

STEFANIA GARETTO
RESEARCH STATEMENT

I am an applied trade theorist with a prevailing interest in multinational corporations. My research is devoted to understanding the formation of multinational corporations, their operations, and their linkages with other aspects of economic activity. My research agenda thus far has been concerned with three main topics: 1) the welfare gains from multinational production and international pricing; 2) the relationship between firms' international activities, their risk exposure, and asset prices, and 3) the role of global banks in the international transmission of shocks. I describe these in detail below.

WELFARE GAINS FROM MULTINATIONAL PRODUCTION AND INTERNATIONAL PRICING

We live in an era of globalization. Multinational firms, mass migration, and technology diffusion have broken the boundaries of economic activity in space beyond trade in goods and services. Accordingly, recent literature in the field of International Trade is concerned with investigating the welfare consequences not only of trade liberalization, but of other, broader and more complex forms of globalization. In **"Input Sourcing and Multinational Production"** (*AEJ Macro* 2013), I examine the welfare implications of vertical foreign direct investment (FDI) and intrafirm trade. I propose a quantifiable general equilibrium framework where firms decide whether to outsource or integrate input manufacturing, domestically or abroad. By outsourcing, firms may benefit from suppliers' specialized technologies, but pay mark-up prices. By sourcing intrafirm through vertical FDI, they save on mark-ups and pay possibly lower foreign wages. The model suggests that realized welfare gains from vertical FDI in the U.S. were about 0.23% of consumption per-capita in 2004. Further opening to FDI can increase this number significantly. To model outsourcing in this paper, I develop a theory of international pricing under Bertrand competition and incomplete information. In **"Firms' Heterogeneity, Incomplete Information, and Pass-Through"** (conditionally accepted at the *Journal of International Economics*), I extend this theory to study a classic issue in empirical International Economics: incomplete pass-through of exchange rate changes into prices. The model investigates the effects of information on pricing behavior. Incomplete information affects the expectations that producers have about the prices charged by their competitors. As a result, producers operating under incomplete information, like for example new entrants in a market, exhibit lower pass-through rates than producers operating under complete information. This prediction is confirmed by an empirical analysis exploiting price variation in the European car market.

While the complexity of multinational firms was only briefly touched upon in previous work, in **"Life-Cycle Dynamics and the Expansion Strategies of US Multinational Firms"**, (with L. Oldenski and N. Ramondo, manuscript) I study the operations of multinational corporations across countries over time. Using a panel of U.S. multinational firms, we trace the spatial evolution of their affiliates' sales over time. Our analysis establishes two stylized facts. First, unlike for exports, sales grow very little over the life cycle of the affiliate. Second, affiliates of U.S. multinational firms specialize in a core activity at birth, which persists as the main activity during the life cycle. Informed by these facts, we propose a simple dynamic model of multinational activity, which delivers several testable implications that we show to be consistent with the data. The model informs us on the nature of the costs of multinational activity, whether variable, fixed, sunk, and whether destination-specific. These are essential ingredients to quantify the welfare gains from openness.

FIRMS' INTERNATIONAL ACTIVITIES, RISK EXPOSURE, AND ASSET PRICES

Exporters and multinational firms are the largest players in the global economy. For this reason, their operations affect many aspects of the economy, including financial markets. Surprisingly, the literature has overlooked the relationship between firms' global operations, risk, and asset prices. In **"Risk, Returns, and Multinational Production"** (with J.L. Fillat, *Quarterly Journal of Economics* 2015) we establish a striking fact:

global firms exhibit systematically higher stock market returns than domestic firms. Among global firms, multinationals exhibit higher returns than exporters. An exploratory empirical analysis shows that global firms are riskier than domestic firms, contrary to the common belief that international operations lead to diversification. To explain this puzzle, we develop a real option value model where firms decide whether and how to sell abroad, entry is costly, and demand is risky. Selling abroad is a source of risk exposure to firms: following a negative shock, firms can either exit (to re-enter when times improve), or remain in the market waiting for better times. Given the high cost of entering foreign markets, they are reluctant to exit and so may bear losses, which are perceived as a risk by their investors. This behavior makes multinational firms the most exposed due to the higher entry costs they paid. The calibrated model is able to replicate features of both international trade and asset pricing data. This is the first paper nesting an industry equilibrium model of trade into a consumption-based asset pricing framework. In the companion paper **“Diversification, Cost Structure, and the Risk Premium of Multinational Corporations”** (with J.L. Fillat and L. Oldenski, *Journal of International Economics* 2015) we deepen the empirical analysis of the relationship between the geographic structure of a multinational corporation and its risk premium. The model unveils two complementary forces. First, multinational activity offers diversification benefits: the higher the covariance between shocks in the home and in the host country, the higher the risk premia of firms operating in those countries. Second, hysteresis and operating leverage induced by fixed and sunk costs of production imply that risk premia should be higher for firms operating in countries where it is costlier to enter and produce. By exploiting a novel affiliate-level dataset, our empirical analysis confirms these predictions and delivers a decomposition of firm-level risk premia into individual countries’ contributions. In **“The Long-Run Risks of Foreign Direct Investment”** (with J.L. Fillat, in progress) we solve a model of interlinked options with shocks to the long-run component of the growth rate of the economy (long-run risk). The model illustrates the impact of long-run risk for the decision of firms to serve foreign markets.

While the previous papers favored a long-run view of the relationship between global firms and asset markets, in **“Becoming a Multinational”** (with J.L. Fillat, in progress) we study the relationship between international mergers and short-run asset prices dynamics. By merging Compustat/CRSP with data from Bloomberg, we build a dataset to investigate the time horizon of the decisions of firms to enter foreign markets through mergers. We use these data to conduct an event study to identify the reaction of stock prices to news about entry and to actual entry into a foreign market. While this project focuses on mergers, in future work I plan on examining the risk implications of global production chains. Finally, my work on the relationship between firms’ global activities and asset markets is summarized and put in the context of the literature in **“Real Options in International Economics”** (in progress), a review article based on a series of lectures I gave at the Paris School of Economics in 2014.

THE ROLE OF GLOBAL BANKS IN THE INTERNATIONAL TRANSMISSION OF SHOCKS

The recent financial crisis has brought to the forefront of the policy agenda the activities of large, systemically important global banks. The goal of this project is to understand the role of global banks in the transmission of shocks across borders. In **“Multinational Banks”** (with J.L. Fillat and M. Götz, manuscript) we develop a framework to study the organization of global banks, and use it to analyze the response of U.S.-based affiliates of European banks to the 2011 European sovereign debt crisis. The model is built to mimic the institutional details of the regulatory framework in the US, and is qualitatively consistent with observed changes in the balance sheets of U.S.-based branches and subsidiaries of foreign banks. Due to the constraints that U.S. regulation imposes on these banks, our findings suggest that while branches favor the transmission of shocks across countries, they mitigate the global effect of shocks. On the other hand, subsidiaries isolate shocks within country boundaries, but cannot reduce their impact. The theory can be used as a laboratory to perform counterfactual analysis that is informative about the outcomes of alternative regulatory policies.