Policy brief

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Multi-Product Firms and Product Quality

In brief

- International trade is dominated by a number of large firms that manufacture a variety of products, instead of specializing in a limited range of goods.
- These multi-product firms frequently modify their product mix in response to changes in the economic environment, and therefore, such changes have important implications on the adjustment of trade reforms and exchange rate environments, thus, shaping firm and aggregate productivity.
- This study seeks to understand the determinants and attributes of firms' core competencies. This will allow us to understand an exporters' success and ultimately aggregate trade outcomes.
- The authors find that product quality varies across a manufacturer's merchandise and depends on the quality of intermediate inputs. Firms have a hierarchy of products and add goods in decreasing order of quality, with their core competency in expensive varieties of superior quality.
- **Key policy implications:**
    - Encouraging quality upgrading can improve developing countries' exports, particularly to rich markets.
    - Import liberalization can boost firms' export activity.
    - Globalization can have differential effects across the skill distribution.
    - Price data should be carefully interpreted when used to guide policy.
- The appropriateness of the above implications depends on other forces such as the impact on prices of import liberalization, spillover effects, market imperfections etc.

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Policy Motivation

"These multi-product firms typically concentrate sales in a few core products that generate the majority of cross-border flows and firm export profits"

An overwhelming share of international trade is conducted by large firms that manufacture a broad variety of products instead of specializing in a limited set of goods. These multi-product firms typically concentrate sales in a few core products that generate the majority of cross-border flows and firm export profits. Companies also frequently modify their product mix in response to changes in the economic environment. Such reallocations play an important role in the adjustment to trade reforms and exchange rate movements, thereby shaping firm- and aggregate productivity. While these regularities have been well documented, little is known about the determinants and attributes of firms' core competencies. Identifying these factors is important for understanding exporters' success and ultimately aggregate trade outcomes. This project makes important advances in this direction by establishing new facts about multi-product firms using detailed customs data for China.

Policy Impact

The study has implications for the design of export-promoting policies in developing countries, as well as for the welfare and distributional consequences of globalization. It sheds light on a number of questions of first-order importance to policy makers. How can export activity be strengthened, particularly to richer markets? What are the aggregate welfare and distributional consequences of such trade flows and policies? How do data on trade prices inform different economic policies?

Audience

Decision makers active in the design of international trade policy, strategies for supporting small and medium enterprises, and efforts to address income inequality.

Policy Implications

"Our results indicate that product quality varies across a manufacturer's merchandise and depends on the quality of intermediate inputs"

We examine theoretically and empirically the variation in exporters' activity across destinations, focusing on the range of products they offer in a market, the revenues they earn, and the prices they charge for each good. Our results indicate that product quality varies across a manufacturer's merchandise and depends on the quality of intermediate inputs. Firms observe a hierarchy of products and add goods in decreasing order of quality, with their core competency in expensive varieties of superior quality.

These results have the following policy implications:

Encouraging quality upgrading can improve developing countries' exports, particularly to rich markets

"Independent work has suggested that quality upgrading is associated with moving up the value-added chain, which can in turn stimulate technological innovation and economic growth rates"

Our results corroborate evidence in the literature that producers of high-quality goods successfully enter more export markers and generate larger sales. Manufacturing and transporting products of superior quality is costly because it requires the use of sophisticated intermediates, skilled workers and specialized equipment. Nevertheless, suppliers are able to recoup these costs by setting higher prices. Since quality products appeal to richer consumers in developed markets, quality upgrading improves firms' ability to serve such countries. Independent work has suggested that quality upgrading is associated with moving up the value-added chain, which can in turn stimulate technological innovation and economic growth rates.

Import liberalization can boost firms' export activity

Our findings suggest that facilitating access to foreign-made inputs can allow manufacturers to upgrade output quality and thereby improve export performance. Given the limited availability of specialized parts in less advanced countries, import liberalization might thus be an important policy option for emerging markets that rely on export activity for economic growth. This is consistent with prior evidence that foreign materials are of superior quality than domestic inputs and that importing a wider range of intermediates allows firms to expand their product scope.

Globalization can have differential effects across the skill distribution

"The role of product quality we identify thus reinforces earlier evidence in the literature that trade liberalization can shift employment and wages differentially across the skill distribution"

It has been shown that, under certain conditions, the effects of globalization on aggregate welfare are unaltered by the presence of firm heterogeneity or multi-product firms. This is no longer the case when firms can actively choose to improve productivity or upgrade quality. It also does not hold in the presence of financial and labor market frictions, which have in fact been found to significantly distort cross-border trade. Our analysis therefore implies that the operations of multi-product exporters could importantly affect welfare. Moreover, sophisticated manufactured inputs and skilled labor are likely complementary in the production of quality goods. The role of product quality we identify thus reinforces earlier evidence in the literature that trade liberalization can shift employment and wages differentially across the skill distribution, specifically towards high-earning, more educated workers.

Price data should be carefully interpreted when used to guide policy

Our analysis highlights the fact that producer prices, and export prices in particular, contain information about product quality. Since consumers benefit from quality products, high prices need not signal deterioration in production efficiency or inflation due to different potential factors. The study thus substantiates efforts to carefully interpret price data when drawing inferences about changes in the economic environment with view to policy design. Two important contexts in which trade prices matter are anti-dumping debates and evaluations of the effects of exchange rate movements on trade and capital flows.

Implementation

"The appropriateness of such measures will in practice depend on other economic forces that we have abstracted away from as well as on the specific institutional context"

While our conclusions have specific policy implications, the appropriateness of such measures will in practice depend on other economic forces that we have abstracted away from as well as on the specific institutional context. These need to be carefully evaluated and taken into account for the proper design and implementation of policy interventions. Such considerations include:

- The impact of import liberalization on domestic producers and consumer prices
- The potential for larger firms to benefit more from import liberalization if the infrastructure for importing materials is underdeveloped and smaller firms are unable to import inputs on their own
- The spillover effects of access to new and technologically sophisticated inputs, including quality upgrading and moving up the value-added chain
- The extent of financial or labor market imperfections that would determine the need for active government intervention via investment policy.

Dissemination

World Bank, Inter-American Development Bank, Central Bank of China, central banks and ministries of international commerce and investment in developing countries.

Further Reading

Please see www.stanford.edu/~manova/research.html and the references in the working paper associated with this brief.

About the authors

Kalina Manova is an Assistant Professor of Economics at Stanford University. She is also a Faculty Research Fellow at the National Bureau of Economic Research and a CESifo Institute affiliate. She received her Ph.D. from Harvard University in 2007 and her A.B. from Harvard College in 2002. She serves as a referee for the leading general-interest peer-reviewed journals in economics, as well as for the major field journals in international trade and development. Her research examines the importance of credit constraints and financial institutions for growth, international trade and multinational activity; the implications of equity market liberalizations and financial crises for cross-country trade flows; the determinants of firms' export success; and the effects of outsourcing on sending economies. She publishes in leading economics journals and frequently participates in conferences organized by the NBER, World Bank, IMF, CEPR, and the Federal Reserve Board System.

Zhiwei Zhang is a Managing Director and Chief Economist & Head of Equity Strategy, China at Deutsche Bank. Previously, Zhiwei was Managing Director at Nomura Securities and has previously worked as an economist for CICC, the Hong Kong Monetary Authority and the International Monetary Fund.

The International Growth Centre (IGC) aims to promote sustainable growth in developing countries by providing demand-led policy advice based on frontier research.

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