

# The Role of Intermediaries in Facilitating Trade

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## Overview

This paper documents that intermediaries play an important role in facilitating international trade. Authors modify a heterogeneous firm model to allow for an intermediary sector. The model predicts that firms will endogenously select their mode of export – either directly or indirectly through an intermediary – based on productivity. The model also predicts that intermediaries will be relatively more important in markets that are more difficult to penetrate. Authors provide empirical confirmation for these predictions using the firm-level census of China's trade, and generate new facts regarding the activity of intermediaries. They also provide evidence that firms begin to export directly after exporting through intermediaries.

## Introduction

Research using firm-level data has uncovered that only a fraction of firms directly export products to foreign markets (Bernard and Jensen, 1995; Bernard et al., 2009). This fact is now well grounded in theoretical models featuring firm heterogeneity and fixed export costs (e.g., Melitz, 2003). These empirical and theoretical findings, however, ignore the role of intermediary firms in trade. The prominence of intermediaries appears in aggregate trade statistics; in the U.S., wholesale and retail firms account for approximately 11 and 24% of exports and imports (Bernard et al., 2007), respectively. The use of intermediary firms has been especially pervasive in developing economies, particularly in Asia. In 2005, Chinese intermediaries handle 22% of Chinese exports.

In this paper, authors develop a simple theoretical framework to explain why firms export their products using intermediaries and document the pattern of intermediated trade using data from China. In the model, manufacturing firms can choose between direct and indirect export modes to each market. As in Melitz (2003), a firm can directly reach foreign customers by incurring a fixed cost and variable trade cost. The new feature of this model is an intermediation technology. Firms that use the intermediary sector incur a one-time global fixed cost that provides indirect access to all markets, which allows firms to save on market-specific bilateral fixed costs. The disadvantage is that intermediation results in higher marginal costs of foreign distribution which raises the price to foreign consumers. Analogous to Helpman et al. (2004), this new entry margin creates a third type of firm: an indirect exporter. However, unlike in Helpman et al. (2004), the intermediation technology here benefits less productive firms. The presence of intermediaries provides a mechanism by which firms can access the export market even if they are not quite productive enough to establish their own distribution network.

This simple extension has important aggregate implications. The model predicts that the share of exports handled by intermediary firms increases with variable and fixed costs of exporting and decreases with market size. The reason is that firms need to possess higher levels of productivity to overcome smaller profits from direct exports. When barriers to trade are large, a larger fraction of less- productive (e.g., small) firms use intermediaries to export. The share of aggregate exports handled by intermediaries therefore increases with the difficulty of accessing destination markets. In addition, Intermediary firms have a relative “country” focus while firms that engage in direct exporting appear to have a relative “product” focus. That is, intermediary firms send relatively more products per country while direct exporters behave in an opposite manner.

Authors find strong evidence that indirect export shares correlate with market characteristics. Countries that are more distant, smaller in size, require more documents for importing (a measure of fixed costs of trade), and with MFN tariff on imports receive a larger fraction of exports through Chinese intermediaries. Intermediary firms also play a relatively smaller role in exporting to countries that have large Chinese-speaking population. This is intuitive if common language and cultural heritage reduce exporting costs. Also, intermediaries may help expand the extensive margin of trade. Once small firms export indirectly by using intermediary services, they could switch to interacting directly with their foreign clients. Firms that use intermediaries could become direct exporters more easily in subsequent periods.

The literature has offered two broad reasons for why intermediaries arise in an economy: facilitating matching of buyers and sellers (e.g., Rubinstein and Wolinsky, 1987) and mitigating adverse selection by acting as guarantors of quality (e.g., Biglaiser, 1993; Spulber, 1999).

## A Theory of International Trade with Intermediaries

The model builds upon now standard open economy heterogeneous firm models. The basic assumptions on market structure, firm heterogeneity and consumer preferences are the same as in Melitz (2003), and there are  $N$  asymmetric destination markets. The novel feature of this approach is an intermediary sector that provides manufacturing firms with an option to export indirectly. Firms face a tradeoff of whether to export their varieties directly or indirectly in each market. Direct exporting requires firms to pay bilateral fixed ( $f_x^j$ ) and variable costs ( $\tau^j$ ) to each market. Alternatively, firms can choose to export their varieties indirectly by relying the intermediary sector. Our framework yields three empirically testable implications: 1) firms of intermediate levels of productivity use intermediation while the most productive firms directly reach foreign consumers, 2) exports by intermediaries will be more expensive and 3) countries that are more difficult to access because of higher trade costs or smaller market sizes will have relatively more intermediated trade.

The intermediary sector is modeled as perfectly competitive sector with (homogeneous) intermediary firms that export on behalf of the manufacturers. Intermediaries purchase varieties from manufacturers at the same price as domestic consumers (there is no price discrimination) and incur an additional marginal cost of selling these varieties abroad. This additional marginal cost captures re- labeling, packaging and other per-unit costs associated with taking the title of varieties from the manufacturers. The price of indirectly exported varieties is therefore higher than the price of directly exported varieties by this factor.

From the perspective of the manufacturers, the intermediary sector serves as a warehouse where manufacturing firms can deposit their varieties that they wish to export indirectly. In order to access this sector, manufacturers incur a fixed cost  $f_i < f_x^j \forall j$ . The fixed cost is global and not market specific. This assumption is natural given that the intermediaries reside in the domestic market and so the intermediation fixed cost captures local search costs. One can think of  $f_i$  as a membership fee to deposit varieties at the warehouse where the intermediaries are located. A firm that pays  $f_i$  can indirectly access all markets and it is assumed that if a firm directly exports to  $n$  markets, it will continue to service the remaining  $N - n$  markets indirectly. The advantage of using intermediation is that manufacturers avoid establishing their own distribution networks. However, intermediaries provide a service by preparing varieties for the foreign market and pass these costs to the foreign consumer. For a given variety, the indirect export price therefore exceeds the direct export price. Since demand is elastic manufacturer's revenue from direct exports exceeds its revenue from indirect exports.

