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Late-Movers Outperform First-Movers in Export Markets

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Abstract

Using exporter-level data from Bulgaria, Burkina Faso, Egypt, Guatemala, Jordan, Malawi, Mexico, Peru, and Senegal, as well as controlling for supply and demand shocks, I find that late-movers outperform first-movers in product-destination export markets.

Keywords: exporter dynamics; first-mover; late-mover; market entry; diversification; international trade

JEL Codes: F14; F63; L25

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1 Introduction

First-movers generate information that can be used by late-movers to a market.³ Exporters can learn from each other about product demand, consumer preferences, quality standards, regulations, and distribution networks at destination.⁴ I take the exporter dynamics research further by studying whether first-movers outperform late-movers at the product-destination level in export markets.

I use a unique disaggregated exporter-level customs dataset from nine origin countries. The analysis distinguishes old from new products at the origin-firm-product-destination level over time, orders precisely the entry of firms and products from origin to destination, looks at all (successful and failing) cases of exporters and exported products, and ensures that re-entry of intermittent products are not counted as new products when ordering the movers to a given product-destination market. The results show that late-movers outperform first-movers at the product-destination export market level.

2 Dataset

I obtained data from the World Bank Exporters Dynamics Database (Cebeci et. al (2012)). The raw data is from customs files from Burkina Fasu, Bulgaria, Egypt, Guatemala, Jordan, Mexico, Malawi, Peru, and Senegal. All non-oil exporting firms and export transactions from these countries are included in the dataset.

The data includes the following variables for each export transaction: exporter ID, HS-6 product ID, destination of shipment, value of exports⁵, and year of transaction. The HS-6 digit level product classification illustrates the narrowness of product definitions and the richness of micro-level information available in the dataset. To test the quality of the data, I compare it with (i) UN-Comtrade data and (ii) mirror data (what each other destination reports as imports from each country of origin in the dataset). The customs dataset is highly correlated with both UN-Comtrade data and mirror data.

Table 1 presents descriptive statistics. It shows that exporters do not shy away from trying and experimenting with products and destinations. It highlights the Hausman and Rodrik (2003) “self-discovery” process holds not only at the macro level, but also at the micro level.

³Lederman et al. (2010)

⁴Koenig et al. (2010)

⁵Export values are deflated to first year equivalents using the US consumer price index from Global Financial Data.

3 Empirical analysis

I define a first-mover as a firm that started exporting a given product to a given destination first and a late-mover as a firm that began exporting the same product to the same destination at least one year after the first-mover stepped in. And, I define a new product as an HS-6-digit code that was not exported by any existing exporter during the first 2 years of available data for any country in the dataset. This way I do not count new exporters of new products as first-movers to a given destination. Instead, I focus only on surviving exporters – i.e. existing exporters who introduced new products to a given destination – to avoid mixing new exporters (i.e. ones without prior experience) with existing exporters who step into a new market.

Following Melitz (2003) assumption that larger and more productive exporters would be willing to pay the market entry cost, one hypothesis can be that first-movers outperform late-movers. To test this hypothesis, I estimate a linear regression model:

$$\ln(V_{eipt}) = \alpha_0 + \alpha_{FM}1[FM_{eipd}] + \alpha_{Exp}Experience_{eipt} + X'\beta + \{FE\} + u_{eipt} \quad (1)$$

$$\ln(Q_{eipt}) = \alpha_0 + \alpha_{FM}1[FM_{eipd}] + \alpha_{Exp}Experience_{eipt} + X'\beta + \{FE\} + u_{eipt} \quad (2)$$

$$\ln(P_{eipt}) = \alpha_0 + \alpha_{FM}1[FM_{eipd}] + \alpha_{Exp}Experience_{eipt} + X'\beta + \{FE\} + u_{eipt} \quad (3)$$

where $1[FM_{eipd}]$ is a dummy variables that equals to 1 if exporter e is a first mover to a given product-destination market from origin i , and 0 otherwise. $Experience_{eipt}$ is the number of years of experience that a given exporter has in exporting a given product at time t . V , Q , and P represent export value, quantity, and price. By controlling for *experience*, I address the concern that first-movers may tend to export low values and that not all exporters reach consumers simultaneously or quickly as documented by Eaton et al. (2011). In addition, the vector of regressors X includes two measures of the exporter's scope: (i) n_{edt} , the number of products that exporter e exports to destination d and (ii) z_{ep} , the share of product p in exporter e 's overall export values. These counts include the observations they are attached to and are hence never zero, so no observations are lost by taking logs. I also include exporter-year, product-year, and origin-destination fixed effects, FE , in different estimations to control for shocks that may affect demand at the destination level as well as supply at the origin and exporter

levels. Moreover, I clustered standard errors at the origin-product-destination level.

Table 2 presents the coefficients of equations (1-3). Column (1) of Table 2 shows that first-movers to a given market perform worse (statistically significant coefficient of -1.821) than late-movers in terms of export performance. One may argue that this result is expected because first-movers typically start small and then grow as they survive in a given market or because first-movers are typically few and have a lot of product churning and low export volumes as highlighted by Iacovone and Javorcik (2010). Thus, in column (2) of Table 2, I compare first-movers with late movers having same experiences in a given product and also controlled for the number of products exported by the exporter as well as for the share of the product in total export value of exporter. The first-mover coefficient increases and remains statistically significant. Precisely, after controlling for experience, I observe that first-movers export more than an order of magnitude less than late-movers ($\exp\{-2.153\}=0.116$), suggesting that first-movers perform worse than late-movers and that my finding is not driven by the linear specification on experience or the relevance of the product. These results contradict the expectations that one would get from Melitz (2003).

One may argue that the export value performance differential between first- and late- movers is driven by either export quantities or export prices (i.e., quality) of exported products. Given this dataset includes export values and quantities, I can estimate equations (2-3) by running regressions using quantities and prices. Columns (3-6) of Table 2 report the results. The dependent variables are the log of quantity exported by an exporter of a given product in a given year (columns 3-4) and the log of export price of product by a given exporter in a given year (columns 5 and 6). The export performance differential between first- and late- movers is driven by export quantity not prices. While there is a statistically significant difference in quantities exported by first- and late- movers (columns 3-4), there is no first-mover effect on prices (columns 5-6). These results contradict the prediction that first-movers may be exporting higher quality (i.e. higher price) products. These results show that first-movers do not necessarily exploit export markets that they explore.

4 Conclusion

This paper uncovers that late-movers to a given market outperform first-movers in terms of export performance. This result holds in presence of fixed effects that control for supply and demand shocks. It suggests that first-movers do not necessary internalize the informational externalities they generate. It also signals absence of “discovery advantage” because, if there is one, then one would expect first-

movers to sell more and grow faster than late-movers. Further research can study the dynamics of first- and late-mover's survival and growth once informational externalities cross the sector or country of origin dimension. Information about a given sector in a given country may inform about the same sector in neighboring countries or other sectors in the same country.

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Country	BFA	BGR	EGY	GTM	JOR	MEX	MWI	PER	SEN
Sample period	05-10	01-06	06-12	03-10	03-12	00-06	04-09	97-09	00-10
# of exporters	408	16252	8244	4386	1785	33725	631	5225	643
# of entrants	185	7103	2029	1390	683	12408	279	2145	265
# of exiters	178	8210	2132	1328	541	12537	429	1837	229
# of HS6 products per exporter	3.76	5.44	4.2	7.89	2.65	4.79	4.25	6.61	6.11
# of destinations per exporter	2.35	2.12	2.59	2.44	2.97	1.90	1.93	2.63	3.21
# of exporters per HS6 product	2.42	22.97	8.3	11.21	4.07	39.20	3.21	12.21	2.90
# of exporters per destination	11.51	184.94	123.05	80.59	37.03	339.43	11.25	85.54	22.11
Export value per exporter (in millions)	1.50	0.54	1.89	1.33	1.60	4.83	1.07	2.34	1.13
Export value per entrant (in millions)	0.21	0.06	0.26	0.15	0.24	0.44	0.31	0.15	0.11
Export value per exiter (in millions)	0.23	0.04	0.44	0.12	0.09	0.33	0.04	0.13	0.11
Export value per survivor (in millions)	0.43	0.13	0.43	0.34	0.46	0.98	2.24	0.27	0.17
Firm entry rate	0.43	0.45	0.25	0.31	0.37	0.37	0.52	0.40	0.40
Firm exit rate	0.42	0.48	0.26	0.31	0.32	0.37	0.61	0.37	0.36
Firm survival rate	0.43	0.30	0.53	0.40	0.47	0.40	0.25	0.44	0.39
Growth rate of export value of survivor	0.43	0.47	0.64	0.49	0.56	0.35	0.09	0.42	0.42
Destination entry rate of incumbents	0.40	0.29	0.25	0.23	0.34	0.15	0.32	0.28	0.36
Destination exit rate of incumbents	0.41	0.28	0.27	0.22	0.32	0.14	0.30	0.26	0.35
Destination entry rate of survivors	0.45	0.33	0.26	0.31	0.40	0.17	0.35	0.31	0.45
HS6 product entry rate of survivors	0.55	0.47	0.41	0.42	0.48	0.42	0.58	0.45	0.55

The first row lists the 3-letter codes of Burkina Faso, Bulgaria, Egypt, Guatemala, Jordan, Mexico, Malawi, Peru, and Senegal. The second row lists the sample period of the customs data available and used for each country. Each statistic represents annual average over the sample duration for each country.

Table 2: Late-movers outperform first-movers						
	$\ln(V_{eipt})$		$\ln(Q_{eipt})$		$\ln(P_{eipt})$	
	(1)	(2)	(3)	(4)	(5)	(6)
$1[First - Mover]$	-1.821 ^a	-2.153 ^a	-1.318 ^b	-1.624 ^a	-0.514	-0.534
	[0.000]	[0.002]	[0.031]	[0.000]	[0.722]	[0.123]
$Experience_{eipt}$		0.617 ^b		0.437 ^c		0.173
		[0.023]		[0.055]		[0.263]
$\ln(n_{edt})$		0.219 ^c		0.202 ^b		0.016 ^c
		[0.052]		[0.030]		[0.069]
$\ln(z_{ep})$		0.930 ^a		0.662 ^a		0.265 ^a
		[0.003]		[0.006]		[0.001]
<i>Exporter – Year</i> FE	Yes	Yes	Yes	Yes	Yes	Yes
<i>Product – Year</i> FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	214735	214735	214735	214735	214735	214735

$1[FM_{eipd}]$ is a dummy variables that equals to 1 if exporter e is a first mover to a given product-destination market from origin i , and 0 otherwise. $Experience_{eipt}$ is the number of years of experience that a given exporter has in exporting a given product at time t . n_{edt} is the number of products that exporter e exports to destination d . z_{ep} is the share of product p in exporter e 's overall export values. V , Q , and P represent export value, quantity, and price. t-statistics, based on robust standard errors clustered at the origin-product-destination level, are in parentheses. ^a, ^b, and ^c represent statistical significance at the 1, 5, and 10% levels, respectively.