Research briefing

New patterns in firm performance and international trade

Trading Partners, Traded Products and Firm Performance: Evidence from China's Exporter-Importers

By Zhihong Yu and Zheng Wang

New research by GEP has uncovered fresh insights into the links between Chinese firms' performance and their importing and exporting behaviour.

The study used a unique dataset to uncover a number of novel patterns that have yet to be reconciled with accepted heterogeneous firm trade theory.

One crucial feature of the analysis was that it distinguished between ordinary and processing trade, the latter of which involves importing inputs and materials to be re-exported.

This approach allowed researchers to identify significant heterogeneity within two-way traders – in terms of size, productivity and factor intensity – depending on their engagement in processing imports/exports.

Two-way traders that concentrate solely on processing were found to be the least productive and to have the lowest capital/skill intensity compared to other traders.

By contrast, firms involved in both ordinary and processing trade were discovered to be the largest, most productive and capital-intensive of all trading firms.

Understanding the performance of two-way traders – firms that both export and import – is important, as such firms account for around 90% of the total value of China's international trade in 2005-2006.

The data constructed for the study could be used to address a number of further important issues surrounding firm engagement and international transactions, including the causes and consequences of firms from developing countries participating in the global value chain via export processing.

Research basis

The study merged two notably comprehensive datasets.

The first, China's Annual Survey of Industrial Firms, was compiled by the National Bureau of Statistics and covers firm-level production and accounting data for large and medium-size enterprises in the manufacturing sector from 2002 to 2006.

The second, the Chinese Customs Trade Statistics, was collected by the General Administration of Customs in China and covers the entire population of Chinese exporters and importers at the transaction level during the same period.

The merged data allowed researchers to directly link various indicators of firm performance to companies' exporting and importing activities, including export destinations, import sources and the kinds of product traded.

A unique feature of the merged dataset is that it distinguishes between transactions under different tax regimes, including processing imports/exports. This enabled the

Key findings

- There is significant heterogeneity within two-way traders – in terms of size, productivity and factor intensity – depending on their engagement in processing imports/exports.
- Two-way traders that concentrate solely on processing trade are the least productive and have the lowest capital/skill intensity compared to other traders.
- They also pay lower wages than one-way importers/exporters.
- Firms involved in both ordinary and processing trade are the largest, most productive and capital-intensive of all trading firms.
- Bigger and more productive firms trade with a larger number of trade partners with longer average distance and smaller market size.

study to explicitly investigate firms' engagement in processing trade and how this relates to key performance indicators such as productivity and capital/skill intensity.

Comments and implications

Study co-author Dr Zhihong Yu, an RCUK Research Fellow at GEP, said: "The past decade has seen a surge in empirical research to reveal the importance of firm heterogeneity in international trade.

"A well-established regularity emerging from this literature is that exporting firms have superior performance compared to their non-exporting counterparts across a wide range of countries and industries.

"But one limitation of what we might call the 'first wave' of trade studies is that the data typically report only the total value of exports at the firm level, without further detailed information on the destinations and the products being exported. Moreover, these early studies focus almost exclusively on firms' exporting status and pay little attention to links to firm-level import activities.

"We're now able to analyse much more disaggregated and detailed firm-transaction-level data, which raises the possibility of exploring a new series of questions.

"Our work contributes to this fast-growing literature by presenting novel empirical evidence on the relationship between firm performance and the characteristics of trade partners and trade products on both the export and import sides.

"It also seems fitting that we should focus on China, which in 2010 became the world's largest exporter."

The finding that two-way traders concentrating purely on processing are the least productive and have the lowest capital/skill intensity compared to other traders is especially significant.

Such firms also pay lower wages than one-way importers/exporters – perhaps reflecting that assembling and processing activities are highly unskilled-labour-intensive and heavily reliant on imports and intermediate inputs.

Among firms that import, exporting firms are less capital/skill-intensive than non-exporters – irrespective of whether they are engaged in processing trade. This is consistent with the notion that China has comparative advantage in labour-intensive tasks and activities even within a narrowly defined industry.

Researchers also found that bigger and more productive firms trade with a larger number of trade partners with longer average distance and smaller market size – and that this pattern is highly symmetric between exports and imports, as well as ordinary and processing trade.

More capital-intensive firms import inputs with greater complexity from countries with higher income per capita, but this pattern holds only for ordinary imports and not imports for export processing.

Dr Yu said: "Overall, these results suggest ignoring firms' participation in processing trade – especially in developing countries – may lead to a serious bias on estimating the relationship between firm performances and international trade activities.

"The data constructed for this research could also be used to analyse a number of interesting issues this broader topic.

"For example, we could explore how firm-level characteristics affects import/export responses to exchange-rate fluctuations; the causal effect of falling import barriers on firm performance via their impact on imported inputs; and the causes and consequences of firms from developing countries participating in the global value chain via export processing."

Globalisation and Economic Policy Centre (GEP)

Based at the University of Nottingham in the UK and primarily funded by grants from the Leverhulme Trust, GEP is the major centre in Europe studying the impacts of globalisation and economic policy.

In January 2008 it opened GEP in Malaysia at the University of Nottingham's purpose-built Semenyih campus, 30km from Kuala Lumpur. In November 2008 it launched GEP in China at the University of Nottingham, Ningbo, China.

GEP is keen to promote its research work and is committed to communicating its expertise. Its academics have advised the Treasury, the OECD, the World Bank and the WTO.

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Research co-author

Dr Zhihong Yu joined the University of Nottingham's School of Economics in 2005 as an Economic and Social Research Council Fellow after completing his PhD in international economics. He has held a Research Councils UK Fellowship since 2006. A GEP Research Fellow, he specialises in international trade and industrial organisation and has a special interest in China's ever-changing role in the global economy. He carried out the study discussed here with Zheng Wang, a doctoral candidate at GEP.

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