Book of Abstracts

"Emerging Issues in International Trade, Finance & Development"

INDIAN INSTITUTE OF FOREIGN TRADE, KOLKATA CAMPUS

1583, Madurdaha Chowbaga Road, Kolkata West Bengal 700107, India

9th IIFT Conference on eiitf Empirical Issues in International Trade & Finance

9th International Conference on

Empirical Issues in International Trade & Finance (EIITF)

December 12th – 13th 2024

Book of Abstracts

Emerging Issues in International Trade, Finance & Development

9th IIFT Conference on eiitf Empirical Issues in International Trade & Finance

9th International Conference
On
"Empirical Issues in International Trade & Finance"

December 12 – 13, 2024

CONVENORS

Prof. Ranajoy Bhattacharyya

Prof. Bibek Ray Chaudhuri

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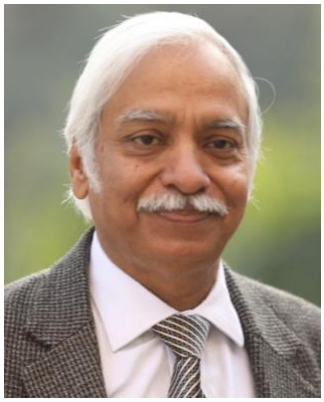
Vice Chancellor's Message



The Indian Institute of Foreign Trade (IIFT) is organizing the Ninth Biannual Conference on Empirical Issues in International Trade and Finance (EIITF) on December 12-13, 2024, at its Kolkata campus themed "Emerging Issues in International Trade Finance and Development."

The global order is undergoing a profound transformation. Starting with the global financial crisis of 2008, the so-called sovereign debt crises, tariff wars, and more recently the pandemic - the entire global economic outlook has altered significantly, creating numerous structural anomalies. The disparity between skills and income is intensifying. Informality is increasingly characterizing the global labor force. Consumption patterns are diversifying yet becoming more erratic. Worldwide, business cycles are being both modified and disrupted, while capital flows are becoming more circumspect, carving specific trajectories in the geography of trade and Foreign Direct Investment (FDI). Geopolitical tensions, such as those involving Russia and Ukraine, have triggered significant turbulence globally and caused regional humanitarian crises. The escalation in international prices of crude oil and other essential commodities is exacerbating inflationary pressures, thereby disrupting various recovery mechanisms deliberated and formulated on domestic and international platforms.

As the new global economic order has posed challenges for economies to deal with, various advancements and re-arrangements have taken shape. In the economic sphere, the defining feature of the last one and half decades is the rise of the services sector, especially its digital aspect.

Rapid breakthrough and progress in the Information & Communication technology followed by the evolution of newer technologies such as AI & rapid automation being used in a new techno-economic era. Growing E-commerce and digital finance have considerably impacted traditional operators and business practices. These new technological breakthroughs, while providing a cushion to various challenges in recent times, have exposed the global economy, in general and developing countries and LDCs, in particular, to new forms of vulnerabilities.

To address the challenges there is a need to discuss, debate, and decide regulatory frameworks as well as domestic and multilateral policies based on sound observations and theoretical grounds. There are also other vulnerabilities such as environmental degradation hurting the resource pool of production activities. Sustainability has to be the guiding factor in all these aspects.

The EIITF conference, which is taking place at a crucial juncture, aims to spur academic debates on ongoing experiences and future policy issues. The conference would provide a platform for researchers, practitioners, and policymakers to come together and bring up new dimensions for the academic community.

I look forward to your active contribution & participation in the Conference, EIITF 2024.

Prof. Rakesh Mohan Joshi

Vice Chancellor
Indian Institute of Foreign Trade

Message from Centre Head, IIFT Kolkata

The global business landscape has moved from VUCA to VUCA+ witnessing widespread challenges ranging from AI adaptation to ESG to regional military disturbances to trade conflicts. Amidst such challenges, India is pushing itself towards a developed nation by 2047 for Amrit Kaal and acquiring a USD 30 Trillion economy. Climate change, another uncontrollable factor which may jeopardize all such calculated moves is also looming large. In such exciting juncture, IIFT is organizing the ninth biennial edition of Empirical Issues in International Trade & Finance (EIITF) during December 12-13, 2024, focusing on "Emerging Issues in International Trade, Finance and Development." The response to this edition of the conference stands testimony to the interests and thought process of our researchers on such emerging issues on divergent perspectives. The researchers have visualized the links of Environment, Technology, GVC, Geopolitics, Human Resources, AI etc. to International Trade and Finance through varying research lenses and have given impactful insights.

This year's conference has also brought out lectures on five special themes by internationally acclaimed researchers which would further help exploration towards new research areas. The ten sub themes of the conference in tracks have deliberated lots of new thinking, analyses and thought provoking ideas useful for the different stakeholders in international trade.

All the papers of the conference are given in digital format as proceedings which I hope will be useful for the policy makers, researchers and academicians alike.

I wish the conference a success and complement the Team-IIFT in successfully organizing the ninth edition of EIITF.

Jai Hind.

Prof. K. Rangarajan

Professor & Centre Head
Kolkata Campus
Indian Institute of Foreign Trade

Invited Speaker Profile 1

Prof. Marcelo Olarreaga

Professor of Economics at University Of Geneva
Fellow, International Trade and Regional Economics

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Marcelo Olarreaga is Professor of Economics at the University of Geneva, and Research Fellow at the Centre for Economic Policy Research (CEPR) in London. Before joining the University of Geneva he worked in the Research Department of the World Bank, as well as in the Economics Research Division of the World Trade Organization. He has also been invited professor at CERDI/FERDI (France), the Graduate Institute (Switzerland), INSEAD (France), Institute CLAEH (Uruguay), SciencePo-Paris (France), Universidad de la República (Uruguay) and the University of Antwerp (Belgium). He holds an MA from the University of Sussex, and a PhD in Economics from the University of Geneva.

Invited Speaker Profile 2

Prof. Richard Tol

Professor at the Department of Economics, University of Sussex
Professor of the Economics of Climate Change, Institute for Environmental Studies and Department of Spatial Economics, Vrije Universiteit, Amsterdam, the Netherlands
Member, the Academia Europaea

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Richard S.J. Tol is a Professor at the Department of Economics, University of Sussex and the Professor of the Economics of Climate Change, Institute for Environmental Studies and Department of Spatial Economics, Vrije Universiteit, Amsterdam, the Netherlands. He is a member of the Academia Europaea.

Previously, he was a Research Professor at the Economic and Social Research Institute, Dublin, the Michael Otto Professor of Sustainability and Global Change at Hamburg University and an Adjunct Professor, Department of Engineering and Public Policy, Carnegie Mellon University, Pittsburgh, PA, USA. He has had visiting appointments at the Canadian Centre for Climate Research, University of Victoria, British Colombia, at the Centre for Social and Economic Research on the Global Environment, University College London, and at the Princeton Environmental Institute and the Department of Economics, Princeton University.

Richard received an M.Sc. in econometrics (1992) and a Ph.D. in economics (1997) from the Vrije Universiteit Amsterdam. He is ranked among the top 100 economists in the world, and

has over 300 publications in learned journals (with 100+ co-authors), one book, three edited volumes, and many minor publications.

He specializes in the economics of energy, environment, and climate, and is interested in tourism and scientometrics.

Invited Speaker Profile 3

Prof. Kunal Dasgupta

Associate Professor, Economics
Chairperson, Admissions & Financial Aid
Indian Institute of Management, Bangalore

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Kunal Dasgupta joined the Economics area of IIM Bangalore in December 2018. Prior to joining IIMB, he was a faculty member in the economics department at the University of Toronto. Kunal's primary research areas are international trade and economic geography. His current research focuses on trade barriers facing firms engaged in international trade, and the role of trade and production networks in shaping the spatial distribution of economic activity. Kunal has consulted for international organizations such as ERIA, the World Bank as well as the Government of India. He holds a PhD in Economics from Princeton University, a MA in economics from Indian Statistical Institute, Delhi and a BS in economics from Presidency College, Kolkata.

Invited Speaker Profile 4

Prof. Rajeswari Sengupta

Associate Professor, Economics
Indira Gandhi Institute of Development Research (IGIDR) in Mumbai, India.

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Rajeswari Sengupta's research focuses on policy-relevant issues of emerging economies in general and India in particular, in the fields of empirical macroeconomics, international finance, monetary policy, banking and financial institutions, firm financing and national accounts measurement.

In the past she has held research positions at the Institute for Financial Management and Research (IFMR) in Chennai, San Francisco Federal Reserve, the World Bank, the International Monetary Fund (IMF) in Washington DC and Reserve Bank of India, Delhi. She was a member of the research secretariat to the Bankruptcy Law Reforms Committee that drafted India's Insolvency and Bankruptcy Code (IBC, 2016). She has published in reputed international journals such as Journal of Money, Credit and Banking, Economic Policy, Journal of International Money and Finance, The World Economy, Emerging Markets Review, Pacific Economic Review, Open Economies Review as well as the Economic and Political Weekly in India. She has also written chapters in various books published by the Asian Development Bank, G20, the Centre for International Governance Innovation (CIGI), among others.

Dr. Sengupta completed her M.A. and Ph.D. in Economics from the University of California, Santa Cruz (UCSC). She holds two previous degrees in Economics from India, a Bachelors degree from Presidency College, Calcutta and a Masters from Delhi School of Economics.

Invited Speaker Profile 5

Prof. Anirudh Shingal

Professor, Finance and Economics, SPJIMR

anirudh.shingal@spjimr.org

Anirudh Shingal holds a Ph.D. in Economics from the University of Sussex, UK, and a master's degree in International Law and Economics from the World Trade Institute, University of Bern, Switzerland. An avid researcher, his experience covers over 20 years of diverse roles with distinguished international organisations and institutions. Currently, he is a Senior Programme Associate of the Global Governance Programme at the European University Institute (EUI), Florence. He was a Jean Monnet Fellow at the EUI during the 2016-2017 academic year. He has also been a Senior Research Fellow at the World Trade Institute (WTI), University of Bern from 2010 to 2017 and a Lecturer in Economics in the Masters in International Law & Economics (MILE) programme at the WTI.

His research contributions to services trade, government procurement, global value chains, and regional integration have been presented and published in leading academic journals, international conferences, and book chapters. He offers consulting in economics research and policy analysis to a range of international institutions, including the World Bank, ADB, the European Commission, and the Commonwealth Secretariat.

Recently Anirudh was accepted as an affiliate researcher at CIRCLE-the Centre for Innovation Research – at Lund University, Sweden. CIRCLE is an interdisciplinary centre at Lund

University connecting researchers on innovation from different in-house faculties and other Swedish and international universities. As an affiliate member, Prof. Shingal will participate in research meetings and activities at CIRCLE and also facilitate collaboration between other researchers at Lund University and SPJIMR. This affiliation will also enable Prof. Shingal to expand his international professional network, which already includes non-resident senior research positions at the Global Governance Programme, European University Institute, Florence and the World Trade Institute, University of Bern, Switzerland.

Invited Speaker Profile 6

Prof. Neerav Nagar

Associate Professor (Finance & Accounting), Indian Institute of Management, Ahmedabad

neeravn@iima.ac.in

Neerav Nagar is a Fellow of IIM Calcutta. His teaching and research interests lie in the areas of financial accounting, financial statement analysis, corporate governance and earnings manipulation. His research work has been published in leading journals like Journal of Business Finance and Accounting, Corporate Governance: An International Review, Journal of Accounting, Auditing and Finance, Journal of Business Research and Journal of Contemporary Accounting and Economics.

Invited Speaker Profile 7

Prof. Shrabani Saha

Professor of Development Economics
Lincoln International Business School
College of Arts Social Sciences and Humanities

ssaha@lincoln.ac.uk

Dr Shrabani Saha is a Development and Macro Economist. Dr Saha has joined the University of Lincoln as a Senior Lecturer (Associate Professor) in Economics in 2014. Prior to University of Lincoln, she was a Lecturer of Economics at Edith Cowan University, Australia and Massey University, New Zealand. She also worked as an Associate Lecturer in the University of Sydney, Australia, and as tutor at University of Western Sydney, Australia.
Dr Shrabani Saha holds a PhD in Economics from Massey University, New Zealand, Masters Of Economics from University of Sydney, Australia, MSc in Economics from the University of Calcutta, India and a BSc (Hons) in Economics from the University of Calcutta, India. She also holds a professional teaching qualification from Higher Education Academy, UK as a fellow.

Dr Saha is deeply interested in political economy, terrorism, economic growth, development economics and international trade issues. The main areas of her research focus on causes and effects of corruption across nations and corruption's relations with democracy and economic freedom. She has also been engaged in research involving political instability and its effects on tourism demands and economic growth.

Dr Saha is currently collaborating on several research projects with researchers from various universities at Australia, New Zealand, UK, USA, Canada, UAE, Malaysia, Singapore, Vietnam, Pakistan, China, Mongolia and India.

Dr Saha has presented her research papers at more than 35 international conferences in the past ten years, which include the American Economic Association Conference in USA and the International Economic Association World Congress 2017

Invited Speaker Profile 8

Prof. Sourav Bhattacharya

Professor, Economics
Indian Institute of Management, Calcutta

Sourav Bhattacharya is a Professor in the Economics Group at Indian Institute of Management Calcutta. His research includes published papers in leading journals such as Econometrica, RAND Journal of Economics, and Journal of Development Economics, covering topics like voting mechanisms, information aggregation, and wage inequality. Some of his ongoing projects explore strategic communication, political economy, and coalition dynamics.

He also serves as the Convener of SERI, a platform for Indian economists, and organizes the IIMC Global Economics Seminar Series, an online seminar held weekly. Participants are welcome to join and engage in discussions on global economic topics.

Programme Schedule

DAY 1: 12th December

8:30 AM – 9:30 AM	**Registration**
9:30 AM – 10:45 AM	**Inaugural Function** **Opening Remarks:** **Welcome Address: Prof. K. Rangarajan**, *Centre Head, Kolkata Campus, IIFT* **Inaugural Address: Prof. Rakesh M. Joshi,** *Vice Chancellor, IIFT* **Guest of Honour: Shri. Rajesh Agrawal,** *Additional Secretary, Ministry of Commerce and Industries* **Keynote Address: Prof. Sugata Marjit,** *Distinguished Professor and Former Vice - Chancellor, University of Calcutta* Topic: ***"Credit Market Imperfection, Monetary Policy and International Capital Flows – the Role of Wealth Distribution"*** Vote of Thanks: **Prof. Bibek Ray Chaudhuri**, Professor & Conference Convener, IIFT
10:45 AM – 11:00 AM	**TEA BREAK**
11:00 AM – 12:00 PM	**Plenary Session – I:** ***"Linking Trade Rules and Workers' Rights: A View from Economics"*** ***Speaker: Prof. Marcelo Olarreaga,*** *Professor of Economics at the University of Geneva. Fellow, International Trade and Regional Economics.* ***Session Chair: Prof. Sugata Marjit, IIFT, Kolkata***
12:00 PM - 12:15 PM	**TEA BREAK**
12:15 PM - 1:15 PM	**Challenges to Global Trade: Special Lecture – II** **Title: "Trade Costs and Industrialisation"** ***(1) Prof. Kunal Dasgupta,*** *Indian Institute of Management, Bangalore, India* **Title: "Impact of currency fluctuations on Indian firm level exports: Does participation in global value chains matter?"** (2) ***Prof. Rajeswari Sengupta,*** *Indira Gandhi Institution of Development Research, Mumbai, India* **Session Chair: Prof. Abhirup Sarkar, ISI, Kolkata**
1:15 PM -2:00 PM	LUNCH
2:00 PM - 4:00 PM	**Technical Session I** (*Concurrent Sessions 1-9*)
4:00 PM - 4:15 PM	**TEA BREAK**
4:15 PM - 6:15 PM	**Technical Session II** (*Concurrent Sessions 10-18*)
6:15 PM - 7:15 PM	**Power, Politics & Prosperity: Special Lecture – II** **Title: "Internationalisation of Education and Economic Growth: Does Political Stability Matter?"** ***(1) Prof. Shrabani Saha,*** *Lincoln International Business School, UK* **Title: "Political Economy of Identity Formation: Theory and Evidence from India"** ***(2) Prof. Sourav Bhattacharya,*** *Indian Institute of Management, Calcutta, India* **Session Chair: Prof. Saibal Kar, CSSS, Kolkata**
7:30 ONWARDS	CONFERENCE DINNER

Programme Schedule

DAY 2: 13th December

9:00 AM – 11:00 AM	**Technical Session III** (*Concurrent Sessions 19-27*)
11:00 AM - 11:15 AM	**TEA BREAK**
11:15 AM – 12:15 PM	**Plenary Session –II: Title: *"Economic Impacts of Climate Change"*** **Speaker: *Prof. Richard Tol,*** *Professor at the Department of Economics, University of Sussex. Professor of the Economics of Climate Change, Institute for Environmental Studies and Department of Spatial Economics, Vrije Universiteit, Amsterdam, Netherlands. Member, Academia Europaea.* ***Session Chair: Shri Debashis Sen, Ex. Chairman, HIDCO, Kolkata***
12:15 PM - 1:15 PM	**Finance: Macro & Micro Prospective: Special Lecture - III** **Title: *"What matters in predicting earnings changes – financial statement numbers or textual disclosures?"*** *(1)* ***Prof. Neerav Nagar,*** *Indian Institute of Management, Ahmedabad, India* **Title: *"Economic Sanctions and Services Trade"*** (2) ***Prof. Anirudh Shingal,*** *S.P. Jain Institute of Management and Research, Mumbai, India* **Session Chair: Prof. Zakir Hussain, Presidency University, Kolkata**
1:15 PM -2:00 PM	LUNCH
2:00 PM - 4:00 PM	**Technical Session IV** (*Concurrent Sessions 28-35*)
4:00 PM - 4:15 PM	**TEA BREAK**
4:15 PM - 5:15 PM	**Valedictory Function** *Welcome Address:* **Prof. Deepankar Sinha**, Professor, IIFT *Valedictory Address:* ***Shri Ajay Bhadoo***, Additional Secretary, Ministry of Commerce and Industry *Vote of Thanks:* ***Prof. Ranajoy Bhattacharyya,*** Professor & Conference Convener, IIFT

Foreward

The 9th Biennial conference of Empirical Issues in International Trade and Finance (EIITF) on the theme of "Emerging Issues in International Trade, Finance and Development" is a proud moment in the Indian Institute of Foreign Trade (IIFT). This year we received papers from around national and International researchers from the field of International Business, economics and allied subjects. EIITF has witnessed presence of eminent academician - Richard E. Baldwin, Professor of international economics, Graduate Institute of International and Development Studies in Geneva, Bemard Hoekman, European University Institute, Gita Gopinath, Deputy Managing Director of the International Monetary Fund, L. Alan Winters, Distinguished Professor of Economics, University of Sussex: Joshua Aizenman, Distinguished Professor of International Relations and Economics, University of Southern California; Jeffrey Bergstrand, Professor, the University of Notre Dame among others. Indian personalities, namely, Dr. C. Rangarajan, former Economic Advisor to Government of India and Governor of RBI, Union Ministers Mr. Anand Sharma, and Smt. Namala Sitharaman, the then Minister of Commerce & Industries, of Dr. Pol Antras, Robert G. Ory, Professor of Economics at Harvard University; Dr. Sumit Agarwal, Low Tuck Kwong Professor at the School of Business and Professor in the departments of Economics, and Dr. Jeffrey H. Harris, Gary D. Cohn Goldman Sachs Chair in Finance, Professor, Department of Finance and Real Estate, American inaugurated the EITF conference series.

This year the conference will witness the presence of Dr. Marcelo Olarreaga, Professor of Economics at University of Geneva, Dr. Richard Tol, Professor of Economics at University of Sussex, Dr. Shrabani Saha, Professor of Development Economics at Lincoln International Business School, Dr. Kunal Dasgupta, Associate Professor at Indian Institute of Management Bangalore, Dr. Neerav Nagar, Associate Professor at Indian Institute of Management Ahmedabad, Dr. Sourav Bhattcharya, Professor of Economics at Indian Institute of Management Calcutta, Dr. Anirudh Shingal, Professor at SPJIMR, Dr. Rajeswari Sengupta, Associate Professor at IGIDR, Prof. Rahul Sen, Auckland University of Technology, Prof. Sadhana Srivastava, Auckland University of Technology, Prof. Aleksandra Barbara, Prof. Joana Wolszczak.

We received around 160 papers that would be presented in hybrid model. The research papers in international economics, trade, finance, and global networks and value chains, logistics, FDI and on similar topics will be discussed.

The Book of Abstracts for the 9th EIITF International Conference, 2024, contains theme-wise papers, the authors, and the abstract published by the Research Division, IIFT Kolkata Campus, with an ISBN. As the Head of the Research Division at IIFT Kolkata Campus, I am pleased to put forward this compilation edited by Professor Ranajoy Bhattacharyya and Professor Bibek Ray Chudhuri. I thank Dr. Rakesh Mohan Joshi, Vice-Chancellor IIFT and Dr. K. Rangarajan, Centre Head, IIFT Kolkata Campus for their invaluable guidance and advice. This event and the proceedings "Book of Abstracts" have the contribution from all faculty and staff members, including the IT Team. I thank all the members.

We hope to witness and deliberate varied research works including new theories, propositions and empirically tested results.

Prof. Deepankar Sinha (Ph.D. IIT Kharagpur)
Professor & Head – Research
Kolkata Campus
Indian Institute of Foreign Trade

Acknowledgement

The Indian Institute of Foreign Trade has been organizing the biannual conference on Empirical Issues in International Trade and Finance since 2007. The 9th conference is being held during the time of several historically important issues that have been rocking the contemporary world. To capture these shocks to the world economic system this year's conference has been organised with a set of papers that is different from previous editions. This book of abstracts reports in nutshell the contents of the papers presented in this conference. It is hoped that the readers will find enough representation incidents such as the Russia-Ukraine war, the Hamas - Israel - Hezbollah war, the issue of climate change, the rise of China as an economic power with geopolitical implications and victimization of conflict to the European continent as well as economic migration and political changes in the America.

We are indebted to all the participants who have contributed their papers to the conference and to Saptarsi, Kinnori, Nilanjana and others for compiling and formatting the abstracts from the respective papers. To help the participants navigate through the conference the abstracts are arranged according to the conference themes.

Happy Reading !

Prof. Ranajoy Bhattacharyya **Prof. Bibek Ray Chaudhuri**

Conference Conveners
EIITF 2024

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Editorial

Trade prospects of the world overall look positive though weaknesses in economies like Germany and Argentina are the sore points. Conflicts across the globe continue to increase uncertainty leading to contraction of global demand. This in turn has adverse impacts on labour markets. Major countries are resorting to expansionary monetary policies to boost their economies given lower inflationary pressures. The near-term growth would be driven by Asian countries. Financial markets were on the other hand turbulent given weak jobs data and raising of interest rate by Japan.

Given this back drop the Conference seeks to deliberate upon key issues in international trade and finance over the two days 12th and 13th of December 2024. This volume presents the abstracts of over 100 papers to be presented in 32 technical sessions. Five plenary sessions, including the keynote addresses and special presentations, include topics which are relevant in the current context.

The range of papers to be presented include theoretical and empirical papers in international trade, finance, environment, development, growth etc. Presenters from Institutions across India and abroad will be deliberating upon important issues in the two days of the Conference. Hopefully this volume will act as a ready reckoner for the papers to be presented and their expected content. Participants would benefit from information related to the papers which might be of interest to them.

Prof. Bibek Ray Chaudhuri

Co-convenor

EIITF IX

Artificial Intelligence & Machine Learning

Assessing Indian Mutual Fund Performance: A Fama-French and Machine Learning Approach

Samrat Sadhukhan
Researcher, Madras School of Economics

Parthajit Kayal
Assistant Professor, Madras School of Economics

Abstract

This paper investigates Indian mutual funds' ability to generate and time excess returns while considering risk-adjusted rankings. It addresses the scarcity of research analyzing mutual funds' performance using risk-adjusted ratios, offering a comprehensive evaluation of funds' alpha, investment style, and timing abilities. Leveraging Random Forest Machine Learning Methods, it assesses factor exposures and the significance of each factor in explaining excess returns. The study ranks equity mutual funds across various risk ratios, compares their performance, and explores investment and timing abilities. Employing Markowitz Mean-Variance Optimization, it constructs optimal fund combinations across small, large, and mid-cap stocks. Results reveal that a value-weighted portfolio outperforms existing flexi-cap funds, indicating the benefits of diversified investment strategies. The analysis spans pre- and post-COVID periods to ascertain changes in excess alpha, providing robust insights for investors. Through this multifaceted approach, the study enhances understanding of mutual fund performance and investment strategies, equipping investors with valuable tools for informed decision-making in dynamic market environments. Additionally, it evaluates the efficacy of timing strategies using the Treynor Mazuy Model and investigates the value-weighted portfolio holdings of funds across different size categories, underscoring the potential benefits of diversified investment strategies and enhancing portfolio performance in dynamic financial markets.

AI and Workforce Adaptability: Mitigation the Skilled-Unskilled wage gap?

Shreya Roy
Doctoral Scholar, Indian Institute of Foreign Trade, Kolkata Campus, India

Bibek Ray Chaudhuri
Professor, Department of Economics, Indian Institute of Foreign Trade, Kolkata Campus, India

Abstract

Artificial Intelligence (AI) has emerged as a transformative force in the global economy, revolutionizing industries, and reshaping labour markets. This paper examines the relationship between AI penetration and the skilled-unskilled wage gap across low-income and lower-middle-income countries. Using panel data from 2007 to 2021 for 122 countries (69 low-income and 54 lower-middle-income countries), we explore how AI adoption affects wage disparities between skilled and unskilled labourers. Our findings reveal that higher AI penetration in a low-income economy leads to a widening wage gap between skilled and unskilled workers. However, this impact depends on the proportion of labourers, capable of adopting AI technology. We have used adaptability to AI as a moderation term to examine how AI penetration will affect the skilled-unskilled wage gap in its presence. We have used various controls like GDP per capita, elderly population, urban population, and unemployment to qualify the relationship between AI and the skilled-unskilled wage gap.

Development

Seasonality in Tourist Flows in India: Measuring Concentration and Stability

Paramita Mukherjee
Professor, School of Economics, XIM University, Bhubaneswar

Rajashri Chatterjee
Assistant Professor, Naba Ballygunge Mahavidyalaya, Kolkata

Abstract

This paper focuses on analysing the nature of seasonality in foreign tourist arrivals in India, one of the major tourist destinations. In addition to applying widely used summary measures of seasonality including the inequality-based and entropy measures, Gini decomposition measure, and Census X-13, a new index-based approach is developed that measures the amplitude of seasonality as well as the stability in the pattern of seasonality. Based on monthly data from January 2005 to March 2023 findings indicate that the amplitude of seasonality is not great in India and the pattern of seasonality is quite stable over time. Moreover, Though COVID-19 has increased instability, it is gradually regaining stability. Interestingly, the greatest seasonal variation is observed during the slack period than in the peak or shoulder seasons The newly developed concentration index is found to capture the nature of seasonality very well; the major contribution is that the new index offers an alternative measure of seasonality in the tourism literature.

Lone Wolf Terrorism: An Outcome of Emotive and Cognitive Economics

Aishwarya Harichandan

Indian Institute Of Management, Sirmaur (IIM–Sirmaur), Himachal Pradesh

Abstract

This paper uses game theory to model the lone wolf terrorist. Lone wolf terrorist is neither funded by a terrorist organization nor represents one. He/she undertakes a terrorist attack on his/her own capacity. It considers behavior of the lone wolf terrorist as the outcome of emotion and cognition. Emotions are represented through the social tie, whereas cognition is represented by loss aversion. In case of social tie, it is taken to be affecting the expected utility of the lone wolf terrorist. It can be positive or negative. Taking prospect theory into account, in the case of loss aversion, losses weigh twice the corresponding gains in terms of marginal gains and losses. The policy prescriptions in this case are to increase the level and intensity of punishment and the social ties.

Bridge or Gulf? Analyzing Healthcare Disparities in India: Public vs. Private Doctor

Gunjan Kumari
Doctoral Scholar, Indian Institute of Foreign Trade, Kolkata Campus

Oindrila Dey
Assistant Professor, Indian Institute of Foreign Trade, Kolkata Campus

Abstract

Post pandemic health crisis, the perception about health service providers has been even more crucial in determining the choice between public and private health provisions. Although public spending should increase on healthcare services in India but, whether this increase can improve the uptake for public healthcare is uncertain. This paper explores how the perception of medical institutions, quality, and accessibility of healthcare influence the choice between government or private healthcare providers in India. Using fixed effect panel model on IHDS household level panel data, we identify that treatment location, waiting time, network with health worker, and perception of medical institutions play important roles in determining the choice between government or private health care service providers. Therefore, from a policy perspective, public healthcare provisions must instil an improved perception of public healthcare service to encourage better utilization of healthcare provisions.

Empirical Trade - I

An Empirical Analysis of Gravity and Machine Learning Models for India's Export Potential to EFTA

Sandeep Kaur
Central University of Punjab

Rahul Kumar
Central University of Punjab

Shamil Mv
Central University of Punjab

Muhammed Pm
Central University of Punjab

Abstract

Introduction: The export potential of India has majorly evolved after the 1991 economic reforms which helps India to diversify its exports including high-value goods such as pharmaceuticals, chemicals, and machinery. On 10th March 2024, the India-European Free Trade Association (EFTA) signed a Trade and Economic Partnership Agreement (TEPA) (PIB). There are four nations in EFTA named as Switzerland, Iceland, Norway, and Liechtenstein which presents significant trade opportunities for India. This paper aims to analyse the export potential between India and EFTA nations using both the traditional Gravity Model and modern Machine Learning (ML) methods. While the Gravity Model has a long history of predicting trade flows and sound theoretical as well as empirical justification are available, machine learning methods are recently used by economists. There is still a need to develop deep understanding and methodologies to make better use of machine learning methods. These two different approaches has contrasting methodologies for predicting trade flows and determining the factors that most influence trade volumes.

Objectives: To investigate the factors driving trade flows between India and EFTA nations using the gravity model. To predict India's export potential using machine learning techniques. To provide a comparative analysis of the gravity model and machine learning methods in assessing export potential.

Data & Methodology: In this study, the data has been taken from 1993 to 2021 for India and the EFTA countries, excluding Liechtenstein due to data unavailability. The data was extracted from secondary sources such as the UN COMTRADE database for trade values, the World Bank for exchange rates, and CEPII for geographic distances. The dataset is balanced with 348 observations. For the analysis part, we used Stata for gravity model analysis and used R for machine learning models.For data preprocessing to prepare it for machine learning models, the

dataset was split into training and test sets. The training set includes data from 1993 to 2015, while the test set, used for testing and prediction, includes data from 2016 to 2021.

Gravity Model Approach: The gravity model of trade was introduced in economics by Jan Tinbergen in 1962. The idea was taken from Newton's law of gravitation in Physics and applied to international trade. He proposed that the GDP of the countries positively boosts trade but distance is inversely related to trade At its inception, the model lacked strong theoretical justification but with time many writers contributed to microeconomic, macroeconomic, and theoretical explanations to make it a popular model in international trade for bilateral trade flows. In this study, we used other variables such as exchange rates and crisis indicators for comprehensive analysis of India's trade with EFTA countries. The equation for the gravity model used in this study is:

$$\begin{aligned} log\left(\text{Exports}_{ijt}\right) &= \beta_0 + \beta_1 \log(\text{GDP}_i) + \beta_2 \log(\text{GDP}_j) + \beta_3 \log(\text{Distance}_{ij}) \\ &+ \beta_4 \log(\text{ExchangeRate}_i) + \beta_5 \log\left(\text{ExchangeRate}_j\right) + \beta_6 \text{Crisis}_t + \epsilon_{ijt} \end{aligned}$$

where Exportijt is the value of exports from country i to country j at time t. The GDP variables represent economic size. The distance variable represent capital to capital geographical distance. Exchange rates and crisis variables are also included to account for macroeconomic shocks and fluctuations.

Machine Learning Approach: The paper complements the gravity model by applying machine learning (ML) techniques to predict export flows. There are many advantages of using ML in perscriptive analysis such as handling large datasets, capturing non-linear relationships and optimizing predictions through iterative learning. The study employed four ML models named as Support Vector Machines (SVM), Random Forest (RF), XGBoost, and LightGBM. Each ML model is trained on historical data from India's trade with EFTA countries, with features such as GDP, distance, exchange rates, and crises. The models are then evaluated based on their predictive accuracy using metrics like R^2, Mean Absolute Error (MAE), and Root Mean Squared Error (RMSE).

Empirical Results: The empirical results of the gravity model showed key highlights of the factors influencing the trade flows of India. The model showed a consistent overestimation of trade for Switzerland from 2016 to 2021. This indicated that India's actual exports underperformed compared to the potential trade volumes predicted by the model. This suggests that there may be untapped export opportunities, likely due to non-tariff barriers or logistical challenges. The model also overestimated the exports for Norway during periods like 2019 and 2021 but it captured general trade trends well. The overestimation points to potential issues

such as high transportation costs or regulatory constraints that may hinder trade growth. Iceland presented a unique case where trade patterns were more volatile. The gravity model overestimated exports in earlier years but closely aligned with actual values in the later period. Thus it shows the model's limitations in accounting for fluctuations in smaller economies.

In contrast, the SVM and XGBoost showed greater accuracy in predicting trade flows across all three countries. The SVM emerges as the most accurate predictor of trade, with an R^2 of 0.876. XGBoost also followed SVM and achieved an R^2 of 0.874, while the Random Forest model performs slightly below with an R^2 of 0.867. LightGBM although more efficient and fast in processing large datasets, underperformed with an R^2 of 0.584. The SVM model accurately predicted trade fluctuations with minimal error. SVM performed best for Switzerland while XGBoost occasionally overfitted in a particular period like 2019. For Norway, both SVM and Random Forest provided relatively stable forecasts, but XGBoost's tendency to overfit was evident again, with predictions overshooting actual export figures.

The erratic trade pattern of Iceland imposed challenges for all machine learning models, but Random Forest and SVM predicted close to actual trade values. These models captured the volatility better than the gravity model. LightGBM consistently underperformed in accuracy for Switzerland and Norway because it underestimated the trade volumes. it reflects the weaker abilities of LightGBM to handle the complexities of such datasets. Overall machine learning models such as SVM provided better predictions, and highlighted the potential of AI-based models to capture non-linear relationships in trade data. Sometimes they suffer from overfitting and lack interpretability compared to traditional economic models.

One major advantage of machine learning models is their ability to provide feature importance either ranking-wise or in terms of relative importance (in percentage). Random Forest and XGBoost models identified the log of distance as the most important predictor of trade flows aligned with the traditional gravity model which shows that geographic proximity is a key determinant of trade volume (Bergstrand, 1985). The GDP of the origin country was the next most significant variable. Exchange rates and crisis indicators have a much smaller impact on trade predictions which are aligned with the gravity results.

Comparison and Discussion: The gravity model and machine learning methods are different but gives valuable interpretation for trade flows. The gravity model has a long history in economic theory which gives a clear interpretation of the relationships between trade variables and partner countries. However, its assumption of linear relationships between variables can oversimplify the complexity of trade. On the other hand, the machine learning models are better at capturing more complex, non-linear relationships but they are prone to overfitting and sometimes lack transparency in their predictions.

When we applied these approaches analyse to India's trade with EFTA countries, we found that the gravity model overestimated export potential, especially for Switzerland and Norway. On the other hand, machine learning models like SVM and XGBoost produced more accurate forecasts but sometimes overfitted to specific data points, leading to greater variability in the predictions.

Conclusion: This paper offered a comprehensive analysis of India's export potential to EFTA countries using both the traditional gravity model of trade and machine learning methods. The results showed that there are significant untapped trade opportunities between India and countries like Switzerland and Norway. Each approach, gravity modelling and machine learning, together bring unique strengths. Gravity models provide a solid theoretical foundation, while machine learning improves predictive accuracy. Policymakers could combine these methods to develop trade policies that strengthen India's economic ties with the EFTA region.

Export diversification and trade resilience of India: A study of global shocks and trade disruptions

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Abstract

Maintaining the strong external policy, India remained a relatively open for international trade in the world. India's trade strategies have shifted to diversification including product diversification indicating growth in the non-traditional product base, and geographical diversification adding more and more trading partners in the export list over the last few decades. Hence, India exhibits a powerful position in relation to global shocks such as global recession, political instabilities, disruption of global supply chains, and global pandemics such as Covid-19. But for India, this risk is clearly addressed by export diversification of the country unlike other countries of the world since India has developed trade resilience and general economic stability even during the years of global shocks.

Objective: The principal objective of the study is to assess the level of product and location diversification of Indian export and its impact on trade resilience in presence of various global shocks and trade disruptions.

Methodology: The study is entirely based on secondary data during the time period 2004-2023. Several measures of concentration including Herfindahl-Hirschman Index (HHI) and Theil Index have been employed to understand the level of diversification of Indian export to other nations. Moreover, to capture the trade resilience in presence to global shocks and trade disruptions, ANOVA model has been used between the years of shocks like Covid pandemic and normal years.

Findings: The results reveal that the product diversification indices based on HHI and Theil concentration index of total export of India on various product categories to the world is concentrating during the periods of shocks due to Covid pandemic. But the results of geographical diversification based of HHI and Theil indices indicates that the geographical diversification of India is increasing during the period of Covid pandemic along with rising trade volume which is a rare signal in external trade showing the opposite trend for geographical diversification. However, the one-way ANOVA result also reveals that the average export volume of India to the world during the Covid period and normal years has significant difference at 5% level of significance ($F=5.14$, $df1=1$, $df2=18$, p-value=0.0359).

Conclusion: The above discussion indicates the high degree of trade resilience of India which helps the country to obtain high growth rate in terms of export volume which again increases GDP growth rate of the country.

Influence of Regional Trade Agreements on Firm Performance and Investor Behaviour

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Abstract

The underlying objective of the study is to comprehend which firms utilize and benefit from regional trade agreements (RTAs). According to Melitz (2003), firms that have higher levels of productivity and efficiency will use Regional Trade Agreements (RTAs) to export their products and benefit from them, whereas less efficient firms will fail. However, recent study by Hayakawa et al. (2023) have demonstrated that firms who make use of Regional Trade Agreements (RTAs) encounter supplementary expenses. Conversely, firms that engage in importing activities also experience advantages due to the availability of raw materials at reduced rates (Blaum et al., 2018). This suggests that it is necessary to re-examine the narrative that compares exporting firms to non-exporting firms, as exporting may not always be lucrative. Hence, this study revisits the observations of Melitz (2003). However, instead of comparing exporting firms to non-exporting firms, this study is the first to compare firms that are positively impacted by Regional Trade Agreements (RTAs), firms that are negatively impacted by RTAs, and firms that are not impacted by RTAs. Furthermore, the firm characteristics, namely, productivity and efficiency used by Melitz (2003), is proxied in the present study using financial ratios representing profitability, liquidity, solvency, efficiency, and market performance. Financial ratios serve as indicators of a firm's financial health and are a useful tool for comparing different firms (Kuppenheimer et al., 2023). Furthermore, this study contends that firms unaffected by Regional Trade Agreements (RTAs) are better protected from the direct impact of global macroeconomic fluctuations compared to those that are influenced by RTAs. However, these firms will be more vulnerable to negative changes in local macroeconomic conditions, while the other group of firms will be less affected given a stable global condition. Investors are logical and promptly respond to the information supplied to them (Lo 2012, Fama, 1991). Consequently, when there is a shift in the local macroeconomic situation, if global conditions remain stable, investors will engage in selling shares of firms that are not affected by Regional Trade Agreements (RTAs). This is because investors perceive a higher level of risk in the near future and choose to sell their shares in order to buy them back later at lower prices (Whaley, 2009). This will manifest in an increase in the levels of Implied

Volatility (VIX Index) of the country. The VIX Index has been widely used as an indicator of market direction since its establishment (Yang et al., 2014). The utilisation of volatility is essential for the implementation of risk management and portfolio optimization strategies (Emenogu et al., 2020). This, therefore, study aims to determine if firms unaffected by Regional Trade Agreements (RTAs) have a greater impact on the increase in VIX values.

This study aims to analyse the objectives by comparing and differentiating between the top 500 firms listed in the stock markets of India and the United States of America through years 2000 to 2023. After removing firms belonging to financial sector and firms with incomplete data the final sample size was 644. A multivariate generalised autoregressive conditional heteroskedasticity estimator was used to divide the firms into the required three groups and a panel random generalised least squares estimator was used to comprehend the objectives. Three reasons inspire the analysis of these two economies. Most firms in India have a concentrated ownership structure, whereas in the United States of America, most firms have a diverse ownership structure (Singal & Singal, 2011). An analysis of the decision-making process in organisations with concentrated ownership against firms with diversified ownership might yield interesting insights, given the substantial disparities between them. Moreover, India is categorised as a developing nation, in opposition to the United States, which is seen as a developed country. As a result, the features of regional trade agreements between these two economies will vary greatly. Moreover, both countries are deeply involved in the present geopolitical scenario (Kumar, 2020).

The outcome of this investigation is vital for both academicians and professionals. For academicians, the findings of this study serve as a motivation to shift the present approach of categorising firms based on their export activities to focusing on how they are impacted by the evolving RTA dynamics. Furthermore, this study will provide an insight into how investor reacts to the changing share prices of the three groups of firms, as well as how these prices react to changes in the local macroeconomic conditions. Practitioners, on the other hand, will have a more profound understanding of which enterprises are more susceptible to the shifting dynamics of regional trade agreements in the country. This knowledge will assist them in making informed decisions regarding investments, partnerships, financing, and other activities that involve assessing the nature of the organisation.

Digitalization and Employment: Lessons from the Developed and Developing Countries

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Abstract

The study examines the effects of digitalization on employment comparatively between developed and developing countries. Based on the available data from the International Labour Organization (ILO) (2024), International Telecommunication Union (ITU) (2024) and World Bank (2024), three different panels comprising 53 developed, 74 developing and 37 developing Asian countries have been formed over the period of 2000-2023 to conduct the empirical exercises using panel data econometric methods. The empirical results imply that the employment effect of digitalization is diverse across developed and developing countries. It is observed that the impact of digitalization on employment in developed countries is nonlinear (inverted-U), indicating that the initial effect is positive, but in the long run, it tends to be negative. However, the impact of digitalization on employment is found to be positive and linear in groups of developing and developing Asian countries. More interestingly, compared to the group of globally selected developing nations, the extent of the employment impact of digitization is lesser in developing Asian nations. In this regard, the relationship between digitalization and job quality may have a pivotal role, as past studies evidence that the said relationship is crucial to determine whether digitalization leads to job creation or job loss. A brief policy lesson is also documented based on the study findings.

Empirical Trade – II

Do Entrepreneurial Activities Enhance Welfare by Increasing Trade?

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Abstract

While international trade is credited with enhancing welfare, it's important to remember that trade is a product of entrepreneurial activities. Therefore, trade liberalization without a corresponding increase in entrepreneurial activities may not necessarily lead to improved welfare. Yet, our understanding of how entrepreneurship influences trade and, subsequently, welfare remains limited. This study seeks to fill this gap by examining the extent to which entrepreneurship influences incomes and poverty outcomes through trade.

Heterogeneous Chinese Imports and Productivity in Indian Manufacturing: Examining Competition, Catch-Up, and Synergy

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Abstract

This paper investigates the distinct effects of consumption, intermediate and capital goods imports from China on Indian firms' productivity. Using a novel large panel data on Indian manufacturing firms for an analytical window of 1995 to 2020, we reveal that capital imports significantly enhance firms' productivity. Imports of consumption goods exert a significant-negative impact on firm-level productivity. The results remain consistent across various empirical strategies, specifically IV-2SLS and long differencing. Furthermore, we identify the R&D-capital synergy effect and the R&D inducing effect on firm-level productivity. This study highlights the significance of capital goods imports in creating the innovation and technology base of the economy. Moreover, we identify the absent synergy effects associated with two other categories of imports and conclude that there is lack of absorptive capacity for these import types. This paper emphasizes the significance of technology-intensive industries and find differing impacts of imports by technology classes on productivity.

What determines India's export price?

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Abstract:

In this paper we tried to find the factors which determine the export price of a product. The export price of a product depends on various costs and also on the competing varieties of the same product available in the importing market sourced from other different countries. These various costs include the cost of production, cost of transport and the cost of entry (tariff barrier) when entering the destination country market. Cost of production is different across different countries depending on its value chain and other costs including labour. Another important component is the cost of entry or simply the trade barriers e.g. tariff which are decided by the country at various commitment levels adding to the cost structure a product may face in the export market. The variety aspect is very important in the study. Each product available in the world market may have different varieties produced in different countries. These variety or quality differentials are demanded at destination markets due to consumers preferences for varities. Higher quality may increase demand but also increases the marginal cost and ultimately impacts the price in an upward direction. The variety and substitutivity dimension of products brings the aspect of own and cross price elasticity and the elasticity of substitution in the determination of price. Trade elasticity or the elasticity of substitution was approximated with the help of import price elasticity. For the empirical estimation of the determinants of export price we selected products at HS 6 digit level disaggregation. Further to understand better, let us suppose there are 'n' firms producing a particular product (at HS 6 digit level) in any country e.g. in India. We normalized these to one firm with the assumption that all firms are similar so that this firm is considered to be a representative firm. Similarly there are other 'n' firms in each competing countries producing the same product. In its simplest example we can consider that within country there is perfect competition and across country many good oligopoly. Here the price of that product produced by the representative
firm (say of India) is impacted by various costs, the price of its competitors and tariff. A scenario of India's export to the world market was considered for the year 2019. The unit value data were collected for all exported products at HS 6 digit level of disaggregation from WITS

database. Following our earlier assumption we have considered each HS 6 digit product to be exported by one representative firm. Its unit value of export is considered to be its export price in the world market. Elasticity data and simple average tariff data are also mapped against each product. The econometric estimation was done by employing PPML techniques. In the regression result the elasticity has positive coefficient whereas the tariff has negative coefficient which are according to the expectation.

Quantifying the Trade Creation and Trade Diversion Effect on Regional Trading Agreement: An application of Spatial Interaction Models

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Abstract

Regional Trade Agreements (RTAs) influence the signatory countries and carry substantial consequences for non-member trading partners. Traditional studies frequently overlook these wider effects. As discussed in these papers, omitting such impacts can potentially result in biased conclusions. Using a spatial interaction model, our research explores how RTAs influence trade for both member and non- member countries. We highlight that while RTAs can open markets for participants, non-participating countries might face trade diversion costs and lost opportunities, especially as more countries join such agreements. The welfare of non-member countries often suffers due to intensified price competition post-RTA formation. This study emphasizes the dual importance of a country's participation status and the actions of other nations in determining trade benefits and costs. The impact of an RTA varies depending on its depth—ranging from Free Trade Agreements (FTA) and Customs Unions (CU) to Common Markets (CM) and Economic and Monetary Unions (EMU). We propose a novel methodology to evaluate these differential effects. Our findings suggest that regionalism does not necessarily diminish multilateral trade with non-member countries, contrary to some beliefs, with some notable exceptions. Using a comprehensive panel dataset of trade flows between 76 countries from 2002 to 2019, including intra-national trade data, we ensure our model aligns with theoretical expectations. By incorporating economic, geographical, and cultural variables, we compare our results with standard benchmarks to highlight the unique impacts of various RTAs. Our research offers a deeper understanding of the nuanced effects of RTAs, providing valuable insights for policymakers and economists alike.

Empirical Trade – III

Does What You Export Matter for Growth? The Asian Story

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Abstract

From the perspective of the recently popularised notion that what matters is not the quantity but the quality of exports in determining the success story of export-led growth, this study explores the impact of export quality upgrading on the economic growth of Asian countries by employing panel data estimation techniques. By applying dynamic system GMM to a selected panel of 34 Asian countries over the period 1990-2010, a significant positive relation between export quality upgrading and GDP growth is observed. Price competitiveness of exports or the volume effect is found to play a much minor role. Clustering countries on the basis of the World Bank's income classifications reveal that export quality is a key driver of growth in both developed as well as developing economies. Notably, growth rates in the developing countries are increasingly influenced by export volume, particularly in nations reliant on primary goods. Drawing from the literature on the non-linear diversification-growth relationship, Threshold GMM estimation is applied that differentiates the quality–growth dynamics before and after a statistically significant threshold value of the export diversification index. Below this threshold, higher quality exports can actually hinder growth, whereas, above it, the relationship becomes significantly positive. These findings underscore the importance of enhancing export quality and achieving diversification to foster sustainable economic growth in Asia. The study highlights the need for targeted policies that promote quality improvement and diversification strategies to leverage these dynamics effectively.

Trade Creation and Trade Diversion Effects of India-Malaysia CECA; A Gravity Model Approach

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Abstract

This paper analyses the impacts of India-Malaysia CECA in terms of trade creation and trade diversion effects. Gravity model is applied in a panel data set of 33 countries from the period of 2000 to 2023. In order to obtain unbiased estimates, PPML method has employed using country-pair and time fixed effects. The findings indicate significant influence of GDP, distance, population, common official language and common border on trade flows. The presence of trade creation effects is observed as a result of India-Malaysia CECA along with the export creation and import diversion effects.

Technological content of export diversification

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Abstract

We provide a new tech-based interpretation of stages of diversification using detailed export data (4,985 product lines) from 160 countries over 22 years. Relative Theil index decomposition shows that changes in non-tech exports' variety drive export diversification, but the role of technological diversification increases with income: in high-income countries, it is responsible for above one-third of the overall diversification level (40% in the U.S.). The rapid development of technological capacity contributed to export diversification in China and India. Investment flows (FDI) enhance technological diversification, while exports embodying digital technologies (including AI) play a negligible role in the diversification process.

Investigating the Impact of Capital on Indian Manufacturing Export Performance: Empirical Evidence

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Abstract

The post-World War II era is marked by manufacturing trade, which increased manifold as compared to world production (World Trade Organisation, 2015).Global trade scaled further heights in the post-1980s period, often referred to as the age of globalization. As international competition intensified due to the forces of globalization, even firms operating domestically required an understanding of the nature of competition they faced from foreign firms (Nag & Chakraborty, 2019). High-productivity firms tend to export more and also, the process of exporting leads to higher productivity (De Loecker, 2007; Van Biesebroeck, 2005). Despite extensive research on factors influencing export performance, the specific impact of different forms of a factory's capital on its ability to export remains underexplored. Capital in its various forms—fixed assets, technological investments, and current assets—potentially plays a pivotal role in enhancing a factory's capacity to produce high-quality goods, innovate, and maintain competitive prices in the global market. This study aims to fill this gap by analysing the relationship between different types of factory capital and export performance using cross- sectional data from the Annual Survey of Industries (ASI) over a 14-year period.

Upon conducting an extensive review of the available scholarly works a significant research gap emerged in the current literature, primarily due to the focus on firm-level data. Most studies on export performance have utilized firm-level data, which aggregates information across multiple factories and business units within a firm. While this approach provides valuable insights, it often overlooks the specific contributions of individual factories to export performance. Factory-level data, as utilized in this study, can provide a deeper understanding of how capital investments at the factory level influence export outcomes. This approach can reveal the heterogeneity in capital investment effects within different factories of the same firm and across various firms, providing more precise policy recommendations and business strategies.

The problem addressed in this research is the lack of comprehensive understanding of how different forms of capital investment influence a factory's ability to enter and sustain itself in

the export market. Specifically, this study seeks to answer the following questions: Does higher capital investment correlate with better export performance? Are there particular types of capital investments that are more influential? Do different industries place varying degrees of importance on these forms of capital? By addressing these questions, this research aims to provide valuable insights for policymakers and business leaders to formulate strategies that enhance export performance through targeted capital investments.

The relationship between capital investment and export performance has been the subject of various studies. Traditional economic theories, such as the resource-based view (RBV), suggest that firms with substantial and well-managed resources are better positioned to compete in international markets (Barney Jay, 1991). Assets related to production processes, innovation, and technology play a vital role in giving firms a competitive edge in international markets. (Hirsch, 1976). Studies by (Melitz, 2003) and (Bernard et al., n.d.) indicate that firms engaging in international trade typically exhibit higher productivity levels, often attributed to more significant investments in capital. Moreover, empirical research by (Lileeva & Trefler, 2010) demonstrates that capital investment in advanced technologies can lead to improved product quality and innovation, which are essential for maintaining competitiveness in global markets. Additionally, (Esaku & Krugell, 2020)found that non-exporting firms that invest in physical capital are more likely to become exporters, and such investment is associated with increased productivity growth among exporters. A considerable body of research on the determinants of export performance in Indian manufacturing has focused on the role of firm size, often using capital stock or number of employees as a proxy for size. However, the impact of firm size on export performance is not unequivocally positive. (Sterlacchini, n.d.) finds that for small firms, size positively affects export performance in an inverted U-shape, while for medium-sized firms, size is not significant, and for large firms, the relationship is U-shaped and negative. This suggests that even small firms can reach the size threshold for increased export propensity. This study builds on the existing literature by employing a comprehensive approach to examine the impact of multiple forms of capital investment—fixed assets, technological investments, and current assets—on export performance. It uses a novel methodological approach, Cragg's Hurdle Model, to account for the dual decision-making process involved in export activities: the decision to export and the intensity of export. This model is particularly suitable for datasets where the dependent variable (export performance) has many zero observations, representing firms that do not export. The hurdle model combines a selection model that determines the boundary points of the dependent variable with an outcome model that determines its non-bounded values.

This study anticipates that higher levels of fixed asset investments will positively correlate with both the decision to export and the intensity of export. Specifically, firms with significant investments in fixed assets are expected to demonstrate higher export performance due to increased production capabilities, improved product quality, and enhanced competitiveness. Investments in computer and IT infrastructure are also anticipated to have a positive impact, facilitating better management practices, improved supply chain coordination, and access to international markets through e-commerce platforms. Current assets, which include inventories and receivables, are expected to positively influence export performance by providing the necessary liquidity and flexibility to meet international demand. By employing Cragg's Hurdle Model, this study aims to provide a nuanced understanding of how different forms of capital investment influence both the likelihood of exporting and the extent of export activities. The findings are expected to offer valuable insights for policymakers and business leaders, emphasizing the importance of targeted capital investments in enhancing export performance and overall competitiveness in the global market.

In conclusion, this research contributes to the existing literature by providing a comprehensive analysis of the impact of various forms of factory capital on export performance, using a robust methodological framework and a rich dataset spanning 14 years. The results will have significant implications for strategies aimed at boosting export capabilities and fostering economic growth through effective capital investments. By understanding which types of capital investments are most beneficial for export performance, policymakers can design targeted support programs to encourage such investments. Business leaders can also leverage these insights to optimize their capital allocation strategies, enhancing their competitiveness in international markets. Additionally, the findings may inform future research by highlighting the importance of considering various forms of capital and their differentiated impacts on export performance. Overall, this study aims to contribute to a more nuanced and practical understanding of the factors that drive successful export activities, ultimately supporting broader economic development goals.

Environment - I

Exploring the Link Between Agricultural Trade and Carbon Emissions in India: A Time Series Analysis using ARDL model

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Abstract

India is one of the fastest-growing economies globally, with its GDP tripling over the past decade, a growth accompanied by increasing carbon emissions. Agricultural trade plays a significant role in India's balance of payments, with the country being a major exporter of rice, coffee, spices, and beef. This paper examines the relationship between carbon emissions and agricultural trade, using economic output and Foreign Direct Investment (FDI) as control variables. The study employs the Autoregressive Distributed Lag (ARDL) model, analyzing time series data from 1990 to 2020. The findings reveal that agricultural trade has a positive impact on carbon emissions, primarily due to changes in land use, with forest areas being converted into farmland for export crops. This research offers valuable insights into the complex relationships between India's emissions, agricultural trade, and economic growth.

Investigating Carbon Leakage Risk in Industries of India under Carbon Credit Trading Scheme

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Abstract

This paper examines through empirical study the risk faced by the Indian manufacturing sector in terms of carbon leakage. Eight sectors are evaluated on the metrics of trade intensity, energy intensity and carbon leakage indicator. Secondary data sources are used and data primarily concentrates on the 2021-22 valuations. On evaluation three out of eight sectors were found to be at risk of carbon leakage. The paper further goes on to suggest policy interventions to reduce or offset the load of emission restrictions on these sectors and to protect these sectors' competitive advantage.

Impact Of Climate Change On Trade In Asia: A Gravity Model Approach

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Abstract

Introduction: Globally, Climate change is one of the most critical concerns of the modern age and is becoming significant daily. This issue has broad socioeconomic implications that could significantly impact people's welfare and lives through extreme weather events and unusual pandemics. Some recent studies have highlighted the growing trend of climate disasters and their enormous global economic outcomes. The focus of debates about climate change has shifted from the causes of the phenomenon to the possible repercussions of climate-related disasters due to continuous rising temperatures and the continuous emission of dangerous gases. Disasters linked to climate change occur more frequently and affect many aspects of daily life. The World Bank, World Trade Organization, and United Nations Environmental Program have collectively expressed concerns about the interplay between trade and climate change through various reports and working papers (Brenton & Chemutai, 2021; Dellink et al., 2017; Yamaguchi, 2021).

Objective: What are the main factors affecting trade due to climate change in Asia? What is the impact of climate change on trade in Asia?

Methodology: Through this study, we tried to estimate the impact of climate change on trade in Asia. For the study's objectives, we selected the top 25 countries from the Asian region that contribute significantly to Asia's trade in the world's total trade. We used the panel data from 2002 to 2022, the selected countries, and applied the Gravity Model of trade given by Jan Tinbergen in 1962. We took the trade, import, and export as dependent variables, for which data were taken from the world development indicator, and variables which were taken as independent are: - climate disaster (for which data were taken from Germanwatch climate index), data for GNI per capita, GDP, Inflation, FDI, Population, Urban Population, Population Growth, Industrialization, Industry Growth were taken from World Development Indicator, and for Institutional Quality data taken from World Governance Indicators.

$$Trade, Import, Export_{it}$$
$$= \alpha + \beta_1 ClimateDisaster_{it} + \beta_2 GNIperCapita_{it} + \beta_3 GDP_{it}$$
$$+ \beta_4 Inflation_{it} + \beta_5 ForeignDirectInvestment_{it} + \beta_6 Population_{it}$$
$$+ \beta_7 PopulationGrowth_{it} + \beta_8 UrbanPopulation_{it}$$
$$+ \beta_9 Industrialization_{it} + \beta_{10} Inflation_{it} + \beta_{11} IndustryGrowth$$
$$+ \beta_{12} InstitutionalQuality_{it} + \epsilon_{it}$$

Result: The analysis found that there is an uneven impact of climate change on the trade of all countries. Gravity Model results show a significant positive correlation between international trade and climatic disasters. Similar we found for import. And there is an insignificant correlation with exports. Developed countries have not been impacted by climate change, but developing countries have suffered more.

Conclusion: Climate change is today's world's one of the biggest concern, which is affecting overall the world differently and many aspects of the living creatures on the planet. Due to climate change problems, trade does not remain unaffected. Climate change and trade are interrelated with each other. Changes in climate impact world trade directly or indirectly by damaging trade infrastructure and making trade more costly and inefficient, which will hamper the economies in different ways. South Asia is the most impacted region of Asia. Agricultural trade is most affected by climate change. However, there were many policies and environment-related provisions in trade agreements that help mitigate climate change. However, there is a need to add legal enforceability in environment-related policies and trade agreements, which will enhance trade and eliminate climate change-related issues.

Seas Of Opportunity: Balancing Trade, Subsidies, And Sustainability In Global Fisheries

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Abstract

The 12th Ministerial Conference of World Trade Organization (WTO) in June 2022 achieved a significant milestone in terms of the member states converging to a consensus on one of the most contentious issues of Fishery Subsidies. The Agreement on Fisheries Subsidies (AFS) is one of the major milestones achieved by WTO. The agreement has been ratified by seventy - one Member States till now. In the recently concluded 13th WTO Ministerial Conference in Abu Dhabi, the second Phase of Negotiations was not able to come to any consensus among the WTO Member States.

Governments across the globe inject huge number of subsidies in the fishing Sector to generate more revenues from Consumption, Trade and Production of Fisheries. This leads to a web of destruction as these huge amounts of subsidies create negative externalities in the form of Overfishing and Illegal and Unreported fishing (Lower Catch in Future risking livelihoods, income and food security) and economic losses due to environmental degradation of the Ocean. There are three main constituent agendas which form the part of the Agreement. Firstly, the agreement aims to curb harmful subsidies given by governments across the globe which leads to overfishing on high seas leading to depletion of fish stocks affecting the future income of Fishermen and revenue generation in the fishery sector. Secondly, the aim is to eliminate Illegal, Unreported and Unregulated fishing (IUU) leading to economic losses and hampering the objective of Ocean Sustainability. Third, it tries to prohibit unregulated fishing in high seas and ensure protection in those areas where fishery management policies are not effective.

This agreement recognizes the connections between global maritime trade patterns, the importance of marine conservation, and the rights and livelihoods of fishing communities around the world. It is based on the principles of multilateral cooperation. Nevertheless, the uncertainties inherent in Agreement on Fishery Subsidies (AFS) rules might result in varying interpretations and enforcement approaches across member nations, impeding its overall efficacy in attaining its stated environmental and conservation objectives. This disparity gives rise to issues regarding the impartiality and equality of the applied procedures. In order to overcome these obstacles related to compliance and fully achieve the potential of AFS in

reducing overfishing and advancing sustainable fisheries management on a worldwide scale, it is necessary to make collaborative and focused policies. Moreover, the varied situations in different countries regarding fishery subsidies and their effects on trade and sustainability highlight the necessity for careful and detailed agreements. (Chaisse et al, 2024).

The Fishery Subsidies issue has been a bone of contention at WTO for several years now. After Years of Negotiations, in the 12th Ministerial conference, the agreement was converged to a consensus among member states and the phase one of the negotiations was completed. At the 13th Ministerial conference in the Abu Dhabi, the negotiations failed to converge to a second phase of negotiations. Why Fisheries sector hold immense importance in terms of economic parameters like growth, trade and employment? What is the significance of this agreement? Why the issues of Fishery Subsidies are an intertwined complex issue that encompass three dimensions that includes Trade, Public Policy and environmental concerns ultimately affecting the Ocean Sustainability?

Environment - II

Environmental regulations and pollution-intensive goods exports: In which direction is India's trade specialization heading?

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Abstract

Reduction in Greenhouse gases (GHGs) is seemingly difficult due to the challenges in ensuring international coordination for both active and passive mitigation efforts. Framing an effective environmental policy necessitates collaborative efforts from all countries and a comprehensive understanding of the trade patterns and their environmental consequences. This study considers India's export in pollution-intensive (PI) sectors to 24 selected high-income countries as the dependent variable, with regulations in the importing countries serving as explanatory variables. The study employed a PMG-ARDL model to investigate the long-run impact using data for the period 1994-2020. The presence of structural breaks and causal effects are also tested. India's export pattern show a significant shift towards specialization in PI goods, particularly evident in trade with high-income countries and at the disaggregated industry level. The findings suggest that measures related to regulations on domestic industries by high-income countries may have contributed to rise in dirty imports from India. These results are in line with the Pollution Haven Hypothesis (PHH). In addition, trade policy measures such as the imposition of tariffs discourage the trade of PI goods. Therefore, in the short-run, India or other developing and less developed countries may benefit from PI goods exports but in the long-run, polices in line with CBAM shall effectively help achieve mitigation goals.

Influence of Trade, Technological Innovation, and Renewable Energy Consumption on CO2 Emissions: Evidence from BRICS+ Countries

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Abstract

While international trade and innovation drive economic growth, their effects on emissions are complex, often intensifying carbon levels unless countered by the adoption of renewable energy. In light of this, the study explores the influence of technological innovation (TI) and renewable energy consumption (REC), along with trade (imports and exports), on both consumption-based and territory-based CO2 emissions. The analysis employs panel ARDL regression to assess the impact across BRICS+ countries (a group of 10 nations) from 1990 to 2023. The findings suggest that increasing the share of REC and promoting eco-friendly TI can help lower emissions. This research provides policy recommendations for BRICS+ nations to harmonize economic growth with environmental sustainability through green technologies and more eco-conscious trade practices.

Environment - III

Do 'Women Hold Up Half the Sky' in Fuel Choices? Revisiting the role of Adolescent Empowerment in a Developing Country Context

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Abstract

In this paper, we estimate the causal impact of women's empowerment on choice of cooking fuel within the household. For this purpose, we study a multidimensional empowerment programme for adolescent girls in India, known as SABLA, that provided support to women across a multitude of dimensions. We exploit plausibly exogenous geographic and cohort variation generated in the implementation of SABLA programme using a difference-in-difference identification design. The results of our study based on this quasi-experimental methodology suggests that women potentially exposed to the SABLA empowerment programme were more likely to use cleaner and efficient modern cooking fuels post-marriage. This high usage of modern cooking fuels is matched by fall in likelihood of using inefficient transitional and traditional cooking fuels. We also show that change in place of cooking, improved awareness regarding healthy kitchen practices coupled with improved intra-household bargaining power on account of exposure to the programme are likely mechanisms causing these effects. Our results remain robust to a variety of sensitivity checks and analysis.

Leveraging Upward Inter-generational Spillovers for Sustainable Living: Evidence from a Randomized Control Trial in India

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Abstract

Evidence on upward spillovers of information and knowledge from children to parents is largely limited to within-household human capital investments and impacts on adult outcomes, rarely involving mechanisms to internalize negative externalities imposed on the society. In this paper, we provide novel evidence of such spillovers of environmental awareness from children to parents resulting in sustainable choices made by the households. We conduct a randomized control trial in 110 day care centers in India with two treatment arms, viz, information and awareness creation and in-kind transfers over and above awareness creation. We find evidence of decreased usage of single-use plastics as well as enhanced environmental consciousness among parents of treated children. Additionally, the intervention also leads to higher willingnesses to pay for sustainable alternatives, if made available. We identify that information appears to be the binding constraint in the counterfactual, as opposed to the lack of a market for sustainable products. Our study provides a low-fixed cost and near-zero marginal cost policy alternative, exploiting upward intergenerational spillovers, to promote the use of environment friendly substitutes for single-use plastics.

Economic Effects of Environmental Provisions in Preferential Trade Agreements

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Abstract

This study explores the role of environmental provisions (EPs) in Preferential Trade Agreements (PTAs) and their impact on international trade flows between 2000 and 2022. The research aims to determine how the inclusion and frequency of EPs within PTAs influence the trade of clean and dirty goods, with a focus on differences between developed and developing countries. Utilizing a comprehensive dataset, goods are classified into 'clean' and 'dirty' categories, and a depth index is constructed to measure the extent of EPs in PTAs. Econometric models test the Porter Hypothesis (PH) and the Pollution Haven Effect (PHE) to evaluate the impact of environmental stringency in PTAs on trade flows.

The findings indicate that traditional PTAs, even without EPs, positively influence trade flows. However, PTAs that include at least one EP tend to promote both total and dirty trade, contrary to the primary objective of environmental provisions. Detailed analysis reveals that an additional EP negatively impacts total and dirty trade but positively affects clean trade, partially supporting the Porter Hypothesis for clean trade but rejecting it for total and dirty trade. This suggests that EPs can foster a technology-based comparative advantage for clean goods but fail to curb the trade of dirty goods.

For developing countries, the study presents mixed results regarding the Pollution Haven Effect. The PHE is confirmed for dirty exports, indicating that stringent EPs in North-South PTAs can reduce dirty exports. However, the PHE is rejected for dirty imports, implying that developing countries continue to import dirty goods from developed nations, highlighting potential environmental protectionism by the North.

In a nutshell, the research contributes to the broader understanding of the trade-environment nexus and offers policy insights for future trade negotiations, emphasizing the need for a nuanced approach to EPs in PTAs to balance environmental goals with equitable economic development.

Ex-ante Evaluation of Deeper Liberalization Policies of BRICS Nations on Economy Wide Variables including Carbon Emissions of India and other Member States and Regions

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Abstract

We use applied general equilibrium GTAP-E Energy environment variant to run deeper liberalization simulations among 5 BRICS nations and then additionally with the new members of the BRICS assuming all members form a free trade agreement. India's value of GDP measured by VGDP and welfare measured by equivalent variation reaches 2.55 and 55 billion US dollars respectively under BRICS deeper liberalization efforts with more than 3 percent carbon emissions. For BRICS4 (excluding India), VGDP, welfare and carbon emissions are 3.86 percent, 386 billion US dollars and 2.99 percent respectively due to scaling up of economic activity happening because of deeper trade liberalization efforts. Thus, additional members in BRICS namely Iran, UAE, Ethiopia and Saudi Arabia bring increasing dividends in terms of VGDP, welfare but also increase carbon emissions. Deeper liberalization consists of measures related to tariff and non-tariff liberalization, movement of factors of production and output oriented technologies applied to energy intensive sector and energy systems with adoption of new shipping technologies and shipping routes. India's growth does not go beyond 4 percent by aligning with BRICS nations and it's expanding alliance. Probably India needs to look for alliance among Middle East and North African (MENA) region for higher dividends related to growth and welfare. At the end, the paper goes into the question of comparing welfare, growth and carbon emissions either through scaling up of economic activity through BRICS-India trade liberalization and national innovation policies through output oriented technological progress in India.

Finance - I

Herding Behavior and Financial Contagion: A Behavioral Finance Approach to Systemic Risk

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Abstract

This paper investigates the interrelationship between herding behavior and financial contagion from a behavioral finance perspective. While herding behavior—where investors imitate others' actions rather than conducting independent analysis—has been widely documented, its role in exacerbating financial contagion remains underexplored. Financial contagion, which describes the rapid spread of market shocks across regions or sectors, is often intensified by cognitive biases like overconfidence, fear of missing out (FOMO), and loss aversion. This study aims to bridge this gap by analyzing how these biases contribute to the transmission of financial shocks. Leveraging market data from past financial crises, including the 2008 financial crisis and the COVID-19 pandemic, the study applies various statistical tests using SPSS. Correlation analysis and cross-correlation of time series are employed to detect co-movements across markets. ARIMA models are used to understand and forecast market trends, while factor analysis isolates common factors driving herding behavior. Additionally, regression analysis explores the relationship between investor sentiment and financial contagion, and cluster analysis identifies behavioral patterns among different investor groups. The findings will provide valuable insights for both researchers and policymakers by highlighting the behavioral mechanisms behind financial contagion and offering practical recommendations for risk mitigation.

Market Efficiency and the Weekend Effect: Evidence from India's Banking and Financial Sector

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Abstract

The weekend effect is a calendar anomaly documented by many researchers studying the financial markets. The weekend effect or the day of the week effect exhibits a systematic pattern in the market returns based on the days of the week which seems to deviate from the Efficient Market Theory. However, there are studies which also exhibit that the anomaly does not exist or seems to disappear with time. There are contradicting views in the existing literature in this regard. Thus, this study aims to investigate the presence of the Weekend Effect in the Indian Banking and Financial service sectors. The NIFTY Bank Index and NIFTY Financial Services Index have been taken as representatives of these two sectors. Five-year (2019-2023) market returns have been analysed using OLS and GARCH Models to study the presence of weekend effect in these sectors. No significant evidence of weekend effect was found in these two sectors supporting the weak form of the market efficiency. The findings have implications for investors, arbitrageurs, hedgers, portfolio managers as well as regulators and academicians.

Does Stock Exchange Listing Improve the Financial Stability of Small and Medium Enterprises? Evidence from BSE SME Platform in India

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Abstract

Small and Medium Enterprises (SMEs) are of one of the leading contributors of economic growth in both developed and developing countries. Access to adequate external finance is considered as prolonged problem that hindering the SMEs growth and innovation. Considering the fundamental role of SMEs in Indian economy, dedicated platforms is established with relaxed norms of listing requirement and disclosure regulations to make the capital market access easier for SMEs. The study empirically attempts to investigate the impact of stock exchange listing on the financial stability of SMEs by using a sample of the same listed Indian SMEs, before and after the listing for the period spanning from 2012 to 2023. The study evaluates the impact of listing in two ways: first, by how far listing helps SMEs to improve financial stability using the statistical method panel regression model and second by what extent listing helps SMEs enter into a higher level of financial stability zone by developing an ordered panel logistic regression model. To measure the financial stability of companies, Altman's Z"-Score (2005) model is chosen as the dependent variable for the first model and Z"-Score zones is chosen as the dependent variable for the second model. The same set of independent variables is used to estimate both of the models. Listing is the main independent variable of interest and control variables include company specific factors: Age, Internal Growth Rate, Cost to Income ratio and macroeconomic factors include Interest rate and financial crisis COVID-19. The study reveals that stock exchange listing is highly significant in improving SMEs financial stability and entering a higher level of financial stability zone. Among all the control variables, only company's internal growth rate is found as positively significant in impacting financial stability of the company for both the models and interest rate is positively significant in the second model. The study suggests that access to the capital market can benefit SMEs to raise funds through new channel, and thus can improve financial stability by lowering the probability of failure due to obstacles in accessing external finance. But listing would prove to be a favourable way of obtaining funds if SMEs consistently perform well in generating operating revenues and show high growth of

companies over time after listing of the stocks. Otherwise, the associated costs of listing will outweigh the benefits.

Finance - II

Connectedness among oil price, COVID-19 and Indian Stock Market: Evidence from wavelet analysis

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Abstract

The COVID-19 pandemic has made the global financial market more challenging and riskier for investors and policymakers. Hence in this study, we aim to investigate the impact and association between oil prices, COVID-19 cases, stock market (BSE: Bombay Stock Exchange) and BSE sectoral indices. This study uses the daily data of new COVID-19 cases, oil price, stock and sectoral return from 31st Jan 2020 to 20th Dec 2023 (1420 days). To study the dynamic correlation, co-movement and interconnectedness Maximal Overlap Discrete Wavelet Transform (MODWT), Wavelet Coherence, Partial Wavelet Coherence and Multiple Wavelet Coherence methods are used. Our analysis with the graphical wavelet coherence plot provides the insides as (a) Dynamic time-varying correlation among COVID-19 cases, oil price, stock and sectoral return, (b) Strong co-movement between oil price and sectoral return, (c) COVID-19 impacts the stock market. We discuss the investment implications in detail.

Forecasting Currency Volatility and Spillover: Insights from Stochastic and BEKK GARCH Models

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Abstract

Foreign currency volatility and spill over effects can have wide ranging effect on economy and businesses. An anticipated exchange rate fluctuations would adversely affect a company's competitive position, even if it does not operate overseas. In this paper we model the volatility dynamics and spillover effects of 11 foreign currencies. Taking the historical Open, High, Low and Closing (OHLC) prices between 2004 and 2024, we model the stochastic volatility and predict the spillover effect using BEKK GARCH. The methodology of this study involves 3 steps, i.e., Calculating daily volatility and stochastic volatility for all the currency pairs, computing Value-at-risk (VaR) for each pair, and estimating the spillover effect among the foreign currencies. In the first step, following (Diebold & Yilmaz, 2012), we calculate the daily volatility of 11 pairs of foreign currencies, after which we compute the stochastic volatility for each pair. Stochastic volatility models capture the time-varying nature of volatility in asset price returns. We apply (Kastner & Frühwirth-Schnatter, 2014) Bayesian estimation of stochastic volatility using Markov Chain Monte Carlo (MCMC) methods to model the volatility of the 11 currency pairs. The non-centred parameterization improves the efficiency and estimation process of the stochastic volatility model using MCMC methods. In the second step, we calculate the Value-at-risk by the Variance-Covariance approach for each pair individually. This part of the analysis depicted a negative value of VaR for most of the years across all the 11 currency pairs taken into consideration. Finally, BEKK (Baba, Engle, Kraft, and Kroner) GARCH is applied to the calculated stochastic volatility to analyze the spillover effect among foreign currencies. BEKK describes the dynamic relationships and volatilities spillover and persistence of shocks among multiple currencies. The BEKK (1,1,1) model is a popular specification due to its balance of flexibility and parsimony. The research provides a robust understanding on the patterns of currency volatility movements and spillover effects. The research study offers a profound methodology to the financial institutions, corporates and other stakeholders to forecast currency volatility and

effectively manage foreign currency risk. The policymakers can scientifically estimate the transmission of shocks across various foreign currencies and develop measures to mitigate risk.

Exploring the Global Impact of FinTech on Financial Inclusion: A Study of 39 Selected Countries

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Abstract

FinTech has emerged as an efficient and effective tool to provide quick access to digital financial services (DFSs) across global citizens in recent years. The existing evidence suggests that financial inclusion via traditional services leads to economic growth. Do the countries who are ahead in traditional financial inclusion only experience rapid digital financial inclusion or countries which were lagging in traditional financial inclusion can also experience higher exclusion in digital space? What does it mean by financial inclusion? We addressed these questions by quantifying the role of FinTech towards financial inclusion among 39 selected countries. This study uses The Global Findex Database (2021) along with The Mobile Money Regulatory Index Database (2021) and World Governance Indicators (2021) to investigate the linkages between fintech development and financial inclusion among the 39 selected countries.

Following are the three contributions of this study: -

- It identifies and provides a list of indicators that can be utilized to understand both traditional and digital financial inclusion (DFS) in 39 selected countries.
- It studies the impact of traditional and digital methods on financial inclusion within the selected countries.
- It uses Spearman's Rank Correlation coefficient to capture the existence of heterogeneity in the use of DFS across different types of countries.

The evidence suggest that no considerable heterogeneity exists across countries.

Finance - III

Thematic Analysis of Central Bank Digital Currency Policies: Insights from AI-Driven Topic Modeling and NLP Techniques

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Abstract

In this discourse, we conduct a thematic analysis of central bank digital currency (CBDC) policies by leading economies and monetary unions (entities) using popular artificial intelligence (AI) techniques, natural language processing (NLP), and topic modeling. Employing the latent dirichlet allocation (LDA) technique through R Studio, we identify topics represented by keywords from the policy corpora of the entities. We further perform vectorizations of the topic keywords using the GloVe (Global Vectors for Word Representation) embedding technique and classify the policy topics in the journal of economic literature (JEL) based on cosine similarity between the topic keywords and the JEL category words/phrases. We identify that in each of the policy entities, there is a dominant topic that can be made up of the keywords. From the entire combined policy text corpora, we identify that there are primarily five themes that can be made up of the policy-topic keywords. The themes are CBDC projects and implementation, CBDC regulatory mechanisms and banks, CBDC payments and transactions, CBDC risks, and CBDC as a currency. We finally perform the thematic analysis of the policies to shed light on the features and characteristics of the CBDC policies and their effects on the economy.

Financial Strength & Market Value, Capacity Expansion, Trade and Firm level Productivity: Evidence from Indian Chemical Industry

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Abstract

The effect of trade on firms' productivity is explored with an unbalanced panel of 2045 Indian Chemical firms from 2000-01 to 2019-20. We consider the ratio of sectoral trade to GDP in PPP (USD) to highlight the effect of real openness on firm-level productivity (TFP). The interconnectedness between trade and firm-level TFP is addressed while eliminating the endogeneity bias by constructing a geography-based trade instrument. Robust econometric estimates depict the following: a rise in trade value increases firm-level productivity of the Chemical firms. A proportionate increase in firm-level capacity expansion acts as a productivity booster. However, (an inverted U-shaped) non-linearity between TFP and new investment is observed as 'adjustment costs' creep in beyond a critical level of capital accumulation. Dominant sales growth and profitability along with a strong balance sheet affect firm-level TFP positively. Firms reap the advantage of learning by doing beyond a threshold minimum level of years of experience gain. For the listed firms, a higher market value predominantly enhances TFP; while productivity of the unlisted firms is induced by changes in firm-level exports and increase in financial strength. Productivity of the pharmaceutical firms, however, is exacerbated by increase in exports, capacity expansion, and profit per unit of total assets.

Time-frequency Effect of Oil Price on Stock Market and Sectoral Indices: A wavelet-based comparative study on Indian Stock Exchanges

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Abstract

The stock market is a complex and collective trading network platform indicating the health of one economy. Comprehensive and comparative understanding is essential to recognize the stock, sector, period, and marketplace for better investment. This paper contributes by investigating a comparative study to examine the impact of oil prices on the Indian stock market and five sectoral indices listed on the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE), the two prominent stock exchanges of India, throughout Nov 2015 to Jul 2024. The maximal overlap discrete wavelet transform (MODWT) is used to decompose the original time series data and feedback relation is observed at a higher time horizon. The wavelet coherence plot reveals the co-movement of oil prices and the indices. The dynamic relationship for both of the stock exchanges is compared. Our empirical finding suggests that both of the stock exchanges are sensitive to the oil price at all time horizons (low and high frequency). We discuss the dynamic lead-lag relationship and the investment consequence in detail.

Beyond the Crises: Unravelling the Real Effects of Currency and Banking Crises

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Abstract

Surging complexities and interconnectedness within the global market necessitates the extensive analysis of macroeconomic indicators that contribute to the real effects of currency and banking crises. This paper attempts to employ advanced machine learning models like SVM and BNN to determine the most relevant factors that are highly sensitive to the eventuality of currency and banking crises. This study shows that inflation and net capital inflows are highly sensitive to currency crises due to substantial depreciation of currency. On the other hand, bank deposits and credit availability are extremely sensitive to the eventuality of banking crises as a consequence of increasing banking distress in the economy. There being a non- linear relation among the macroeconomic indicators in the real world, machine learning algorithms perform better in determining the most significant factor that explicate the aftermath effects of currency and banking crises in comparison to conventional econometric models.

Global Value Chain - I

A quantitative assessment of the Indo-Pacific Economic Framework (IPEF) and India opting out of the trade pillar: Evidence from a global economic model

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Abstract

Our study attempts to quantitatively evaluate the general equilibrium impact of formation of the Indo-Pacific Economic Framework (IPEF) trade pillar including India, followed by a counterfactual scenarios involving India leaving IPEF. We further use a General Equilibrium Pseudo Poisson Maximum Likelihood (GEPPML) estimation using cross sectional data for 2021 to do the counterfactual policy analysis incorporating a structural gravity model. The net impact of counterfactuals is evaluated through welfare changes, GDP, outward and inward resistance terms, exports, imports and internal trade of members and non-members implemented through the GEPPML model empirically applying *gegravity* using Python and Google collab. Additional simulation scenarios are implemented utilizing a global economic model and database provided by Global Trade Analysis Project (GTAP). The aim is to quantitatively assess the economy wide impact for all 14 IPEF member countries. We build in our policy simulation scenarios the three pillars, namely, GVC induced value added enhancement technological progress, implementing harmonized standards by reducing non-tariff barriers, and the clean economy pillar by introducing output oriented technological progress in public utilities like electricity, gas and water. Our preliminary results suggests that the gains would be highest for all members if all four pillars, including the trade pillar are incorporated, with India incurring welfare losses if they opt out of membership of IPEF.

US, China or India, who gains the most from CPTPP membership? A quantitative evaluation

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Abstract

Our study attempts to quantitatively assess the economic impact of mega regional economic cooperation initiatives in the Asia-Pacific region, focusing on the CPTPP, and its implications for India, one of the fastest growing economies of the world, which is currently not a member of CPTPP, but has instead joined IPEF, albeit opting out of the trade liberalization pillar. There is no empirical evidence yet that compares a possible counterfactual of US, China and India considering joining the CPTPP, and our paper contributes to that direction.

We utilize a structural gravity model modelling trade costs incorporating a GEPPML model, exploring three counterfactual scenarios. These include US joining the CPTPP, China's entry into the CPTPP, and that of India joining CPTPP. We further model deeper liberalization scenarios through policy simulations incorporating the global economic model and database provided by Global Trade Analysis Project (GTAP). Deeper liberalization scenarios that are incorporated in our simulations are GVC induced value added enhancement technological progress, harmonized standards implementation reducing non-tariff barriers, and clean economy initiative introducing output oriented technological progress in public utilities like electricity, gas and water. The simulations utilize an applied general equilibrium model incorporating the GTAP 11 database updating it to 2022, to work out the relative benefits and costs for the Indian economy.

Our preliminary results suggests that the gains would be highest for Asia-Pacific countries if US joins the CPTPP, as opposed to China or India.

Drivers of International Business – the Doughnut, Disruption, and Diversification, Perspectives

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Abstract

International Business is at the crossroads of planetary boundaries, disruptions and diversifications. The nations' aim to preserve the biophysical processes while meeting people's needs has led to the emergence of carbon taxes, carbon border adjustment mechanism (CBAM) and energy trading system (ETS). The doughnut economics aims to establish a framework that meets human needs without disrupting the environment (Raworth, 2018). This approach has posed a challenge to the decision-makers to simultaneously address the competition and the climate (Turner & Wills, 2022).

Different nations imposed different policies and regulations in this regard. Some countries, such as Sweden, introduced carbon dioxide in 1991 and enhanced the tax rates over time from €29 per ton of carbon dioxide emitted in the production of goods except electricity to €125 in 2024. Developed countries pursued the policy of carbon taxing pricing on goods and introduced an energy trading system (ETS). Canada followed a different policy. The government introduced C$20 per ton in 2019, increasing annually by C$10 to reach C$170 per ton by 2030. United Kingdom limited its taxing on the power sector and introduced an emission trading system in the UK post-Brexit. World Bank report shows that large middle-income countries such as Brazil, India, Chile, Colombia, Turkey and South Africa have made strides in carbon pricing implementation, especially in the power sector. The European Union's carbon border adjustment mechanism focuses on carbon pricing for industries such as iron and steel, aluminium, cement, fertilizers, and electricity (World Bank, 2024).

Sustainable targets lead to an increase in cost, negating the competitiveness of goods in global markets. It requires firms to invest in shadow (environmentally mitigating) projects to compensate for the environmental damages.

There is conflicting evidence on the benefits of openness of trade. In support of this argument, the authors have concluded that the extent of benefits is country-specific. Hence, firms in different markets must understand the customers' requirements and the country's environment. For example, the USA and the UK are moving away from openness, while the EU and Japan have signed a free trade agreement.

The literature does not provide enough evidence on the effect of the simultaneous interplay of factors – sustainable production, conflict, autarky, and openness, on the flow of goods to and

from a country. This paper attempts to develop a causal model based on the System Dynamics (Forrester, 1961) approach to predict a country's facing disruptions and struggling to meet sustainability requirements.

This study has five sections. The following section discusses the concepts of Doughnut Economy, Carbon Tax, and Disruptions. Section 3 puts forward the impact of planetary consciousness and disruptions. Section 4 brings out the shortcomings of existing theories of international business. Section 5 proposes the causal model. The last section concludes.

Political, Economic and Natural Risks of Partner Counties and Bilateral FDI from Emerging Counties

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Abstract

The choice of foreign direct investment (FDI) is involving with a trade-off between managing country risks in host countries and a shift in location choice to obtain a favorable outcome. Thus, this study aims to investigate whether the impacts of country risks on outward FDI stock of emerging source countries (ESCs) are different in destinations when the partner countries are from developed countries (DCs), emerging countries (ECs), and other developing countries (ODCs). For empirical estimation purposes, the PPML method is employed. The findings of this study show that three risk variables such as economic risk, political risk, and natural risks of host countries are not responding in a similar fashion to FDI originating from emerging sources. While in the context of source variables, reduction of political risk factors within ESCs collectively supports OFDI by bringing market transparency and introducing market competition that can promote new forms of outgoing investors to invest more in abroad. Moreover, multinational investors are less responsive to the economic risk of domestic countries when they invest in DCs and ODCs, but negatively related when they invest in ECs. Among two natural risk factors, the technological disaster risk of ESCs affects bilateral FDI flows from ESCs to ECs. On the other hand, technological disaster risk and natural disaster risk factors negatively discourage these investments when the partners are DCs and ODCs. By revisiting the conceptualization of bilateral export as a potential complementary instrument, the result shows that the learning mechanism helps to obtain foreign market-specific knowledge in the presence of country risks.

Global Value Chain - II

Analyzing the Effects of Rules of Origin on Global Value Chains with Special Reference to Newly Industrialized Economies

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Abstract

This paper explores the effect of Rules of Origin (RoOs) and Free Trade Agreements (FTAs) on Global Value Chains (GVC) participation, specifically in chemical and chemical products. Global value chains encourage production fragmentation, where final products arrive at their destination after incorporating inputs from various countries and adding value, thereby facilitating knowledge and technology transfer. In such a scenario, it becomes crucial to specify the product's origin within the trade agreement to effectively leverage trade barriers. However, it is very complex to deal with RoOs under different FTAs at a time, and sometimes instead of benefits, it might be disadvantageous. The study hypothesizes whether Rules of Origin lead to trade creation or trade diversion effect in the case of Global Value Chains. It is conducted for the Newly Industrialized Economies with the period ranging from 2000 to 2023 and based on the existing literature, a modified gravity model is employed.

Understanding the Rule of Origin for India's GVC participation with Asian Countries: Evidence for Electrical and Machinery

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Abstract

This paper aims to explore the impact of Rules of Origin (RoO) on India's participation in the Global Value Chain (GVC) within the "Electrical and Machinery" sector, particularly in the context of trade with selected Asian countries. The analysis is based on data sourced from the UN Comtrade database (SITC REV 3), focusing on India's trade dynamics concerning parts and components in the Electrical and Machinery sector from 1991 to 2020. The study employs various analytical tools, including the Product Sophistication Index (PSI) and trade specialization indices, to assess India's export complexity and competitive advantage in high-tech segments of the sector. It also examines the trends in India's backward and forward participation in the GVC with selected Asian Countries. The findings indicate that India has experienced significant growth in its GVC participation in the Electrical and Machinery sector, particularly in its trade relations with key Asian partners. The study reveals an increasing complexity in India's export basket, suggesting a shift toward higher value-added products and intermediate goods. Furthermore, India has developed a comparative advantage in high-tech sectors, indicating an enhanced ability to compete in global markets. The results also highlight the rising levels of both backward and forward participation in the GVC, demonstrating India's deepening integration into regional supply chains. The research concludes that Rules of Origin and trade agreements play a crucial role in shaping India's competitive advantage in the Electrical and Machinery sector. The increasing sophistication of India's export products underscores the potential for technological advancement and long-term economic growth. India's evolving role in the GVC reflects a strategic positioning that can benefit from continued engagement with trade partners. To further enhance India's participation in the GVC, the paper suggests that policymakers should prioritize the refinement of RoO frameworks to facilitate smoother trade flows and reduce barriers. Strengthening trade agreements with Asian countries and investing in technological advancements can also help India capitalize on emerging opportunities in high-tech sectors. Additionally, promoting

collaboration between the government, industry stakeholders, and research institutions could foster innovation and enhance the overall competitiveness of the Electrical and Machinery sector in the global market.

Regulatory Framework and policy implications for the implementation of AI and ML in International Trade to promote Global Value Chain

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Abstract

In recent years, trade has significantly been disrupted by AI and the forthcoming advancements in the field of ML to improve the global value supply chain. These technologies involve the designing and implementation of information systems for improving trade operations in several avenues with respect to the decision-making, efficiency and cost. However, the integration of AI and ML in GVCs has some regulatory implications, for which sound legal framework that discusses issues such as data privacy, protection of intellectual property rights, ethical use of artificial intelligence as well as trade relations must be developed. Analyzing the AI and ML regulation in international trade this paper reveals policy implications of the topic for the global markets. It opens up the discussion on global regulation on one hand and innovation whilst respecting user's privacy on the other hand. Thus, the analysis shows how AI and ML are revolutionizing the tradability of goods and services – and compliance with WTO rules – in trade-related areas such as tariffs, customs, and trade facilitation. Moreover, the paper also discusses possible implications of economic imbalances, caused by the unequal distribution of AI technologies between the countries, as well as possible recommendations on how to increase equality within the GVC. In this regard, adoption of AI friendly policies could help government to establish sustainable and fair trade. Finally, this paper provides policy implications that can guide governments and other international organizations to adopt the use of AI & ML professionally, retain the positive impacts of the innovation while preventing unfavorable effects in the international business environment.

Global Value Chain - III

Impact of digitalization, RTAs and GVC participation in manufacturing industry on trade in environmental goods: An empirical investigation

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Abstract

Digitalization and the emergence of global value chain (GVC) led trade in developing Asian economies have brought about significant changes affecting their international trade in recent years. Concurrently, digital provisions in existing regional trade agreements (RTAs) are also gaining importance. These three factors may collectively address issues related to resource and environmental pressures. However, while digitalization has been observed to have a mitigating impact on climate change and has shown to positively influence overall GVC trade, its impact on GVCs involving trade in environmental goods more specifically, including digital RTA provisions, have not hitherto been analysed in the empirical literature.

In the above context, our study empirically investigates the effects of digitalization, GVC participation, and digital provisions in RTAs on the trade of environmental goods across 75 countries, classifying these goods according to Organization for Economic Co-operation and Development (OECD) standards. It uses OECD Multi-Regional Input-Output (MRIO) tables from 1995 to 2020 to measure sectoral digital intensity and GVC participation rates. We apply the structural gravity model framework incorporating a Poisson Pseudo Maximum Likelihood (PPML) estimation approach. The primary aim is to provide new insights into the interaction between digitalization, GVCs, and digital provisions in RTAs involving trade in environmental goods.

Preliminary findings suggest that digital participation in GVCs leads on an average, to a 0.2% increase in exports of environmental products. Further, digitalization mitigates the negative effects of data provisions, leading to an overall positive and significant impact of digital provisions in RTAs on the trade in environmental goods. The findings are robust, considering endogeneity and alternative measures of digital intensity.

Impact of Participation in Global Value Chains on Export Performance

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Abstract

Given the intertwined and interdependent economies of the world today, simple determinants of trade statistics of gross exports and imports fail to fully capture the present, existing reality of international trade. This interdependence between countries owes its existence to the rise of Global Value Chains (GVCs) since the dawn of the 21st century. GVCs are defined as the phenomena where "the making of a product is spread across countries, regions and continents benefiting from comparative local cost advantages to become globally competitive" (Javorsek & Camacho, 2015). GVCs are value chains in the sense that the different steps of production of a particular product to reach its final stage are spread over multiple enterprises in multiple countries based on their own local comparative advantages and thus involving an increasing trade in intermediate stages of the given product (Gereffi & Fernandez-Stark, 2011). At each intermediate step then, value is being added by the participant in the value chain, all of which add up to prepare the final product. GVCs are typically used by transnational enterprises and have gained a prominent share in the international trade flows of the current era.

At present, trade statistics do not distinguish whether the intermediate products in the production of a final product originated in a particular country or not, thus possibly inflating the performance of exports. In order to make this distinction between what value added was added at what stage in the production chain, the concept of Trade in Value Added becomes significant and indispensable. As such, data on value-added addresses the double counting implicit in current gross trade data by measuring flows in terms of the value that is added by a country in the production of goods and services (Javorsek & Camacho, 2015).

Keeping these concepts and relatively new developments in mind, it becomes essential then to study the impact and effect that the rise of GVCs has had on the overall global trade scenario. Several studies have been conducted on the varied impact GVCs have had on the myriad variables that have a bearing on the conduct of trade globally, which will be expounded upon in the literature review section that follows. *However, it is worth noting that not sufficient analyses exist on how GVC participation has affected the export performances for a panel of*

countries that is both prominently featured in the GVCs as well as is geographically well-represented. This gap in analysis is what the current paper seeks to fill.

The paper includes a review of the empirical literature followed by the data sources, including data for the years 2016, 2017 and 2018 for which the latest statistics of the value-added database are available. The sections thereafter include the objective, methodology, the results of the analysis, and the conclusions and policy implications that can be garnered therefrom.

Transport equipment value chains- analysing policy influence on nature of India's GVC participation

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Abstract

India's transport equipment sector has been a relatively brighter spot in India's otherwise not so impressive manufacturing sector. In the past decade the Indian government has undertaken multiple policies to help manufacturing in general and also the transport equipment sector in particular. The paper tries to explore the effect of the govt.'s industrial and trade policies on exports and imports of finished and intermediate products of this sector as well as makes an attempt to check any change in position of the sector in GVCs. The study has policy implications in the kind of policy support that the sector may require going forward as well as the kind of markets the evolving position of the sector may likely find attractive.

Linking Surge in Deep Trade Agreements and Participation in GVCs: An Augmented Gravity Modeling Using Machine Learning

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Abstract

The past two decades have witnessed a surge in deep trade agreements and a rise in countries' participation in global value chains (GVCs). Existing research linked these two phenomena theoretically but struggled to establish any specific empirical relationship, which is the subject matter of the present study. The present study attempts to link the surge in deep trade provisions included in deep trade agreements to the GVC participation of the countries. The study first augments the gravity model with the machine learning approach, the Lasso and the iceberg Lasso, to select the significant provisions that impact GVC participation. It concludes that the depth of provisions associated with technical barriers to trade, trade facilitation, and competition policy has a stimulating impact on GVC participation. In addition, the study finds that environmental laws and visa & asylum-related provisions enhance backward participation, and provisions related to subsidies, state enterprise, and intellectual property rights positively impact forward participation. From the policy perspective, designing deep trade agreements with uniform provisions homogenizes the cross-country trade environment. It is a credible device for countries with different socio-economic characteristics to integrate through GVC participation.

Labour - I

An exploratory study on Financial Distress/Financial Well-Being of informal Construction Workers: Glimpses from the selected blocks in West Bengal

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Abstract

Purpose:

The purpose of the paper is to reveal the level of financial well-being/ financial distress of informal construction workers in West Bengal using the IFDFW scale. In addition to that the reliability and validity of the said scale using the data collected on 470 labourers have been tested.

Methodology:

Data for the present study was collected from different categories (migrant, non-migrant & self-employed) of informal construction labourers in different areas in West Bengal using the InCharge Financial Distress/Financial Well-Being (IFDFW) Scale. The scale is a self-reported subjective index of eight items which was developed by Prawitz et al. (2006) with an aim to measure financial well-being or financial distress of individuals. Moreover, the study has used Confirmatory Factor Analysis (CFA) for examining the reliability of the scale. Lastly, Cornbach's alpha has been engaged to measure internal consistency of the said scale. Each item in the IFDFW scale ranges between 1 to 10. The minimum value (i.e. 1) indicates overwhelming stress and on the other side, 10 represents zero stress. The labourers based on the average score (Average Score = ∑⁡〖Total Scores〗 /n, here n=8), have been categorized as i) High financial stress (Mean scores of 1.0-4.0) ii) Average financial distress (Mean scores of 4.1-6.9) iii) Low financial stress/high financial well-being (Mean scores of 7.0-10.00) as followed by Prawitz et al. (2006).

Findings:

The study finds out that among the three groups of construction labourers, the highest level of financial distress is found for self-employed group with the mean value 1.89, followed by non-migrant (2.09) & migrant labourers with 2.22. Lower the value shows higher the degree of stress and vice versa. Moreover, the overall score of informal construction workers has found at 2.06, which reveals high degree of financial distress as prescribed by Prawitz et al. (2006). The validity of the IFDFW scale concerning the data on informal construction workers in West

Bengal using the Confirmatory Factor Analysis (CFA) (or model-I) has been developed. Most of the parameters regarding the fitness of the model of model-I have come out good, although, the value root mean sum square and other parameters was found not good and did not meet the threshold criteria. Thus, the modification index was used to re-specify the model, identifying the covariances among the items with the error terms and the highest value of covariance was identified between items 4 & 6 with the error, followed by the items 5 & 7 with error. After doing such modifications, all the items are found in the expected direction with standardized factor loading of each item, that are varying from 0.42 to 0.73. Lastly, we have engaged Cronbach alpha to measure the internal consistency of the scale, which has estimated at 0.811. Thus, the overall reliability of the one-dimensional IFDFW scale is considered good.

Practical Implications:

The results of the study have enabled the policymakers to throw a light on how to uplift the financial or overall condition of the informal construction workers. Therefore, the results of the study could be used by the policymakers to amend the law as well as to commence the programmes aiming to uplift such workers. Originality: The study has collected primary data to explore the position of informal construction workers in West Bengal with regard to the score generated for Financial Well-Being (FWB). This has been carried out to compare the three different groups of construction labourers in the informal construction sector in West Bengal.

International Migration and Inward FDI of India: A Bilateral Analysis of their Determinants and Relationship

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Abstract

The dynamics of international factor mobility, including international migration and inward Foreign Direct Investment, have become crucial in shaping India's economic landscape within the context of globalization. Therefore, in this study, we have examined the determinants of Indian bilateral emigration and inward FDI stock and examined the substitutability or complementarities relationship between the two variables. This research contributes to the existing literature on the earlier determinants and the association between bilateral emigration stock and inward FDI stock by using India as a reporting country and 88 partner countries from 2001 to 2020. The empirical estimation of this study employed benchmark panel regression such as pooled ordinary least squares, fixed effects, random effects, and Hausman-Taylor regression. This study also minimizes the gap in econometric modelling by employing Two-Stage Least Squares and Poisson pseudo-maximum likelihood with a panel dataset considering host and source countries with 1760 panel pairs for the selected sample time. This study has found that certain determinants such as GDP source, remittances, trade openness, infrastructure quality and employment rate of host countries, and unemployment rate and internal conflict of source country have strong positive effects on bilateral emigration stock of India. On the other hand, GDP host, distance between source and host, common border, common language, and trade openness of source have substantial adverse effects on Indian bilateral emigration. The paper has also found evidence that certain determinants such as GDP source and host, common language, common colony, trade openness of source, exchange rate volatility, institutional quality, and inflation rate of host country have a strong positive impact on bilateral inward FDI of India. On the contrary, distance, common border, wage differences between source and host, trade openness, financial development, and corporate tax of host have a strong negative impact on bilateral inward FDI of India. Moreover, we have found the bilateral analysis that the outward Indian labour mobility positively contributes to the inward capital movement of India and vice versa. This result implies a complementary relationship between Indian bilateral emigration and inward FDI stock. As a

result, effective policies that harness these interactions can improve the economic benefits for India and contribute to its long-term prosperity.

Impact of Workers' Remittances on Inflation in India: An ARDL Bounds Testing Approach

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Abstract

This study examines the relationship between workers' remittances and inflation in India, aiming to understand how remittance inflows impact inflationary trends during 1991-2021. The study also includes control variables like the output gap and Call money rate to see the influence on inflation in India. By utilizing the autoregressive distributed lag bounds test, the study confirms the existence of long-run relationships among these variables. The findings reveal that a unit increase in workers' remittances leads to a 0.23% increase in the WPI, indicating a substantial impact of remittances on inflation levels. Additionally, the study finds that the CMR and OG also play critical roles in this dynamic, with the CMR inversely related to inflation, as lower interest rates tend to increase borrowing and spending, thereby raising prices. The output gap also influences inflation, with the results suggesting that economic activity levels affect price stability. The study highlights the need for proactive monetary policy adjustments, targeted social programs, and investments in productive sectors to mitigate inflationary pressures.

Labour - II

Labor Market Penalty for Single Mothers

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Abstract

It is well established that there is a motherhood penalty in the labor market for child-bearing women. Theoretical models, as well as empirical estimates, suggest that unmarried or never married women without children have a relative advantage in terms of labor market opportunities. However, little is known about single mothers and their labor market outcomes. Aside from the fact that this is an expanding demographic worldwide, single mothers constitute an interesting case from a purely conceptual point of view. On the one hand, they might not have the typical social constraints of married women in traditional patriarchal societies, but on the other hand, they face the same constraints with respect to childcare and childbearing as other married mothers. While aggregate data suggests that single mothers' labor market participation rates are usually higher than those of unmarried women, we argue that in contrast to married women without children and married mothers, this realized labor market equilibrium masks potential demand-side discrimination and likely reflects strong supply-side incentives. With the aim of uncovering potential demand-side discrimination effects, we conduct a correspondence study experiment that involves applying to real jobs using fictitious resumes. We show that equally qualified single mothers are much less likely to receive interview callbacks than unmarried women without children, married without children, and married mothers. For every interview callback a single mother has to apply to about 30 jobs, whereas an unmarried woman receives more than two callbacks for as many job applications. As a potential mechanism behind our findings, we find suggestive evidence of inaccurate statistical discrimination by employers.

Tariff, Wages and Compensation: A General Oligopolistic Equilibrium Analysis

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Abstract

The current paper analyses the impact of strategic trade policy on wages and welfare in a two- country general oligopolistic equilibrium model. Firms face resource constraints and wages are simultaneously determined. Relative to free trade, imposition of tariff leads to a reduction in the wages of the partner country. The welfare of the tariff-imposing country is unambiguously penalized. The revenue generated from tariff and the subsidy required to compensate the affected workers are compared. When trade in only final goods take place, the results indicate that tariff revenue can compensate the workers beyond a specific level of tariff rate. This specific level of tariff is directly related to foreign tariff rate. A high value of foreign tariff implies a lower ability of the domestic government to subsidize the workers. However, when trade in both final and intermediate goods take place, we get the opposite results, where tariff revenue can compensate the workers up to a certain level of tariff rate. The results are of crucial policy relevance, especially given the increasing participation of developing countries in Global Value Chains. Rationalization of these effects suggests a political-economy view on tariff formation in general equilibrium.

Literature Review

Behavioural Interventions for Sustainable Energy Practice: Critical Literature Review

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Abstract

Energy conservation at the household level is considered one of the key measures to reduce greenhouse gas emissions. Inducing people to use energy more efficiently is considered one of the effective ways to tackle climate change. Energy conservation at the household level has emerged as a significant field of experimentation, allowing researchers to tackle many problems, including energy poverty. Consumer behaviour is challenging to understand and much more complex than we think. It is not always that traditional economic theories are followed while consumers make decisions, particularly regarding environment-related decisions. The paper discusses the various pieces of literature available for assessing residential energy patterns using behavioural economics models and factors that affect residential energy consumption. It further analyzes the research papers that have used empirical models (interventions) to address the behavioural anomalies that occur while addressing energy efficiency and energy issues at the household level.

Impact of Non-tariff Measures on Global Value Chain Participation: A Systematic Literature Review

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Abstract

The central theme of the present study revolves around examining the influence of non-tariff measures on the participation in global value chains. Utilizing the PRISMA methodology, 514 research papers on NTMs and GVCs were analysed. Eventually, 25 papers from Scopus and Web of Science were selected. The analysis reveals that non-tariff measures significantly impact the participation of firms and countries in global value chains. However, the impact is heterogeneous and is dependent on various factors like size of the firm, regulatory policies, trade agreements etc. Since, quantification of NTMs is not easy unlike tariffs, the study also identified indicators like additional compliance requirement indicator, ad-valorem equivalents, NTMs as effective prices etc. which aid in quantifying the impact on GVCs. This review highlights the growing importance of the area for developing countries especially like India, which can play a huge role in facilitating and promoting trade networks.

Navigating Sustainability: Insights into Energy-Growth Interdependence

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Abstract

The nexus between energy, environment, and economic growth has become increasingly significant in the context of sustainable development. Energy drives economic growth, but its consumption often exacerbates environmental degradation, posing critical challenges for policymakers worldwide. This paper explores the interlinkages between these dimensions, focusing on the trade-offs and synergies. It also examines the implications of energy use and climate change on economic growth and highlights the role of financial markets in fostering green transitions. A thorough literature review identifies research gaps, emphasizing the need for integrated policy frameworks to achieve sustainability goals. The study concludes with actionable insights to balance economic aspirations with environmental preservation.

Misc. Issues in Trade & Finance - I

Influence of Transfer Pricing on Global Supply Chains: Challenges and Opportunities

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Abstract

This study examines the critical role of transfer pricing in shaping global supply chains, focusing on the challenges and opportunities it presents for multinational corporations. Transfer pricing, the practice of setting prices for goods and services exchanged between related entities within an organization, significantly impacts supply chain decisions, tax liabilities, and the overall corporate strategy. This study employs a comprehensive literature review and case study analysis to explore how transfer pricing influences supply chain configuration, location decisions, and operational efficiency. Key challenges identified include regulatory compliance across multiple jurisdictions, the potential for double taxation, and the complexity of aligning transfer pricing with business objectives. Opportunities highlighted include strategic tax planning, improved resource allocation, and enhanced global competitiveness. The study concludes by proposing a framework for integrating transfer pricing considerations into supply chain management, emphasizing the need for a holistic approach that balances tax optimization with operational effectiveness. These findings contribute to the understanding of the multifaceted impact of transfer pricing on global supply chains and offer practical insights for managers navigating this complex landscape.

The adverse effects of Climate Change on Indian Maritime Trade and its Impact on International Economics Processes

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Abstract

Global climate change has gradually raised its impact on the world's sea borne trade and India being a country with a very long sea frontage and important ports is not exception to this fact. This paper focuses on the impact of climate change on the Indian maritime trade and as a result, the nature and implication for the global economy is also taken into consideration. Superimposed climate change impacts of rising sea levels, harsh weather conditions, and climatic uncertainties thereby pose a peril to the productivity and effectiveness of the key Indian major ports in Mumbai, Chennai, and Kolkata, which contributes the largest amount of import and export business in India. This paper shows that disruption of sea traffic through more frequent storms, coastal erosion, and damage to the ports has a direct effect on the movement of goods, thus contributing to the delay, high cost, and reduced international market competitiveness to handle the international trade disruptions. The disturbances create ripple effects not only for India but for the global supply web as well as for international commerce systems. Since India is prominently involved in sectors like textiles, pharmaceuticals, and technology, one can easily see that disturbance of the seaborne trade routes, result in scarcity, fluctuations of prices and slow down of other economies as well. Moreover, as more countries develop green and environmentally friendly infrastructure to counter the impact of climate change in many fields the cost of adaptation in the marine industry adds pressure on the global economy adjusted especially in the developing nations. On balance, the threat that climate change brings to the expose of Indian maritime trade is a dangerous risk to its own economy as well as the worlds economy. The paper called for policy response now, enhancing the construction of strong maritime infrastructure and cooperation in tackling climate change burdens. In this way, both the Indian and global economy can avoid such risks and further strengthen global trade sustainability in a changed environment.

Misc. Issues in Trade & Finance - II

Merchandise Exports from Emerging Market and Developing Economies: An Empirical Analysis

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Abstract

Purpose: The study aims to understand the dynamics of merchandise exports from Emerging Market and Developing Economies (EMDEs).

Design/Methodology/Approach: Data for merchandise exports from eighteen EMDEs belonging to six regions globally were collected from World Trade Organization (WTO) database. The contribution of EMDEs in total merchandise exports as well as each category was computed. Later Balassa's Revealed Comparative Advantage (RCA) was calculated for each country to decipher the advantageous position of each EMDE.

Findings: The results demonstrate that exports from EMDEs constitute mostly of manufactures with the maximum contribution from China. The RCA index reveals that India has an advantageous position in all the three categories of merchandise export.

Research Implications: The research contributes to the existing literature on EMDEs and trade therefrom. The findings of this research have overarching policy implications for the EMDEs to harness their export potential in a sustainable manner. The research also serves as a starting point for the EMDEs to know their advantageous position and delve deeper to understand the products in each category which can enhance and maintain their position in international trade.

Do export-driven investments in information and communication technology yield performance gains? New insights from Indian manufacturing firms

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Abstract

Learning by exporting literature has largely overlooked information and communication technology (ICT) aspects in analysis. Considering the increasing importance of the issue, we investigate whether firms' decisions to enter export markets drive investments in ICT and, subsequently, how these export-driven ICT expenditures impact their performance. Using a panel of Indian firms spanning from 2002 to 2019, our two-step methodology employs propensity score matching (PSM) to extract export-driven ICT expenditures and production function estimation to assess their effects on firm performance. Our findings reveal a positive impact of export-driven ICT expenditures on firm performance. Moreover, our sub-sector analysis indicates a greater impact of these expenditures in ICT-intensive sectors compared to non-ICT-intensive sectors. These findings emphasize the importance of aligning digital investment policies with other export support initiatives, highlighting the necessity of a holistic approach to fostering firm performance in global markets.

Non – Tariff Barriers

What does India's Anti-dumping Actions Reveal?

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Abstract

'Trade Remedies' are effective trade policies considered by any trading nation to protect their import competing industries against any form of material injury. There seems to be an increase in number of cases of material injury across the major trading nations with more and more trade liberalization. Anti-dumping (AD) and countervailing measures are among the most used new protectionist measures across the economies. Over the period 1995-2023, 6768 AD cases were initiated across the globe while on the other hand, 698 countervailing cases were observed. Traditionally, it was Australia, Canada, European Union, New Zealand and the USA (the so called 'traditional' users) as the only users of the AD policy, whereas post 1980s and specifically in the WTO era countries like Argentina, Brazil, China, India, Indonesia, South Korea, Mexico, Pakistan, South Africa and Turkey (the 'new' users) were the major users of it. Amidst both groups, India leads the list with 1175 AD initiations over the period 1995-2023 (i.e., 17% of total world AD initiations); among which 790 were converted to measures (i.e., 18.2% of total world AD measures).

It is often argued that the extant empirical research specifically on the 'new' users of AD activities is inadequate; see Blonigen and Prusa (2016). More importantly, India being a non-traditional user has different motivations for filing an AD case as its economic outcome are expected to be different than that of the 'traditional' users. Furthermore, there has been plentiful of evidences that reveal how anti-dumping practice across the globe is a strategic outcome rather than an economic outcome; Prusa (1994), Feinberg and Reynolds (2018), among others. With regard to the published body of empirical literature in the Indian context, we observe that the empirical studies miss two aspects. First, it doesn't explore the impact on India's AD activities on quantity, value and price on named products and find out whether it is an intermediate or final product. Thus, our RQ1 is whether the AD protection able to safeguard its import competing industry or making Indian firms less competitive. Second, the studies don't explicitly analyze the strategic and economic determinants of AD initiations. Therefore, our RQ2 is to find out, what are the macroeconomic and strategic determinants of India's AD initiations?

To address our first research question, we perform the product metric analysis using antidumping data from 'Global Antidumping Database', The World Bank and import data at

HS-6 digit level from BACI database of CEPII. This analysis to address RQ1 is done in three stages. In the first stage, we calculate India's annual stock of AD measures at the product level over the period 1995-2020. In doing so, we also compute the ratio of the products under AD measures to the number of products (PS-Ratio) that are imported from the major named countries and across industry groups. Subsequently, to explore the impact of AD measures, we identify the named products into generic and specific commodity using the product concordance between HS and BEC classifications. For these commodities we explore the change in unit value, quantity and import value over the period t-3 to t-1, t to t + k and t+k+1 to t+k+4; where t is the year when AD measures were imposed and k is the years till the AD measures are continued. The results obtained are as follows. The stock of AD measures increased significantly. In fact, the two major incremental rise occurred in 2009 and 2015. India levied around 75% of all AD measures against China (23.86%), South Korea (7.54%), European Union (7.31%), Taiwan (7.02%), Thailand (5.37%), USA (4.54%), Japan (4.44%), Indonesia (4.23%), Malaysia (4.02%), Singapore (3.40%), and Russia (2.89%). The simple annual average growth rate for PS-Ratio for these countries has been statistically significant excepting Singapore and Russia. Furthermore, on classifying the same data across industry groups, we find that PS-Ratio is high in Chemicals, Plastic and Rubber, Textiles, Base Metals and Machinery & Mechanical Appliances. We calculate the share of the products that were intermediate in nature and found them to be high. Across the countries on an average about 64% of such product are to be used further in production. The list is as follows: USA (68%), Thailand (52%), Taiwan (74%), South Korea (60%), Singapore (64%), Russia (50%), Malaysia (67%), Japan (60%), Indonesia (72%), European Union (67%), and China (67%). More importantly, our calculation shows that on an average 61% of intermediate product had witnessed a rise in their prices (proxy by unit value) in t to t + k from t-3 to t-1. However, prices for most product declined in three years post the removal of AD measures (i.e., t+k+1 to t+k+4) but didn't reach the pre-AD measure phase. In other words, there were about 40% product that witnessed further price rise in the three year period after the measures were removed. These observations points out that AD measures imposed by India have increase the cost of producing the final goods. Such activity might favour the local producer of the intermediate good but certainly not to those firms that uses the imported product as a raw material. On other hand, for the products that were final products, on an average 52% have seen a price rise in in t to t + k from t-3 to t-1 and prices increased by around the same percentage of them during t+k+1 to t+k+4.

In an attempt to explore RQ2, we consider hypotheses of macroeconomic and strategic variables that could impact the number of AD initiations (ADI) over the period 1995 to 2019

for these set of 11 countries. In other words, the econometric model is an attempt to model India's AD initiations with the named country in year t. Following Bao and Qiu (2011), we consider import penetration ratio and economic growth as macroeconomic factors that are hypothesized to impact anti-dumping initiations. A high value of import penetration ratio is expected to positively impact ADI as industries are exposed to foreign competition. Economic growth and ADI are hypothesized to be negatively related as firm might file an AD case when economy experience a slowdown. On the other hand, the strategic variables include Tit-for-Tat, AD club, General Retaliation, Echoing, Deflection, Diversion, Learning. Tit-for-Tat is a dummy variable that assigns the value of 1 if in period t-1, the named country has filed a case against India, zero otherwise. If India's ADI are retaliatory in nature, we would expect a positive coefficient sign of the Tit-for-Tat variable. AD club is the total number of ADI made by the named country against all countries in t-1 period. The expectations are if the named country is a frequent user of AD legislation, then India wouldn't want to initiate a case in t fearing a retaliation. On the other hand, if the number of cases filed by the named country is large then it indicates that the country is in a club that tend to use AD legislation on each other. The general retaliation captures the total number of AD initiations faced by the named country in year t-1. Unlike the specific retaliation, this variable captures the likelihood if other countries have targeted the named country with AD case, India will too initiate a case. Deflection represents the number of cases against the named country excepting India in year t-1. The variable is expected to measure whether India's anti-dumping initiations in period t is an outcome from the trade deflection caused by the third country to the named country. In other words, the variable is expected to have a positive coefficient sign. Echoing measures, excepting India the number of AD initiations filed by the other countries against the named country in year t. The sign of the estimated coefficient is expected to be positive as there is a possibility that when other countries have complained of dumping from the named country then it might also dump its product to India. Diversion considers all the AD initiations initiated by India against all countries excepting the named country in year t-1. There is a greater possibility that non-named countries in year t-1 might be willing to export in unrestricted market and that may attract an AD initiation in year t. Lastly, the learning effect is considered as the number of AD initiations filed by India against the named country in year t-1. Prior experiences of filing an AD case against the named country creates a higher chance that initiation in period t will be converted into a measure.

Given that our dependent variable is count in nature and the variance is not equal to its mean, we explore panel negative binomial regression model. Furthermore, we consider the random-effects over the fixed effects model as the former allows to consider the group specific effects

to be randomly distributed. In other words, as the nature of our dependent variable is over-dispersed, the random effects model assumes that the overdispersion varies randomly across different groups. The Hausman specification confirms the use of random effect specification. The result revealed that economic variables measuring economic growth and import penetration ratio did not turn out to be statistically significant. On the other hand, the strategy variables such as tit-for-tat, AD club, echoing, deflection and diversion were observed to be statistically significant. The result of the variable tit-for-tat reveals that India's doesn't retaliate. In fact, if faced with an AD case, India's rate of an AD action drops by 21%. AD club reveals that if the named country is a heavy user of the AD legislation, then, India's rate of initiating an AD case increase by 0.9%. The statistical significance of the deflection variable points out that India's AD initiation increased by about 2% when the named country is targeted by a third country through an AD investigation. Result of echoing shows that when the number of AD initiations are high to a particular country, India's filing rate to that country also increase by about 1.7%. Lastly, the result of the variable diversion shows that India's AD initiation increases by 0.6% when a new country starts to export. These results point us that India's AD initiations are more strategic than any other economic reasons.

A Study of Non-Tariff Barriers with RCEP: In the Context of Indian Textile Industry

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Abstract

In light of India's textile trade, the Regional Comprehensive Economic Partnership (RCEP) is significant. The future of India's textile trade with RCEP members cannot be disregarded, even though the country has decided to leave this significant trade pact. India's capacity to participate in the textile trade in the region depends on its membership in free trade agreements (FTAs) with RCEP countries like South Korea, Japan, and ASEAN. The study also makes use of original research on how non-tariff obstacles affect Indian textile producers doing trade in selected RCEP countries. The primary findings of the survey indicate that Indian textile producers encounter several hurdles, including but not limited to anti-dumping, certification, customs, documentation, environmental concerns, export limitations, labelling, video recording, metal problems, and rules of origin. Furthermore, the majority of these issues that Indian textile industries have faced come from China, the US, Japan, Thailand, Vietnam, Singapore, etc. The results show that, in order to enhance its competitiveness, India ought to emphasis growing trade with all RCEP countries excluding Vietnam and China. India is also less competitive now, especially in the cotton industry.

Understanding the Effects of Sanitary and Phytosanitary Standards (SPS) and Technical Barriers to Trade (TBT) Measures on India's Trade

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Abstract

This paper analyses the impact of Sanitary and Phytosanitary Standards (SPS) and Technical Barriers to Trade (TBT) measures imposed on India's exports from 2000-2020 using three unique panel datasets created using data from multiple sources. In addition to structural gravity specifications, a fixed effects model is also estimated using importer-time fixed effects and exporter-time fixed effects to capture Multilateral Trade Resistance terms (MRTs) and country-pair fixed effects to control for endogeneity. The gravity models are estimated using the Poisson Pseudo-Maximum Likelihood (PPML) estimation technique to address issues like zero trade flows and heteroskedasticity in trade data. Results show that SPS-TBT measures imposed by importers have an unambiguously negative impact on India's export flows. On average, SPS and TBT measures individually decreased overall exports by 20 per cent and 33 per cent, respectively. Moreover, SPS measures decreased agricultural export flows by around 25 per cent, while TBT measures hampered manufacturing exports by almost 40 per cent. Interestingly, the study highlights that tariffs imposed on India have not necessarily hindered exports in recent times, possibly due to the declining tariff rates achieved through trade liberalization. In contrast, countries are increasingly resorting to SPS-TBT standards, which have emerged as a crucial trade policy instrument, hampering export flows in the Indian context. From a trade policy perspective, this study underscores the need for policymakers to diversify their focus from tariff reduction towards curtailing the adverse impacts of SPS-TBT measures.

How do Product Standards influence Exports? Empirical Evidence from the Chinese Tea Industry

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Abstract

The present analysis explores whether the imposition of the product standard related measures, particularly Sanitary and Phytosanitary (SPS) and Technical Barriers to Trade (TBT) interventions may negatively influence Chinese tea exports using a gravity framework over 1996-2021. It further intends to analyze whether with increase in the stringency of notified SPS-TBT measures on tea reduces the country's exports. The present study first identifies the major trade partners of China, who account for a significant proportion of China's tea exports. 25 major countries have been selected for this purpose based on their presence in China's export basket, as they collectively account for more than 30 percent of the total sectoral exports. The paper contributes to the literature through an exhaustive analysis of the notifications on tea in partner countries to identify the potential impact on China's sectoral exports, as existing literature on this aspect is relatively scarce.

Open Economy & Macroeconomics - I

Monetary Policy Reaction Function in India: Examining the Role of Inflation Expectations, Output Gap and Exchange Rate on Interest Rate Decisions

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Abstract

The research explores how central banks make decisions by analyzing the monetary policy reaction function and its influence on expectation dynamics. It focuses on how central banks respond to inflation expectations, the output gap and the exchange rate, stressing the vital role these expectations play, especially in an inflation-targeting framework. To estimate the reaction function through a time series analysis using quarterly data, an Autoregressive Distributed Lag (ARDL) model was used, as the variables were a mix of I(0) and I(1), as confirmed by the Phillips Perron and Lee-Strazicich unit root tests. This study is one of the first in analyzing the reaction function of Reserve Bank of India with respect to the recent policy shift of adopting the inflation targeting. On the contrary to other analysis, the present study considers gross domestic product as the output and inflation forecast based on consumer price index as the inflation expectation and thereby considering the forward-looking approach of the central bank. The findings underscore the importance of inflation expectations and the output gap in shaping India's monetary policy decisions. Before the adoption of inflation targeting, monetary policy was largely centered on regulating exchange rate. However, after the shift to inflation targeting, the results confirmed a flexible inflation-targeting regime in India, with significant coefficients for both expected inflation and the output gap.

Analysis of Exchange Rate Pass -Through into Trade Prices and Trade Quantities of India

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Abstract

This paper evaluates first-stage exchange rate pass-through into trade prices of India using panel data for time period 1990-2020. This study attempts to shed further light on exchange rate elasticities of trade quantities of India. This empirical study shows that exchange rate pass-through into trade prices of India is incomplete. While the exchange rate elasticity of import quantity is statistically insignificant, exchange rate elasticity of export quantity has been found to be significant. The results show that GDP and world income are main determinants of trade quantities. These findings have important policy implications for using exchange rate as an instrument for export promotion and correction of current account deficit. It suggests that devaluation policy is not effective in promoting expenditure switching from imported commodities to domestic substitutes though it can increase exports.

Macroeconomic Determinants of Exports in India: Analyzing the Role of Money Supply, Interest Rates, and Export Taxation using ARDL

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Abstract

Exports play a vital role in driving economic growth. Various macroeconomic variables such as money supply, interest rates, and tax policies directly or indirectly influence export performance. Broad money (M3) as a percentage of GDP reflects the liquidity in the economy, which can influence exchange rates and trade balances. Real interest rates, by affecting the cost of borrowing, can either incentivize or dissuade investments in export-oriented industries. Meanwhile, taxes on exports act as a fiscal tool that can either promote or restrict the flow of goods to international markets.

Objective: The primary objective of this research is to analyse the long-term and short-term impact of money supply, interest rate, and export taxation on exports of the country.

Methodology: Time series data for these variables were collected from World Development Indicators for 1978 to 2023. Stationarity of the data was tested using Augmented Dickey Fuller test. The ADF test revealed that the variables are a mixture of I (0) and I (1). Under such scenario, ARDL model was employed to assess the short- and long-term relationships among the variables. An F-bound test was conducted to determine whether a long-run equilibrium exists, and the estimation of long-run coefficients provided insights into the direction and magnitude of these relationships.

Key Findings: The F-bound test confirmed the presence of a long-run relationship between exports of goods and services, broad money, real interest rates, and taxes on exports in India. The long-run coefficients reveal several important findings:

a) Positive Impact of Broad Money on Exports: An increase in broad money as a percentage of GDP has a positive effect on the exports of goods and services. This suggests that a higher money supply, which increases liquidity in the economy, enhances export performance by making credit more accessible for businesses engaged in international trade.

b) Positive Impact of Taxes on Exports: Contrary to conventional beliefs, the long-run coefficients indicate a positive relationship between taxes on exports (as a percentage of tax

revenue) and the exports of goods and services. This finding may reflect the fact that the specific structure of export taxation in India incentivizes export activities, possibly through targeted subsidies or export promotion schemes linked to tax policies.

c) Negative Impact of Real Interest Rates on Exports: The real interest rate exerts a negative influence on the exports of goods and services. A higher real interest rate increases the cost of borrowing for businesses, which reduces investment in export-oriented industries. This finding aligns with the theory that lower borrowing costs make it easier for firms to finance export operations, thereby boosting export performance.

Discussion and Conclusion: The results of this study have significant implications for India's trade and macroeconomic policy framework. An expansionary monetary policy with well-adjusted interest rates can positively impact exports. However, such policies must be managed carefully to avoid inflationary pressures that could erode export competitiveness in the long run. While the positive relationship between taxes on exports and export growth is a novel finding, it suggests that the current taxation regime might be structured in a way that supports exports. Policymakers could further explore export-oriented tax policies that promote growth without creating additional burdens on the domestic economy.

Does Economic Policy Uncertainty Confound Exchange Rate Pass-Through to Domestic Prices in India?

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Abstract

We examine the influence of economic policy uncertainty (EPU) on the degree of exchange rate pass-through (ERPT) to domestic prices in India. By analyzing data on the nominal effective exchange rate (NEER) from 2003 to 2024, we estimate ERPT to both Consumer Price Index (CPI) and Wholesale Price Index (WPI). Employing autoregressive distributed lag (ARDL) model, while we find that appreciation of NEER leads to reduction in prices, but on the contrary, with the increase in EPU it leads to increase in prices. The Nonlinear-ARDL estimation reveals an asymmetric ERPT effect with NEER appreciation showing relatively a stronger ERPT effect than depreciation, while both large and small exchange rate changes exhibiting similar pass-through effect on prices. Additionally, employing Time-Varying Parameter Vector Autoregressions (TVP-VAR) technique, we find that except for four-quarter horizon, the impulse responses for one-, eight-, and twelve-quarter horizons of prices to exchange rate shocks remain negative all throughout the period. Moreover, we find that ERPT to domestic prices is similar across optimistic, pessimistic, and normal economic outlook. Our findings emphasize the significance of EPU in influencing ERPT to domestic prices in India, highlight the imperative for monetary authorities in emerging market economies to consider the role of EPU in the transmission mechanism of exchange rate movements to domestic prices.

Open Economy & Macroeconomics - II

Central Banks' Capacity To Intervene And Exchange Rate Volatility

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Abstract

Central banks succeed in calming exchange rate volatility through foreign exchange market intervention, provided they have adequate reserves. Insufficient reserves set a cap on the capacity to intervene since the primary focus is to accumulate additional reserves, while the exchange rate is unleashed to absorb the shocks during episodes of high volatility in the foreign exchange market. Our study intends to validate whether an adequate capacity to intervene warrants exchange rate stability. The results for the period January 1990 to October 2020 suggest that eight out of thirteen countries (Switzerland, India, Brazil, Thailand, The Republic of Poland, Turkey, Norway and Colombia) record a stable exchange rate while their monetary authorities possess the capacity to intervene. Intervention, therefore, is an instrument to stabilise the exchange rate provided a country holds adequate reserves.

Estimating Exchange Rate Misalignment and Analysing its impact on Economic Growth of India.

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Abstract

The paper aims to analyse the misalignment of REER in India between 2004 Q2 – 2023 Q4 by applying BEER and NATREX techniques. Then the misalignment calculated by both the methods are used to analyse the impact on economic growth. ARDL bounds test is applied for the purpose of understanding both the objectives. Terms of trade, Rate of interest differential, Oil prices, Balassa Samuelson were significant determinants of REER under BEER. BEER predicts undervaluation of REER for majority of period of study. Sectoral Productivity, External Debt, Rate of interest differential were significant determinants of REER under NATREX. NATREX predicts results similar to that of BEER but with greater deviations as compared to that in BEER. Undervaluation is seen to have positive impact on economic growth of India, while overvaluation was seen to have an significant negative impact with lags in the long run but positive impact in the short run. COVID pandemic was seen to have a negative impact on economic growth.

The Impact of Uncertainty Shocks on Macroeconomic Variables in Emerging Economies: A Time-varying Analysis

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Abstract

This paper investigates the macroeconomic impact of uncertainty shocks in selected emerging economies: India, China, Brazil, Chile, Russia, and South Korea. The empirical investigation involves the estimation of country-specific time-varying structural vector autoregression (TVP-VAR) models with stochastic volatility. The impulse response analysis suggests that output growth decreases in response to positive shocks to uncertainty during crises in all economies. Real effective exchange rates depreciate, inflation rises, and interest rates fall in most economies. The cumulative impulse reactions of macroeconomic variables to uncertainty shocks show significant time variation in all economies. The adverse impact of uncertainty shocks on output appears to be more persistent during crises. The variance decomposition reveals that during major crisis events, uncertainty shocks account for a significant portion of the variation in output growth in India, China, South Korea, and Brazil. Overall, the results suggest that the rise in uncertainty adversely affects most economies under consideration and plays a crucial role in explaining business cycle fluctuations, especially during times of crisis. The findings suggest that reducing economic uncertainty is critical in the context of emerging economies to offset its negative macroeconomic consequences.

Political Economy - I

The Russia-Ukraine War and Its Impact on Global Agricultural Trade: A Study of Supply Chain Disruptions

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Abstract

The Russia-Ukraine war, which began in February 2022, had significant consequences for global agricultural trade. This study explores the impact of the conflict on supply chain disruptions, particularly in grain exports and food prices. Both countries are major players in global agricultural markets—Russia, a key exporter of fertilizers, and Ukraine, known as the "Breadbasket of Europe." Together, they account for a substantial share of global wheat, corn, and sunflower oil exports. The conflict has led to significant disruptions in these supply chains, causing port blockages, logistical challenges, and sanctions. This has resulted in price volatility and affected global food security. Using time series data from 2015 to 2023 and employing econometric models such as ARIMA and GARCH, the study examines pre- and post-war trends in grain export volumes and agricultural price volatility. Key findings are expected to show a marked decline in export volumes from Russia and Ukraine and increased volatility in global food prices. These disruptions highlight the vulnerability of global food systems to geopolitical conflicts and underscore the need for more resilient agricultural supply chains. The study offers insights into mitigating such risks and enhancing future food security.

Political Uncertainty And Initial Public Offerings: The Mediating Role of Political Connections

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Abstract

The negative impact of political uncertainties on a firm's decision-making has been widely researched in the past. In contrast, surprisingly very little attention has been paid to the impact of political uncertainties on investors' decision-making. This study attempts to fill the void in the literature by empirically examining the impact of political uncertainty on investors' initial returns and participation decisions in initial public offerings of Indian firms. Motivated by the recent research on the benefits of political connections of the firm, we also examine whether these connections of IPO firms reduce the adverse effects of uncertainties on investor participation decisions and underpricing. Unlike previous studies centered on nations with single or dual-party systems such as China or the US, this paper delves into the Indian context where a multi-party system prevails, thus offering a unique perspective on political uncertainty and its impact on public offerings. Data of 652 IPOs listed on BSE from 2000 to 2024 were taken. Using general elections as a proxy for political uncertainty, this study conducts a ordinary least-square regression to analyze the impact of elections on IPO underpricing or investors first-day initial returns. Our findings provide evidence that IPOs exhibit greater underpricing during the election years. We also found out that politically connected firms show less underpricing and higher investor participation even during periods of political uncertainty.

India's Trade with Group of South Asian Countries and China- The Intricate Influence of Geo-Political Uncertainties

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Abstract

The geo-political complexities in south Asia region is very multifaceted issues involving cross borders terrorism and political instability in few countries such as Pakistan and Bangladesh. As India is a major dominating player in the region, trade relations with neighbouring countries are highly volatile. The objective of the study is to examine the impact of geopolitical uncertainties on trade flows between India and South Asian Countries and China from 2003 to 2021. This study would employ the Panel autoregressive distributed lag (ARDL) to assess the geo-political risk (GPR) on trade flows on Group of South Asian Nations viz. Afghanistan, Bangladesh, Bhutan, Maldives, Myanmar, Nepal, Pakistan, and Sri Lanka. We have added China as China is one of the top trading partners of India and it plays an important role on the geo-politics of the region. We have taken trade in capital goods, consumer goods, intermediate goods and raw-materials. The data is collected from WITS database, World Bank. To capture the degree of GPR in this study, we use the GPR index developed by Caldara and Iacoviello (2022). The results of this study would have the potential to greatly assist economists and policy makers in creating suitable trade policies that work. The findings of the study may lend credence to the question of whether India would consider the risk of geo-political uncertainties to expand the trade relations with South Asian nations and China at large.

Impact of Geopolitical risk on International Trade between BRICS Countries

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Abstract

Introduction: Increasing geopolitical tensions and the geoeconomic fragmentation of international trade are affecting all trade flows globally. Intra bloc trading is increasing globally and these blocs are formed in line with geopolitical interests (Gopinath et al., 2024). The effect of sanctions on trade between sender, target, and third-party countries is also garnering much academic attention (Kwon et al., 2022). An increasing portion of trade and banking transactions occurs between nations within the same geopolitical alliance. Emerging markets and developing economies (EMDEs) face significantly higher geoeconomic vulnerability than advanced economies, as they engage more frequently with geopolitically distant partners. (M, Aiyar S, Ohnsorge F(2024).

It is widely acknowledged that geopolitical risk (GPR) is a key determinant of international trade and investment and that geopolitical risk negatively affects trade (Gupta et al., 2019;) and it increases bilateral trade costs especially for agricultural goods (Hou et al., 2024). Geopolitical events can have multiple ways of affecting the economy, such as changes in investment behaviour, consumption patterns, and employment levels. (Blomberg et al., 2004; Eckstein & Tsiddon, 2004). Kleinman et.al (2020). However, the effect of sanctions on third party countries requires much more academic attention. These incidents have varied effects on third party countries which are mostly developing nations. Sanctions are sophisticated economic tools nations use to subdue ideologically opposing nations. Sanctions do decrease trade between its senders and targets, but third-party countries often facilitate 'sanction busting' through trade diversion by the targeted nation. This is found to be mostly for economic reasons rather than for political reasons (Jena et.al 2024).

The politico-economic union of BRICS is garnering much attention in this backdrop. The global financial crisis, pandemic, and the Ukraine war are some of the many geopolitical developments that have increased cooperation amongst member states of BRICS. With the possible expansion to a BRICS+, the grouping has the potential to create alternative trading and payment systems and the potential to de-dollarize the global economy (Liu & Papa, 2022).

Objective: Our study has two objectives – (1) To examine how country-specific geopolitical risks of member country pairs impact bilateral export flows between the BRICS countries.
(2) To examine whether geopolitical risk pertaining to Russia and China impacts all bilateral trade flows of the BRICS countries.

The study uses a gravity model to assess whether individual GPR indices of each country pair have affected bilateral export flows in the bloc. We focus on China and Russia's GPR values in the second model because they are the only sanctioned economies in the bloc in recent times that maintain anti-Western foreign policies and are UNSC members.

Our study uses the Historical Geopolitical Risk (GPRH) index constructed by Caldara, D., & Iacoviello. The index counts the number of newspaper articles related to adverse geopolitical events and associated risks that have appeared in three leading international newspapers each month (as a share/percentage of the total number of news articles). GPRH reflects the automated text search results from the electronic archives of the following three newspapers: The New York Times, Chicago Tribune and The Washington Post. The text search is centered around eight categories of geopolitical risk: war threats, peace threats, military buildups, nuclear threats, terror threats, beginning of war, escalation of war, and terror acts (Caldara et al. 2022). The GPRH index thus encompasses both geopolitical threats and actual geopolitical acts for the purpose of this study.

Political Economy - II

Impact Investing in Turbulent Times: Green Investors and the Commodity Supercycle

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Abstract

In recent years, investment in green firms' equity has emerged as key investment trend in India, owing to the green company's eco-friendly business strategy. In this study, we have explored the relationship between performance of green firms in Indian equity markets with respect to the risk arising from price fluctuations in Indian commodity markets. The heterogenous impact of commodity prices on green equity prices is explored through a quantile-on-quantile regression model and causality-in-quantiles model framework. The results shows that agricultural and metals commodities have positive impact on green equity investment in extreme quantiles, while bullions have negative relationship in median and upper quantiles. The results provide unique insights for investors and policymakers in relation to impact investment.

Countries' Choice of Trade Partners in Uncertain Times: Does Geopolitical Closeness Matter?

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Abstract

The importance of Trade Agreements (TAs) has increased and emerged as one of the crucial channels of facilitating economic growth in recent decades. However, the traditional economic and political determinants of TAs gained significant attention in the economic literature, the impact of country-specific trade-related uncertainties on the same is not explored much. In an increasingly globalized world, uncertainty introduces significant challenges in international trade. Despite its prominent role, there is no consensus yet on whether countries faced with uncertainty will turn to TA as a stabilizing mechanism or not. In this context, the paper tries to statistically capture and quantify the likelihood of countries signing TAs amidst uncertainty and further examines whether geopolitical closeness between countries influences this probability. We use an Instrumental Variable (IV) Probit model to estimate the effect of uncertainty and geopolitical closeness on the formation of TAs for the period of 1996-2021. The study found that uncertainty has a positive impact and is a statistically significant determinant of TAs. In contrast, the importance of much-doubted and questioned geopolitical alignment between countries depends on the kind of TAs formed. By addressing the gap in the literature, the study provides insights into the modern drivers of TA formation.

Geopolitical risks and global production sharing: evidence from the panel gravity model

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Abstract

We investigate the effects of geopolitical risks on international trade by incorporating the phenomenon of global production sharing. Using e a panel dataset of bilateral intermediate goods exports, imports and total trade for 41 countries with 143 partners for 1990–2019., we estimate a gravity model using the Poisson Pseudo Maximum Likelihood method to mitigate zero trade values and heteroskedasticity issues. Our analysis provides new empirical evidence on the significant adverse effects of geopolitical risks on global production sharing. More specifically, we find that a 10 per cent rise in the reporting country's geopolitical risk results in a 2 per cent reduction in intermediate goods trade with its partners. We also find that geopolitical risks have lagged effects, lasting at least for one year affecting trade relationships. Besides, we observe that developing countries are more affected by geopolitical risks than their developed counterparts. Our study has important policy implications on promoting resilient trade networks in global production sharing and hence remains of interest to policymakers.

Theoretical Trade - I

Does Efficiency of Public-Infrastructure Use Matter for Pattern and Volume of Trade? A Theoretical Foundation of Growth Empirics

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Abstract

This paper bridges the gaps between the empirics and the theory, justifying the role of efficiency of public-infrastructure use in determining the trade-pattern and trade-volume, yet unexplored in theoretical endogenous-growth literature. For a mixed-economy with three production sectors: two private-sectors each producing a pure consumption-good (C) and a consumption-cum-investment good (X), and a government/public-sector (G) creating output represented as investment in public-infrastructure for use, considering an endogenously determined domestic-relative- price, this paper contributes and establishes the following: (a) Given the relative factor intensities, the efficiency of public-infrastructure use in all three sectors and the composition of public-infrastructure determines the trade-pattern, apart from other model parameters. (b) An increase in the efficiency of public-infrastructure use by the G-sector (θg) affects both trade-pattern and trade-volume. An increase in θg, with opening up of the economy, ensures maintenance of pre-trade comparative advantage, implying that the domestic economy will continue to export C-good and import X-good, provided a restriction on joint interaction of efficiency of public-infrastructure use of X-sector (θx) and composition of public-infrastructure (μ) is satisfied, along with some other restrictions. (c) An increase in θg can lead to (i) decline in import of X-good provided a joint restriction on θx and μ is satisfied, suggesting that the desired import reduction can be achieved through maintenance of appropriate combination mix of θx and μ; this result implying that the effect of an increase in θg will in turn depend on θx and also, (ii) an expansion of C-good export, if the household's rate of time preference exceeds a threshold level, the threshold in turn being dependent on responsiveness of sectoral input ratios, economy-wide input ratio and domestic price w.r.t. θg, along with other model parameters. The paper highlights that examination of the effect of an increase in efficiency of public-infrastructure use by G-sector necessitates consideration of the same by the X-sector and the composition of the public-infrastructure as well.

Trade Variations Due to Time Zones Related Distance and Delaying Costs: A Theoretical Exposition

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Abstract

This paper constructs a competitive trade model involving countries in two distinct time zone locations. Our results suggest that geographical distance positively impact service trade, in contrast to its harmful nature for goods trade. These results are not in line with the traditional gravity arguments of international trade. Our model also reveals an intriguing relationship: an increase in distance between trading nations results in higher skilled wages and lower rent in case of service trade, while goods trade yields the opposite effect. We then connect distance with delaying cost and find the effects of delaying cost on trade and factor prices. We further extend our basic model to introduce informal sector and government manufacturing sector. Despite these additions, the consistency in the effects of distance on factor prices and output persists.

Imitation, Innovation, and the Road to Development

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Vimal Kumar
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Abstract

We present a North-South model of endogenous growth outlining the journey of a Southern country from Imitation to Innovation. Our model acts as a framework to track the dynamics of three phases of Southern development: only Imitation in South, both Imitation and Innovation in South and finally, only Innovation in South. We find transition from one phase to the next marked by a thresh-hold, where the first transition takes place with equalisation of Imitation and Innovation costs in South and the second with equalisation of rates of Innovation in North and South. We also find that to reach sustainable Innovation, effective Southern labor in Innovation has to be higher than effective Northern labor to make up for the technological supremacy of North.

Theoretical Trade - II

Caught in the Crossfire: How Trade Policy Uncertainty Impacts Global Trade

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Abstract

Trade policy uncertainty impacts firm's decisions to enter export markets and make new investments. I extend the trade policy uncertainty literature in a multi-country trade model to evaluate the uncertainty effect on global trade flows. The model introduces two sources of uncertainty namely a policy change probability and tariff size uncertainty. Using these two sources of uncertainty, I argue that the trade policy uncertainty moderates global trade flows and increases domestic price level due to lack of certainty in price distributions. The framework can be generalized to other uncertainties in trade partners. Finally, the model calibration demonstrates that a moderation of trade flows during the recent trade war period, can be explained by trade policy uncertainty.

The Economics of Greenwashing

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Oindrila Dey
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Abstract

The impact of innovation in 'green' technology in the modern world facing global environmental issues, is crucially dependent upon how widely the new technology is taken up. This paper theoretically investigates the decisive factors that compel a firm to either stay 'brown' or take up the new 'green' technology through strategic interactions against a rival firm through technology adoption, quality signalling and lobbying for subsidies and take-up cost aid. We find that in the absence of an effort to sensitise consumers to the drawbacks of `brown' consumption, the industry is led to a greenwashing combination of high take-up cost aid and low production subsidies.

Geopolitics and Joint Ventures: A Game-Theoretical Analysis of Chinese-Indian Collaborations

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Abstract

This paper studies the formation of International Joint Ventures in the case of geopolitical risks in a game theoretic framework. It concludes that the MNC's decision to form a Joint Venture is based on whether the current discounted value of the geopolitical risk is greater than the difference in costs between producing the good as a Joint Venture in its home country and producing it in its parent country. It provides a Nash bargaining set up to decide the share of ownership.

Time Series

Decoding Crude Oil Trade Dynamics: A Comparative Analysis of Machine Learning and Deep Learning Models

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Abstract

Globally the crude oil energy landscape is influenced by supply and demand dynamics, energy security considerations, and volatile international relations. This research aims to predict the formation and dissolution of crude oil trade links with specific reference to major crude oil exporting countries by employing classification-based machine learning algorithms involving Logistic Regression, Logistic Ridge Regression, Random Forest, and Support Vector Machine (SVM), and two deep learning models – Artificial Neural Network (ANN) and Convolutional Neural Network (CNN). It harnesses a dataset covering two decades (2002-2021) comprising node-specific and edge-specific features to capture the economic, historical, and geopolitical nuances affecting crude oil trade linkages. The analysis reveals that out of all models employed, the Random Forest Classifier can aptly predict both active and non-active crude oil trade links, outperforming traditional econometric models and, further emphasizing the immense potential of employing ML algorithms in energy economics. These outcomes offer indispensable insights for policymakers and help them to ensure energy security by anticipating alterations in trade links and therefore enabling adaptive strategies in response to evolving global predicaments.

Temporal Volatility Shifts: A Cross-Model Analysis of Financial Fluctuations Using the GARCH Family Models

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Abstract

This study conducts an in-depth analysis of stock price volatility for three leading technology companies—Google, Microsoft, and Apple—over three critical periods: pre-COVID-19, during the pandemic, and post-COVID-19. Utilizing advanced GARCH family models, the research identifies significant volatility patterns in these stocks, highlighting the robustness of the GJR-GARCH model in capturing asymmetric volatility effects. Rigorous EDA and statistical testing, including ARCH-LM and ADF tests, ensured the reliability of the models. The findings underscore the importance of accurate volatility assessment for risk management and portfolio optimization, particularly in the tech sector, which is prone to rapid market fluctuations.

Geopolitical Risks and Economic Growth: A Dynamic ARDL Approach to Russia's Export-Led Strategy

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Abstract

This study explores the influence of geopolitical risks on Russia's export-led (ELG) growth and economic stability. ELG has been a primary factor in Russia's economy, which is mainly driven by its ample natural resources, especially oil and gas. However, current geopolitical events have highlighted critical obstacles to Russia's dependence on exports for economic development. We have utilized a dynamic autoregressive distributed lag (ARDL) estimation for the period 1994-2022 to evaluate the association between exports, geopolitical risk, inflation, and exchange rates on Russia's economic growth. The results verify that while exports promote economic growth, geopolitical risks exert a substantial negative impact. Furthermore, in the long run, inflation and exchange rates have a negative impact on economic growth by eroding purchasing power and rising import costs, respectively. This study provides new insights into export growth and geopolitical nexus and accentuates the need for Russia to modify its economic strategies to sustain growth in a volatile global environment. The findings hold substantial policy implications for Russia and other export-dependent economies facing similar geopolitical challenges.

Trade & Artificial Intelligence

Artificial Intelligence, Trade Convergence and Deglobalization- A Cross-Country Analysis

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Abstract

Of late, one of the fundamental technological breakthroughs that has steered the structural transformation of all the segments of a globalized economy is the widespread development and application of Artificial Intelligence (AI). On the one hand, it has resulted in improvement in labour productivity, in some cases. On the other hand, it has also intensified new fears of job loss through massive relocation and replacement of traditional jobs, making them redundant. There is a strong potential of AI to stimulate trade through innovation and hence reduce cost. AI is predicted to affect not only the type and quality of growth through trade but also accelerate movement towards services economy (particularly trade in digital services has continued to rise persistently in the post globalization era). It has been observed that the trade-GDP ratio in goods has peaked or plateaued, or at times reduced due to various forms of trade restrictions and technological innovations (e.g. AI) – a form of deglobalization which has been mainly prominent for advanced economies AEs (with few exceptions). The impact of AI on trade varies significantly across countries particularly between the AEs and emerging and developing economies (EMDEs) depending upon their AI readiness. The present paper seeks to explore the impact of the degree of preparedness to AI [measured by the AI Readiness Index (AIRI)], as the main explanatory variable, on Trade/GDP (the dependent variable) [measured by trade (as a percentage of GDP)] along with other explanatory variables like GDP per capita, real effective exchange rate (REER), FDI (foreign direct investment net inflow as a percentage of GDP) across two sets of nations - AEs and EMDEs. It tries to examine whether there exists β convergence (unconditional and conditional), sigma (σ) convergence in our dependent variable Trade/GDP. Generalized Entropy Measures (GEM), Kernel density estimation and Transitional Probability Matrix (TPM) are also used to further explore the variation in both Trade/GDP and AIRI to analyse existence of club convergence and deglobalizing trend.

Artificial intelligence and knowledge creation - cross-country evidence from AI patents

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Abstract

In this study, we analyse AI patenting in a large sample of countries using patent-level records from PATSTAT Global database and OECD.AI Observatory. We document the share of AI patenting in the universe of all patent applications to key 5 patent offices. We analyse the global distribution of AI patenting, showing the role of technological leaders worldwide and addressing specific country studies such as USA, India and China.

We also analyse a specific set of AI patents generated by of higher education institutions from 31 countries in the years 2011-2019. To the best of our knowledge, this is the first attempt to provide a microlevel dataset that allows for the quantification of AI patenting by universities in such a large sample of HEIs from different countries. So far AI patenting (or patenting in the so-called 4-th Industrial Revolution domain) has been mainly explored at the level of countries (Venturini, 2022; Parteka and Kordalska, 2023), regions (Balland and Boschma, 2021) or firms (Benassi et al., 2022; Czarnitzki et al., 2023; Yang, 2022; Igna and Venturini, 2023) but not explicitly when it comes to AI patents by higher education institutions. In this study we use the new database on knowledge creation by Higher Education Institutions (KC-HEI) – Parteka (2024). In this database, patent data come from The Worldwide Statistical Patent Database (PATSTAT Global, 2022 Autumn edition) and are merged with the European Tertiary Education Register (Lepori et al., 2023) ETER database containing information on individual universities with the use of specially created crosswalk.

We document the minor share of the AI patents in the sample of all university patents (mean 1.25%). Additionally, we show the regional distribution of AI patents across the presenting the core-periphery spreading. After showing the descriptive statistics of AI university patents across countries we conduct the empirical analysis in order to find the main determinants of AI university patenting. We take into account the individual characteristics of universities such as:

year of foundation, number of students – representing the size of the institution, the share of students in science, technology, engineering, and mathematics (STEM) disciplines, number of students per academic staff – proxy of teaching load, publication per academic staff – research orientation, financial resources and their type (core versus third party revenues). Additionally, we take into account country, year and regional fixed effects to control for unobserved characteristics. We conduct analysis with different estimation methods: OLS regression, logit and finally zero-inflated negative binomial regression (Buis, 2012) to cover the overdistribution caused by many zero values in AI patent variables.

We find that older, bigger, with a higher share of STEM students, higher number of publications per academic staff, richer and with a higher share of third-party funding universities are characterised by a higher number of AI patents. Conversely, universities with a higher number of students per academic staff and a higher share of core revenues patent less. Additionally, we repeat the estimations for three countries with the highest number of AI patents in Europe, namely France, the UK and Germany. We find some countries' differences. In France, the most important factor is the size of the institution – bigger universities – a higher number of AI patents, in the UK the most important factors are the age of the institution and the share of STEM students while in Germany additionally to previous factors the number of publications per academic staff is statistically significant in all model's specifications.

Our study has straightforward policy implications. We show that AI patents constitute the minority of university patents. In order to counteract this tendency national governments or even at the central institutions of the EU the specific actions should be implemented to strength AI patenting by HEIs.

AI powered Consumer Behavior in e-Commerce

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Abstract

As the e-commerce industry continues to evolve, artificial intelligence (AI) has emerged as a powerful tool for understanding and influencing consumer behavior. This review explores the convergence of e-commerce and consumer behavior, emphasizing the significant influence of AI-driven personalization on market trends. AI-powered technologies have the ability to analyze vast amounts of data in real-time, providing valuable insights into consumer preferences, shopping patterns, and decision-making processes. By leveraging AI algorithms, e-commerce retailers can personalize the shopping experience, recommend products, and optimize pricing strategies to maximize sales and customer satisfaction. Additionally, AI can streamline the purchasing process by offering chatbots for customer support, virtual assistants for product recommendations, and predictive analytics for inventory management. The investigation explores how machine learning algorithms can be used to forecast customer preferences, expedite the purchase process, and create a more customized shopping experience. The review also examines the difficulties and moral dilemmas posed by AI-powered personalization as e-commerce develops. To give a thorough grasp of the wider ramifications of AI in influencing consumer behavior, issues like algorithmic bias, data privacy, and the careful balancing act between personalization and intrusiveness are studied. This analysis provides insightful information about the mutually beneficial interaction between e-commerce and consumer behavior, highlighting the revolutionary potential of AI-powered personalization and its impact on developing market trends. Businesses must comprehend and take advantage of AI-driven tactics in order to remain competitive as they navigate the digital landscape. This combination of data-driven insights and automated decision-making has the potential to revolutionize the way consumers interact with online retailers, ultimately shaping the future of e-commerce

Resilience and Efficiency in a Post-Pandemic Era: How Artificial Intelligence is Transforming the Aviation Supply Chain

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Abstract

The aviation supply chain is under pressure as never before from disruptions caused by the pandemic, geopolitical instabilities, labor shortages, and erratic surges in demand. The paper investigates how AI can transform the aviation supply chain in three important ways: First, with increased inventory transparency, prolonged lifecycles of crucial assets, and compliant procurement, all increasing resilience. AI's real-time insight and predictive capability help stakeholders efficiently manage the inventory, reduce wastage, and ensure that operations run smoothly. Predictive maintenance algorithms permit proactive maintenance of assets, reducing the risk of unexpected failures and downtime. Apart from optimizing procurement, AI does so through the analysis of vast amounts of data to identify certified suppliers and adhere to industry standards. In most cases, AI has become the much-needed strategy to navigate the complexities in the modern aviation market

Trade Barriers

Assessing the Impact of Service Trade Barriers in BRICS Economies: What an Empirical Analysis Reveals for BRICS+

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Abstract

BRICS—Brazil, Russia, India, China, and South Africa—form one of the most influential economic blocs globally, playing a crucial role in driving global growth, trade, and investment, particularly in the services sector. However, these economies face challenges in the form of regulatory barriers imposed by their nations. This paper uses a structural gravity model to analyze the average impact of distinct policy barriers on service exports within BRICS economies. There are limited studies on service trade among BRICS countries across various service sectors, including telecommunication, computer and information services, transport, construction, and financial and insurance activities. The analysis of the results reveals that, among five policy areas or STRI indicators, barriers to competition and restrictions on the movement of people are significant in telecommunication, computer and information services. Additionally, restriction on the movement of professionals also hinder trade in financial and insurance services, while regulatory transparency among BRICS members—regarding rules, laws, and policies—promotes trade across multiple service sectors. The findings emphasize the need for targeted policy reforms to reduce these barriers and enhance trade integration within BRICS economies, which could further stimulate economic growth in BRICS Plus nations.

Comparative Advantage in the 24/7 Economy: Time Zone Differences and Service Trade Flows

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Abstract

Traditional gravity models posit an inverse relationship between geographical distance and bilateral trade due to increased transportation costs. However, recent literature suggests that bilateral service trade may increase between two countries located at an appropriate geographical distance. Using the Poisson Pseudo-Maximum Likelihood (PPML) method, this research analyses two key effects of time difference for 162 countries in 2018 - the continuity effect (enabling 24/7 operations) and the synchronization effect (influenced by cultural and/or institutional differences) for aggregate services, ICT-enabled services, and travel-transportation services. Our findings indicate a positive continuity effect across all service categories, while the synchronization effect varies across categories. We also find that 8-10 hour time difference between two countries appears most advantageous for ICT-enabled service trade between them. This paper underscores the importance of ICT and physical infrastructure, coupled with transparent governance, to boost service trade.

Digital Trade Growth in India: The Long-Term Impact of COVID-19 on E-Commerce, Internet Penetration, and Global Markets

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Abstract

The COVID-19 pandemic greatly accelerated a shift in India's digital economy, with quicker internet penetration and fundamentally altering its place in global trade networks. This paper explores the dynamic interplay between internet access and the emerging trends of digital media and e-commerce industries in India with respect to cross-border trade and digital exports. Important insights include huge growth in the share of new users accessing e-commerce sites, surges in digital content consumption, and enhanced participation of MSMEs in global markets through Amazon Global Selling. The research analyzes longitudinal data to identify pandemic-specific trends and underscores the pivotal role that digital infrastructure plays in sustaining trade and economic activity. The study offers actionable insights for policymakers and trade strategists to focus on investments in targeted digital infrastructure, harmonized trade regulations, and innovative solutions so that India can continue its integration into global digital trade networks.

Trade & Development

The influence of Trade Integration on Energy Intensity: A network Analysis Approach

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Abstract

Introduction The impact of international trade on the environment remains a critical question, particularly in light of trade's role in driving economic development. Since 1995, global tariff reductions have spurred increased trade and economic growth, raising environmental concerns. Trade influences the environment both positively and negatively, yet its overall effect is still debated (Antweiler et al., 2001; Baek et al., 2009; Cole, 2006; Forslid et al., 2018; Kim et al., 2019; Tiba & Frikha, 2018). A novel approach to analyzing this dynamic is through trade network analysis, which accounts for both direct and indirect effects of trade. This method provides a deeper understanding of a country's importance within a global trade network. Therefore, examining the trade-environment relationship from a network perspective is essential for a more comprehensive understanding (Essandoh et al., 2020; Kim et al., 2019). Research Objectives This study aims to examine the role of trade in shaping a country's energy efficiency. While previous research has predominantly focused on direct trade effects, such as bilateral trade, this paper explores the indirect effects through network measures. Specifically, it utilizes average geodesic distance, a measure of the indirect effects of trade, to assess network effects.

The Impact of Tariffs on Quality-Differentiated Products in International Trade: A Comparative Static Analysis

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Abstract

The paper analyses the trade-in quality difference and the uniform distribution of consumers based on income. It considers a two-country, two-firm, and one-product case, where each firm, operating in a different country and specializes in different quality of the product. The focus is to study the impact of a pre-and post-tariff imposition when products are differentiated based on quality. This is studied using a comparative static. The optimal price is compared between the pre-and post-tariff case and conclusions are drawn. The analysis indicates that Country A imposes tariffs as a protective measure to shield its domestic market from the influx of cheaper, low-quality imported goods. However, it is noteworthy that even with the imposition of tariffs, the price of high-quality goods remains higher than that of low-quality goods.

Impact of International Migration and Cost of Transaction on Bilateral Remittance Flows: A Fixed Effects and PPML Estimation Approach

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Abstract

The aim of this study is to determine the drivers of bilateral remittance inflows by applying a gravity-model approach. Utilizing a bilateral remittance flow dataset constructed by using the model framework of Ratha and Shaw (2007) for 271 set of sending and receiving countries from 2011 to 2019, the study found factors such as average transaction cost of remittances, migrant stock, and liquid liabilities as significant drivers of bilateral remittance inflows. The study has used a novel approach of poisson pseudo-maximum likelihood (PPML) estimation along with fixed effects (FE) for the analysis. The study puts forth suggestions for enhancing the remittances to these economies through cost reduction and policies aimed at facilitating stronger international migration ties amongst countries. Reducing cost of transaction is one of the key objectives of achieving Sustainable Developmental Goals.

Trade & Technology - I

Embracing Second Thoughts at WTO Negotiations? A case of Information Technology Agreement

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Abstract

After completion of the long negotiations under the Uruguay Round (1986-94), the World Trade Organization (WTO) was established in 1995 with the objective of securing free trade. In recognition of the emerging trade currents and the linkage effects for downstream sectors, the urge for further negotiations to reduce tariff across key sectors was, however, immediately perceived. Consequently, the Information Technology Agreement (ITA) was signed in 1996 as a plurilateral agreement with 29 signatories at the Singapore Ministerial Conference of WTO. While the participating developed and developing countries implemented the mandated tariff reforms over the years, the advent of technological revolution and regular revisions of the trade codes by the World Customs Organization (WCO) subsequently necessitated a re-look at the coverage at the ITA (termed as ITA-1). Interestingly, the commitment and implementation of ITA-1 principles by some members (e.g., India) came under observation, which underscores the evolving dynamics in capacity asymmetries. This decision affects the global value chain (GVCs) participation of the concerned countries on one hand and bear crucial ramifications for the ongoing digital trade negotiations at WTO on the other. In 2015, the ITA-2 came up, which significantly expanded the product as well as participating country coverage. The current analysis focuses on the decision of some members of ITA-1 who did not join the ITA-2 agreement and attempts to recognize the economic drivers behind the choice.

The Impact of Geopolitical Tensions on Sino-Indian Trade Relations: A Focus on the Tech Sector

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Abstract

This paper examines the impact of geopolitical tensions on Sino-Indian trade relations, with a particular focus on the technology sector. The findings indicate that while geopolitical conflicts have led to disruptions in trade and investment, the economic interdependence between China and India continues to shape their relationship in complex ways. The analysis highlights the need for both countries to navigate their differences and build trust through strategic dialogue, policy measures, and collaborative initiatives. Several potential scenarios can be envisioned for future Sino-Indian tech relations based on current trends. Notably, within the BRICS framework, China's expertise in infrastructure development and India's strengths in software and digital services present opportunities for mutual benefits. By implementing these recommendations, Chinese and India could potentially move towards a more balanced and constructive tech relationship, mitigating security risks while capitalizing on the immense potential for collaboration between the world's two largest populations.

Assessing the Impact of Transfer Pricing on the IT Sector: Challenges and Strategic Insights

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Abstract

Transfer pricing refers to the prices of goods and services of the MNCs transferred between jurisdictions of different countries . It is the prices rendered by Parents companies to its subsidiaries/holding companies for the purpose of reducing tax burden. Transfer pricing in the IT sector is setting prices for transactions between related entities within MNCs, especially involving intangible assets like Intellectual Property Right, software, data processing services, and cloud computing. IT sector's heavy reliance on these intangibles assets becomes a complex issue. For example, Parents companies must decide how to allocate profits from the development and use of software or patents across different countries of their subsidiaries Companies. To ensure that there is a fair distribution of royalties for software licenses, there often involves cost-sharing arrangements for R&D. The complexity of IT services, along with evolving global tax regulations, creates challenges in aligning transfer pricing with the arm's length principle (ALP) as per Article 9 of the OECD Model Tax Convention which mandates that transactions between related entities should be priced as if they were between independent parties.

Methodology for this extended abstract is to applying key methods and principles for determining d transfer pricing for IT services, known as Comparable Uncontrolled Price (CUP) method, the Cost Plus method, and the Profit Split method. the study delves into case studies of multinational corporations in the IT sector, highlighting how they navigate transfer pricing challenges, including the allocation of R&D costs, software licensing fees, and data center services across jurisdictions For example Google used strategy of he "Double Irish" and "Dutch Sandwich" under which In Europe they takes an advantage of low taxation in Ireland. There is a need for MNCs to carefully determine Transfer Pricing policies because of complexity nature of their Intellectual Property Rights and they have to ensure that its must compliance with OECD Model.

Trade & Technology - II

Comprehending Path to Self-Sufficiency amid Burgeoning Imports of India's Edible Oil: A PCA and VECM Analysis

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Ram Singh
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Abstract

This study employs a PCA-VECM approach to analyse the demand and supply dynamics in India's edible oil market from 1981 to 2021. The findings reveal that surplus ending stock, largely driven by imports, significantly impacts current market demand, especially in the industrial sector. A persistent lag in domestic production, compounded by the availability of cheap imported oil, has weakened farmers' incentives to increase oilseed production, despite minimum support prices. While the government's liberalized import policies address short-term demand, they also reinforce long-term dependence on imports, heightening the risk of external price shocks. The VECM model shows a relatively swift market correction, with 57% and 68% of disequilibrium in demand and supply, respectively, adjusted within each period, leading to market stabilization within 3-5 years after a shock. The study calls for strategic policy interventions to achieve self-sufficiency in edible oil production, breaking the cycle of high demand from processing industries and insufficient domestic supply.

Trade Performance of the Indian Dairy Sector in the Post-Liberalization Period

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Abstract

In this study, we are interested to examine the trade performance of the dairy sector in the post- liberalization period. To examine the trade performance of the sector intuitively we have focused on three parameters of the international economics, including, (1) competitiveness of the India's dairy export in the international market (2) direction of country's dairy export and import and (3) degree of market concentration of the exported and imported dairy products. Further, in this study, we are interested to investigate effects of selected determinants of the dairy export and import. From the estimated results of the study, it is seen that most of the dairy products are not export competitive in the international market. India's dairy trade is mostly associated only with the countries of the South-Asia and Middle-east. These export destinations are unstable during the study period. On the other hand, dairy import comes from the developed nations. From the estimated result of the study, it is also seen that dairy export is diversified whereas dairy import is moderately concentrated. It is also evident that selected macroeconomic indicators affects India's dairy export and dairy import.

Realization of Trade Potential among South Asia and Southeast Asia: A Stochastic Frontier and Structural Gravity Analysis

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Abstract

The aftermath of colonisation is known to have resulted in underdeveloped economies with strong ties with the erstwhile colonisers for trade and institution building. The benefits of industrialisation were far removed from the newly colonised manufacturing and agricultural sectors. The continued trade dependence upon the EU and the USA has diminished the trade opportunities among the group of countries and poses as an anathema to the expansion of trade. The South Asian and Southeast Asia (SASEA) has exhibited an overwhelmingly low intra- regional trade compared to APEC, EU and NAFTA. Recently, BRICS has shown a considerable rise in intra-regional trade, while SASEA's share in intra-regional trade continues to hover around 20 percent of total trade. This fact, combined with the trade potential among these economies, brings out a very dismal picture.

Attempts to study the integration among South Asia have been given limited scenarios. However, among them, Bhattacharya and Das (2014) and Moinuddin (2013) have provided the integration scenarios for SAARC. However, there are no gravity analyses on the SASEA region with the prospect of becoming an aligned integrated economic and trading bloc. This paper uses the Stochastic Frontier Gravity Model to evaluate the behind-the-border and beyond-the-border trade inefficiencies in the region. The MLE (Maximum Likelihood) estimates of a time-varying decay model indicate that the gamma for SFA, the inefficiency coefficient, is 0.82. This value identifies that about 82 per cent of trade inefficiencies are explained by the 'behind-the-border' and 'beyond-the-border' restrictions to trade, and only a small part is explained by random noise. Further, by following Battese and Coelli's (1988) method for calculating technical efficiencies in bilateral trade, the paper presents the average technical (in)efficiencies for all the country-pairs in the SASEA. The 'te' values further confirm that all the regions have shockingly low levels of technical efficiencies. These inefficiencies seem to have reduced over a period of the last 30 years, but the fall in them is hardly helping to boost the higher levels of trade and production. Within the SASEA region, countries such as Bhutan, Brunei, Cambodia

and Myanmar have very large inefficiencies, and Singapore, Thailand, and Vietnam have relatively better levels of inefficiencies.

The structural gravity estimates using Anderson and van Wincoop's (2003) model with multilateral resistances and Silva and Tenreyro's (2006) model for PPML estimation are used to estimate the gravity coefficients. While most variables show theoretically consistent signs, the interesting among them are population, Common language and Common Religion. While the population shows negative signs, indicating the absorption effects of a higher population upon trade liberalisation. The OLS estimates of augmented gravity analysis present that common religion has a negative impact upon bilateral trade. In addition to the gravity estimates, using the CEPII database for cross-country bilateral trade, the effects of trade creation and trade diversion are measured by applying time-varying fixed effects. The data has been truncated to study the decadal changes in trade creation and diversion. The analysis indicates that in the 1990s and 2000s, the trade creation effect was positive and significant. However, in the 2010s, there is evidence of substantial trade diversion. In many respects, this is a positive sign as there is, albeit very small, a trade shift from the rest of the world to the SASEA region. This paper attempts to make a case for increasing commitment to multilateral reduction in trade barriers among the SASEA countries and the eventual creation of a highly integrated trading bloc.

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