

Firms' Survival in Export Markets: Does Foreign Financing Matter?

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CompNet Workshop
Banca d'Italia. Rome.
13, 14 March 2014

Outline

- Motivation
- This paper
- Descriptive analysis
- Survival analysis
- Conclusions

Economic Growth and Survival

- South Korea; Taiwan; China and India have been successful in boosting economic growth; they have all emphasized exports.
Export performance is central to achieving development (Hausmann and Rodrik, 2003).
- **It is about surviving as an exporter rather than about entering export markets.** Most export relationships for firms in developing countries are short lived (Besedes and Blyde, 2010).
- Raising survival rates in the export markets and **understanding its determinants** is of the first order of magnitude for policy-makers.
- **Financial constraints** seem like a natural candidate for explaining survival.

Financial Constraints

- **The Industrial Organization Literature.** Financial constraints are relevant to explaining survival in the domestic market (Fotopoulos and Louri (2000); Bunn and Redwood (2003); Bridges and Guariglia (2008)).
- **The International Trade Literature.** Financial constraints can explain entry in export markets and export performance (Chaney, 2005; Manova, 2012; Muûls, 2008; Manova et al., 2011; Minetti and Zhu, 2011).
However, the role of financial constraints in survival in the exports market has received little attention.
- We emphasize the role of financial constraints in explaining survival and the duration of trade relationships.

This paper

- We study the link between financial constraints and firms' survival in the exports market.
- Contribution to the literature on survival in exports markets (Besedes and Blyde, 2010):
 - ✓ We use firm-level data on financial variables
 - ✓ We are able to assess the effect of foreign financing (great dataset)
- Contribution to the literature on dynamics of new exporters:
 - ✓ We propose financial constraints to explain dynamics (search frictions --Eaton et al. (2009)-- and marketing costs --Arkolakis (2011)).
 - ✓ We think of foreign financing as a way of shielding firms from financial constraints (Kohn(2013)).

Data

- Data on 7,773 manufacturing Argentine firms that exported for at least 2 years over the period 2003-2008.
- The case of Argentina is interesting because of:
 - Large devaluation in 2002
 - Falling banking system
- Firms represented in the sample by their largest spell
- Data on: (i) Export values by destination & product, (ii) No of employees and (iii) Amount and origin of foreign debt and (iv) Type of creditor

Descriptive Analysis

We perform descriptive analysis with two goals:

- ✓ Identifying relevant variables to be employed in the survival analysis
- ✓ Characterizing firms performance of the entire sample along 2 dimensions
 1. Access to foreign financing
 2. Permanence in export markets
 - Starter*: the firm begins to export after 2003 (no “left censoring”)
 - Permanent exporter*: the firm exports the 6 years
 - Sporadic exporter*: the firms exports at least for 2 consecutive years

Descriptive analysis

The sample

Condition	Number of firms	%
Starters	2,663	34.3
Sporadic exporters	1,315	16.9
Permanent exporters	3,795	48.8

7,773

- Most firms are permanent exporters
- Considerably large number of starters (large devaluation in 2002)

Descriptive analysis

Spell length

- *Criterion:* A firm has access to foreign financing if it received foreign financing 40% of its exporting years

	Mean of Spell
Without foreign debt	4.0
With foreign debt	5.1

- Firms with access to foreign financing remain longer in export markets

Descriptive analysis

Access to foreign financing

Condition	Without foreign debt	With foreign debt
Starters	62.7	37.3
Sporadic exporters	62.4	37.6
Permanent exporters	31.2	68.8

- Permanent exporters have disproportionately large access to foreign financing
- Are permanent exporters the most productive? Is productivity correlated w/foreign financing? –wait 2 slides–

Descriptive Analysis

Export destinations (Herfindahl-Hirschman Index -HHI-)

Condition	Without foreign debt	With foreign debt
Starters	0.835	0.746
Sporadic exporters	0.858	0.732
Permanent exporters	0.663	0.507

- Exporters w/access to foreign financing are more diversified in terms of export destinations
- Permanent exporters much more diversified than starters or sporadic exporters
- Global engagement shields firms from financial constraints --Bridges and Guariglia (2008). Excluding HHI from survival may overstate the role of foreign financing.

Descriptive analysis

Size

- *Endogeneity issue*: if productivity is excluded from the survival equation and is correlated w/foreign financing
- Problem not easy to address, but as a first attempt we use firms' size as a proxy for productivity

Number of employees		
Condition	Without foreign debt	With foreign debt
Starters	21.8	45.1
Sporadic exporters	25.4	70.5
Permanent exporters	38.7	148.5

- The number of employees is correlated w/foreign financing and permanence in the export markets

Survival analysis

- We concentrate on starters
- This leaves us with a set of 2,663 firms, represented in the sample by their longer spell

Starters	Number of firms	%
With initial foreign financing	761	28.6
Without initial foreign financing	1,902	71.4
<i>Of which: got financing onwards</i>	461	24.2

- Only a small percentage of starters (24.2%) are able to get foreign financing within the sample period

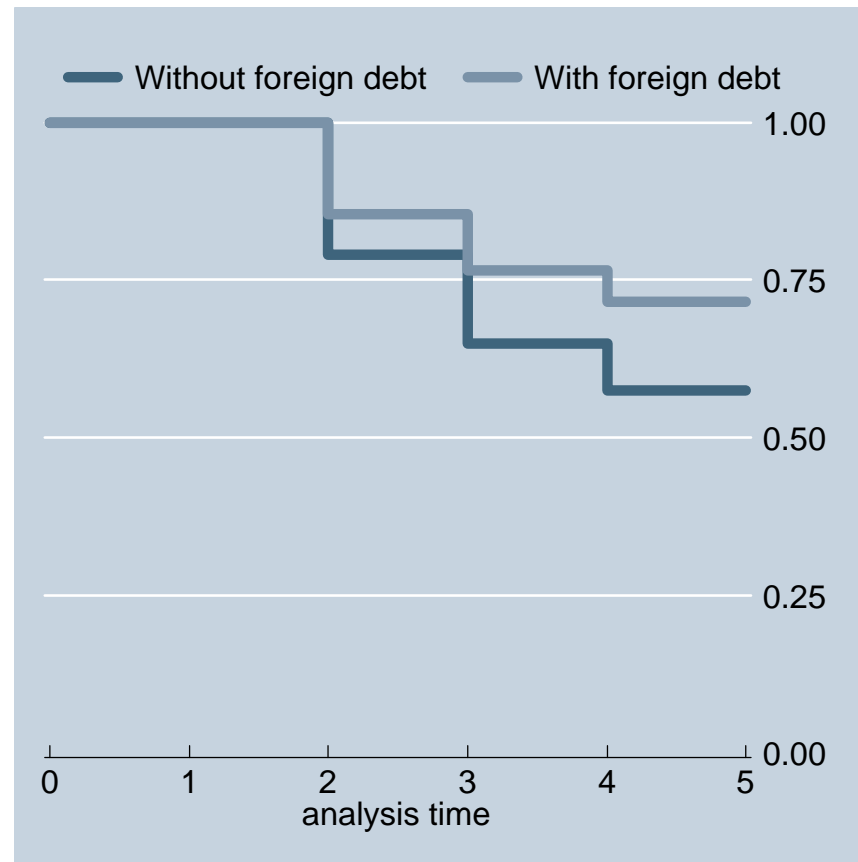
Survival analysis

- And the majority of this 24.2% obtain foreign financing in their earlier years of the exporting experience

Year in which the firm got foreign financing	%
2	55.1
3	29.0
4	10.5
5	5.4

Survival analysis

Univariate Analysis: The Kaplan-Meier non parametric estimator



- Firms with access to foreign financing have a higher probability of survival

Survival analysis

Cox estimation with time varying covariates

- We estimate a Cox (1972) proportional hazard model. The probability of hazard –death– is written as

$$h(t / x_j) = h_0(t) e^{(x_{jt} \beta_x)}$$

semi-parametric approach time varying covariates

- Models include as control variables:
 - Size (proxy for productivity)
 - Firms debt with foreign creditors
 - HHI by destination
 - Developed countries dummy
 - And some gravity models variables: geographical distance, GDP, contiguity, common language

Survival analysis

Estimation results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Employees	-0.00201** [0.000794]	-0.00136* [0.000776]	-0.00124 [0.000771]	-0.00141* [0.000770]	-0.00148* [0.000785]	-0.000924 [0.000765]	-0.000824 [0.000758]	-0.000969 [0.000760]
Dummy foreign financing		-0.345*** [0.0816]	-0.357*** [0.0817]	-0.346*** [0.0816]	-0.342*** [0.0816]	-0.200** [0.0822]	-0.210** [0.0823]	-0.206** [0.0822]
Dummy export to developed country			0.340*** [0.0955]				0.349*** [0.0947]	
Dummy export to contiguous country				-0.375*** [0.0812]				-0.226*** [0.0815]
Dummy export to common language country					-0.345*** [0.0864]			
HHI exports						2.302*** [0.199]	2.310*** [0.199]	2.239*** [0.200]
Observations	7,856	7,856	7,856	7,856	7,856	7,856	7,856	7,856

*** Significant at 1%, ** at 5%, * at 10%.

Standard errors in brackets.

Foreign financing is significant in all regressions

It reduces the hazard rate around 20% in specification that include HHI

Survival analysis

Estimation results (cont'd)

VARIABLES	(1)	(2)	(3)	(4)	(5)
LN(GDP pc)	0.0967 [0.0648]	0.0895 [0.0647]	0.109 [0.0696]	0.0406 [0.0661]	0.0745 [0.0680]
LN(mean distance)	-0.0293 [0.0319]	-0.0131 [0.0319]	-0.0314 [0.0338]	-0.146*** [0.0396]	-0.0732** [0.0359]
Dummy foreign financing		-0.436*** [0.0782]	-0.347*** [0.0832]	-0.319*** [0.0833]	-0.332*** [0.0833]
Employees			-0.00126 [0.000782]	-0.00130* [0.000776]	-0.00136* [0.000793]
Dummy export to contiguous country				-0.591*** [0.111]	
Dummy export to common language country					-0.369*** [0.0998]
Observations	8,393	8,393	7,732	7,732	7,732

*** Significant at 1%, ** at 5%, * at 10%.

Standard errors in brackets.

Foreign financing remains significant

Conclusions

- We use survival analysis to study the incidence of access to foreign financing on the survival probability of exporters
- Access to foreign financing increases firms' likelihood of surviving as exporters
- Exporting mainly to contiguous, less distant and common language countries also increase the probability of survival

Many Thanks

Descriptive analysis

Export destinations (HHI by group)

Year of exporting	Starters		Sporadic exporters		Permanent exporters	
	Without FD	With FD	Without FD	With FD	Without FD	With FD
1	0.889	0.827	0.854	0.729	0.713	0.546
2	0.838	0.758	0.863	0.719	0.686	0.521
3	0.798	0.694	0.857	0.715	0.650	0.501
4	0.769	0.665	0.858	0.751	0.643	0.491
5	0.768	0.658	0.864	0.799	0.641	0.487
6					0.643	0.495

- The HHI decreases notably for starters and particularly for those with access to foreign financing