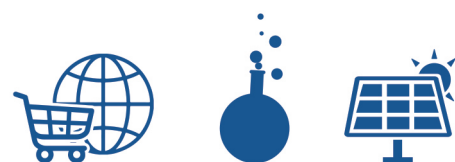


RESEARCH BRIEF No. 121

Essays in International Trade in Post Liberalization India



Export-Import Bank of India (India Exim Bank) instituted the BRICS Economic Research Annual Award in 2016. The objective of the Award is to promote advanced doctoral research in international economics, trade, development and related financing, by nationals of any of the five member nations of BRICS, from any University/ educational institution globally. This study is based on the doctoral dissertation titled “Essays in International Trade in Post Liberalization India” selected as the award-winning entry for the India Exim Bank BRICS Economic Research Annual Award (BRICS Award) 2021, written by Dr. Rahul Singh, currently Assistant Professor at the Amrut Mody School of Management, Ahmedabad University, Gujarat. Dr. Singh received his doctoral degree in 2020 from the Indian Institute of Management, Bangalore.

Introduction

The post liberalization period in India saw some major changes in international trade. The focus of trade negotiations shifted from tariffs towards non-tariff measures (NTMs) which emerged as the main barriers to trade. This period also saw China become the world's largest exporter in 2009 and a drastic increase in its share in India's manufacturing imports from 5% in 2000 to 18% in 2010. Against this backdrop, it is natural to ask how these changes impacted the Indian economy. Are there consequences for firms in India if India introduces a NTM that reduces imports? How large are the competitive effects of the sudden rise in Chinese import competition? What are the labor market effects of Chinese import competition? This study takes a step in addressing these questions empirically with a focus on causal inference.

While the focus of the study is India, these questions are of considerable interest to policymakers in other BRICS member countries. As regulatory measures continue to gain in prominence, understanding their impact on domestic firm performance would help inform policy. While the policy objectives behind the regulatory measures are often legitimate and well defined, much less is known about their potential costs to domestic firms due to reduced imports. Other member countries like Brazil, Russia, and South Africa have also experienced a considerable increase in Chinese manufacturing imports in the last two decades and it is important to understand how domestic firms adjust to increased competition and access to inputs. Further, it is important to understand how the gains/ losses from Chinese trade are distributed among producers and consumers.

The first section examines the impact of maintaining restrictive Technical Barriers to Trade (TBTs) on the performance of domestic firms. The second

section studies the effect of Chinese imports on firm performance. Finally, the third section examines the link between increased Chinese import competition and employment of contract labor.

TBTs and Firm Performance in Maintaining Country

Since the early 2000s, there has been a substantial increase in the incidence of Technical Barriers to Trade (TBTs) maintained by India. While the proximate reasons for TBTs relate to addressing public policy objectives like health, consumer protection and the environment, countries can also use these regulatory measures to give unfair advantage to domestic firms. TBTs can negatively impact the import flows into the maintaining country by increasing the production costs. This can have a negative effect on domestic firm performance through reduced competition in the Indian market and reduced access to intermediate inputs for importers.

This study examines the effect of restrictive TBT measures on the performance of manufacturing firms in India. This issue is pertinent to research in the Indian context given the significant unilateral trade liberalization undertaken by the country in the early 1990s followed by the growing use of TBTs since the early 2000s. These liberalization measures resulted in greater import competition in the Indian market and enabled Indian manufacturing firms to gain access to previously unavailable foreign intermediate inputs, thus helping to remove their pre-liberalization constraints on production technology.

The effect of restrictive TBTs introduced by India on its manufacturing firms are examined by focusing on a specific channel, i.e., their effect on access to imported intermediate inputs and the consequent effects on the efficiency and profitability of domestic firms which

are the end users of these inputs. The underlying rationale for investigating this channel is that TBTs have a negative effect on imports into the maintaining country as they are associated with increased variable costs (e.g. labeling requirements) or fixed costs (e.g. new production process) of production. Hence, by reducing access to imported inputs that potentially embody better technology and decreasing input varieties available to firms, TBTs are likely to affect firm-level performance in the country maintaining these regulatory measures.

The Specific Trade Concerns (STC) dataset from the WTO is combined with firm level data from Prowess to examine the relationship between TBTs and firm performance. The findings in this study suggest that TBTs have a negative impact on the performance of domestic firms driven by the reduced access to imported inputs for importers. Importers experience a reduction in their efficiency as well as profitability in response to introduction of TBTs on inputs. Further, it is found that the effects are more pronounced for importers who export and are in contract intensive industries. These findings highlight that maintaining TBTs may be costly, especially if they hinder access to imported inputs for importers.

The Rise of China

China experienced rapid productivity growth in its manufacturing sector in the 1990s and 2000s leading to substantial rise in Chinese import share in most countries (see **Figure 1**). This increase in productivity was driven by internal reforms like rural-urban migration, Special Economic Zones, and technology

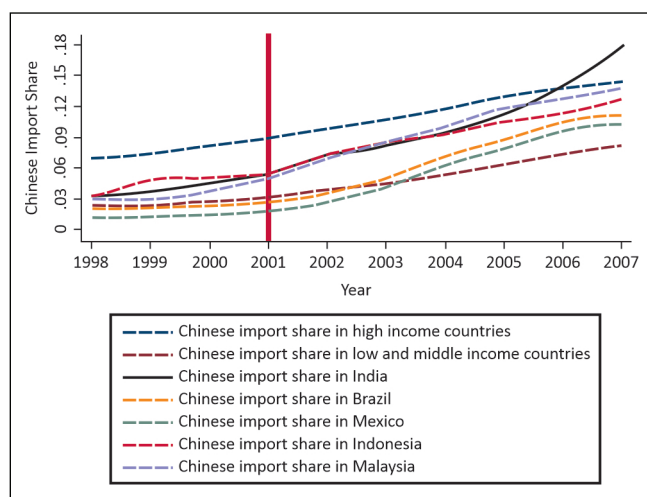
transfer through FDI. China's accession to the WTO in 2001 further accelerated the increase in Chinese exports. This has led researchers to examine the consequences of this major economic event on performance of manufacturing sector in importing countries. However, the primary focus of this literature has been on advanced economies while the effects of Chinese import competition on firm performance and the structure of employment in developing countries has received considerably less attention.

Chinese Imports and Firm Performance

Increased imports from China can benefit consumers by lowering prices in the domestic market. Import competition can lead to lower prices charged by domestic firms through two distinct channels. First, import competition can induce firms to seek efficiency improvements and lead to decrease in marginal costs. Under incomplete passthrough of costs to prices, a part of the cost savings feeds into lower prices. Second, firms with market power may be forced to lower markups and hence, prices. Thus, while both channels lead to reduced output prices, the extent of reduction in prices depends crucially on the rate of passthrough of costs to prices. Further, Indian firms may benefit from increased access to imported inputs from China which would lead to reduction in marginal costs. Again, the rate of passthrough is crucial in determining the extent of price reduction.

Identifying the effect of import competition on marginal costs separately from markups is important as each channel affects overall welfare and its distribution between producers and consumers differently. The direct reduction in markups due to increased competition leads to reduced prices and increases consumer surplus at the expense of producer surplus. The reduction in marginal costs from import competition will lead to increase in markups unless the passthrough of costs to prices is complete. If passthrough is low, the cost savings will lead to increase in markup of firms with only modest increase in consumer surplus due to lower prices. To isolate the direct effect on markups from increased competition, it is required to control for the effect of import competition on marginal costs, which in turn requires us to observe firm-product level prices. The analysis uses detailed data on sales and physical quantities at the firm product level for Indian manufacturing firms from Prowess to study the effect of Chinese import competition on prices and

Figure 1: Evolution of Chinese Import Share



Source: UN Comtrade Database

its underlying components, i.e., marginal costs and markups. As firm level prices are observed, markups can be separately identified from marginal costs.

It is found that increase in Chinese imports leads to: (1) increase in physical efficiency; (2) decrease in marginal costs; (3) increase in markup; (4) only moderate decrease in prices; (5) increase in R&D expenditure and capital intensity; and (6) insignificant effect on product scope. Evidence of incomplete passthrough of cost savings to prices, both cross-sectionally and over time is found. The increase in markups from cost savings, both due to import competition and access to imported inputs, dominates the direct reduction in markups of firms from increased competition. The study finds considerable heterogeneity in firm responses based on firm characteristics. First, it is found that firms with initially low marginal costs differentially reduce marginal costs, increase markups and product scope compared to firms with initially high marginal costs. Second, business groups and foreign owned firms have very low passthrough leading to large increase in markups while other private firms pass on most of their cost savings to prices with no significant increase in markups.

The findings suggests that the primary beneficiaries of increased imports from China were producers who experienced a large reduction in marginal costs and an increase in markup, with only a modest decrease in prices. These results suggest that Chinese import competition forced firms to increase efficiency and reduce marginal costs. Further, access to Chinese imported inputs led to large gains for formal firms as it substantially reduced their marginal costs and increased their markup.

Chinese Import Competition and Contract Labor

There has been a structural shift in the composition of manufacturing employment in India since the 1990s, with firms drastically increasing the share of workers employed on contract in their workforce. While this phenomenon has been widely acknowledged by policymakers and researchers, the causal factors driving this shift remain poorly understood.

This study hypothesizes that Chinese import competition increases contract employment through a within firm (cost saving) and a between firm (composition) channel. In the within firm channel,

Chinese import competition leads all firms to seek short term cost savings and they increase contract share in employment because contract workers are cheaper. In addition, high productivity firms facing stronger unions differentially increase their contract share in employment to counter the bargaining power of regular workers in response to Chinese import competition. It is expected that this effect will be stronger in states with regulations that lead to stronger unionization. Further, it is hypothesized that Chinese import competition shifts output and resources toward high productivity and high contract share employment firms, thus, increasing aggregate contract employment share in the industry through a between firm composition effect. The reallocation effects also feeds into the within effect as it leads initially productive firms to increase their contract share of employment as they face stronger firm level unions as they become larger.

Firm level data from the Annual Survey of Industries is combined with industry level changes in Chinese import competition between 1998 and 2007 and the effect of Chinese import competition on firm employment is analyzed. **Figure 2** shows a strong positive correlation between Chinese import competition and contract share in employment at the sector level.

The results suggest that there is significant increase in contract share in employment for formal firms in response to Chinese import competition. The within firm effects are driven by larger and productive firms that face stronger firm level unions, and this effect is further amplified in states with stronger unions. The analysis also provides evidence of a composition effect, where contract share in employment increases as more output and resources shift toward high productive high contract share firms in response to import competition. The estimates imply that Chinese import competition accounted for nearly 9 percent of contract employment increase between 1998 and 2007.

Taken together, these results suggest that rising import competition is an important determinant of firms' decision to hire more contract workers. Further, the findings of the study suggest that the institution of contract workers enables reallocation of workers across firms in response to increase in Chinese import competition, thus, leading to overall productivity gains.

Conclusion

This study examines the firm level adjustments to two major events related to international trade in the post liberalization period in India. The first is the increasing use of regulatory measures following the progressive decline of tariffs. Second is the spectacular rise of China as an exporting hub leading to a large increase in Chinese import share for most countries.

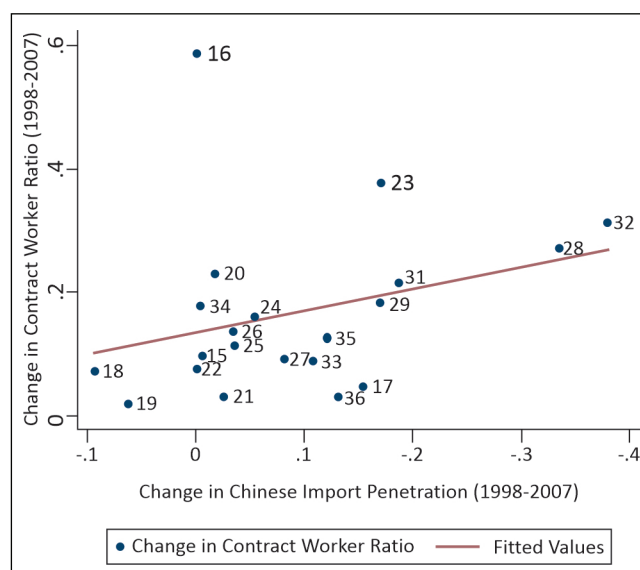
The results of this study have broader implications for trade policy, especially in developing countries. It is found that regulatory measures aimed at addressing legitimate public policy objectives can have unintended consequences for firm performance in developing countries if they negatively affect the import flows of intermediate inputs. Given the increasingly integrated world of global value chains, supply chain disruptions caused by such measures can have spillover effects on firm performance. Hence, the impact on trade flows and such spillovers should be taken into account to ensure that these measures do not impose excessive increases in trade costs than is necessary to achieve the public policy objective.

The results of this study also suggest that Indian manufacturing firms do not experience a substantial decline in markup due to Chinese import competition as they are able to reduce inefficiencies. Further, Indian manufacturing firms gain from access to Chinese imported inputs. However, consumers only experience a modest decline in prices as most of the cost savings are absorbed by the firms. The findings of this study suggest that Chinese imports lead to potentially large gains for the manufacturing sector both by increasing competition thereby disciplining firms and increasing access to imported inputs thereby increasing efficiency and reducing costs.

Finally, the results of this study suggest that import competition can significantly alter the structure of employment by increasing the share of contract workers in the workforce. In the presence of strong unions and labor regulations, the institution of contract labor enables the reallocation of workers to more productive producers thereby increasing

aggregate productivity. Thus, contract labor plays an important complementary role in the relationship between imports and firm growth.

Figure 2: Sector-Wise Changes in Chinese Import Penetration and Contract Workers Ratio



Source: Annual Survey of Industries and UN Comtrade Database

The contents of the publication are based on information available with India Exim Bank. Due care has been taken to ensure that the information provided in the publication is correct. However, India Exim Bank accepts no responsibility for the authenticity, accuracy or completeness of such information.

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