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Learning, incomplete contracts and export dynamics: Theory and evidence from French firms

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ABSTRACT

Using French firm-level trade data, we provide empirical support for a heterogenous firm model in which exporting requires finding a local partner in each market. In the model, contracts are incomplete, exporters must learn the reliability of their partners through experience and export behaviour is state-dependent due to matching frictions. As predicted by our theoretical model, we find that better legal institutions alleviate contracting frictions especially in sectors with large contracting problems, thereby increasing state dependence more in those sectors. Finally, hazard rates depend on the quality of local legal institutions and decline with the age of the relationship, as unreliable partners are weeded out.

1. Introduction

How do firms establish new export relations and what determines the dynamics of exports at the firm level? The most prominent models of export dynamics rely on sunk fixed costs to enter the export market. Such costs can explain why only very productive firms export (Melitz, 2003), why firms' export statuses are very persistent over time and why the probability that a firm exports is determined primarily by its past export status (see Roberts and Tybout, 1997, among others). However, a growing number of microstudies on export dynamics (Eaton et al., 2007; Buono et al., 2008; Lawless, 2009) have revealed evidence that is at odds with this view.

First, export values are usually small when a firm breaks into a new market. Second, most export flows have a very short duration (1 or 2 years), few survive for a longer period and these grow fast. This leads to hazard rates – defined as the probability for an export flow to stop conditional on having survived for t years – that sharply decrease over time and fast growing export values conditional on survival. Finally, a novel stylised fact, which we uncover in the present paper, is the positive relation between the persistence of export flows and the quality of legal institutions in the destination country.

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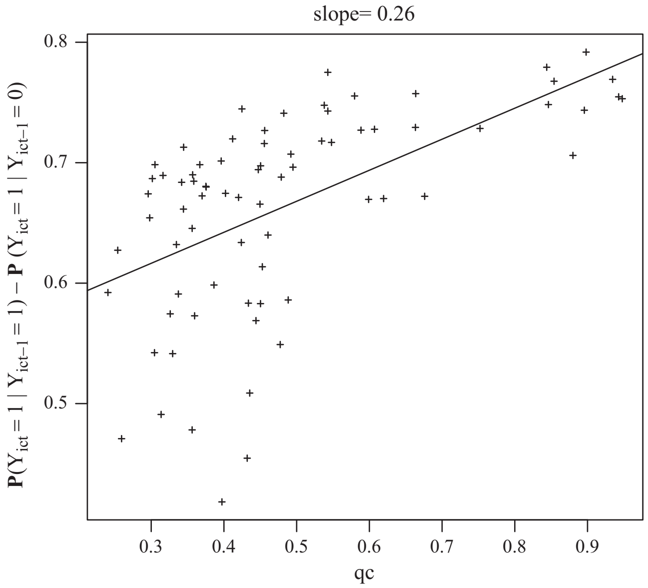

Fig. 1. State dependence as a function of legal institutions. The figure shows the correlation between rule of law (from Kaufmann et al. (2006) and the estimated marginal effect of past export status on current export decisions. For each export destination, marginal effects of past export status are estimated from a linear probability model with current export status as a dependent variable, controlling exporter-time effects.

We argue that it is crucial to consider that exports at the firm level are relationship-specific in order to explain these observations. Most exporters neither sell a perfectly homogeneous good that can be sold in an organised exchange nor own a distribution network in the export destination. As a result, exporters need to rely on partners in each market. These are either trade intermediaries, distributors that locally market the exporter's product, or foreign firms that import the exporter's product to use it as an intermediate input.

In the model, firms that want to start exporting to a specific country have to search for a partner in that destination. When an exporter is matched with an importer, she is initially uncertain about the importer's reliability. Contracts are incomplete, so that some partners may try to hold up the exporter. Whether an importer has incentives to do so depends on the value of the short-term gains from holding up the partner relative to the value of maintaining a long-term relationship. This depends – among other things – on the importer's type (patient or impatient), the exporter's productivity, the extent of sectoral contracting frictions and the quality of legal institutions in the destination country. Patient importers sufficiently value future profits from any relationship to respect contracts with all exporters. On the other hand, impatient importers try to renegotiate contracts *ex post* if contracting frictions are severe (the payoff from renegotiation is large), legal institutions are weak (the opportunity to renegotiate is strong) and exporters are relatively unproductive (the expected value of future profits is low). Since exporters have to learn their partners' type through experience, uncertainty is initially large and thus export values are small. As an exporter observes that the contract is respected she becomes more confident that her partner is reliable and the value of exports grows.

The combination of these ingredients leads to several interesting patterns. Here, we focus on the more important ones. First, matching frictions generate persistence (state dependence) in export decisions, even though there are no sunk costs in the model. An exporter is unwilling to give up a partner unless she is sure that the importer is unreliable. Second, better legal institutions make it more likely that a given relation survives from one period to the next. As a consequence, better legal quality leads to more state dependence and reduced hazard rates. Moreover, the more severe the contracting frictions are in a given sector, the larger this effect. Similarly, larger destination market size or higher exporter productivity implies that a given relationship is more valuable for importers and thus makes it more likely that they will honour the contract. Hence, state dependence is larger (and hazards are lower) in destinations with larger markets and for more productive exporters. Moreover, hazard rates decrease with the age of the relationship because partnerships that involve unreliable importers are sorted out, while relations with reliable partners survive in the long run.

We use a panel of roughly 46,400 French manufacturing exporters over 13 years to test these predictions.[3]

First, we find that there is strong evidence for state dependence of export decisions that is positively related to institutional quality. Fig. 1 illustrates this point. It presents a plot of the estimated effect of past export status on today's export probability by destination country against a measure of the legal quality of the destination country.[4] It is apparent

[3] Similar datasets have recently been used by Berthou and Fontagné (2012) and Berman et al. (2012) among others.

[4] We use a linear probability model and regress the current export status of each plant on the export status in the previous year by destination country. This figure is meant to be purely illustrative. We provide more formal econometric evidence for this relation in the empirical section of this paper.