Fintechs benefit from their arrangement by having access to pre-certified partners, which shortens their time to market.

2. Mastercard with Finicity: Since2020, Mastercard has been attempting to enhance account-to-account money transactions. They have teamed up with open banking platform Finicity and as a result of their cooperation, Mastercard's digital environment now includes the Payment Routing Optimizer and Success Indicator tools.

3. Deutsche Bank and Traxpay: In order to integrate supply chain innovations into the bank's business, Deutsche Bank partnered with Traxpay, a German fintech company that offers reduced and reversed factoring solutions. The partnership yielded outstanding outcomes, advancing Deutsche Bank to the forefront of financing for supply chains.

4. SIA and Banking Circle: SIA is the leading fintech company in the EU for payment services, while Banking Circle is a fully licensed payments bank. Offering clients, the choice to make quick payments is their main objective. Because it enables clients to perform transactions nearly quickly every day without taking days off, the collaboration has proven to be effective. Only if the entire amount being sent does not exceed 100,000 euros may the payment be completed. (tomych,2023)

5. State Bank of India MD C S Setty recently told Fe that Yono 2.0 will allow it to collaborate with 75–100 fintech companies. They currently have 12 to 15 very active collaborations, while they may have more in the future. SBI provides YONO, a comprehensive digital banking platform that lets users book flights, trains, buses, and taxis, shop online, and pay medical bills, among other financial and non-financial activities. Additionally, it features YONO Krishi, which offers financing and investment solutions, combines online mandis, and delivers agri-information. In order to serve SMEs, it also established YONO Business.

According to the institution, its net profit for the first quarter of FY24 was Rs 16,884 crore.

The bank said that overall bank deposits surged by 9.19 percent YoY to Rs 44.23 lakh crore in its annual report for 2022–2023. Of these, domestic deposits climbed by 8.50 percent to Rs 42.53 lakh crore and deposits from overseas offices by 29.60 percent to Rs 1.70 lakh crore. CASA deposits increased to Rs 18.62 lakh crore, a 4.95 percent growth. (Anshul,2023)

All these above collaborations have been proved as successful with available facts and news articles and institutions. Further we have studied the SWOT & PESTLE Analysis of fintech startups and conventional Banks to better evaluate their competitive position.

SWOT & PESTEL ANALYSIS

➢ Fintech

Strengths:

Fintech has a lot of advantages. Fintech offers significant potential to improve efficiencies, lower costs, modernise financial infrastructure, enable more effective risk management, and expand access to financial services across a range of different areas including lending, payments, personal finance, money transfer, and insurance by streamlining and simplifying the interaction between consumers and financial services as well as between financial service providers.

Weakness:

These days, there is a lot of focus on protecting the privacy of personal information that customers provide online. One recent example of this is the Facebook data breach. This issue, along with the financial risks associated with consumers not fully understanding new financial

products, is especially pertinent to the Fintech sector.

Opportunity:

An existential threat to many small states in the Commonwealth, particularly those in the Caribbean and the Pacific, is the "de-risking" phenomenon. Fintech may be able to provide answers for some of the main de-risking factors, like the "Know Your Customer" policy, or it may be able to completely do away with the requirement for matching banking relationships.

Threats:

Cybercrime has the ability to compromise the integrity of the financial system as a whole. This may be the primary cause of some Central Banks' reluctance to accept Fintech on a larger scale. Many small and developing Commonwealth nations lack the infrastructure and capability to protect cybersecurity. Concerns have also been raised about the fact that a lot of Fintech start-ups are too intent on getting their product out there fast at the expense of security precautions.

➢ Conventional Bank

Strengths:

1) strong balance sheet
2) robust brand and active community participation experienced, long-serving employees with solid ties to the community
3) Retention and loyalty of customers,cutting-edge sales technology

Weakness:

1) Greater cost of liquidity compared to the majority of rivals
2) Previous sales performance—the incapacity to carry out a sales plan shoddy sales procedure
3) Low liquidity, NIM, and ROA as a result of the qualification and underwriting process's slow sales velocity.
4) Low ratio of pipeline efficiency.
5) Compared to our bank, competitors' close loans 30% faster.
6) Lack essential sales abilities
7) Frontline accountability and coaching: low sales technology user adoption

Opportunities:

1) High-yielding financial instruments
2) Establishing new connections with clients
3) Decreased market rivalry as a result of M&A activity competitors diverted by market M&A activity
4) Robust job and economic growth in the area
5) Cross-promoting to current customers possible Fed rate increase

Threats:

1) Persistence of low interest rates
2) Fresh rivals joining the market rivals' pricing schemes and their capacity to complete loans thirty percent quicker than our bank
3) Alternative lenders and new finance networks with digital capabilities
4) New competitors are offering factoring and receivable finance products.

PESTEL ANALYSIS:

➢ Fintech -

- Political: Government regulations, policies, and guidelines have a major influence on how any sector develops. so does our fintech industry, as government policies impact laws that are essential for data privacy, consumer protection, and business standards.
- Economic: The fintech industry's growth is contingent upon a range of micro and macroeconomic factors, including GDP, Deflation, Inflation, and GNP.
- Social: The behaviour of consumers is important because it is influenced by their perceptions and experiences with technological advancements that aim to make their lives easier. As a result, they will shift from traditional to digital approaches.
- Technological: Technological advancement is a major driving force in the Fintech industry. Every innovation, including machine learning and artificial intelligence, etc.
- Legal: Fintech businesses must abide by all legal guidelines established by the government. Companies must comply with data protection regulations, protect user privacy, and safeguard intellectual property.

- Environmental: Making the switch to digital is one of the most efficient ways to lessen the impact of conventional practices like paper waste. Digital techniques offer more effective and superior ways to invest.

➢ Conventional Bank-

- Political Aspects- The political stability of a nation facilitates the international expansion of Fintech companies. This promotes the expansion of businesses and the fintech sector.
- Economic Aspects- The fintech industry's businesses are impacted by the state of the world economy. This is due to the fact that the fintech companies' goods and services are not required. Therefore, there will be less of a market for the goods and services provided by fintech companies in the event of a global recession. They will thus witness financial loss.
- Social Elements- People in many third-world nations lack knowledge about the goods and services provided by fintech companies. Fintech will therefore not be in high demand in these nations.
- Technical Aspects- As technology advances, the fintech sector provides increasingly cutting-edge goods and services. As a result, fintech companies' client is growing every day.
- Legal Aspects- Laws to regulate the fintech sector are being developed over time. Businesses will need to exercise greater caution when handling customer data and the personal information of other customers as a result, strengthening the industry's checks and balances.
- Environmental Elements- Because the fintech sector operates entirely online, it promotes the use of electricity. The demand for electricity is rising as a result of this. As a result, environmental degradation is being brought on by increased electricity generation.

FINTECH & CONVENTIONAL BANKS : WHAT'S THE DIFFERENCE?

1. Structure & Function

Fintech-

Fintech is a cutting-edge, client-focused idea. It has the capacity to simplify intricate financial procedures. And because of this,

consumers can easily and simply access all kinds of banking services. Furthermore, the financial software development firms that provide flawless fintech solutions typically employ lean operating methods that identify problems with legacy systems. Fintech also makes it easier for firms to repair legacy systems, innovate them with something fresh and engaging, and adjust.

Furthermore, Fintech is an idea that uses technology like cloud computing, big data, and artificial intelligence to provide customers with a distinctive and comfortable experience. Furthermore, personalization, seamless delivery, relevance, and speed are given increased importance by these technologies.

Conventional Banks-

The regulatory environment and broader financial system that traditional banks operate within limit their capacity to promptly adopt new and developing technology. Because of this, banks are unable to develop new goods or services that fintech companies can offer to clients in a timely manner to meet their needs. We can speculate that it occurs because banks, as opposed to fintech, are more process-oriented.

2. Regulations

Fintech-

Fintech companies don't really have a single regulator in particular. One of the main explanations for the proliferation of fintech startups is this. Furthermore, in the absence of stringent regulations, these fintech companies are free to alter their operations and are not constrained by any rules. This makes it incredibly easy for financial companies to function more quickly in this hazardous area and adjust to the needs of their clients.

Conventional Banks-

The national bank or central bank of the country of origin oversees the global banking system. Additionally, in order to comply with legal limitations, prerequisites, and rules that can aid in protecting the client's funds, the regulatory bodies demand a typical bank. In other words, the purpose of banking rules is to guarantee openness between customers and lenders.

3. Growth Potential

Fintech-

Ten of the twenty-four Fin Techs are currently pursuing profitability with great vigor. Among the most lucrative businesses are UPI behemoth Paytm, financial startup Billdesk, and stock brokerage Zerodha, among others. Profitability has long been a feature of FinTech behemoths like Zerodha, Razorpay, Pine Labs, Paytm, Billdesk, and others. (Sengupta, 2023)

Conventional Banks-

Traditional banks have sustained the financial market for the past many years and with fintech coming into the picture and evolving in such a way, they are adapting to changes in client requirements. This also means having fintech features like mobile payments, digital security, and peer-to-peer lending which have the capabilities to enable clients to borrow money from an individual or a group of people.

4. Risk Factors

Fintech-

Fintech regulations, as you are aware, are not inflexible, which may put the industry at greater danger. But due of its advantages over traditional banks—such as its robustness, affordability, excellent user experience, and innovative nature—it is regarded as a preferable choice.

Conventional Banks-

The more stringent the laws, the more they aid in reducing the risks when it comes to legacy infrastructure. However, financial technology is really vital if the organisation wants to stay competitive, provide better service to the users, and reach out to more people. It is possible for legacy systems to attract people to their apps by providing the greatest services [(tatva,2021)]

PERFORMANCE, PEOPLE, PROCESS & TECHNOLOGY: A BROADER VIEW

➢ Performance-

The financial landscape in India has evolved into a unique stage for an unparalleled performance: the battle between entrenched traditional banks and agile fintech startups. Their performances in

the last two years (2022–2024) have varied like dancers following different beats, each highlighting their advantages and disadvantages.

➢The Amazing Growth of Fintech at the Cost of Unprofitability- Paytm-

The fintech industry has experienced rapid expansion. User bases, transaction volumes, and fundraising rounds have all skyrocketed for startups such as Paytm, Razorpay, and Zerodha. For example, Paytm's Gross Transaction Value (GTV) increased by 51% year over year to INR 8.8 trillion in FY23 (Paytm,2023)This fast growth is driven by multiple factors like Innovation, Targeted Offerings, Digital Advantage

Even with its enormous user base of over 450 million, Paytm is still losing money; in FY23, it lost INR 701 crore (Kawale,2023). This illustrates the difficulties of growing a broad portfolio that includes loans, financial services, e-commerce, digital payments, and low-margin companies while contending with high customer acquisition expenses.

➢Measured Steps & Stability- SBI

The conventional banks exhibit a more measured approach. The largest bank in India, SBI, reported a net profit of INR 12,229 crore in FY23, demonstrating their continued stability in profit margins (SBI,2023). This steadiness results from:

- Established Customer Base- Over many years, banks have amassed sizable clientele, which they rely on for traditional banking services like deposits and loans.
- Various Revenue Streams: Banks have a variety of revenue streams, which helps to offset the effects of market swings in particular industries, in contrast to fintechs that frequently have limited business models.
- Risk management: Even at the expense of slower expansion, banks place a high priority on cautious, risk-averse strategies that ensure financial stability.

However, their emphasis on risk management may stifle innovation and adaptability. Legacy infrastructure and complex regulatory procedures might make it difficult for them to compete with fintechs

in terms of speed and flexibility. This slower rate of adaptation to changing consumer demands may jeopardize their long-term competitiveness.

➢People-

The financial environment is more than just numbers and algorithms; it is about people, both enthusiastic employees and the diverse clients they serve. Comparing Paytm, a modern fintech company, to State Bank of India (SBI), a venerable banking institution, via the lens of "people" uncovers surprising insights into employee characteristics, customer experiences, and possible areas for collaboration.

➢Paytm

Office Staffs- Paytm's personnel is young and technologically savvy, including engineers, data scientists, product designers, and marketing specialists. Their innovative attitude is fueled by a diversity of educational backgrounds and previous experience. The average age may be lower than in SBI, indicating a concentration on agility and a fast-paced culture.(Paytm,2023)

Customer Experience- Paytm: By embracing digital platforms, Paytm stresses convenience and speed. User-friendly apps, AI-powered chatbots, and self-service features cater to users who want rapid satisfaction. They may struggle with customised touch and sophisticated queries that require human engagement.

➢SBI

SBI's employees, on the other hand, have a wealth of experience. Their profile includes years of banking experience, extensive regulatory knowledge, and an emphasis on risk management. Their increased workforce is likely to include a high number of branch personnel who provide personalised service to individual consumers.

Customer Experience- SBI provides a blend of real and digital experiences. Physical locations offer a personal touch and the opportunity to create relationships, whilst internet banking services appeal to tech-savvy customers. Long lines, cumbersome paperwork, and archaic processes may disappoint people seeking speed and agility.

➢Process-

The financial industry depends on a careful balancing act between

stability and agility. This is especially clear when contrasting the operational procedures of State Bank of India (SBI), a massive player in the traditional banking industry, with Paytm, a quick fintech company. Let's examine their divergent strategies and make perceptive conclusions.

- Acceptance of Automation

➢ Paytm: The company's motto is automation. Digital workflows underpin all of their operations, from paperless KYC for customer onboarding to AI-powered algorithms for transaction processing. This emphasis on automation reduces the possibility of human error, boosts productivity, and permits quick scalability. (Paytm,2023)

➢ SBI: The organisation still relies heavily on manual processes even while it welcomes automation in some areas, such as core banking systems. Applications on paper, opening an account in person, and

- Security vs Speed

➢ Paytm: With a focus on ease and speed, Paytm provides real-time transactions, rapid account opening, and speedy loan approvals. Quickness draws in tech-savvy clients that appreciate mobile financial services. However, because of how quickly these procedures move along, worries about fraud and data security could surface. (Paytm,2023)

➢ SBI: SBI places a high priority on legal compliance and security. Although they greatly slow down processes, tangible paperwork, multi-layered approvals, and strict verification procedures increase security. Although this conservative strategy ensures financial stability, it may irritate clients who are looking for instant gratification.

- Customer Centric Approach

➢ Paytm: Paytm uses individualised interfaces and data analytics to meet the demands of each individual consumer. Contextual marketing, targeted promotions, and AI-powered recommendations all contribute to personalized and convenient experiences. Still, focusing only on digital platforms may leave out tech-averse or underprivileged groups.

➢ SBI: SBI's physical branches cater to clients who prefer in-person transactions and offer a personalized touch and human engagement that fosters trust. However, clients who are accustomed to using digital devices may become frustrated by restricted branch reach and lengthy wait times.

5. Technological Titans: A Code-Clash Between SBI and Paytm

Technology is king in the digital finance space. When you compare the technology strategies of the fintech startup Paytm with the banking giant State Bank of India (SBI), you can see how they battle it out with cutting edge agility and well-established infrastructure. Let's examine their innovation tactics, tech stacks, and make some perceptive deductions.

- Taking Up the Future:

➢ Paytm: The core technologies of Paytm include AI, APIs, and cloud-based infrastructure. They use state-of-the-art technologies like chatbots for smooth customer support, machine learning for tailored recommendations, and blockchain for safe transactions. Their emphasis on cutting-edge technologies enables them to evolve quickly and adjust to the shifting needs of their clientele. (Paytm,2023)

➢ SBI: Despite making significant investments in reliable core banking systems, SBI's technological stack frequently displays its older infrastructure. Their potential to compete with agile fintechs may be hindered by their reliance on on-premise servers, manual data integration, and traditional software development methodologies.

- Speed and Convenience

➢ Paytm: Their user-friendly apps, quick transactions, and real-time data analytics are the results of their digital-first strategy. Clients gain from quick loan approvals, quick account opening, and easy access to financial services from any location at any time.

➢ SBI: Although they work to enhance internet banking, SBI's paper-based procedures and physical branch network frequently cause delays in service. Tech-savvy consumers looking for quick satisfaction may become frustrated by complicated internet interfaces and drawn-out verification processes.

THE FINANCIAL FUTURE: A FINTECH & BANK TANGO

Two major participants in the financial sector are engaging in a fascinating dance: nimble fintechs and well-established traditional banks. By bringing different methods and strengths and weaknesses to the table, they each help shape the future of finance.

Fintechs are known for their technological prowess; their quick innovation, individualised experiences, and easy service delivery are fueled by cloud-based infrastructure, AI-powered solutions, and data-driven insights. Their speed and adaptability challenge the established quo and they offer specific solutions to under represented segments. They are still not profitable, though, and there are still issues with system weaknesses and security. (Paytm Investor Presentation,2023)

Conversely, traditional banks provide stability and confidence: strong core banking systems, sizable clientele, and an emphasis on risk management guarantee both brand loyalty and financial security. They appeal to individuals who feel uneasy with digital-only solutions by offering physical networks and personalised human engagement. But their antiquated infrastructure and sluggish procedures may make it more difficult for them to match fintechs' speed and adjust to changing client needs. (State Bank of India Annual Report, Business Standard).

This dynamic interplay—rather than a one-sided dominance—is where the future is found. Collaboration is essential: banks can embrace fintech's tech agility and data insights to update existing systems, tailor client experiences, and reach new markets, while fintechs can use banks' infrastructure and security expertise to grow their operations and foster trust. (Source: McKinsey & Company - Fintech and the future of banking)

This synergistic tango has great promise. Co-branded products, AI-powered branch encounters, and financial literacy initiatives are just a few of the possibilities. By merging the dynamism of fintech with the solidity of banks, the financial ecosystem can grow into one that provides inclusive, personalised, and efficient financial services to everyone. This future will not see fintechs replace banks, but rather them dancing together on the stage of invention, resulting in a joyful symphony of advancement for the whole financial industry.(Google Bard, 2023)

CONCLUSION

Here's the end of the Research paper in which we delve deeply into the complex relationship between fintech startups and traditional banks. We have uncovered the advantages and disadvantages, opportunities and dangers influencing their dynamic coexistence through a thorough PESTEL and SWOT analysis, a thorough literature study, and in-depth analysis on a number of different topics.

Understanding that the fintech industry in India has been expanding quickly, and the primary drivers of this growth are the digital payment sectors such as Paytm, PhonePe, and BharatPe. Customers who seek convenient, user-friendly, and affordable solutions from FinTech companies are posing a threat to traditional banks' income streams and business models. In order to take advantage of the potential advantages of FinTech technologies, incumbent banks have forged alliances and partnerships with these companies. Researchers and other interested parties in the financial sector can benefit greatly from the evidence-based insights and case studies presented in this study.

Key takeaways:

1. Fintechs disrupt: These nimble disruptors provide technological expertise, AI-powered solutions, and data-driven insights, resulting in quick innovation, tailored experiences, and efficient service delivery. They target underdeveloped markets with specialty offerings, upending the financial landscape. (PWC India - India Fintech Report 2023)
2. Banks stabilise: Traditional banks provide a foundation of stability through strong infrastructure, large client bases, and an emphasis on risk management. They offer trust, personal engagement, and physical networks to people wanting traditional banking experiences. (State Bank of India Annual Report, Business Standard)
3. Collaboration, not competition: The future is not in a zero-sum game, but in collaboration. Fintechs may use banks' infrastructure and expertise to scale, while banks can use fintech agility and data to modernise and reach new markets. (McKinsey & Company, 2023)
4. Synergy promotes progress: Co-branded products, AI-powered branch encounters, and financial literacy campaigns are just a few of the numerous possibilities. By combining innovation and

stability, the financial ecosystem may progress toward more inclusivity, personalization, and efficient services for everyone.

Looking ahead, our findings establish the framework for further investigation. Deeper dives into specific sectors, case studies of successful collaborations, and continual regulatory framework monitoring can all help you navigate this ever-changing market.

Lastly, it's critical to keep in mind that humans are involved in the fintech-bank dance in addition to data and technology. Both organisations fulfil human needs, and their ability to succeed depends on their ability to recognize and meet the changing demands of various clientele groups. Let's continue to place the human aspect at the centre of this financial dance so that everyone gains from the well-balanced combination of stability and innovation.

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Comparing Government Policies in Manufacturing in India and China

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Research Background Introduction

Following their respective iberalizations, both India and China embarked on ambitious economic journeys, aiming to transform their industrial landscapes. While both nations faced similar initial challenges, their manufacturing sectors have evolved along divergent paths. China has emerged as a global manufacturing powerhouse, capturing a staggering 30% of global production, while India's progress has been more moderate, still placing it within the developing nation category. This research paper seeks to understand the crucial role that government policies have played in shaping this disparity.

Significance of the Study

Understanding the factors behind China's manufacturing success and India's relative lag holds immense significance for policymakers and researchers alike. By analyzing the contrasting approaches

taken by both governments, we can gain valuable insights into the effectiveness of various policy levers in fostering a vibrant manufacturing sector. Such knowledge can inform future policy decisions in both countries, potentially enabling India to capitalize on its immense potential and bridge the current gap.

Scope of the Study:

This research will specifically focus on the period following liberalization in both countries, as this marked a turning point in their economic policies and industrial strategies. We will compare and contrast the government policies implemented in India and China within the following key areas:

Industrial Infrastructure Development: Examining the investments made in physical infrastructure like transportation, logistics, and energy, as well as digital infrastructure connectivity and development.

Foreign Direct Investment (FDI) Attraction: Comparing policies aimed at attracting foreign investment, including tax incentives, regulatory frameworks, and ease of doing business measures.

Human Capital Development: Analyzing investments in education, skill development, and promoting innovation within the workforce. Sectoral Support and Subsidies: Comparing the extent and targeted nature of government support provided to specific manufacturing sectors in both countries.

Trade and Tariff Policies: Evaluating how trade policies and tariff structures have impacted the competitiveness of each nation's manufacturing sector.

Usage of Energy: How governments promote more energy efficient usage also restrict those industries using energy vigorously.

Development of technology: Several policies and government reports support high end technology usage, and find the difference between the two countries on this ground.

Literature Review:

Economic reforms undertaken by both China and India during the late 20th Century were characterized heavily by market reforms tending to liberalization. Liberalization manifested itself in both nations in the form of changes in trade policies, domestic licensing, attitudinal changes and more. The increased shift of these economies towards the free

market had massive impacts on policies for the manufacturing sector. An understanding of these policies allows us to gain insights into the respective growth of these nations and better map out the trajectory of their economic development.

Studies have analyzed India and China's respective policies and done comparative analysis, whereas others have merely done it on one nation, all with varying methodologies. Nagraj (2016) considers disaggregated industry growth (annual) and share of capital goods in manufacturing to ultimately propose an explanation for China's superiority in industrial growth. Lal (1995) on the other hand, considers more qualitative aspects that describe the nations' cultural and economic histories to gain insights into liberalization and contrast them.

Nagraj (2016) draws that China's greater share of investment in capital goods as compared to India may have contributed to China's increased competitiveness in the export market for labor intensive goods. The paper also gathers that the Chinese economy's high capital-output ratio implies excess capabilities, inefficient investments and unsustainable profitability. The same factors may have led to India's growth being less volatile as compared to China.

Lal (1995) adds on to this by concluding that India's capital markets were inefficient, but ahead of China's by the year 1995. An interesting perspective that this paper adds is the nature of land markets. While India's land market had been virtually free, China's wasn't and it led to a collapse in agricultural output.

Wei and Balasubramanyam (2015) had a different approach wherein they did an economic policy analysis and comparison between the two countries. The paper concludes by 'doubting' the often recommended policy suggestion of India promoting labor intensive manufacturing.

Although China's model is not completely obsolete for India, the paper also suggests that China's Township and Village Enterprises (TVEs) may significantly impact India's non-agricultural rural enterprises.

Wei Jigang's "China's Industrial Policy: Evolution and Experience" examines the Chinese government's targeted approach to fostering industrial growth through regular pronouncements and five-year plans. Emphasizing profitable, technologically advanced, and future-oriented industries, this paper illuminates China's unique mixed economic policy blending government intervention with market forces. Conversely, R.

Nagaraj's "Industrial Growth in China and India: A Preliminary Comparison" (2005) employs data to analyze the diverging industrial growth trajectories of both nations since independence. Focusing on the post-reform era's widening gap, Nagaraj's study pinpoints key sectoral disparities to explain the different economic outcomes.

Methodology and Data Sources

This study takes into consideration a variety of methodology for comparative policy analysis. Mainly, periodic selection (reforms in policy) , policy scope (specific and broad policy) will be parts of the analysis that ultimately are based on chronological and thematic analysis. Periodic selection lets us analyze governmental policies and respective changes in the economy from the 1980s onwards, allowing a specific period of reforms to be highlighted. Then, through the lens of chronological analysis , the evolution of policies, turning points as well as changes in the economy can be analyzed altogether. An additional scope of analysis can be obtained via thematic analysis that grants an additional perspective on policy through an industrial lens. The economic theme behind each policy decision, whether it be poverty alleviation, infrastructure development, increase in productivity, trade and so on can be attributed.

It shall be necessary to determine potential research gaps and biases, especially for earlier sources of data. Various factors such as political ideologies, political interests may play a role in the literature and data source obtained. Cross referencing and triangulating the findings shall be essential in maintaining the rigor of this study. For this study of comparison of government policies in the manufacturing sector post liberalization in China and India, the major source of data is the Annual Survey of Industries (ASI)which is currently published by the Ministry of Statistics and Program Implementation.

India Brand Equity Foundation, a trust established by the Department of Commerce also acts as an aggregator of data and relevant information.

ASI data sources primarily provided information about **principal characteristics** from the year 1981-82 to 2011-12 such as number of factories, inputs, capital structure and material consumption.

Furthermore, Reserve Bank of India’s occasional papers (Vol 28,No.3) and another **report** by RBI dated 11 June, 2014 approximate Total Factor Productivity (TFP), a major component that has driven the

growth of the Indian economy. This data involves TFP and TFP growth , in aggregate, from 1980s onwards to the mid 2000s.

Findings

India before independence

Prior to gaining independence in 1947, India's economy was predominantly agrarian, characterized by a high reliance on agricultural output. Industrial activity remained limited, with a small number of enterprises concentrated in sectors like steel (Tata Steel) and cotton textile mills. By 1951, the manufacturing sector contributed only 14% to total production, employing 10% of the workforce. Notably, only 2% of workers were involved in modern industries, primarily engaged in processing agricultural products such as sugar, jute, and cotton.

India after independence

Following independence in 1947, India embarked on a path of planned economic development through Five-Year Plans.

First Five-Year Plan (1951-1956): Guided by the Harrod-Domar model, this plan focused on increasing savings and investment, particularly in capital goods production, to lay the foundation for future industrial growth.

Second Five-Year Plan (1956-1961): The Mahalanobis Model characterized this plan, emphasizing heavy industries like steel and machinery to foster rapid industrialization and provide abundant employment opportunities.

Third Five-Year Plan (1961-1966): Initially envisioned the creation of self-sufficient industrial clusters where each industry's output serves as another's input. However, economic shocks forced a shift towards addressing immediate concerns like employment generation and poverty alleviation, deviating from the initial heavy industry focus.

Despite the shift in the Third Five-Year Plan, Mahalanobis' legacy of "heavy industry bias" left a lasting imprint. The Industrial Policy Resolution (1948) reserved critical sectors for state control, while licensing requirements for non-essential industries created the infamous "License Raj." This stringent regulatory environment discouraged private investment and hampered growth in the consumer goods sector.

India Post Liberalization

In the 1980s and 1990s, the Indian economy was subject to significant liberalization. The Indian economy experienced rapid **de-regulation** of the **domestic** economy, declining foreign **trade barriers** (import and export incentives) and what is described by ***DeLong*** as **'attitudinal change'.**

The economy's deregulation paved a way for free-market dynamics to dictate the domestic economy. A fundamental aspect of deregulation involved **delicensing** industries, a policy measure intended to incentivize firm entry to ensure **competition** and an approach towards a 'free' market. By 1991, a total of **31** industries were delicensed. Furthermore, the **investment limit** below which no licensing was required was increased by up to 140 times its initial amount (Rs. 3.5 million to Rs.500 million) in many regions. An extension of deregulation was also seen through the abolishment of price control systems in the cement and aluminum industries that resulted in the removal of black-market pathways, allowing these industries to be even more integrated into the formal economy. During this period of deregulation, the total factor productivity (TFP) statistic was seen to increase greatly, and was shown in studies to have contributed to up to **37.7%** of the GDP growth in the Indian economy.

The decline of trade barriers was observed on multiple fronts that exhibited themselves in the form of changes in import and export controls/incentives and foreign investments (FDI) .

The reduction of import barriers resulted in an increase in **productivity** and competitiveness of Indian firms, directly resulting from import of technology and factors of production at more efficient levels. Furthermore, the increased ease of importing products meant that the Indian firms had to lower costs and increase productivity to compete with foreign firms.

Either way, Indian firms were compelled to compete either on the basis of price or on the basis of quality with respect to foreign firms.

Similarly, export incentives were heavily introduced after the mid 1980s. Various **tax deduction** opportunities were available for export including up to a deduction of 100% of profit in the year 1989. Interest rates on **export credits** were reduced, and the Open General License (**OGL**) List was expanded to allow for easier export of goods.

These policy changes with an emphasis on trade incentivized / compelled Indian firms to provide goods/services to a larger market and allowed for the transfer of knowledge and technology to experience higher growth . Foreign Direct Investment (**FDI**) too had a similar contribution to the Indian economy by emphasizing a more 'global' approach of knowledge sharing. Before 1991, foreign investment was only available in the form of equity (FDI) and not in the form of portfolio (FPI). Relative to FPI, FDIs require equity such that there is **substantial** interest in any given company; though this would directly result in a higher amount of foreign investment, it potentially dis-incentivized investors from taking on such risky ventures in a volatile market such as India. In general, the post **1991** period saw changes such as **automatic approval** for amounts below a certain threshold, and the opening up of various industries towards FDI. However, it must be noted that FDI has been somewhat volatile and an ever-changing aspect of liberalization that doesn't have as obvious of a causal determinant for economic growth. Some studies have been hesitant to give credit to the 1991 reforms in FDI for its impact on growth, as their conclusion points towards the **type** of FDI attracted to be a better **determination** of growth than just its sheer **value**.

An alternative, non-quantitative, approach at understanding causes behind the Indian economic liberalization and its 'associated' growth was proposed by DeLong (2003) that supports the notion that deeper changes, specifically, the shift in official attitudes and the rise of **entrepreneurial activities** held a greater deal of importance than any individual policy reform. This proposal is in contrast with other direct policy interventions ; it must be emphasized that his proposal doesn't claim that policy interventions had no contribution, rather it claims that without a change in **'attitude'** bolstered by entrepreneurial freedom, the growth that was seen after the 1990s reforms would not have been sustainable. These claims are somewhat difficult to claim, and DeLong himself "*Whether growth theory turns out to be useful—whether valid, interesting, and nonobvious in-sights are generated—is left as an exercise to the reade*r". A change in attitude is, however, without a doubt a determinant of India's sustained growth since liberalization ; whether this change is a product of time or of policy interventions are of course up for debate.

NIC Code	Industry group	1950-51/1979-80	1980-81/2000-01
20-21	Food	1.5	6.2
22	Beverages	NaN	-5.5
23-26	Textiles	3.5	5.6
27	Wood	3.8	-0.9
28	Paper	8.6	6.8
29	Leather	8.1	5.9
30	Chemicals	7.9	9.8
31	Rubber	10.9	9.8
32	Non-metallic minerals	9.3	7.8
33	Metals	8.6	7.1
34	Metal products	12.2	4.9
35	Non-electric machinery	14.8	5.8
36	Electric machinery	14.1	9.6
37	Transport equipment	6.7	6.9
38	Other manufacture	0.7	7.6
39+97	Repair services	NaN	-5.2

Table 1.0 : India's growth in respective industry group during pre-liberalisation and post-liberalisation period

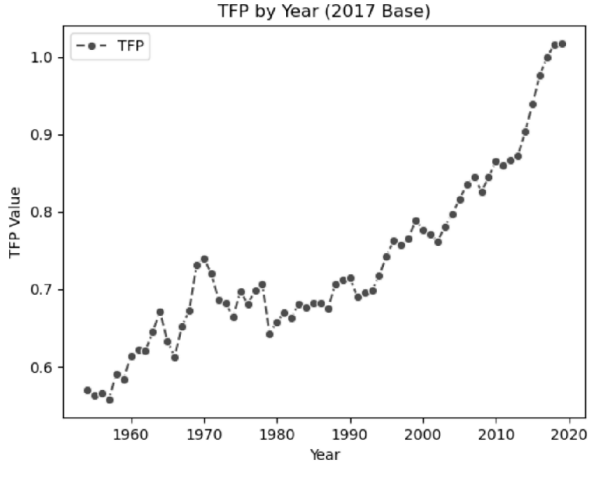


Fig 1.0 : India's TFP value (2017 base) over the years

China

China, after their independence in the year 1942 and the formation of People's Republic of China adopted several socialist policies ; Mao's socialist policies initially showed a boost in the economy but with time, the cultural revolution's consequences became devastating. The nation faced the largest famine with an estimated death of around 50 million people.

The pre-reform Chinese economy, characterized by collectivized agriculture, central planning, and limited international engagement, experienced significant stagnation and social hardship by the late 1970s. Farmers, deprived of land ownership and profit incentives, struggled to provide for their families, as evidenced by declining agricultural productivity and living standards. Additionally, foreign reserves dwindled, reflecting an inward-looking economic approach. Recognizing these challenges, Deng Xiaoping's "Reform and Opening-Up" policy, initiated in 1979, marked a pivotal turning point.

Industry	1949-77	1978-97
Food products	6.3	10.5
Beverages	8.4	10.3
Tobacco	5.7	5.7
Textile products	5.7	6.4
Wearing apparels	3.8	17
Leather products	7.2	15
Wood products	6.1	6.7
Paper and printing	11	10.8
Chemicals and petroleum	14.4	8
Rubber and plastic	11.8	14.1
Building material	8.9	10.8
Metals	17.7	6
Machinery, transport equipment	17.1	11.8
Electric machinery	17	16.5
Other manufacture	8.8	11.8

Table 2.0 : China's growth in respective industry group during pre-liberalisation and post-liberalisation period

While it is important to avoid attributing China's current economic strength solely to the 1979 reforms, they unquestionably served as a catalyst for transformative change. By introducing market-oriented elements, such as private enterprises and foreign investment, alongside rural reforms that empowered farmers and fostered entrepreneurialism, the reforms laid the groundwork for China's subsequent economic ascension.

Deng Xiaoping's "Reform and Opening-Up" policy, initiated in 1979, marked a pivotal shift in China's economic development strategy. This landmark initiative encompassed several key elements including market liberalization , decollectivisation , special economic zones and the reform of state owned enterprises. Deng's "leapfrog development" vision fueled rapid urbanization and entrepreneurialism. Government investments in education aimed to cultivate a skilled workforce capable of supporting sustained economic growth. Social safety nets also provided support to unemployed workers impacted by initial job losses during the transition, mitigating social unrest.

Manufacturing emerged as a core pillar of China's economic ascent. SEZs and robust infrastructure attracted FDI, facilitating technology transfer and knowledge assimilation. China's comparative labor cost advantage, coupled with strategic policies encouraging technology sharing and collaboration with domestic firms, further propelled its manufacturing prowess. This resulted in a remarkable jump in China's share of global manufacturing, from 5% in 1995 to 30% in 2020, while the US share significantly declined.

China's unique "socialist market economy" model combines market forces with state intervention. While prices and demand are generally market-driven, the government retains control over key sectors and infrastructure, fostering a distinct model. This approach, although subject to ongoing debate, has undoubtedly underpinned China's remarkable economic trajectory.

Despite lifting millions out of poverty and becoming a global economic powerhouse, challenges remain. Income inequality, environmental concerns, and potential trade tensions demand careful navigation. Understanding the legacy of Deng's reforms and their enduring impact will be crucial for China and the global community as they navigate the complexities of the 21st century.

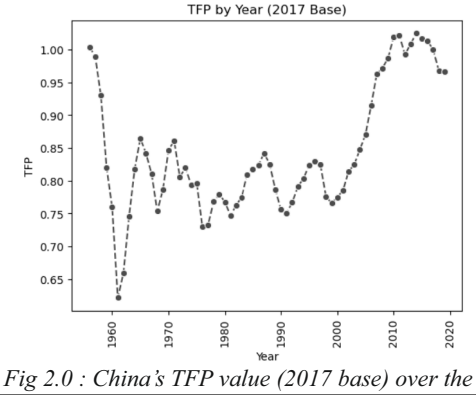


Fig 2.0 : China's TFP value (2017 base) over the years

Overview of China's policy mix

From 1990 to 1997, China underwent a monumental economic transformation, pivoting from an agrarian base to an industrial powerhouse. This period witnessed a series of strategic shifts. An overview of these changes is given in the form of bullet points:

- 1990: Emphasis on bolstering basic industries and fostering a competitive manufacturing sector.

-1992: Prioritization of technological advancements in central and western regions, leveraging resources for growth.

-1993: Infrastructure became a central focus, with new mechanisms implemented to accelerate development.

-1994: Collaboration with domestic and foreign parties facilitated trade and competition, while basic industries received support for technological advancement, cost reduction, and modernization.

-1995: Shift towards producing investment goods, indicating an export-oriented approach.

-1997: Significant investments in agriculture, infrastructure, and basic industries solidified the foundation for further expansion.

These transformative years laid the groundwork for China's emergence as a global player, driven by industry, technology, and infrastructure development.

The 11th Five-Year Plan (2006-2010) marked a shift towards solidifying the foundation for future advancements."Independent innovation" emerged as the core principle, fostering self-reliance through domestic technology generation. Modernization and optimization of crucial basic industries like steel, energy, transportation, and telecommunications were prioritized. Advanced manufacturing gained traction, with a focus on aerospace, high-tech electronics, and biotechnology. Upgrading industrial capabilities became a key objective, emphasizing quality and resource efficiency. Environmental consciousness played an increasingly important role, leading to restructuring or closure of unsustainable practices.

The 17th National Congress (2007) emphasized "strategic adjustment" to adapt to changing global landscapes. Independent innovation remained crucial, but expanded to include energy conservation and environmental protection. Building a sustainable future integrated into

China's industrial ambitions.

From 2010 to 2012, China's industrial policy underwent further focused transformation.

"Rigorously cultivating strategic and emerging industries" prioritized sectors like biotechnology, new energy, and information technology. The "integration of three networks" policy aimed to create a more efficient infrastructure encompassing information, logistics, and finance. Developing production-oriented service industries highlighted the growing importance of the service sector.

The 12th Five-Year Plan (2011-2015): It emphasized the "development of the marine economy," promoting sustainable resource management and strategic planning. "Using new energy resources" and "preventing blind expansion of manufacturing capacity" addressed resource management and sustainable development concerns.

Expanding domestic demand and strengthening the infrastructure network aimed to foster self-sufficiency and efficient logistics. Renewed focus on high-end equipment development targeted biomedicine and new energy vehicles, driving innovation and sustainability.

This period reflects China's commitment to becoming a "strong country" through "high quality development" by fostering innovation, sustainability, and domestic growth. From strategic industries and new energy vehicles to the marine economy and infrastructure, these initiatives continue to shape China's position as a leading industrial power, pushing the boundaries of innovation and striving for sustainable progress.

Conclusion

Following independence, India and China adopted contrasting policy approaches towards their manufacturing sectors. Both initially struggled to achieve significant economic progress. However, subsequent liberalization efforts in both countries led to substantial poverty reduction.

India embarked on a liberalization process, transforming its economy and paving the way for its current modernized state. China, similarly, faced economic challenges after independence but experienced a radical economic transformation following its 1979 liberalization reforms.

These reforms, coupled with bold government decisions, are widely

recognized as pivotal factors in China's emergence as a global manufacturing hub. While both countries witnessed economic growth post-liberalization, China's trajectory has been exceptional. India implemented various measures to stimulate its manufacturing sector, including deregulation, privatization, tax reductions, and infrastructure development.

However, its agricultural policy primarily relied on subsidies and financial assistance to farmers. China's approach differed in its emphasis on maintaining a degree of state control over industries and strategic economic planning. This allowed for bold initiatives like establishing Special Economic Zones, promoting rural industrialization, and prioritizing vocational education and infrastructure development. China's technology policy, characterized by collaboration with foreign firms and fostering domestic innovation, further propelled its industrial growth. Additionally, the government prioritized industrial profitability and productivity, areas where India has been deemed to lag behind.

India's fragmented political landscape, with frequent changes in government and policies, presents a disadvantage compared to China's one-party rule. This creates uncertainties for investors, both domestic and foreign, hampering investment and economic progress. Political instability in certain regions further exacerbates these challenges.

The economic system adopted by China, where the government retains significant influence over the market, is often termed "market socialism." This approach, contrasted with India's more liberalized model, has sparked ongoing debate among economists regarding its efficacy.

In conclusion, India and China's contrasting approaches to industrial development have yielded markedly different outcomes. While both countries have experienced post-liberalization growth, China's centrally planned, state-guided approach has demonstrably fueled its rapid emergence as a manufacturing powerhouse. Understanding the distinct policy choices and economic models employed by these two nations offers valuable insights into the complexities of achieving sustained industrial development.

Policy recommendation

1. Prioritize infrastructure development: Invest in robust transportation networks, reliable power grids, efficient logistics

systems, and modern industrial zones to create a conducive environment for manufacturing.

2. Focus on rural infrastructure: Develop rural connectivity (roads, electricity, internet) to unlock the potential of rural areas for manufacturing and economic activities.

3. Promote skill development: Expand vocational training programs and make them more relevant to industry needs. Increase awareness and acceptance of vocational education as a valuable career path.

4. Boost technological advancement: Collaborate with research institutions like DRDO, ISRO, and IITs to develop and implement advanced technologies in manufacturing. Encourage technology transfer and knowledge sharing through public-private partnerships.

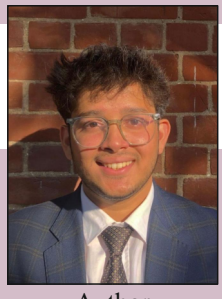
5. Foster innovation and collaboration: Create an ecosystem that incentivizes domestic and foreign companies to invest in R&D and collaborate with each other. This will drive innovation and technological leapfrogging.

6. Identify high-potential industries: Analyse and prioritise sectors with strong comparative advantages and export potential. Focus on creating clusters for these industries to leverage economies of scale and knowledge sharing.

7. Support efficient and productive industries: Provide targeted incentives and assistance to emerging and domestic companies in high-potential sectors. Consider phasing out or restructuring unproductive or loss-making industries.

8. Strengthen domestic supply chains: Encourage local production of key components and raw materials to reduce dependence on imports and enhance resilience.

Advent of Capitalism in India



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Abstract

This academic study embarks on a comprehensive analysis of capitalism in India, critically evaluating the ideas of political and economic thinkers, and tracing its emergence from the Mughal era to the contemporary landscape. The examination delves into pivotal sectors such as agriculture, trade, and industries, uncovering their roles in shaping capitalism's diverse forms. We also project the future outlook of capitalism in India while discerning relevant theories, shedding light on the economic, political, and social implications of its continued evolution. Fundamental questions surrounding its manifestation, emergence, prevalence, and geographical variations will be addressed, aiming to provide a well-informed understanding of India's complex capitalist journey and contribute to the academic discourse on the subject.

Finally, we will give an overview of our analysis in regards to the different

possibilities of when it came into existence, and why did it start eventually.

Introduction

In today's world, a significant portion of the global community has embraced capitalism as the primary framework for economic growth. Capitalism in simple words can be described as a kind of economic system, where private ownership controls the market, aiming to produce maximum profits. India in the modern context is known to be a mixed economy, that is a mixture of socialist and capitalist economy features, with a stronger capitalist face. It is almost impossible for any country to be capitalist without any government intervention; hence the state plays an integral part in any capitalist economy. The institutional set-up for capitalism is protected by the government in many ways, such that it becomes mutually beneficial for both.

One question that the state faced in the post-independent Indian era while making policies and laws is- what should be the major concerns where the government can show improvements and lastly, how an economy develops.

While looking at all these details, some fundamental questions arise: when did capitalism first emerge in India? Who were the pioneers of this monetary and exchange-based system, and how was it adopted across the country? What precipitated the advent of this system?

In this paper, we will delve into these historical questions, exploring the emergence of capitalism in India. We also analyze an all-time crucial matter of debate- 'Is strong agriculture a pre-condition for the development of capitalism?'. This paper will trace the trajectory of capitalism in India, commencing from the Mughal period and extending to the modern era. Additionally, we will speculate on its potential future. Furthermore, we will examine how capitalism has undergone transformation in India, and how this evolution has reshaped the system's definition over time.

Capitalism in Mughal Era

During the 14th Century, a strong Islamic force came from South Asia to the Indus River Basins including India, famously known as the Mughals realized their capital and empire in India. The economy was mainly agriculture-based and certain craftsmanship like pottery, handicrafts, etc. existed. Apart from these later with a rising surplus in the economy, new forms of occupations like trading of goods and services, defense,

patronized scholars, and nobles also started to emerge. Out of all the above, agriculture was the most significant occupation followed by the craft industry and they at large affected the emergence of capitalism in the Mughal era (14th century till 18th Century). So, if we have to give a basic outline of how the Mughal Empire functioned, then we can say it was majorly a subsistence and self-sufficient economy, with high agrarian potential, due to a huge abundance of land. The system was made such that there were *Zamindars* or *Jaghirdars* who owned the land and were supposed to collect taxes on the land facilities and transfer a fixed sum to the royalty. Later land revenue was also imposed which led to enormous crises and debt-trap. This also pushed for markets to grow in this period, which is marked as the beginning of Capitalist Farming in India. Now agriculture was segmented into two folds: period, which is marked as the beginning of Capitalist Farming in India. Now agriculture was segmented into two folds:

i. The existing *Peasant Agriculture,* which was small-scale and only for subsistence purposes.

ii. The new *Commodity Agriculture,* which was for selling large scale.

But the question arises, who is buying this produce? Who is actually selling this produce and to whom? What kind of produce is being cropped? This is the point where a Merchant and trading

came into effect. The crops were grown resonating to the demand of two groups; the non-agrarian participating economic agents such as scholars, nobles, army, etc., and for trading.

For example, towards the 16th Century, India practiced a 'putting-out system', and as the British started to demand Indigo and various other cash crops, Indian farmers grew these products using the merchant's assets, who further traded them externally on the coasts. Moreover, the failing taxation system of the Mughal Empire due to low productivity, ineffective supervision, and limited capital investment after the Land revenue reform, the eco-political crisis led to the decline of the empire. This according to Dr. Tirthankar Roy was the starting of 'merchant capital accumulation', resulting in *Merchant Capitalism* in the 15th century.

He further said that the decline of the Mughals and the starting of trade relationships with the British in the coastal regions like Bombay, Calcutta, and Madras was the major turning point of India's subsistence

to initial capitalistic features. According to him, this was the first time when the coast had so much social, political, and economic power. On the other hand, Irfan Habib argued that it was the start of Capitalist Agriculture that led to the initial stages of *Agrarian capitalism* in India, even though it collapsed as soon as the empire collapsed, as both agriculture and trading were very closely bound to the empire. Both theories are completely logical and have a great chance of being true, but Habib's version seems to be historically more plausible. Let us discuss some more opinions and facts to get a better idea of why Habib's theory seems comparatively more believable.

As Habib mentioned in his work, *The Potentialities of Capitalistic Development in the Mughal Era,* due to an increase in surplus people, especially the royal class, started consuming a variety of goods and services, which gave rise to different occupations. This divergence led to the introduction of the minting of gold and silver coins which ensured a smoother transaction and easy-to-store value of money.

Whereas, as Roy describes reinvestment in the textile and landlocked state productions to increase profits is the significant point where merchant capitalism started. This also can be put as that trading with the Britishers was one point where capitalists started spreading the system to the Indian society too. But let's try to put this in chronological order. The introduction of money came first which came with the perks of better market functioning in the economy, which enabled people to produce, consume, and sell relatively more freely. This was only possible because of strong agrarian routes. From the simplest economies to the most complex ones, a strong agrarian background is a historically necessary condition, at least in the earlier years of its development. As we can note Irfan Habib emphasizes and delves deep into the agricultural conditions of the Mughal Era in his contention --- since he realizes the strength of agricultural production as one of the critical determinants of development, therefore it is important to note that it stands as a strong argument to describe that this might be the reason that laid a foundation for further trading to exist, and eventually capitalism to grow. Therefore, strong agrarian roots, as mentioned by Habib, is a very important factor when we talk of capitalism.

Did capitalism finally find its way?

As already discussed in the introduction of this paper, India in contemporary is still not a full-fledged capitalist economy. But we are

still stuck on the question, when did it start? Is it safe to assume that capitalism emerged in the Mughal era? Or is it the British era? Let's try to answer this question here, with whatever knowledge we have today.

In the Mughal Era, as we know the link of capital relationship was very high with the *zamindari* system, which led to the failure of agricultural capitalism to take place, as with the Mughal empire, the *zamindari* system also diminished. Now talking about the Pre-Independence era, that is before 1947, due to the immense "drain of wealth" and destruction of the primary sector, India couldn't ever become a capitalist economy as EIC's motive was never to flourish India, but extraction from India to fuel its own capitalist home country. If we argue about merchant capital, the early capitalistic signs declined after the post-independence era, with the aim of self-reliance, under the government of Pandit Jawahar Lal Nehru.

Therefore, we can summarize this by saying that in both theories, one can say that there was capitalistic potential in the country, but due to unfortunate circumstances, and certain obstructions to capitalistic growth, India couldn't develop into the modern capitalist, like the U.S.

Let us now take a look at certain obstructions that possibly hindered the growth of capitalism in India:

i The major reason that can almost sum up most of the reasons at large would be the *nature of production.* India under Mughal rule was a subsistence economy, and under British rule was just a raw-material producer. Even after the great abundance of resources, India couldn't flourish under the Mughal regulations and then under British rule, the wealth of resources was exported in huge amounts to their home country, by EIC. And post-independence, until 30 years later, export-import was almost negligible due to the self-reliance goal of the government.

ii The nature of capitalism is another big factor that prevented India's economic growth and capital accumulation. In the contemporary world, the best form of capitalism is *Industrial capitalism* which comes after capital investments to maximize the profits or surplus. Whereas, *merchant capitalism* was a threat to Industrial capitalism due to the worse version of the putting-out system, practiced in India. Also*, agrarian capitalism* was not maximized, due to the weakening of the *zamindari* system.

iii Competition faced at the global level is another major reason why India's capitalist features didn't last for long. With EIC as a parasite in India, worsened India's worldwide position in international markets to ensure that it remains at the topmost level in the market. They extracted our resources, manufactured them in their home country, and sold them internationally at higher prices. This made India's entry into the market very difficult. So, it will be safe to say that EIC cut the wings of the "*Golden Bird*" and used it to soar higher themselves.

iv Social Factors, like the prevalence of the caste system made it difficult for the country to prosper to its maximum potential. Also, with the evolution of capitalism in India, accepting capitalism in India, as the 'upper-caste' did not want to sacrifice their premium rights at the cost of overall capitalism.

v The problem of market elasticity, as explained by Dr. Tirthankar Roy, is due to the low income of people, the demand for industrially produced goods was quite low. Due to the lack of profit motives in the labor class, i.e., Limited upward mobility made subsistence their priority, leading to less demand elasticity. Whereas, the royalty's demand for Luxury wasn't any less. This created the problem *dual economy*.

The above reasons are predicted to be the major reasons why capitalism couldn't grow in India. So now the final set of questions arises; when did it finally occur? Has it still occurred? What is the future outlook of capitalism in India? Let us try to find a plausible explanation to the above questions in the next section.

The origin and Premature Death of Capitalism in the Mughal era

One of the major questions that we focus on in this paper is '*When did capitalism occur in India?*'. The answer to this question is very hard to answer, and is still very debatable, due to the lack of evidence in the theories, as they deal with history. We can only predict a theory here, but cannot accept it as the only possible truth. Although, Irfan Habib's idea is quite convincing but lacks any empirical data or any viable justification that can prove to us that the agriculture sector was the best to focus on during the Mughal era. Similarly, Roy's theory that *merchant capitalism* was the first point of capitalism stands in the dilemma that how trade

starts, and with what motive. Is there a possibility that if *capitalist agriculture* hadn't started, then *merchant capitalism* would have not been borne? Therefore, we can only debate about this topic.

Today's India has grown into a capitalist economy but with a strong role of the state. Firms now operate with the motive of profit maximization, but it's only the capitalist who is on the receiving end of the profits in this chain. The working class is still stuck in the cycle of subsistence. So, in the present, one can say we see a regulated level of capitalism in India, with growth in the industrial sector, agricultural sector, and good export connections.

Finally, let's take into consideration Capitalism in the long run. According to Ranjit Sau, in his work *Development of Capitalism in India,* he mentions a possibility of a crisis like Bonapartism, which can lead to destruction in a democracy like India. This statement is mostly assumed keeping in mind the behavioral variables, but it sounds somewhat convincing. In a diverse country like India, with such a big background along with so many chronic problems like,

Poverty, bad healthcare, illiteracy, unemployment, and social evils like casteism still prevail in the economy, and certain groups of people are likely to take charge and create their monopoly or hegemony. This way, Ranjit's prediction of Bonapartism is no overstatement. Therefore, complete capitalism in India is not a good idea itself.

Conclusion

In the late 1940s, when India became an independent country, the government decided to 'Industrialize' the economy by releasing the Second Five Year Plan, also known as the " Nehru-Mahala Nobis Plan". The plan focused on the capital industry but made sure that agriculture was not overlooked, and hence proper consolidatory and expansionary actions were taken. Hence, it is essential to realize that a boost in agriculture can potentially kick-start the other sector's growth pattern too. Similarly, it is plausible that it was because of the agricultural surplus, that led capitalism to potentially emerge.

Thus, one can say that the agricultural sector cannot be ignored, as it is a historical necessity for development. We examined the different views and tried to derive a somewhat plausible explanation for the emergence of capitalism in India. It didn't stay for long but we did see some initial symptoms, during the Mughal era or the pre-independence era. As

conceived by the government, it was only after the opening of trade again post-independence, that India started prospering and started to develop capitalist symptoms, but critics believe that this is a false assumption, as the capitalist symptoms started to unveil as soon as trading got prominent and became profitable for the Indian trader, much sooner than 1947.

Moreover, we summarized the major challenges to capitalism being majorly the nature of production, global competition, low market elasticity, and dual economy problems. Finally, we discussed contemporary capitalism, how it might have emerged and the scope of capitalism in the long run.

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