Private Enterprise Development in Low-Income Countries

Interacting and Sharing the Gains in Buyer-Seller Relationships: Garments in Bangladesh

Julia Cajal-Grossi

An integral part of global supply chains is the selection by international buyers of trading partners in developing countries. However, our understanding of how buyers find a suitable long term supplier is limited. I use unique buyer-seller customs data in a large market in an LDC - the "fast fashion" industry in Bangladesh - to study the formation of those relationships. I show that buyers experiment with different potential partners before settling down in their relationships. Contrary to the standard result in search models, I show that the more heterogeneous the potential partners are, the less the buyers experiment before choosing a trade partner. This mechanism affects not only who trades with whom but also how the gains from trade are split between international buyers and their suppliers in Low Income Countries.

Introduction

Trade in many markets involves a process of information acquisition, by the buyer, the seller or both. This is particularly true in international transactions, where foreign buyers purchase goods in unfamiliar environments, or where manufacturers need to introduce their products in markets with unknown demand structures. These information frictions are generally more pervasive in developing economies, where the search for a suitable partner often entails screening the reliability, trustworthiness and general quality of the supplier. This in turn has two immediate implications. First, acquiring the relevant information involves costly experimentation or testing of some kind. Second, the value of undertaking such testing itself should depend on the heterogeneity of the pool of potential trading partners. In this context, I address two questions: first, how does such heterogeneity affect who trades with whom and, second, what are the implications (if any) of this on rent sharing, that is how the gains from trade are split between buyers and sellers. To answer these questions, this project firstly uses matched exporter-importer customs data to construct measures of search activity (or experimentation behaviour by buyers) and suppliers' heterogeneity, and secondly uses these to test the micro-level implications of a model of search.

Empirical context – the Bangladeshi garment industry

Bangladesh is a salient example of low income countries that have a pillar industry driving, via exports, the country's growth. With the garment industry accounting for more than 10% of the country's GDP, the sector has pushed annual per-capita income from USD280 in 1990 to USD838 in 2013, an increase of almost 300%. Expanding international demand for garments, wage levels that are among the lowest in the region, and a very elastic labour supply have spurred the growth of the sector over the past two decades to a degree unprecedented for the country. In these decades, the country's exports of ready-made garments have grown by more than 2,000% to about USD20 billion. While companies in Europe and the United States can leverage Bangladesh's cheap production costs to source ready-made garments, managing the supply chain in the country has been recognized as the main bottleneck in their sourcing strategy. Contracts between buyers and sellers are often incomplete and ensuring the quality and timely delivery of orders tends to be a major concern for international buyers. In addition, the garment sector in Bangladesh is infamous for its lack of compliance with minimum health and safety requirements and human rights, even when firms hold all the necessary credentials. Governmental and official controls for these are known to be weak, and episodes of extensive coverage in the media have shown the difficulties buyers face, even after engaging in costly screening processes, to identify suppliers that might secretly break their compliance agreements. While some characteristics of the seller can successfully be tested and assessed within the course of a trading relationship, ex-ante, buyers do not have full information about their suppliers. This is the friction that I study.

The data

The empirical analysis in this project exploits a comprehensive dataset recording all export transactions between ready-made garment (RMG) manufacturers in Bangladesh and buyers in the rest of the world. The primary source of this dataset is the compilation of mandatory export and import records in the main custom stations in Bangladesh, from 2005 through 2012. Each record constitutes a product within a shipment from a supplier to a buyer, taking place on a given date. The real-time data include details on the statistical values, quantities, destinations and specifics of the terms of trade. Importantly, they include identifiers for all buyers and sellers. Exports of garments in Bangladesh are split almost evenly between knitted and woven products. The focus here is in woven products, whose manufacturing technologies are known to be relatively homogeneous - across products and across firms - and whose main material input, woven fabric, is imported. Our source of primary data includes, in addition to exports, all the imports by RMG manufacturers into Bangladesh, with records as detailed as those in the export side of the data. Exploiting an administrative procedure used for claiming duty exceptions for inputs to garment export orders, we can match specific orders to the material inputs used for producing them. Because the RMG sector in Bangladesh is almost exclusively export oriented, exported volumes coincide with virtually the whole of the manufacturers' supply. Therefore, we can claim to observe the firms' output in its entirety and, for the sample here, the relevant material inputs as well.

Outline of the model

The economic model, that attempts to mimic as closely as possible the endeavour of international buyers of different sizes accessing the manufacturing market in Bangladesh, leads to four implications that can be tested in the data. Contrary to the observation that higher heterogeneity in the environment intensifies search efforts, the model here implies that higher dispersion in the types of suppliers can be associated with lower overall search activity. Moreover, the effect of suppliers' heterogeneity in exploration behaviour depends on the buyer's cost of search and, with this, on the buyer's size. For larger buyers, search activity is lower in more heterogeneous environments. For buyers with large search costs (small buyers), higher heterogeneity might imply higher or lower exploration efforts, depending on whether the dispersion or cost effects prevail. Finally, in more heterogeneous environments buyers are willing to match with (weakly) lower suppliers. For small buyers, with high search costs, the effect of dispersion on the threshold acceptable supplier is negligible, while for large buyers, small changes in the underlying dispersion bring the threshold supplier down significantly.

Measures of heterogeneity and search activity

To empirically test the predictions obtained from the model, two relevant objects need to be recovered from the data: a measure for suppliers' heterogeneity and a measure of buyers' search activity.

I exploit the fact that we observe both volumes and prices at a disaggregated level to obtain (scalar) measures of heterogeneity of manufacturers from a linear regression of volumes on buyer and seller fixed effects, using relatively light assumptions. The operational definition for heterogeneity is that, conditional on the product and buyer with whom a seller is trading, sellers who can sell higher volumes at a given price (instrumented with prices of inputs) are recognized by the demand as better suppliers. Suppliers' heterogeneity is recovered using an approach similar to that used in recent developments in the trade literature, for measuring firm's quality.

I consider that, from the perspective of a buyer, the search for a suitable partner in a product market is successful when the buyer establishes a relationship that lasts for at least a year. In the data, the relationships that are in this sense unsuccessful involve, in 50% of the cases, a one-off shipment and in 95% of the cases interactions that last for less than one quarter. If search is costly in the standard way (there is a marginal cost to searching sequentially over partners), we should observe that buyers minimize the search instances in environments where this cost is higher. We can then consider the number of unsuccessful relationships the buyer enters in after ending a long-lasting relationship and before starting a new one. High realizations of this measure correspond to high experimentation, meaning that the buyer attempted multiple instances of trade with different partners without these turning into long-lasting relationships, before succeeding with one.

Empirical Results

The main implications of the model are strongly supported by the data, and hold in terms of within-buyer, cross-market differences in experimentation behaviour. There is a strong negative relationship between the intensity of search activity (measured as the count of test orders the buyer places with different sellers, before selecting one) and the dispersion of types across the available sellers (measured here in standard deviations of the scalar as explained above). This is still the case when I take into account standard candidates for drivers in search activity. Augmenting the complexity of the statistical model to decompose the heterogeneity effect for buyers of different sizes shows that the negative effect is only present in search instances of large buyers. This coincides with the predictions of the economic model and is consistent with the threshold supplier the buyer is willing to accept moving downwards.

Moving Forward…

In the final report I presented further results on two main paths for exploration. The first one is the extensive margin of search. I showed that the negative relationship between suppliers' heterogeneity and search activity also holds in the extensive margin, i.e. in the decision of buyers to search at all versus to stay with already known partners. The second one is the study of the implications of the heterogeneity mechanism in the split of gains from trade. I find a strong positive relationship between the price-cost margins paid by any given buyer to its incumbent suppliers, when the environment is such that there is high heterogeneity across potential alternative partners. Consistent with the main results in the project, this could suggest that in the presence of higher heterogeneity, search costs are higher and, with them, the demand active suppliers are facing is more inelastic. As such, this is a mechanism that might be favoring rent extraction on the "weaker" part of these buyer-seller relationships. Future work will proceed in this direction.