

Essays on International Trade
and Foreign Direct Investment

Essays on International Trade and Foreign Direct Investment

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To My Parents

Preface

This report is a result of a research project carried out at the department of Economics at the Stockholm School of Economics (SSE).

This volume is submitted as a doctor's thesis at SSE. The author has been entirely free to conduct and present his research in his own ways as an expression of his own ideas.

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Filip Wijkström
Associate Professor
SSE Director of Research

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Summary

The availability of firm level data in international trade started a very quickly developing theoretical literature that focused on the micro evidence and understanding its implications for aggregate productivity and welfare. The new models were dealing with individual firm characteristics determining entry and exit from foreign markets and the different ways in which firms chose to enter. Two of the main features of this literature are that firms have heterogeneous productivities and need to pay a fixed costs in order to enter both their home and foreign markets. As a result, some do not find it optimal to export and it is those with higher productivity that do. This thesis is comprised of three theoretical papers (chapters) in which the models are with firms with heterogeneous productivities and there is steady state economic growth. The purpose in all three papers has been to generate results that are already established empirical facts but that have not been incorporated in the theoretical trade and growth literature.

Chapter 1: Trade with R&D Costs to Entering Foreign Markets

Chapter one started as a project aiming at building a quality ladders growth model with heterogeneous firms. Melitz (2003) and many of the following papers had been modeling an endogenous entry of firms, the so-called self-selection into export markets, but the exit rate of those that had already started production was entirely exogenous and independent of firm size or productivity. My first intention was to endogenize the firm exit rate and to see whether and how that affected the connection between trade liberalization and productivity growth. A model of creative destruction seemed to be a good way to go, since in such a model firms are born and replaced based on their endogenous investment in R&D.

I obtain the main results in Melitz (2003): exporters are more productive than non-exporters and trade liberalization leads to productivity growth. I make, however, different assumptions regarding firm heterogeneity and the entry cost to the foreign market. Since the qualities of products sold are at different levels, demand dependent on quality results in different profits for firms. Those that sell higher quality products earn more. There was no need to introduce additional heterogeneity of marginal costs. The second assumption in which my model diverges relates to the cost for entering the foreign market. While in Melitz (2003) it is a fixed cost, in my model firms invest in learning how to export. That knowledge comes with a Poisson arrival rate dependent on the firm's investment in learning. It therefore takes some firms longer to become exporters. This second assumption leads to two results of empirical relevance. First, there are relatively large and productive firms that do not export and the model does not have a productivity

cutoff that abruptly divides exporters from non-exporters (Bernard et. al. (2003) and Hallak and Sivadasan (2008)). Second, firm turnover, in addition to being endogenous, depends on the variable costs to trade. Trade liberalization increases the exit rate of firms, as shown in Pavcnik (2002).

The third result that I focus on in chapter one is the pricing behavior of exporters. Evidence suggests that exported products are more expensive than those intended only for the domestic market (Baldwin and Harrigan (2007), Hallak and Sivadasan (2008)). Many papers in the literature introduce a second source of heterogeneity in order to accommodate this stylized fact. In my model, exported products are sold by technological leaders who price as monopolists. Non-exported products are sold either by leaders that have not learned how to export or by a competitive fringe that prices at marginal cost. The presence of the competitive fringe keeps the average price of non-exported products lower.

Chapter 2: Cross-Border Mergers and Greenfield Foreign Direct Investment

In chapter two I study the composition of foreign direct investment (FDI). The horizontal FDI literature has been focusing mainly on firms choosing to build a plant abroad, so-called greenfield FDI. It has been paying little attention to the fact that the greater share of total FDI belongs to mergers and acquisitions (M&A), about four fifths according to UNCTAD (2000). I build a model with heterogeneous firms similar to Helpman, Melitz and Yeaple (2004), but in addition to firms being able to enter the foreign market as exporters or greenfield investors, I introduce the option to buy an existing plant abroad (M&A). Efficiency gains and technology transfer are the incentives for M&A. Since the model is one with monopolistic competition and firms are very small, there are no strategic motives for a merger aiming at reducing competition. The choice of how and if to enter a market depends on the productivity of the firm: the least productive ones do not enter, followed by those that sell only in their local markets, exporters are more productive than non-exporters and the most efficient firms are the foreign direct investors. Within this group, the ones that build a plant abroad are more productive than those that choose to acquire a foreign firm. I study two symmetric countries, in which both types of FDI, greenfield and M&A, exist in equilibrium and flow in both directions. Countries that are closer to each other attract a greater share of greenfield FDI.

Chapter 3: Trade with Heterogeneous Firms and Endogenous Firm Turnover

Chapter three has a theme more similar to that of chapter one. It turns again to endogenous firm turnover. Firms have heterogeneous productivities and steady state economic growth is driven by an increasing variety of products. There are fixed costs to entering the home and foreign market. The more productive firms self-select into becoming exporters. Evidence suggests that a large percentage of firms that start exporting remain in the foreign market for only a few years. Besedes and Prusa (2006) and Eaton et. al. (2010) show that the exit rate is very high in the beginning and falling with time. In order to model such an endogenous and decreasing exit rate I introduce additional stochastic fixed costs that firms have to pay after entering a market. Although the expected

discounted value for the second fixed cost is taken into consideration when firms initially enter, if faced with the high fixed cost, some of the least productive ones are forced to exit.

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