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Institutions and export dynamics

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ABSTRACT

We study how contract enforcement and export experience shape firm export dynamics in an environment with incomplete information. We show that exporters start with higher volumes and sell for longer periods in countries with better contracting institutions and when they have prior foreign experience. However, conditional on survival, firm export growth *decreases* with the quality of the country's institutions. Controlling for time-varying firm unobservables and other factors, we confirm these and other predictions using a panel of Belgian exporting firms from 1995 to 2008. The results highlight the manifold implications of export experience and contracting institutions for firm dynamics in foreign markets.

1. Introduction

Imperfect enforcement of contracts can inhibit mutually beneficial transactions. This problem is particularly severe for transactions across different jurisdictions, as in international trade. Empirical research has found that strong contract enforcement indeed boosts aggregate trade levels.[1] Likewise, recent research shows that export experience helps firms to succeed in new foreign markets.[2] In this paper we study how those factors influence the dynamics of trade at the firm level. Relying on the premise that informational frictions create fundamental obstacles to international trade, we argue that strong institutions (at the country level) and export experience (at the firm level) may assuage those constraints, but the effects can be subtle. For example, we show that strong institutions increase the survival rates of exporting firms while at the same time *decreasing* growth of the ones that manage to cope. Similarly, firms survive longer in a market if they have prior experience in similar foreign markets, but this effect is not long-lasting.

We develop these and other results in a simple dynamic model where firms engaged in international exchange build reputations as a response to incomplete information in their foreign relationships. To access a foreign market, potential exporters search for distributors there without observing their types. This makes exporters cautious, as some distributors are opportunistic and default on their contracts whenever possible. Yet others are forward-looking and have an incentive to abide by their contractual obligations. By doing so they build private reputations within their relationships, and through this mechanism they ameliorate the problems created by asymmetric information. This yields a simple dynamic framework that is consistent with previous findings in the literature.[3] More importantly, it allows us to study how

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[1] Anderson and Marcouiller (2002) and Ranjan and Lee (2007), for example, find sizeable effects of institutional variables on bilateral trade flows using gravity specifications. Turrini and van Ypersele (2010) show that differences in legal systems can depress trade even within a country (in their analysis, France).

[2] For example, Carrère and Strauss-Kahn (2012) show that export experience increases survival in a new foreign market, even when experience is in a non-OECD country and the new market is an OECD country.

[3] Producers in successful partnerships increase their exports over time, as typically observed in micro datasets. Alternative explanations for this stylized fact are provided by Rauch and Watson (2003)—buyers make investments to train foreign suppliers under asymmetric information—by Arkolakis (2010)—increasing marginal penetration costs—and by Albornoz et al. (2012), Eaton et al. (2011) and Fernandes and Tang (2015)—uncertain export profitability. Similarly, the conditional probability of a partnership failure decreases with its duration, just as Cadot et al. (2013) observe for African exporters, and also related to Besedes and Prusa's (2006) finding that the hazard of trade relationships at the product level falls with their duration. More generally, Allen (2014) provides compelling evidence for the prominence of informational frictions among the costs that hamper trade.

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exporters' dynamics depend on the strength of the contracting institutions in their destinations and on their own previous export experience.

Specifically, the model generates several testable implications relying on the idea that good institutions limit the scope for costless contractual default, whereas previous experience yields better matches by allowing firms to spot some opportunistic types. First, producers selling to countries with good contracting institutions, or similar to other markets they have served, start with higher volumes. Second, they are more likely to keep selling to those markets in the future, but this effect eventually vanishes. These results stem from different forces. Because having stronger institutions make contractual defaults more difficult, it both increases the expected longevity of partnerships and makes producers more confident about the workings of their partnerships; this induces them to start with higher volumes. In contrast, more export experience in similar markets allows producers to select their foreign partners better and to cater more effectively to foreign consumers' tastes. This too leads to higher initial export volumes and greater average export spells.

Contracting institutions also matter for firms' export growth. We show that, conditional upon survival, the growth of a firm's exports to a country *decreases* with the quality of the country's institutions. The reason is that, in a good institutional environment, the private reputation of a distributor evolves slowly over time, as successful interactions are less informative of the distributor's type when institutions impose tighter constraints on her behavior. Thus, although tight enforcement of contracts raises the expected return of foreign exporters, boosting initial trade volumes, it also has the perverse effect of slowing down the learning of exporters.

We test these predictions using a rich panel of Belgian firms that contains both goods export values and their destinations from 1995 to 2008. Our data allow us to control for a wide range of factors at the firm, destination and time dimensions. In our main empirical specification we use *firm-year* fixed effects to control for time-varying firm-specific characteristics that influence firm decisions about where to export, for how long and how much. Therefore, we identify the effects of institutions and of previous experience on firms' export dynamics only from within-firm-year variation across export destinations—so for example unobservable time-varying shocks to firm productivity are fully accounted for. We define export experience at entry as the number of similar destinations the firm already serves, where *similarity* between two destinations is based on the "extended gravity" variables proposed by Morales et al. (2014), which incorporate cultural, geographical and economic characteristics. Hence, our benchmark measure of export experience is not subsumed in the firm-year fixed effects, varying at the firm, year and *destination* levels.

We find strong support for our theoretical predictions. Overall, our findings reveal that weak contracting institutions and lack of export experience cannot be thought simply as an extra sunk or fixed export cost, as is often believed; they also affect firms' export volumes and dynamic patterns in non-trivial ways. Essentially, as long as institutions or previous experience are unable to fully neutralize the problems created by informational frictions, firms overcome those problems over time by building private reputations within their relationships. Such a mechanism operates more strongly, the weaker the country's contracting institutions.

Our analysis is inspired by the existing literature on institutions and trade. However, by focusing on how institutions shape firms' export dynamics, we depart considerably from the standard approach. As Nunn and Trefler (2014) underscore, that line of research concentrates on developing and testing the implications from static frameworks. Significant attention has been given to the fundamental question of how different types of institutions shape the pattern of comparative advantage across countries.[4] Much work has been done also to understand how contractual frictions affect the structure of trade through their effects on the boundaries of the firm.[5] This literature, however, largely bypasses dynamic issues.

The paper contributes to a recent but growing literature on firm export dynamics. It is closely related to the contributions of Albornoz et al. (2014), Chaney (2014) and Morales et al. (2014).[6] Albornoz et al. analyze the different ways in which fixed and sunk costs affect firm survival rates in foreign markets. Chaney develops a model of international network formation where firms gather information about potential partners from their current ones. Morales et al. argue that export experience facilitates entry in related markets by reducing sunk entry costs. Unlike those papers, which focus on the expansion of firms across markets, we concentrate on the dynamics within a market. Like us, Antràs and Foley (2014) and Besedes et al. (2014) study the intensive margin, but their goals are different. Antràs and Foley study the choice of financial terms in international transactions. In the same spirit of our analysis, they show how this effect changes over time, as agents develop their relationships. Besedes et al. examine how credit constraints in the origin country affect import growth at the product level in the European Union and the United States. Exploring a mechanism that is intuitively similar to ours, they find that imports of more financially-dependent goods from less developed countries are initially constrained but grow relatively fast.

The paper is also related to two other lines of research. One is well established and explains how informal cooperative coalitions form and develop in the absence of formal enforcement institutions.[7] The other is recent and studies the circumstances when international trade is likely to be carried out indirectly and the matching pattern between buyers and sellers in international transactions.[8] It is worth noting that indirect trade can take place for many reasons. In our model it is a requirement that creates informational frictions, but in other contexts intermediaries may arise to *solve* informational problems—Chinese exports through Hong Kong provide a classic example (Feenstra and Hanson, 2004).

The paper proceeds as follows. In Section 2 we develop the model and characterize the equilibrium and its dynamic properties. In Section 3 we derive testable implications for how institutional quality and export experience shape firm level exports. We discuss the empirical strategy in Section 4 and describe the data in Section 5. In Section 6 we show and analyze the empirical findings. Section 7 concludes.

2. Model

We develop a model where agents learn about the reliability of their trade partners through repeated interactions. The learning process is affected by both the country's institutions and the producer's export experience. Weak institutions offer greater scope for opportunistic behavior. Lack of experience makes it more difficult to identify risky

[4] See e.g. Acemoglu et al. (2007), Antràs (2005), Costinot (2009), Cuñat and Melitz (2012), Levchenko (2007) and Nunn (2007). Nunn and Trefler (2014) provide an insightful survey. A related line of research explores instead how trade affects institutions; e.g. Puga and Trefler (2014) provide a fascinating account of changing institutions in Venice following exogenous shocks to the value of international trade during Medieval times.

[5] For example, Bernard et al. (2010) and Corcos et al. (2013) estimate the effect of product contractibility and countries' institutions on the level of and the choice to engage or not in intra-firm trade.

[6] See also Aeberhardt et al. (2014), who study related but different empirical implications obtained from a variant of our model.

[7] See Greif (1993) for an insightful early contribution. Related to this approach, McLaren (1999) studies the circumstances under which firms choose to base their relationships on trust instead of on (enforceable) contracts.

[8] For example, Ahn et al. (2011), Antràs and Costinot (2011), Bernard, Grazzi and Tomasi (2014), Felbermayr and Jung (2011) and Tang and Zhang (2014) provide theoretical and empirical analyses of direct vs. indirect trade. Bernard, Moxnes and Ulltveit-Moe (2015) and Carballo et al. (2013) characterize the matching of exporters with their foreign buyers.