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Trade, Investment and Economic Growth

Issues for India and Emerging Economies

Springer

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Editors

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Foreword

The Indian Institute of Foreign Trade (IIFT) has established itself as an Academic Centre of Excellence in International Business. It is committed to high standards of teaching in international business as well as a centre for pioneering research and knowledge dissemination in the arena of foreign trade and policy issues. IIFT has been organizing the Empirical Issues in International Trade and Finance (EIITF) Research Conference series since 2008. From the beginning, the conference has brought to the fore academic discussions and discourse on contemporary issues relevant to international trade, finance and business as a whole. The themes of the conference series have reflected the rapid changes around the world, particularly contemporary themes which have been of interest to researchers in associated fields as well. The institute organized the Sixth EIITF on 18 and 19 December 2018 at its New Delhi Campus. In keeping with the latest developments, the themes of the conference were technology disruptions, global capital flows and international trade-drivers for economic development. The conference was attended by academicians, policy researchers, multilateral agencies, industry bodies and policymaking communities from across the globe.

The release of the current volume could not have been at a more appropriate time. International trade and capital flows, since the turn of the century, have been in a state of flux. In particular, international trade patterns have been marked by rising uncertainty, since the global financial crisis of 2008–2009 and the eurozone crisis of 2011–12. The world economy is currently reeling under an unprecedented health crisis due to spread of the COVID-19 pandemic which is expected to severely affect global economic activity. As a result, compared to the last year, growth in the global economy is expected to fall by as much as 3 per cent in the current year. IMF's *World Economic Outlook (WEO) Update (April 2020)* reports this to be much more severe than the growth contraction resulting from the financial crisis of 2008–09. Assuming that the pandemic is contained in the second half of 2020 and in view of the expansionary policy measures, *WEO (April 2020)* projects that a bounce back is expected in 2021, wherein the global economy is expected to expand by 5.8 per cent.

A key challenge for the global economy at the current juncture relates to the uncertainty regarding the time it would take for the pandemic to fade away and for economic activity to normalize. In the aftermath of the pandemic, consumer demand is expected to remain weak and employment in the informal sector is likely to remain stagnant. This is notwithstanding the bleak global growth prospects due to rising trade disputes and geopolitical tensions in 2018–19. The advanced economies have had a choppy and long road to recovery post the global financial crisis of 2008–09 (*Trade and Development Report 2019* (UNCTAD)).

While there is an urgent need for monetary as well as fiscal expansion, there may be limitations to the policy headroom. Another crucial aspect is the anchoring of inflationary expectations through communication by the monetary authorities. There is a risk of a debt-deflation spiral which may be abated by a strong government policy stance. In order to facilitate recovery, regulatory foresight in the form of strong insolvency and debt enforcement frameworks is required. Finally, multilateral cooperation is the need of the hour, especially in the economic as well as medical arena. This would mean the removal of tariff and non-tariff barriers to allow international trade and functioning of global supply chains along with measures to boost the global financial sentiment. Nations would need to work side by side to share information about the virus crucial for containment and development of the vaccine.

The present volume has been contributed by scholars who participated at the EIITF 2018 Conference and intends to make a significant contribution to the existing literature by including selected empirical works on critical policy issues in the spheres of international trade and foreign capital flows and their role in fostering economic growth and development in the context of India and several emerging market economies. Twenty papers included in the volume are classified appropriately under four broad themes, namely: (1) International Trade: Empirical and Policy Issues, (2) Foreign Capital Flows and Issues in Finance, (3) Trade and Development Interface: Implications for India and Emerging Economies and (4) Analysis of Sector-level Growth and Development in India, all of which are extremely relevant in the current context. The chapters in the volume have been contributed by leading academicians and researchers involved in the applied area of economics. I am confident that the empirical works presented in this comprehensive volume could serve as ready reference for academicians, researchers and policymakers, particularly in emerging economies facing similar challenges.

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Acknowledgements

All of the chapters included in this volume were originally presented in the 6th Conference on Empirical Issues in International Trade and Finance (EIITF) organized by the Indian Institute of Foreign Trade (IIFT) Delhi on 13 and 14 December 2018. The conference focused on technology disruptions, global capital flows and international trade-drivers for economic development.

Professor Manoj Pant, Director, IIFT, was a guiding light and extended his unconditional support. We are obligated to Springer for making this collection of papers accessible to students and researchers working in related fields in the form of a book. We are grateful to Nupoor Singh, Editor, Springer, and Daniel Joseph G. for their constant support in this endeavour. The authors are also grateful to two anonymous referees for constructive suggestions and comments.

We are thankful to all the authors who contributed their research work for the volume. We also gratefully acknowledge competent and diligent support from Ashima Puniani and Saloni Khurana, for compiling and editing the chapters in the volume. Research support from Tanya Dawar is also gratefully acknowledged. Lastly, we thank our families for facilitating us in countless ways.

Introduction[1]

This chapter introduces the background, recent developments, themes and the papers contained in this conference volume titled *Trade, Investment and Economic Growth: Issues for India and Emerging Economies*. The first section presents the background to the key issues covered in the volume. Subsequently, we discuss the recent developments and performance of emerging economies in the second and third sections. The last section discusses the themes which form the focal point of the papers and briefly outlines papers included in the present volume.

Background

The twenty-first century is being shaped by changing views on international trade in both goods and services along with global capital flows and their role in affecting the economic outcomes of various countries. Lately, the global economy has been under a lot of strain and is facing sluggish economic growth. This may be attributed to the dawdling trade along with mounting tariffs, unstable financial flows, decreased business confidence and rising policy uncertainty among others. Climate change, divergent public views on critical issues and an increasing distrust of political parties are also risking the medium- and long-term growth. In view of changes in volume as well as pattern of trade and investment flows, there is an urgent need to study the established paradigms of economics through a new lens with advances in theoretical and empirical models.

To add to the fire, the intensified trade tensions among the USA and China, Brexit negotiations, the shutdown of the US federal government, US-Iran trade rifts, Italy's conflict with EU regarding public debt and uncertainty in Mexico's policy direction under the new government are some of the many upsetting policy news from all around the world. China, one of the largest economies in the world, has been experiencing a decline in its growth due to policy pressures in the face of a debt overhang,

[1]Diligent research work by Tanya Dawar is gratefully acknowledged.

slower infrastructural investment and decline in exports as a result of the US tariffs. This has badly affected the imports in the economy and exports of its trade partners in Asia and Europe. India too is also slowing down, and its exports to the world are experiencing a secular decline.

With this backdrop, Indian Institute of Foreign Trade organized its 6th Conference on Empirical Issues in International Trade and Finance during 13–14 December 2018 at its New Delhi Campus. The editors of this volume have selected some of the best papers presented at the conference. The distinctive aspects of the volume are that it covers topical issues pertaining to international trade, capital flows and finance, development and sector-level growth in India with a focus on the policy point of view. Secondly, the discourse focuses mainly on empirical work and econometric aspects. Finally, the overall focus is on the lessons learnt from the trade–capital flows–growth experience of emerging economies.

Recent Developments

The global economy has been in a lot of flux lately; the paradigms for achieving a healthy and steady economic growth are continuously getting redefined. The world is currently staring at an unprecedented health crisis presented by the outbreak of the COVID-19 pandemic. The global economy, currently grappling with a health crisis resulting from the spread of COVID-19, is likely to witness a contraction in the economic activity. However, it is not possible to stray away from the existing theory, literature and evidence on the pillars of achievement of robust growth.

It is notable that the health crisis due to spread of COVID-19 is associated with a huge output loss. The growth in the global economy, year on year, is expected to fall by as much as 3 per cent. IMF's World Economic Outlook (WEO) Update (April 2020) reports this to be much more severe than the growth contraction resulting from the financial crisis of 2008–09. There is considerable ambiguity regarding the duration and intensity of this surprise. Clearly, innovative policy, both medical and economic, is the need of the hour to counter the effects of the crisis.

Assuming that the pandemic is contained in the second half of 2020, and in view of the expansionary policy measures, WEO (April 2020) projects that a bounce back is expected in 2021, wherein the world economy is expected to expand by 5.8 per cent. The recovery in global economic activity in 2021 is marked by enormous uncertainty. The implementation of effective policies is central to a gradual normalization of economic activity and a recovery in 2021 (WEO Update, April 2020). Cross-country cooperation on medical supplies, vaccines, therapies and other interventions is critical to slow down the transmission of the COVID-19 pandemic. However, countries should refrain from the imposition of additional trade restrictions and resort external funding wherever required. Apart from cooperation on healthcare systems, targeted policies, at both the local and national levels, are imperative at the current point in time.

The articles included in this volume provide contemporary dynamics of the pre-COVID period which will probably remain important in the post-COVID world also as globalization has made a tectonic shift to economic management. Perhaps, the post-COVID world will try to align the new reality with some of the fundamental aspects of the twenty-first-century world which are expressed through the papers. In particular, issues related to the development of emerging economies through the trade and finance channels are at the heart of the economic growth literature. Therefore, the papers in the volume bring to the fore critical issues which merit the attention of the policymakers and growth enthusiasts and these experiences will serve as lessons for the way forward in the post-COVID 'normal'.

Performance of Emerging Economies

The critical role played by investment and trade in the context of engendering economic growth cannot be emphasized enough. Truth be told, a vast majority of advanced economies have been able to sustain the growth momentum in view of conducive conditions for investment and trade. This is particularly true of the emerging and developing economies (EMDEs) which have struggled with the 'twin deficits' of trade deficit and budget deficit in the past. Before we delve further into the role played by investment and trade in economic growth of a nation, we define EMDEs and discuss their key economic performance measures.

As of June 2020, the World Bank has classified the countries given in Table 1 as emerging and developing economies (EMDEs) which include some of the largest and most populous economies of the world such as China, India and Brazil.

Table 1 Emerging market and developing economies (World Bank)

Country	Continent group
China	East Asia and Pacific
Indonesia	
Thailand	
Russia	Europe and Central Asia
Turkey	
Poland	
Brazil	Latin America and the Caribbean
Mexico	
Argentina	
Saudi Arabia	Middle East and North Africa
Iran	
Egypt	

(continued)

Table 1 (continued)

Country	Continent group
India	South Asia
Pakistan	
Bangladesh	
Nigeria	Sub-Saharan Africa
South Africa	
Angola	

Source Global Economic Prospects, World Bank, June 2020

Table 2 presents the rate of growth of real GDP for the advanced and emerging market and developing economies (EMDEs) in 2015–21. Clearly, the EMDEs have been growing at a much faster rate than the advanced economies over the period 2015–21. In particular, China and India have been the fastest growing and largest EMDEs during the last few years.

Table 2 Annual estimates and forecasts (f) of real GDP (World Bank)

	2015	2016	2017	2018e	2019f	2020f	2021f
World	**2.9**	**2.6**	**3.1**	**3.0**	**2.6**	**2.7**	**2.8**
Advanced economies	**2.3**	**1.7**	**2.3**	**2.1**	**1.7**	**1.5**	**1.5**
USA	2.9	1.6	2.2	2.9	2.5	1.7	1.6
Euro area	2.1	2.0	2.4	1.8	1.2	1.4	1.3
Japan	1.2	0.6	1.9	0.8	0.8	0.7	0.6
Emerging market and developing economies (EMDEs)	**3.8**	**4.1**	**4.5**	**4.3**	**4.0**	**4.6**	**4.6**
Commodity-exporting EMDE	0.8	1.5	2.1	2.2	2.1	3.1	3.0
Other EMDE	6.1	6.0	6.1	5.8	5.2	5.5	5.5
Other EMDE excluding China	5.2	5.1	5.4	4.9	4.2	4.8	5.0
East Asia and Pacific	6.5	6.3	6.5	6.3	5.9	5.9	5.8
China	6.9	6.7	6.8	6.6	6.2	6.1	6.0
Indonesia	4.9	5.0	5.1	5.2	5.2	5.3	5.3
Thailand	3.1	3.4	4.0	4.1	3.5	3.6	3.7
Europe and Central Asia	1.1	1.9	4.1	3.1	1.6	2.7	2.9
Russia	−2.5	0.3	1.6	2.3	1.2	1.8	1.8
Turkey	6.1	3.2	7.4	2.6	−1.0	3.0	4.0
Poland	3.8	3.1	4.8	5.1	4.0	3.6	3.3
Latin America and the Caribbean	0.1	−0.3	1.7	1.6	1.7	2.5	2.7
Brazil	−3.5	−3.3	1.1	1.1	1.5	2.5	2.3
Mexico	3.3	2.9	2.1	2.0	1.7	2.0	2.4
Argentina	2.7	−2.1	2.7	−2.5	−1.2	2.2	3.2

(continued)

Table 2 (continued)

Middle East and North Africa	2.9	5.1	1.2	1.4	1.3	3.2	2.7
Saudi Arabia	4.1	1.7	−0.7	2.2	1.7	3.1	2.3
Iran	−1.3	13.4	3.8	−1.9	−4.5	0.9	1.0
Egypt	4.4	4.3	4.2	5.3	5.5	5.8	6.0
South Asia	7.1	8.1	6.7	7.0	6.9	7.0	7.1
India	8.0	8.2	7.2	7.2	7.5	7.5	7.5
Pakistan	4.1	4.6	5.4	5.8	3.4	2.7	4.0
Bangladesh	6.6	7.1	7.3	7.9	7.3	7.4	7.3
Sub-Saharan Africa	3.0	1.3	2.6	2.5	2.9	3.3	3.5
Nigeria	2.7	−1.6	0.8	1.9	2.1	2.2	2.4
South Africa	1.3	0.6	1.4	0.8	1.1	1.5	1.7
Angola	0.9	−2.6	−0.1	−1.7	1.0	2.9	2.8

Source Global Economic Prospects, World Bank, June 2020

Table 3 Annual estimates and forecasts (f) of fixed investment rates in EMDEs (World Bank)

	2015	2016	2017	2018e	2019f	2020f	2021f
East Asia and Pacific	6.5	6.6	5.3	5.3	5.1	5.1	4.9
Europe and Central Asia	0.4	−0.1	6.3	2.5	−0.9	3.3	3.6
Latin America and the Caribbean	−4.5	−5.3	−0.2	2.2	1.3	3.1	4.4
Middle East and North Africa	1.6	−0.3	2.4	3.7	4.4	5.7	6.4
South Asia	3.5	7.7	7.0	10.5	8.3	7.8	7.9
Sub-Saharan Africa	3.7	−0.6	4.7	5.8	5.9	6.1	6.7

Source Global Economic Prospects, World Bank, June 2020

Table 3 depicts the fixed investment rates for EMDEs by region during 2015–21. We notice that the EMDEs located in Europe and Central Asia have had a relatively low rate of fixed investment in the recent past. However, the South Asian EMDEs have displayed a relatively consistent and higher rate of fixed investment along with those in East Asia and Pacific. EMDEs in Middle East and North Africa as well as those in sub-Saharan Africa are showing much promise and have an upward trend in the investment rates. Finally, the EMDEs located in Latin America and the Caribbean have a very volatile performance over the period 2015–21.

Table 4 focuses on the contribution of net exports or trade balance to GDP in case of EMDEs. We find that, in majority of the cases, the net exports' contribution to GDP growth has been negative or at best low. In case of Europe and Central Asia as well as Middle East and North Africa, the contribution has been consistently decreasing over 2015–21.

Figure 1 shows that general government gross debt levels of emerging economies reduced sharply post 2008 due to the global financial crisis. It was also adversely

Table 4 Annual estimates and forecasts (f) of net exports' contribution to growth in EMDEs (World Bank)

	2015	2016	2017	2018e	2019f	2020f	2021f
East Asia and Pacific	−0.1	−0.8	0.4	−0.9	−0.4	−0.4	−0.5
Europe and Central Asia	3.0	0.3	−0.7	1.0	0.5	−0.1	−0.4
Latin America and the Caribbean	1.2	0.8	−0.4	−0.3	0.2	−0.2	−0.2
Middle East and North Africa	2.0	4.8	−0.2	1.4	−0.5	0.8	0.4
South Asia	−0.2	−0.3	−2.0	−2.1	−0.6	−0.6	−0.6
Sub-Saharan Africa	0.0	1.6	1.2	−0.6	−0.2	−0.1	−0.2

Source Global Economic Prospects, World Bank, June 2020

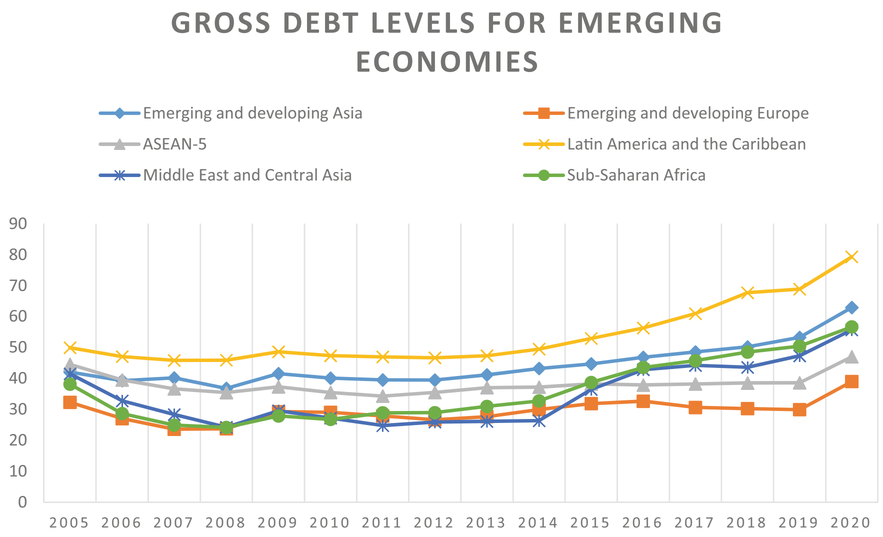

Fig. 1 General government gross debt of emerging economies between 2005 and 2020 as percentage of GDP (IMF). *Source* IMF World Economic Outlook Data (October 2020)

affected between 2014 and 2016 as a result of the collapse of commodity prices worldwide. Finally, it has further deteriorated in 2020 due to the ongoing COVID-19 pandemic.

Themes and Papers in the Current Volume

The current volume intends to contribute to the existing literature by covering select works on crucial policy issues in the international trade and financial flows and their role in fostering economic development in the context of India and several other emerging economies. In line with the research areas, twenty-one papers included in the volume are classified under four broad areas, namely:

(1) International Trade: Empirical and Policy Issues,
(2) Foreign Capital Flows and Issues in Finance,
(3) Trade and Development Interface: Implications for India and Emerging Economies and
(4) Analysis of Sector-level Growth and Development in India.

The papers included in this volume have dealt with emerging research questions on these broad themes empirically. In addition, detailed literature survey, discussions on data availability and issues relating to statistical estimation techniques in theoretical background ensure that each paper significantly contributes to the ever-growing literature on international trade and capital flows. The chapters in the current volume are contributed by leading academicians and researchers involved in the applied area of economics. The empirical evidences provided here could serve as ready reference for academicians, researchers and policymakers, particularly in emerging economies facing similar challenges.

The first part concerns empirical and policy issues relevant to international trade and includes six chapters, and it will be interesting to see how trade relations among economies shape up in the post-COVID world. The coverage of different papers in the volume is as follows. Chapter 1 of the volume is by Kanika Pathania, and it offers an understanding of the effective rate of protection by empirically estimating the inverted duty structure for 14 industries in India for the period 2000–2014. The study utilizes a modified version of Corden's measure of effective rate of protection. The paper finds that the higher the extent of positive protection, the lesser is the chance of duty inversion. Inverse duty structure is found for the Indian industry segments, viz. electronics and optical products, paper and paper products, computer, pharmaceuticals, machinery and equipment, and other transport equipment. The paper assumes significance as there is a suspected resurgence of 'protectionism' in recent times. The following chapter by Priyanta Ghosh and Aparna Sawhney focuses on whether a firm's home market performance plays a role in its decision to participate in exports for Indian manufacturing firms for the period 2000–2014. The study utilizes micro-level panel data to estimate a random effects Probit model and discern the export behaviour of new exporters vs. non-exporters basis their performance in the home market. The paper finds the interesting conclusion that firms which perform better in the home market are more likely to enter the export market in future. The third paper in the section by Vaishnavi Sharma and Akhilesh Mishra discusses the Indo-African trade with a focus on the post global financial crisis period. They utilize a generalized gravity model for overall trade, imports and exports over the period 1991–2014. The estimation results suggest that income levels of the trading partners, openness of the African nation, GDP of the African trade partner, inflation in India and the exchange rate are the key determinants of trade between India and African economies. The next chapter by Ganapati Mendali tests for the validity of the J-curve for India vis-à-vis BRICS nations using monthly data from 2011 to 2017 using panel co-integration methodology. The findings of the paper suggest that there does not exist a J-curve for the Indian economy. This chapter indicates that policies related to currency management merit further empirical attention. Chapter 5 by Divya Nagraj and Ishita Ghosh examines the challenges for trade between India and ASEAN economies with an emphasis on factors that contribute to trade costs. The authors employ the Novy approach to the gravity model of trade and discover that shipping connectivity and distance are major factors that contribute to rising trade costs. There are other costs such as those of sanitization which have increased in the current circumstances. The last chapter in the part by Areej Aftab Siddiqui and Parul Singh studies the relationship between information and communications technology (ICT) penetration and exports, imports and trade openness for major trading economies over the period 2001–2018. The authors construct an ICT penetration index using principal component analysis based on data for the trade of ICT goods and services, Internet use, mobile and broadband subscriptions. The authors utilize other control variables such as financial development index, domestic investment, foreign direct investment, exchange rate and growth and investigate the relationship between trade and ICT penetration while controlling cross-country effects. The chapter finds that there exists a significant link between ICT penetration and exports, imports and trade openness for the sampled countries. It is notable that the role of ICT in the post-COVID world cannot be emphasized enough.

The second part focuses on international capital flows as well as issues in finance and consists of six chapters, and these must be kept in mind while analysing the behaviour of FDI flows in the post-COVID scenario. The first chapter in part two by Ishita Ghoshal, Saylee Jog, Uday Sinha and Ishita Ghosh discusses the macroeconomic factors that impact foreign direct investment (FDI) inflows into emerging economies. The panel data under consideration comprises 17 emerging economies between 2000 and 2017. The findings suggest that capital formation, GDP growth rate, size of the economy, labour force participation rate, foreign exchange reserves and savings lead to higher FDI inflows into emerging economies. The subsequent chapter by Aparna Sawhney and Rashmi Rastogi studies the pattern of inward FDI to India and assesses the factors affecting the FDI into Indian industries. The chapter examines the composition of the FDI inflow by industry-specific characteristics (at disaggregated 3-digit industry classification) for Indian manufacturing firms and evaluates the characteristics of high-income source nations determining FDI in different Indian industries, over the period 2000 to 2014. The findings suggest that capital-intensive industries have attracted significant FDI inflows. Further, the source-country analysis shows FDI from capital-abundant, large nations, and especially those with stringent environmental regulations has been flowing to polluting industries. Chapter 9 by Aneesha Chitgupi inspects the current account sustainability and intertemporal budget constraint for India using the autoregressive distributed lag (ARDL) methodology for quarterly data from 2000 to 2017. The analysis reveals that exports and imports are co-integrated in the long run and the intertemporal budget constraint validity cannot be rejected for India. The next chapter by Saswata Chaudhury, Nitya Nanda and Bhawna Tyagi focuses on the role played by FDI in economic growth of South Asia with a special emphasis on greenfield versus merger and acquisition. The results indicate that the strength and pattern of impact of FDI depend on the nature of FDI (greenfield vs. M&A) as well as country-specific issues (such as domestic investment, inflation, infrastructure, external trade, among others). The fifth chapter in the part by P. K. Das discusses risk modelling by coherent measure using a family of generalized hyperbolic distributions. The study identifies the appropriate probability distribution for describing the return of BSE SENSEX to be the generalized hyperbolic family of distributions. The validity of the family of distributions was found to be adequate for describing the probability density based on AIC and likelihood function. The last chapter in the part by Kanika Dhingra and Sheeba Kapil analyses the impact of macroeconomic variables on stock market using co-integration analysis for monthly data from 1993 to 2019. The factors included in the analysis include wholesale price index (WPI), money supply (M3), consumer price index (CPI), index of industrial production (IIP), trade balance (TB), gold price (GP), call money rate (CMR), exchange rate (ER) and foreign portfolio investment (FPI).

Trade and development interface with a focus on implications for India and other emerging economies with five chapters is the next part of the volume. Trade has served as an engine of economic growth and development in the past. These chapters are a key reminder during the 'new normal' of the manner in which development outcomes may be achieved. The first paper in the part by Biswajit Nag and Saloni Khurana conducts a firm-level analysis to examine the relationship between employment generation and trade for India. The study employs Annual Survey of Industries data from 2008–09 to 2015–16 and finds that exporting industries' overall growth in employment is higher than the manufacturing sector as a whole for India. The next chapter by O. Olaiya and A. Bello assesses the complementary role of institutions to study the relationship between trade liberalization and poverty alleviation in Nigeria. The paper uses the time-varying parameter (TVP) approach of state-space model and fully modified ordinary least squares and shows that improvement in macroeconomic policies, indicators and institutions was on an average a declining function of poverty. Interestingly, policy inconsistencies have led to a sharp upward and downward movement in poverty rate for Nigeria. The third chapter in this part by Manoj Pant and Nidhi Dhamija focuses on the interface between trade liberalization, growth and poverty in India. The chapter uses panel data techniques on the data collected from NSSO's thick survey rounds (1993–94, 2004–05, 2009–10 and 2011–12) for 21 major states of India. The study concludes that trade liberalization process has helped in raising the per capita income levels in the Indian economy. The next chapter in the part by Vijaya Katti analyses India's labour-intensive exports (textile and clothing, leather products, gems and jewellery and electronic goods) and recommended policies to enhance exports to the USA. The paper also focuses on the competitors for India in the US market for these products and the reasons for India's poor performance in the US market relative to its competitions. The final chapter in the part by Debashis Chakraborty and Biswajit Nag presents empirical evidence and policy suggestions in the context of United Nations Economic Commission for Europe (UNECE) Agreements on harmonization of vehicle standards in India. Using WITS-SMART simulation, the authors suggest that there could be a degree of divergence in the pure tariff reduction outcomes in Indo-EU sectoral export and imports.

The last part deals with an analysis of trends in sectoral growth and development for India and includes four chapters. With an enhanced focus on 'Vocal for Local' by the Indian government, a sectoral perspective on growth and development makes for a fascinating exploration. The first chapter by Sanchita Roy Chowdhury and Siddhartha K. Rastogi evaluates the success of the 'Make in India' launched scheme by the Government of India in 2014. The study focuses on the electronics sector and chooses 46 items of six-digit HS code under the broad category of 'electrical and electronics goods'. The results show incongruent trends in terms of exports and imports for different products. The scheme is extremely important in the post-COVID times where looking inwards is the way forward in economic growth. The second chapter in the part by Taufeeque Ahmad Siddiqui and Kashif Iqbal Siddiqui utilizes the structural equation modelling framework to investigate the causal linkage between financial inclusion and telecommunication for the Indian states of Kerala and Bihar. The results suggest that despite the variation in the development of the two states, there exists a causality between telecommunication and financial inclusion variables in both states. The impact of telecom on financial inclusion is relatively higher, but the reverse causality is also found to be significant. The following chapter by Mousami Prasad and Trupti Mishra examines the relationship between environmental efficiency and trade theory and presents evidence from the metal sector for India. The authors utilize multiple output production technology in an output distance approach and stochastic frontier analysis to estimate the environmental efficiency. Findings of the study suggest that there exists a positive role of trade on environmental efficiency in case of metal firms. The last chapter of the part is by Anil K. Kanungo and Abhishek Jha and evaluates the prospects for air services in Indonesia under the Modified General Agreement on Trade in Services by focusing on the India–China dimension. The paper studies the future prospects in terms of providing air services to Indonesia by calculating the RCA index to arrive at export prospects. The research methodology includes World Input-Output Table and National Input-Output Table (NIOT) Database to evaluate Indonesia's outlook in air services.

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Editors and Contributors

About the Editors

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Part I
International Trade: Empirical and Policy Issues

Chapter 1
Empirical Estimates of Inverted Duty Structure and Effective Rate of Protection—The Case of India

K. Pathania

1 Introduction

One of the major concerns with regard to the growth and development of the domestic industries is to analyse their tariff structure. In 1991, India's foreign exchange reserves had dropped significantly, putting pressure on its balance of payment. As mentioned by Singh (2017), "The 1991 Budget recognised the significance of trade-policy reform as part of overall reform programme, stating, 'The policies for industrial development are intimately related to policies of trade'".

The 1991 tariff reforms led to a reduction in the peak tariff rates applied to non-agricultural goods, mainly on industrial products (Singh, 2017). In fact, as shown in Table 1, on an average, the peak tariff rates imposed on imports of these products have experienced a decline since the year 1991–92. However, the country's tariffs on capital goods, chemicals, electronics, textiles and tyres, etc., have remained high, mainly due to significantly high tariff peaks on manufactured goods other than consumer goods (Rasheed, 2012; Singh, 2017).

The 2002–03 budget also expressed a vision that 'by the year 2004–05, there would be only two basic rates of custom duties—10% covering generally raw materials, intermediates and components and 20% covering generally final products' (Singh, 2017). Initially, it was expected that this tariff wall would give protection to final

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Table 1 India's peak tariff rates announced in the budget speech since 1991

Year	91–92	92–93	93–94	94–95	95–96	96–97	97–98	98–99	99–00	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Peak rate (%)	150	110	85	65	50	52	45	45	40	38.5	35	30	25	20	15	12.5	10

Source Singh (2017)

Table 2 India simple average tariff by stage of processing in manufacturing 1990–91 to 2014–15

Category	1990–91	1993–94	1995–96	1996–97	1997–98	2010–11	2014–15
Unprocessed	107	50	27	25	25	22.5	23.5
Semi-processed	122	75	44	38	35	8.6	9
Processed	130	73	43	42	37	12.2	13.6

Source Singh (2017)

goods sector and, in turn, would improve the efficiency of the domestic supply chain by offering inputs at a lower tariff rate. However, with a rise in the number of India's regional trade engagements in the recent past, overall Most Favoured Nation (MFN) as well as the FTA tariff rates[1] have come down drastically across the sectors, which lead to the apprehension that large number of final goods would enter the country due to the significant tariff cuts under FTAs, as the duties on unprocessed goods remain relatively higher. Table 2 shows that during the years 1990–1991 to 2014–2015, tariff rates imposed on imports of processed, semi-processed and unprocessed goods fall significantly. If such a scenario remains, then it would negatively impact the final goods producers as they need to compete with cheaper foreign commodities especially from the East and South-East Asia. The technical term that describes this situation is referred to as the inverted duty structure (IDS). It implies that the tariff on import of intermediate inputs is more than tariff imposed on import of final output of goods produced with those inputs. On the contrary, tariff escalation implies that import duties on finished products are higher than on semi-processed products and the latter duties are higher than on raw materials. This practice protects domestic processing industries and inhibits the development of processing activities in the countries where raw materials originate.[2]

This issue of duty inversion has also been recognised by the Indian policy makers. In an interaction with the members of Economic Times, Finance Minister Arun Jaitley said (Seth, 2015 March 1),

> …I propose to reduce the rates of basic customs duty on certain inputs, raw materials, intermediates and components (in all 22 items) so as to minimize the impact of duty inversion and reduce the manufacturing cost in several sectors.

This is indeed required to promote domestic manufacturing as a part of its 'Make In India' campaign. In fact, in the past two years, various steps have been undertaken to rectify this problem in major sectors of the Indian economy; however, till now, no concrete study has been done to verify the existence of IDS in manufacturing production. Of crucial importance is another concern regarding the existence of negative protection in India's merchandise industries. If effective rate of protection

[1] 'FTAs are arrangements between two or more countries or trading blocs that primarily agree to reduce or eliminate customs tariff and non-tariff barriers on substantial trade between them. FTAs normally cover trade in goods or trade in services'. Source: Indian Trade Portal.

[2] https://www.wto.org/english/thewto_e/glossary_e/tariff_escalation_e.htm.

(ERP)[3] is positive in a sector which is characterised by duty inversion, then IDS may not affect the industry negatively, and there is some level of positive protection provided by the tariff structure. But if the opposite holds true, i.e. if ERP is negative in the presence of inverted duty structure, then the tariff structure may negatively impact the country's manufacturing sector. Hence, there is an emergent need to relook at the country's tariff structure and calculate the rate of effective protection accorded by India.

Thus, in this study, we empirically investigate the tariff structures characterising various Indian industries. We are particularly interested in analysing three rates of tariffs viz. nominal tariff (the duty imposed on imports of final goods, or NRP), input tariffs (duty imposed on imports of intermediate goods) and effective tariffs (based on input and output tariffs).

Subsequent sections of this chapter are structured as follows. Section 2 outlines the empirical methodology, followed by Sect. 3 explaining the data that we have utilised to compute different rates of protection. Section 4 discusses the empirical estimates of ERP, and the last section summarises the study.

2 Methodology

On the basis of the available data (World Input–Output Database), we modify the standard measure of ERP given by Corden. As defined in his study, for any sector j,

$$\mathrm{ERP}_j = \frac{\mathrm{VA}_{Tj} - \mathrm{VA}_{\mathrm{FT}_j}}{\mathrm{VA}_{\mathrm{FT}_j}} \times 100 \tag{1}$$

where VA_{Tj} refers to value added at basic price under restricted trade, and $\mathrm{VA}_{\mathrm{FT}j}$ represents the value added under free trade at basic prices. Based on Corden's methodology and given the properties of our data which entails information on actual trade (rather than free trade), we can algebraically represent the former as follows:

$$\mathrm{VA}_{Tj} = \mathrm{VO}_j - \sum\nolimits_i \left(\mathrm{IC}_{ij}\right) \tag{2}$$

where

VO_j represents sector j's value of output at basic prices.

IC_{ij} represents intermediate consumption of good i required to produce output of sector j at purchaser's price.[4]

[3] ERP is defined as the percentage excess of domestic value added due to imposition of tariff and non-tariff barriers over free trade value added.

[4] We have to calculate the value of intermediate consumption at purchasers' price as WIOD provides the same at basic price. Therefore, we add net indirect taxes (or NIT = taxes-subsidy) and international transport margin (ITM = lump sum international transport margins) to the value of IC at basic price and compute its value at purchaser's price.

Since we would be referring to each year's input–output table, whose values have been computed taking into account different rates of tariff imposed on imports of final output and intermediate input, therefore, in order to find value added under free trade, we will normalise the ex-post value of output by the amount of tariffs charged on each product, i.e. $\left(1+t_j\right)$ and ex-post intermediate consumption by $(1+t_i)$. Thus, we can write the value of $\mathrm{VA}_{\mathrm{FT}_j}$ as follows:

$$\mathrm{VA}_{\mathrm{FT}_j} = \frac{\mathrm{VO}_j}{\left(1+t_j\right)} - \sum_i \frac{\mathrm{IC}_{ij}}{(1+t_i)} \tag{3}$$

Here, t_j refers to ad valorem tariff on import of final output j, and t_i refers to ad valorem tariff on imports of intermediate consumption.

Substituting the values from Eqs. (2) and (3) in Eq. (1), we find

$$\mathrm{ERP}_j = \frac{\text{Eq. (2)} - \text{Eq. (2)}}{\text{Eq.(4)}} \times 100$$

$$\mathrm{ERP}_j = \frac{\frac{t_j \mathrm{VO}_j}{(1+t_j)} - \sum_i \frac{t_i \mathrm{IC}_{ij}}{(1+t_i)}}{\frac{\mathrm{VO}_j}{(1+t_j)} - \sum_i \frac{\mathrm{IC}_{ij}}{(1+t_i)}} \times 100 \tag{4}$$

Equation (4), therefore, becomes our final equation of interest, and we would now empirically estimate this equation. This Eq. (4) is actually a reformulation of Corden's measure based on the data that we use to compute the values of sectoral ERPs. It is crucial to note that since one product may employ more than one input in its production, we will first find out the import-weighted average tariff on intermediate imports (Avt_i) and then utilise it to compute ERP estimates.

The existing literature suggests two different possibilities about the treatment of non-traded inputs,[5] while calculating the measure of ERP—either to treat the non-traded inputs as part of value added (i.e. as primary factors as per Corden's 1971 study, or to consider them as traded inputs with zero tariff (Balassa, 1965). We have proceeded to compute effective rates for Indian industries using both the assumptions, and in accordance with Pathania and Bhattacharjea (2020), we assume that the true value of ERP lies within the bounds of these two assumptions defined by Corden and Balassa.[6]

[5]Non-traded: 'These are goods (and above all, services) where no significant part of domestic consumption is imported or of production is exported so that they do not have their prices set in the world market. They may be conceivably or physically tradeable, but because of transport costs or for other reasons are not actually traded'. Corden (1971).

[6]However, in such a case, even the value of non-traded inputs will get affected by exchange rate fluctuations. On the contrary, in case of Corden methodology, any change in the exchange rate will not impact the value of non-traded inputs. It is important to note that in the analysis that follows, we have not considered the effect of exchange rate fluctuations in impacting the rate of effective protection.