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EXPORT AND INVENTORY: EVIDENCE FROM CHINESE FIRMS

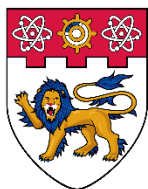
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Export and Inventory: Evidence from Chinese Firms^{*}

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Abstract

This paper investigates the effect of export on firm inventory using Chinese firm data. We find that exporting increases firms' inventory stocks. And exporting to more distant destinations is associated with less frequent and more concentrated export transactions.

Keywords: *Firm inventory, export, export frequency*

JEL classification: *F14, G31*

^{*}All errors are the authors' own responsibility.

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1 Introduction

Recent literature has highlighted the role of inventory in aggregate trade dynamics as well as business cycle fluctuations.¹ However, we still lack empirical studies about the determinants of optimal inventory at the firm level. There are many factors that may affect a firm's optimal inventory stocks, such as the lumpiness of demand, order delivery lag and increasing return to scale for shipment. In particular, these factors seem to be more relevant for export transactions. As a result, inventory management is crucial for firms engaging in international trade. In a recent seminal paper, Alessandria et al. (2010b) have documented that micro-level trade flows are lumpy and infrequent. They quantify a tariff equivalent of inventory carrying cost of 20 percent, nearly six times larger than the physical costs of trade. While they look at the inventory problem for importers, this paper focuses on the role of export in firm's optimal inventory choice. We empirically investigate the effect of export on firm's optimal inventory using Chinese firm data and find that export intensity is positively associated with inventory stock for Chinese exporters.² We also find that exporting to more distant destinations is associated with less frequent and more concentrated (in certain months over the year) export transactions.

We use the industrial firm survey data from China as well as the Customs data of China with transaction-level record of export over the period of 2000-2006. The firm survey data set contains firm-level basic characteristics such as employment, capital usage, total sales, export as well as inventory stock at the yearly basis. The matched data gives us more information on firm-level export, such as the number of exported products, number of export destinations, as well as the export distribution across products and destinations in each year. A simple ordinary least square panel estimation shows that the export intensity of a firm is positively associated with its inventory-sales ratio. Firms exporting more tend to maintain higher share of inventory stocks. This results remain statistically significant when we control for several series of other control variables, including firm-level controls such as productivity, capital-labor ratio, financial constraint, number of export destinations and number of exported products, market share and markup, firm age and its square term, firm size measured by employment, export distribution across products and destinations, and industry-level controls such as state-owned-enterprise share, number of foreign entities and share of intermediate input. Throughout all estimations, the positive relation between

¹See Khan and Thomas (2007a, 2007b), Alessandria, Kaboski, and Midrigan (2010a, 2013) for examples.

²We measure firm-level inventory using the inventory-sales ratio to control for firm size. We check the robustness of our finding using log of inventory levels while controlling for log sales. The results are similar if we use export dummy instead of export intensity.

export intensity and inventory remains statistically significant.

In order to well establish the causality from export to inventory, we adopt an instrumental variable estimation approach utilizing each firm's geographic location. In particular, we use the logarithm of the distance of a firm to the coastline as the instrument for its export intensity. This instrument survives various tests commonly used in the literature for instrumental variables. We also discuss other potential biases and control for various fixed effects. The instrumental variable estimation results confirm that higher export intensity does cause higher inventory for exporting firms.

To ensure the robustness of our finding, we carry out various robustness checks. First, we measure the firm-level inventory directly using the logarithm of inventory instead of inventory-sales ratio to avoid any potential contamination of our result from the variation of firm sales. Both the ordinary least square estimation and instrumental variable estimation confirm our baseline results. Second, in the baseline estimation we use the matched firm data, firm survey data and Customs data on firm export. In this check, we only use the industrial firm survey data and use the export dummy to indicate export as the majority of firms are not exporting. The results show that exporting firms do have significantly higher inventory compared to their domestic counterparts. Third, we include industry-year and region-year fixed effects to control for other potential omitted variables at the industry and regional level. Our baseline finding remain robust throughout all checks.

In order to gauge the mechanism behind the positive effect of export on firm inventory, we look into the transaction-level export data for each firm-product combination. It is found that exporting to more distant destinations decreases the export frequency. Export tends to be more occasional to distant markets. Looking at the transaction distribution over the 12-month period, it is also more concentrated in certain months when exporting to more distant destinations. Both of these indicate that firms may have to maintain more inventory stocks.

Lastly we show that the positive effect of export on inventory is stronger for firms locating in the west inland region of China relative to east coastal region, for state-owned enterprises and foreign firms compared to private firms, and for ordinary exporters compared to processing exporters.

This paper belongs to the large literature on firm inventory. The inventory management problem has been studied quite a lot in the field of operation management. In recent years Macroeconomics has seen a reawakening of interest in inventories emphasizing its

role in business cycle fluctuations, for example Khan and Thomas (2007a, 2007b), and Alessandria, Kaboski, and Midrigan (2013). Alessandria, Kaboski, and Midrigan (2010a) use inventory adjustment to explain the collapse of world trade after the 2008 financial recession. Alessandria, Kaboski, and Midrigan (2010b) and (2011) look at the US trade and inventory dynamics. Blum et al. (2019) highlight the difference in inventory management for exports from poor and rich countries. This paper provides another empirical perspective to look at the inventory management problem. Our finding highlights the role of export in firms’ optimal inventory choice. Taking together, this literature shows that international trade plays an important role in firm inventory management. And in return, inventory choice is also crucial for trade dynamics.

The next section presents our empirical investigation, including data and variable description, main results, robustness checks, mechanism discussion as well as heterogeneous effects. The last section concludes.

2 Empirical Investigation

We first describe the data we use in this empirical exercise and the construction of our variables. Then our main empirical results are presented, as well as robustness checks. We use panel fixed effect estimation in our baseline result. To control for potential endogeneity problem, we adopt an instrumental variable approach using a firm’s distance to coastline to instrument its export intensity. We then discuss one potential mechanism for export-caused inventory using monthly firm-product level export transactions. Lastly, we look at heterogeneous effect of export on inventory for different types of firms.

2.1 Data and Variables

Firm inventory data, along with other firm-level characteristics, is from the industrial firm survey by the National Bureau of Statistics of China.³ From this data we have our firm-level control variables, such as firm size and firm age. Firm level capital intensity, financial constraint, total factor productivity (TFP), markup and market share are then calculated using this data set. Firm location is used to calculate our instrumental variable.

³The inventory record here may include final goods for sale or intermediate inputs stored for future production. We cannot separate the two and thus treat our inventory as the measure of total immediate production/sales capacity that can be realized in a timely fashion to satisfy consumer demand.

We measure the firm inventory as the inventory-to-sales ratio for each firm over the period of 2000-2006. To address the concern that sales fluctuations may have disproportionate effect on inventory, we check the robustness of our results using the log of inventory level as the dependent variable and the log of firm sales as control.

The other main source of data on Chinese exporters is the Customs of China, where monthly transaction-level trade data is recorded. We merge the two data sets following Yu (2015) and calculate the Herfindahl-Hirschman Index (HHI) for each firm's export across products and across destinations, and industry-level control variables such as state-owned enterprise share, number of foreign entities, and intermediate input shares. Information on distance to export destinations is retrieved from CEPII. Data on custom clearing fee and time and per capital GDP for all export destinations are downloaded from the World Bank.

Descriptive statistics for our main variables are presented in Table 1.

2.2 Export and Inventory

A linear regression on the logarithm of inventory-sales ratio is estimated using the matched firm data panel. Several categories of control variables are added to address potential bias due to omitted variables. Then we use an instrumental variable approach to deal with the potential reverse causality concern. Our main results are presented in Table 2.

In column (1), the baseline fixed-effect panel regression shows that firm's export intensity has a significantly positive effect on its inventory ratio. We also see that more productive firms tend to hold lower inventory ratios. More capital-intensive firms also tend to have higher inventory ratios. Firm's financial constraint, number of products exported, number of export destinations are all controlled.

In column (2), we further control a set of firm-level variables, including firm age and the square of firm age, firm size measured by total employment, as well as two market power measures, the markup and its market share. The baseline results are similar as column (1). Firm size seems to be irrelevant. Firm age has a positive but decreasing effect on inventory. Market power on the other hand tend to decrease firms' inventory stocks.

In column (3), we add a set of industry-level time varying controls, such as the state-owned-enterprise share, the number of foreign entities, and the intermediate input share. Again our baseline results remain significant. And foreign entry seems to have negative impact on

firm inventory in that industry.

In column (4), an additional set of time-varying firm ownership type and export mode fixed effects are included. And our main finding about the positive relation between export intensity and inventory ratio is reconfirmed.

In column (5), we control for the firm-level export concentration across products and across export destinations, measured by the two HerfindahlHirschman Indexes. Again our main finding remains. And it appears that export concentration in either dimension has a negative effect on firm's inventory ratio.

Taking together, we believe that the export intensity of a firm is indeed positively correlated with its inventory stocks. In particular, when export intensity increases by 10%, the associated inventory-sales ratio will increase by about 5% (relative to its original inventory ratio).

2.3 Instrumental Variable Estimation

There may be concerns about reverse causality between export and inventory. A firm with high inventory stock may choose to export more to clear excessive inventory, if domestic demand for its product is weaker than foreign demand. Then the ordinary linear least-squared estimation will have upward bias. In order to identify the causal relationship, we adopt a firm-specific geographic instrumental variable (IV) approach similar as Vannoorenberghe (2012). We use the logarithm of the distance of a firm to the coastline as the instrument for its export intensity. We believe the use of this geographic instrument helps to alleviate the concern of endogeneity. Even though location choice may be affected by a firm's export strategy, as long as it doesn't show up for the concerns of inventory, our instrument will still be valid.

To ensure the exclusion restriction of the instrument, there are two implicit conditions. First, inventory should not vary systematically with the distance to coastline. Inventory is affected by local logistic efficiency and inventory carrying cost along with other factors. Logistic efficiency is likely to be unevenly distributed across regions. Inventory cost is correlated with local rental which also varies across the geography. In order to control for this potential effect, we include the firm fixed effect in all our estimations. Second, firms should not be choosing locations to affect its inventory stock. This is likely to be true. On one hand, firm relocation is very rare in our sample. On the other hand, firms' inventory

may not be at the firm location. They can simply rent warehouses at an optimal location.

We carry out various tests for our instrumental variable, including the Sanderson-Windmeijer F test, the Anderson-Rubin Wald test and the Stock-Wright LM S statistic. Our instrument variable passes all these tests as shown in column (6) of Table 2. And our baseline results remain statistically significant. We have now established the causal relationship from export intensity to firm inventory stock.

2.4 Robustness Checks

In this section we subject our main results found above to several robustness checks. First, we use an alternative measure for firm inventory. Instead of the inventory-sales ratio, we directly use the logarithm of inventory as our dependent variable and control for the logarithm of total firm sales. This alternative measure is able to address the concern that variation of inventory ratio may come from variation in the sales. OLS and IV estimation results are reported in column (1) and (2) respectively in Table 3. Our main results remain statistically significant, even though the OLS result for export intensity loses some statistical significance.

The second check we do is to use the full sample of firms from the industrial firm survey data. Here we have a majority of firms not exporting at all. We estimate the effect of an export dummy instead of the export intensity on firm inventory. Column (3) of Table 3 shows that exporting firms on average maintain 4% more inventory stocks compared to their domestic counterparts. A full set of industry-ownership type-province-year fixed effects are included to control for potential omitted variables.

We carry out two additional robustness checks to our baseline estimation. One is including the industry-year fixed effects to control for time-varying factors at the industry level that may affect firm inventory, for instance, the time-varying technology change or inventory management practices in each industry. The other is including the province-year fixed effects to control for time-varying factors at the regional level that may affect firm inventory, for instance, the time-varying infrastructure and warehouse rental price in each region. Similar results are found and presented in column (4) and (5) of Table 3.

2.5 Mechanism Discussion

Thanks to the richness of the customs data set, we can discuss a little on the mechanism behind the positive effect of export on firm inventory. We are interested in the transaction frequency, which is defined as the number of export transactions for each firm and HS 6-digit product each month. One potential mechanism for the positive effect of export on firm inventory may be the distance to export destinations. Exporting to more distant destinations is associated with longer delivery lag, larger fixed cost per shipment or transaction, and more uncertainty demand. As a result, exporting to more distant destinations implies higher inventory, along with less frequent and more occasional export transactions. Since we do not have inventory for each destination, we turn to the frequency and distribution of export transactions.

We look at the export transaction at the firm-product level in each month. As shown in column (1) and (2) of Table 4, exporting to more distant destinations decreases the export frequency. Firms tend to export less frequently to more distant markets. We control for the income of destination country, non-tariff trade barriers such as fees and time to clear customs, as well as other geographic variables such as landlocked country and contingent with China or not. Year and firm-product fixed effects are included in column (1), and column (2) includes additional product-year and firm-year fixed effects.

We use the distribution of transactions over the 12 months to calculate the HerfindahlHirschman Index for each firm-product each year. Higher HHI index means export transactions are more concentrated in several months in a given year, instead of evenly distributed over the 12 months. It measures the regularity or smoothness of export transactions over time. As shown in column (3) and (4) of Table 4, exporting to more distant destinations means more concentrated export transactions.

2.6 Heterogeneous Effects

We look at the heterogeneous effects of export on inventory for different types of firms. The results are reported in Table 5. First, in column (1) and (2), we show that export has a larger positive effect on inventory for exporters in the west region compared to those from the east region. It may be the case that firms from the west faces longer delivery lag or larger foreign demand uncertainty or higher fixed cost of export shipment. Second, in

column (3)-(5), considering different ownership types, exporting increases firm inventory the most for state-owned enterprises, followed by foreign entities and then private firms. Lastly, in column (6) and (7), the positive effect of export on inventory is stronger for ordinary exporting firms compared to that for processing firms.

3 Conclusion

This paper investigates the effect of export on firms' optimal inventory using Chinese firm data. Using both fixed effect ordinary-least-square estimation and instrumental variable estimation, we find that export intensity has a significant positive effect on firms' inventory stocks. This result is robust to various robustness checks and controlling for a rich set of fixed effects. We also find that exporting to more distant destinations is associated less frequent and more concentrated export transactions. Our paper highlights the role of export in firms' inventory management. Given the role of inventory in aggregate fluctuations, we provide another channel for trade in macroeconomic fluctuations.

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Table 1: Summary Statistics

Variables:	mean	sd	5%	95%	N
Log Inventory-Ratio	-2.19	1.21	-4.42	-0.52	131973
Export Intensity	0.03	0.05	0	0.12	131973
Capital/Labor	3.52	1.43	1.15	5.78	131973
Financial Constraint	0.05	0.44	0	0.19	131973
Num _{Destination}	2.03	1.23	0	4.01	131973
Num _{Products}	1.32	1.01	0	3.09	131973
Market Share	0.02	0.08	0	0.09	131973
Firm Age	6.89	4.61	0	15	131973
Employment	5.42	1.14	3.66	7.37	131968
FDI _{Number}	5.14	1.66	2.56	8.16	128933
SOE _{Share}	0.25	0.15	0.05	0.55	128933
IM _{Share}	0.59	0.42	0	1	128933
HHI _{Nation}	0.61	0.32	0.13	1	131972
HHI _{Product}	0.69	0.28	0.21	1	131972
Distance _{IV}	3.77	1.54	2.11	6.76	123305
Log(Frequency)	0.64	0.85	0	2.4	19753026
HHI _{Month}	0.75	0.32	0.17	1	19753026
Distance _{Destination}	8.67	0.69	7.59	9.57	19753026
GDPPC _{Destination}	9.54	1.34	6.56	10.7	19741712

Table 2: Main Results

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)
Log Inventory-Ratio	OLS	OLS	OLS	OLS	OLS	IV
Export Intensity	0.403*** (0.0832)	0.429*** (0.0837)	0.428*** (0.0844)	0.498*** (0.0850)	0.481*** (0.0853)	3.441** (1.429)
TFP	-0.241*** (0.00617)	-0.183*** (0.00728)	-0.189*** (0.00743)	-0.188*** (0.00744)	-0.187*** (0.00744)	-0.173*** (0.00955)
Capital Density	0.0218*** (0.00458)	0.0228*** (0.00712)	0.0233*** (0.00729)	0.0252*** (0.00733)	0.0255*** (0.00733)	0.0254*** (0.00622)
Financial Constraint	0.00776 (0.00576)	0.00741 (0.00575)	0.00767 (0.00580)	0.00801 (0.00583)	0.00795 (0.00581)	0.00663 (0.00829)
Num _{Destination}	-0.0185 (0.00589)	-0.0218 (0.00590)	-0.0201*** (0.00601)	-0.0215*** (0.00606)	-0.0296*** (0.00698)	0.0124 (0.0208)
Num _{Products}	0.00220 (0.00728)	0.00187 (0.00726)	0.00176 (0.00741)	0.00378 (0.00745)	-0.00882 (0.00826)	-0.0119 (0.00840)
Markup		-0.422*** (0.0260)	-0.409*** (0.0265)	-0.408*** (0.0265)	-0.409*** (0.0265)	-0.414*** (0.0227)
Market-share		-0.277*** (0.0503)	-0.394*** (0.0585)	-0.398*** (0.0587)	-0.397*** (0.0587)	-0.390*** (0.0687)
Age		0.0166*** (0.00269)	0.0192*** (0.00311)	0.0168*** (0.00383)	0.0169*** (0.00383)	0.0195*** (0.00373)
Age ²		-0.000955*** (0.000145)	-0.00105*** (0.000158)	-0.000962*** (0.000175)	-0.000969*** (0.000175)	-0.00106*** (0.000179)
EmPLY		0.0298 (0.0403)	0.0405 (0.0416)	0.0449 (0.0417)	0.0482 (0.0417)	0.00372 (0.00779)
FDI _{Number}			-0.0102*** (0.00384)	-0.0118*** (0.00408)	-0.0117*** (0.00408)	-0.00974** (0.00412)
SOE _{Share}			0.0359 (0.0302)	0.0208 (0.0306)	0.0208 (0.0306)	0.0230 (0.0330)
IM _{Share}			0.0182 (0.0182)	0.0199 (0.0182)	0.0193 (0.0182)	0.0278 (0.0181)
HHI _{Nation}					-0.0457** (0.0214)	0.0317 (0.0421)
HHI _{Proudet}					-0.0864*** (0.0219)	-0.103*** (0.0224)
Instrument Tests:						
Sanderson-Windmeijer F test						29.55***
Anderson-Rubin Wald test						7.72***
Stock-Wright LM S statistic						69.14***
FE _{year}	Yes	Yes	Yes			
FE _{Ship-owner-year}				Yes	Yes	Yes
FE _{firm}	Yes	Yes	Yes	Yes	Yes	Yes
Observations	108,623	108,619	105,664	105,653	105,653	98,884
R-squared	0.769	0.771	0.771	0.772	0.772	0.012

Note: Standard errors in parentheses, and*** $p < 0.01$,** $p < 0.05$,* $p < 0.1$.

Table 3: Robustness

Dependent variable:	Log Inventory		Log Inventory-Ratio		
	(1)	(2)	(3)	(4)	(5)
	OLS	IV	Full Sample	Industry-Year	Region-Year
Export Intensity	0.140*	2.986**		0.480***	0.463***
	(0.0802)	(1.356)		(0.0884)	(0.0903)
Log Sales	0.151***	0.171***			
	(0.0114)	(0.0151)			
Dummy _{export}			0.0386***		
			(0.00572)		
TFP	0.240***	0.244***	−0.750***	−0.178***	−0.171***
	(0.00801)	(0.00805)	(0.00447)	(0.00766)	(0.00781)
Capital Density	0.170***	0.165***	0.0289***	0.0273***	0.0259***
	(0.00753)	(0.00621)	(0.00307)	(0.00768)	(0.00785)
Financial Constraint	0.0313***	0.0283***	0.00122***	0.00759	0.00765
	(0.00962)	(0.00785)	(0.000283)	(0.00535)	(0.00536)
Markup	−0.609***	−0.615***	−0.215***	−0.416***	−0.415***
	(0.0239)	(0.0209)	(0.00801)	(0.0270)	(0.0276)
Market-share	0.00352	−0.0254	0.508**	−1.243***	−1.104***
	(0.0524)	(0.0651)	(0.226)	(0.101)	(0.0963)
Age	0.0287***	0.0319***	0.0205***	0.0179***	0.0177***
	(0.00361)	(0.00352)	(0.00159)	(0.00398)	(0.00415)
Age ²	−0.00156***	−0.00170***	−0.000974***	−0.000984***	−0.000993***
	(0.000166)	(0.000170)	(0.000007)	(0.000181)	(0.000193)
EmPLY	0.260***	0.248***	0.168***	0.0102	0.004
	(0.00898)	(0.00876)	(0.00535)	(0.00906)	(0.00915)
Num _{Destination}	0.0156**	0.0533***		−0.0329***	−0.0364***
	(0.00664)	(0.0191)		(0.00747)	(0.00770)
Num _{Products}	0.0160**	0.0142*		−0.00832	−0.00107
	(0.00784)	(0.00796)		(0.00859)	(0.00882)
FDI _{Number}	−0.00427	−0.00196			
	(0.00384)	(0.00388)			
SOE _{Share}	−0.0290	−0.0284			
	(0.0288)	(0.0311)			
IM _{Share}	0.0165	0.0218			
	(0.0172)	(0.0170)			
HHI _{Nation}	−0.0175	0.0519		−0.0524**	−0.0635***
	(0.0201)	(0.0395)		(0.0222)	(0.0228)
HHI _{Product}	−0.0199	−0.0358*		−0.0820***	−0.0966***
	(0.0207)	(0.0213)		(0.0224)	(0.0231)
Instruments test:					
Sanderson-Windmeijer F test		29.28***			
Anderson-Rubin Wald test		8.37***			
Stock-Wright LM S statistic		74.90***			
FE _{industry-owner-province-year}			Yes		
FE _{industry-year}				Yes	Yes
FE _{province-year}					Yes
FE _{ship-owner-year}	Yes	Yes		Yes	Yes
FE _{firm}	Yes	Yes	Yes	Yes	Yes
Observations	105, 531	98, 763	665, 573	105, 463	101, 410
R-squared	0.898	0.055	0.853	0.780	0.780

Note: Standard errors in parentheses, and*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4: Distance and Transaction Frequency, Concentration

Dependent variable:	Log Frequency		HHI over 12 Months	
	(1)	(2)	(3)	(4)
Distance _{Dest}	−0.0779*** (0.000585)	−0.0788*** (0.000593)	0.0256*** (0.000216)	0.0260*** (0.000219)
Fee _{Custom}	0.00737*** (0.000299)	0.00771*** (0.000304)	−0.000439*** (0.000116)	−0.000483*** (0.000118)
Time _{Custom}	0.00789*** (0.000520)	0.00736*** (0.000529)	−0.000113 (0.000207)	0.000006 (0.000210)
GDPPC _{Dest}	0.142*** (0.000329)	0.145*** (0.000336)	−0.0428*** (0.000125)	−0.0438*** (0.000127)
Dummy _{Landlocked}	−0.233*** (0.00183)	−0.240*** (0.00187)	0.0820*** (0.000708)	0.0842*** (0.000725)
Dummy _{Contig}	0.249*** (0.00152)	0.256*** (0.00155)	−0.0776*** (0.000595)	−0.0798*** (0.000604)
FE _{Year}	Yes		Yes	
FE _{hs-year}		Yes		Yes
FE _{firm-year}		Yes		Yes
FE _{hs-firm}	Yes	Yes	Yes	Yes
Observations	9, 281, 373	9, 189, 278	9, 281, 373	9, 189, 278
R-squared	0.410	0.442	0.373	0.406

Note: Standard errors in parentheses, and*** $p < 0.01$,** $p < 0.05$,* $p < 0.1$.

Table 5: Heterogeneous Effects

Dependent variable: Log Inventory-Ratio	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Region		Ownership Type			Export Mode	
	East	West	FDI	SOE	Private	Ordinary	Processing
Export Intensity	0.435*** (0.0927)	0.760*** (0.216)	0.531*** (0.0971)	0.766** (0.389)	0.357* (0.215)	0.648*** (0.125)	0.376*** (0.136)
TFP	-0.194*** (0.00850)	-0.159*** (0.0151)	-0.183*** (0.00915)	-0.204*** (0.0246)	-0.184*** (0.0182)	-0.201*** (0.00903)	-0.147*** (0.0159)
Capital Density	0.0264*** (0.00833)	0.0239 (0.0154)	0.0121 (0.00911)	0.0782*** (0.0240)	0.0294 (0.0179)	0.0271*** (0.00863)	0.00733 (0.0162)
Financial Constraint	0.00649 (0.00761)	0.0109 (0.0102)	-0.00381 (0.0105)	0.00126 (0.0515)	0.0212 (0.0149)	0.0123 (0.00818)	-0.0452 (0.0624)
Markup	-0.371*** (0.0289)	-0.535*** (0.0601)	-0.376*** (0.0304)	-0.422*** (0.101)	-0.562*** (0.0711)	-0.424*** (0.0320)	-0.361*** (0.0582)
Num _{Destination}	-0.0263*** (0.00786)	-0.0380** (0.0150)	-0.0209** (0.00869)	-0.0857*** (0.0219)	-0.0358** (0.0158)	-0.0354*** (0.00842)	-0.0150 (0.0150)
Num _{Products}	-0.0120 (0.00934)	0.000297 (0.0176)	-0.0145 (0.0102)	0.0147 (0.0274)	-0.0253 (0.0191)	-0.00826 (0.00980)	-0.00588 (0.0195)
Market-share	-0.396*** (0.0663)	-0.432*** (0.129)	-0.410*** (0.0759)	-0.364* (0.196)	-0.417*** (0.138)	-0.372*** (0.0690)	-0.409*** (0.135)
Age	0.0199*** (0.00454)	0.00836 (0.00702)	0.0410*** (0.00678)	0.0136 (0.0110)	0.0138* (0.00811)	0.0210*** (0.00445)	0.00836 (0.00947)
Age ²	-0.00111*** (0.000210)	-0.000601* (0.000320)	-0.00209*** (0.000293)	-0.000322 (0.000456)	-0.000743** (0.000359)	-0.00112*** (0.000204)	-0.000702 (0.000438)
Emphy	0.0682 (0.0467)	-0.0491 (0.0922)	-0.0708 (0.0508)	0.344** (0.139)	0.130 (0.106)	0.0952* (0.0493)	-0.164* (0.0906)
FDI _{Number}	-0.0115** (0.00472)	-0.0118 (0.00793)	-0.00922 (0.00566)	-0.0242* (0.0146)	-0.000954 (0.0105)	-0.00603 (0.00496)	-0.0133 (0.00840)
SOE _{Share}	0.0401 (0.0352)	-0.0683 (0.0625)	0.0307 (0.0396)	0.0197 (0.0898)	-0.0110 (0.0769)	0.0179 (0.0360)	0.0479 (0.0694)
IM _{Share}	0.0340 (0.0209)	-0.0232 (0.0364)	0.0303 (0.0221)	0.0460 (0.0623)	-0.0115 (0.0528)	0.0303 (0.0234)	0.0264 (0.0331)
HHI _{Nation}	-0.0445* (0.0244)	-0.0517 (0.0443)	-0.0239 (0.0276)	-0.174*** (0.0664)	-0.0696 (0.0468)	-0.0720*** (0.0251)	0.0123 (0.0506)
HHI _{Product}	-0.100*** (0.0250)	-0.0369 (0.0444)	-0.0932*** (0.0280)	-0.0585 (0.0648)	-0.119** (0.0489)	-0.0875*** (0.0253)	-0.0819 (0.0536)
FE _{owner-year}	Yes	Yes				Yes	Yes
FE _{ship-year}	Yes	Yes	Yes	Yes	Yes		
FE _{firm}	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	83,953	21,523	67,194	9,537	22,959	73,292	25,312
R-squared	0.767	0.784	0.765	0.811	0.792	0.779	0.772

Note: Standard errors in parentheses, and*** $p < 0.01$,** $p < 0.05$,* $p < 0.1$.