Firms in international trade:

- Technology and costs: revisiting Tech. gap theories
- Who is trading? The role of intermediaries

PhD class - Advanced topics in Int. trade

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New Perspectives

- Central role of firms in recent trade theories, as compared to country-sector focus of previous frameworks
- Differences in opportunity costs (due to tech. or endowments) among countries as the basis for int. trade. Trade is *inter-sectors*
  - Empirics: so called 'Leontief Paradox'
- Increasing returns (dynamic economies of scale) technology gap theory and 'new trade' theory (love for variety)
  - Empirics: Firms are different. Only few firms export
- Interaction of firm characteristics and export status play an important role in shaping aggregate productivity and industry dynamics

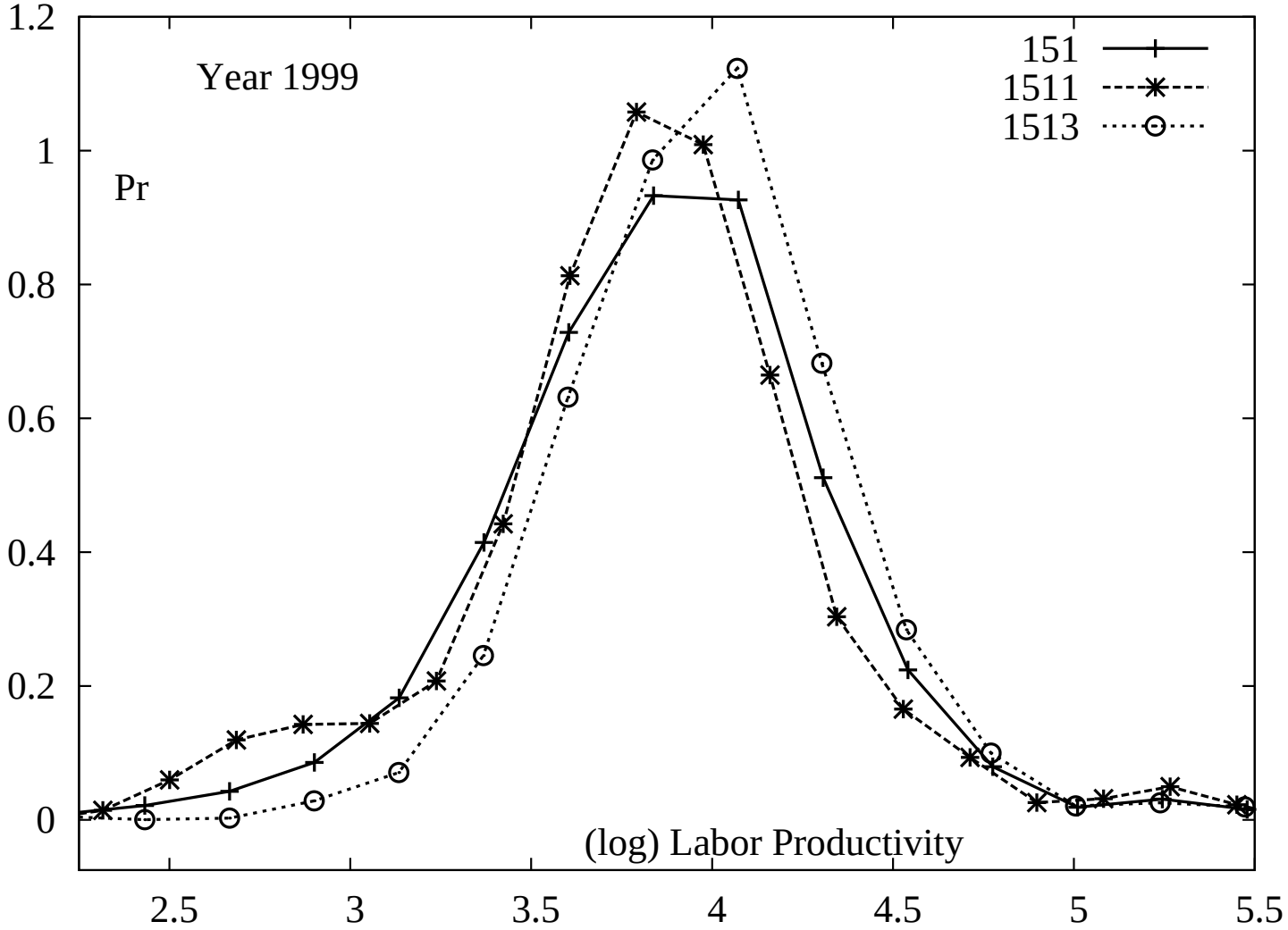
New Perspectives

- Recent works in Int. Econ focus on the role of firms and acknowledges substantial heterogeneity among firms
- Export status is yet another dimension under which firms differ and contributes to observed industry level heterogeneity
- Theoeretical explanations (Melitz, 2003) capture the central role of produtivity differences in determining reallocation of market shares, but are rather silent about the determinants of such (persistent) productivity differences

In this scenario we tackle two research questions

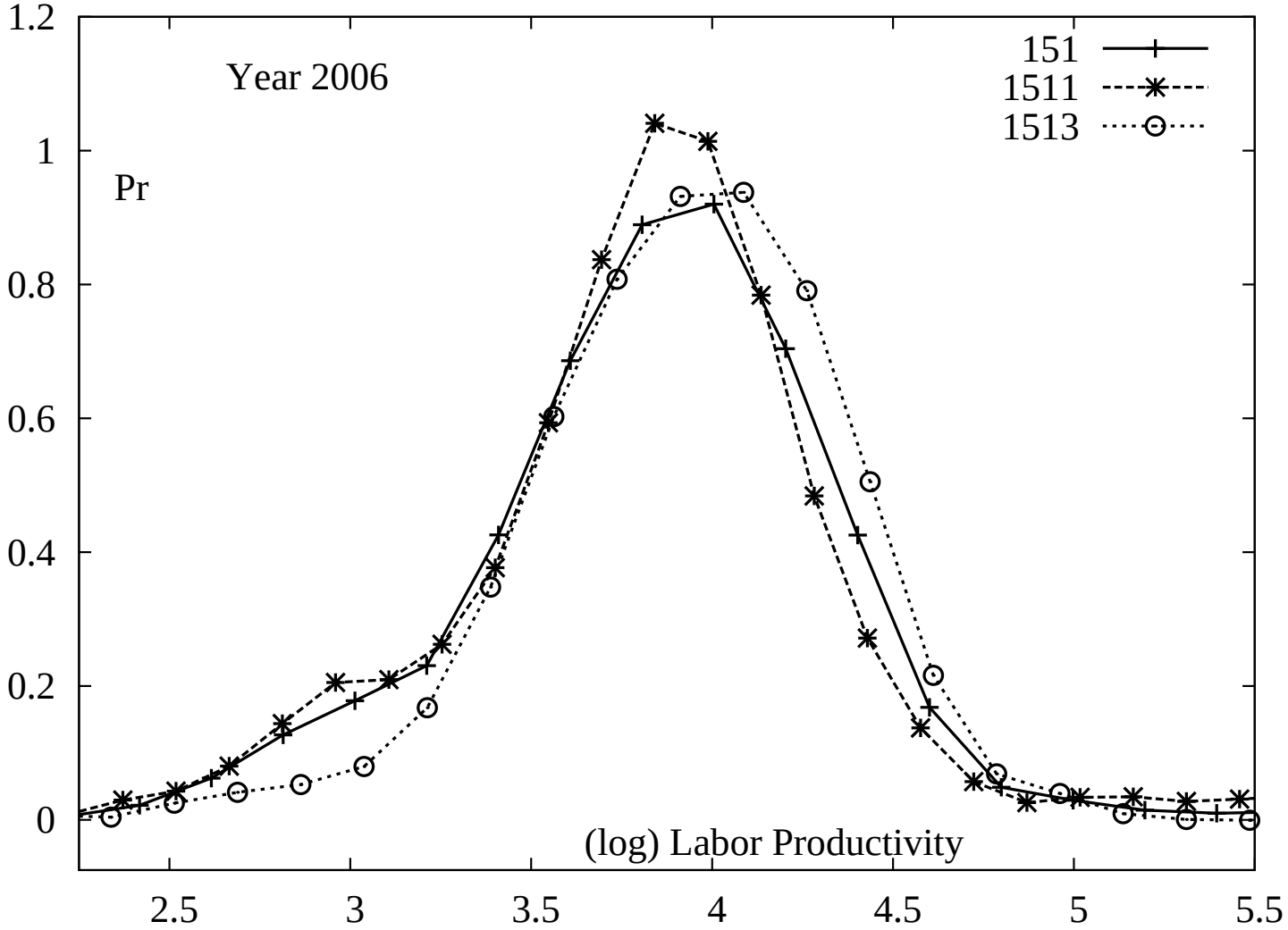
- Who is trading? Different types of exporters. The role of intermediaries
- The role of technological and cost competition in explaing who is trading (ext. margin) and export volumes (int. margin)

Heterog. performances Meat Products (1999)



$\exp(3) \approx 20$ th. euro; $\exp(4.5) \approx 90$ th. euro

Heterog. in performances is persistent (year 2006)



exp(3) ≈ 20 th. euro; exp(4.5) ≈ 90 th. euro

The international competitiveness: a macro perspective

- Tech. gap: trade flows are primarily driven by sector-specific abs. adv., in turn stemming from widespread tech. asymmetries between countries
- Theoretical framework

$$X_{ij} = f(T_{ij}, C_{ij})$$

- Evidence at country and sector-country level
  - Technology - as proxied by patents - is relevant in explaining export shares
  - The role of costs is much less clearcut

The international competitiveness: firm level analysis

- Wide and persistent intra-industry heterogeneity in:
  - ex-ante choice of input mix (Dosi and Grazzi, 2006).
  - ex-post performance (Bartelsman and Doms, 2000).
  - partecipation on the export market (Bernard et al., 2012) and innovation activity (Basile, 2001; Caldera, 2010).
- Central role of firms and firm heterog. In recent trade literature (Melitz, 2003) all is driven by efficiency parameter $\Rightarrow$ What is the distinct role of technological and cost competition in explaing trade?
- Integrating the classical technology gap approach to international trade (Soete, 1981; Fagerberg, 1988) and the more recent literature on firms in international trade (Melitz, 2003; Bernard et al., 2007).

Table: Country- and sector-level studies (see complete table online)

Authors	Years-Cntr-Sec	Methodology	Main results
Soete (1981, 1987)	1963-77 - 20 - 40	cross-sectional estim. of 4 equations in 1977	Patents (+)
Fagerberg (1988)	1961-83 - 15 - all econ	2SLS estimation of a six equations model	R&D-Patents (+), Investments (+), Costs ()
Dosi et al. (1990)	1963-77 - 20 - 40	cross-sectional analysis	Investments (+), Patents (+), Costs ()
Greenhalgh (1990)	1954-81 - 1, UK - 31	error correction model	#Innovations (+), Prices ()
Amendola et al. (1993)	1967-87 - 16 - all manuf	autoregressive-distributed lag model	Patents (+), Investments (+), Costs ()
Magnier and Toujas-Bernate (1994)	1975-87 - 5 - 20	error correction model	R&D (+), Investments (+), Prices (-)
Amable and Verspagen (1995)	1970-91 - 5 - 18	error correction model	Patents (+), Investments (+), Costs (-)
Landesmann and Pfaffermayr (1997)	1973-87 - 7 - 2	almost ideal demand system	R&D (+), Costs (-)
Wakelin (1998b)	1988 - 9 - 22	OLS estimation of pooled & sect. data	R&D (+), Patents (+), Investments (), Costs(-)
Carlin et al. (2001)	1970-92 - 14 - 12	distributed lag model	Patents (), R&D (), Investments (+), Costs (-)

Table: Firm-level studies (see complete table online)

Authors	Country	Data source	Structure	Firms
Wakelin (1998a)	UK	SPRU innov. survey	cross-section	320
Sterlacchini (1999)	Italy	field study	cross-section	143
Basile (2001)	Italy	Mediocredito surveys	panel	6000
Roper and Love (2002)	Germ. & UK	product development survey(PDS)	cross-section	1087(UK) 1190(Germ.)
Barrios et al. (2003)	Spain	ESEE survey	panel	around 2000
Beise-Zee and Rammer (2006)	Germ.	CIS	cross-section	4786
Lachenmaier and Wöß mann (2006)	Germ.	IFO innovation survey	cross-section	981
Aw et al. (2007)	Taiwan	Statistical Bureau's census and R&D survey	panel	∼518 ∼1311
Castellani and Zanfei (2007)	Italy	CIS2 and ELIOS	cross-section	785
Harris and Li (2009)	UK	CIS3 and Annual Respondents Database	cross-section	3303

Table: Observations by manuf. sectors, COE + Micro3, year 2000

	(I)	(II)	(III)	(IV)	(V)
All manufacturing	30,599	100.00	100.00	75.87	100.00
Food, beverages, tobacco	2,049	6.70	7.75	74.33	4.80
Textiles, wearing, leather	5,379	17.58	13.70	72.91	13.94
Wood	776	2.54	1.49	66.88	0.67
Paper & printing	1,709	5.59	5.06	69.28	2.56
Coke & petroleum	108	0.35	0.90	41.67	2.61
Chemicals	1,174	3.84	6.67	91.99	10.11
Rubber & plastics	1,863	6.09	5.15	86.74	4.68
Other non-metallic	1,697	5.55	5.09	64.76	3.34
Basic metals	866	2.83	4.57	82.56	4.99
Fabricated metal	4,668	15.26	9.66	63.52	5.27
Machinery	4,433	14.49	15.22	87.95	20.70
Computing & electrical	2,681	8.76	10.41	74.67	9.93
Transport equipment	1,023	3.34	9.57	77.61	11.07
Other manufacturing	2,173	7.10	4.74	85.18	5.33

Note. (I) Number of firms; (II) percentage share of firms within each sector; (III) shares of employment; (IV) percentage of exporting firms within each sector; (V) shares of export volumes.

The Micro Evidence: Selection into export

$$P(EXP_{it} = 1) = \Phi(\beta_1 WAGE_{it-1} + \beta_2 PROD_{it-1} + \beta_3 INV_{it-1} + \beta_4 PAT_{it-1} + \beta_5 EMP_{it-1} + \epsilon_{it}) \quad (1)$$

i for firms

$EXP_{it} = 1$, if a firm exports

EMP, number of employees

PAT, dummy for patenting firm

The Micro Evidence: Export volumes

$$\begin{aligned} EXP_{it} =& \beta_1 WAGE_{it-1} + \beta_2 PROD_{it-1} + \beta_3 INV_{it-1} \\ &+ \beta_4 PAT_{it-1} + \beta_5 EMP_{it-1} + \epsilon_{it} \end{aligned} \tag{2}$$

Main results

- **Patents and investments** do matter. More relevance at the *intensive* (volums) than at the *extensive* (selection) margin.
- **Wages**: capture more differential skills (even controlling for labour productivity). Overall, not a hindrance to export strategy.
- **Product innovation** is more relevant than process innovation in determining firms export success (CIS data).

Selection: results

	WAGE	PROD	INV	PAT(D)	Obs.	firms
ALL MANUFACTURING	0.034***	0.119***	0.011***	0.115***	181524	39761
Food, beverages, tobacco	−0.007	0.132***	0.009**	0.144***	14136	2941
Textiles, wearing, leather	−0.052***	0.253***	−0.017***	0.053	32356	8030
Wood	0.044	0.204***	0.010	0.206***	4854	1028
Paper & printing	−0.274***	0.131***	0.023***	0.122*	10635	2268
Chemicals	0.038*	0.014	0.004	0.025	9261	1714
Basic metals	0.105***	0.063***	0.012***	0.163***	7108	1236
Machinery	0.054***	0.070***	0.009***	0.066***	24312	5010
Computing & electrical	0.095***	0.150***	0.041***	0.114***	15294	3624
Transport equipment	0.169***	0.051***	0.012***	0.140***	5725	1244

Note. Probit estimation. Marginal effects computed at means with robust standard errors clustered at the firm level in parentheses. (D) for discrete change of dummy variable from 0 to 1. Coefficient of *EMP* omitted. Year dummies included. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Export volumes: results

	WAGE	PROD	INV	PAT	Obs.	firms
ALL MANUFACTURING	0.032	0.824***	0.082***	0.562***	138241	31255
Food, beverages, tobacco	0.367***	0.852***	0.157***	1.073***	9931	2310
Textiles, wearing, leather	−0.094	1.117***	−0.069***	0.799***	23326	5778
Wood	0.317	0.246	0.017	1.762***	3226	743
Paper & printing	−1.188***	0.903***	0.223***	1.389***	7249	1719
Chemicals	−0.179	0.713***	0.278***	0.277**	8153	1578
Basic metals	−0.577***	0.989***	0.051*	0.210	5743	1064
Machinery	0.105	0.858***	0.029**	0.479***	21544	4531
Computing & electrical	−0.026	0.236***	0.149***	0.722***	12056	2796
Transport equipment	0.198	0.874***	0.131***	0.987***	4680	1041

Note. Pooled OLS estimation with robust standard errors clustered at the firm level in parentheses. Coefficient of *EMP* omitted. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Main results: Robustness checks

These results are robust to a number of controls and robustness checks:

- Heckman-type selection (selection variable: lagged exp status)
- workforce composition
- GMM estimation of dynamic specification with short-run and long-run effects
- Emerging evidence on quality sorting and trade: Employing the volume of exports of firms to any given product-country destination we find that firms that engaged in innovative activities suffered less following an exogeneous shocks as a real exchange rate appreciation.

Short-run *vs.* long-run

- We adapt the empirical framework of Amendola et al. (1993) to firm-level data and consider an autoregressive distributed lag model

$$EXP_{it} = \sum_{l=1}^{K} \eta_l EXP_{it-l} + \sum_{l=1}^{L} \alpha_l WAGE_{it-l} + \sum_{l=1}^{L} \beta_l PROD_{it-1} + \sum_{l=1}^{L} \gamma_l INV_{it-1} + \sum_{l=1}^{L} \delta_l PAT_{it-1} + \sum_{l=1}^{L} \phi_l EMP_{it-1} + d_t + \epsilon_{it} \tag{3}$$

- In order to identify the short-run coefficients, we employ a "twostep system GMM" estimator, to control both for unobserved heterogeneity and for the potential endogeneity of cost and technology variables.
- We use less distant lags (typically at $t-2$ and $t-3$) to instrument, in the first difference equation, both the lagged value of the dependent variable (EXP_{it-1}) and the variables that we take as endogeneous, that is wage, productivity, investment intensity, and patents.
- Long-run coefficients are calculated from the short-run:

$$x_{long-run} = \frac{\sum_{l=1}^{3} x_l}{1-\eta_1} \tag{4}$$

where $x \in \{\alpha, \beta, \gamma, \delta\}$.

CIS data: Innovation premia

$$Export_i = \alpha INN_i + \beta sector_i + \epsilon_i$$

$$XMS_i = \alpha INN_i + \beta sector_i + \epsilon_i$$

where $INN = INDPT$ or $INPCS$ depending on the specification.

Innovation premia: results (%)

	CIS3		CIS4	
	(1)	(2)	(3)	(4)
Panel A: Product innovation premia				
Exporting firms	14.8	10.9	13.2	9.4
Export shares	116.2	54.7	115.1	51.3
Panel B: Process innovation premia				
Exporting firms	10.0	6.4	11.7	8.3
Export shares	80.2	22.9	84.2	25.0

Note. The table reports innovation premia, in percentage. Columns (2) and (4) control for total employment. All differences are significant at the 1% level.

Innovation effects: selection equations

$$EXP_i = \alpha WAGE_i + \beta PROD_i + \gamma INPCS_i + \delta INPDT_i + \zeta BOTH_i + \phi EMP_i + \epsilon_i$$

Only for firms that introduced a product innovation:

$$EXP_i = \alpha WAGE_i + \beta PROD_i + \gamma NEWMKT_i + \epsilon_i$$

Innovation effects: export market shares equations

$$XMS_i = \alpha WAGE_i + \beta PROD_i + \gamma INPCS_i + \delta INPDT_i + \zeta BOTH_i + \phi EMP_i + \epsilon_i$$

Only for firms that introduced a product innovation:

$$XMS_i = \alpha WAGE_i + \beta PROD_i + \gamma NEWMKT_i + \epsilon_i$$

Innovation effects: selection results

	CIS3		CIS4	
	(1)	(2)	(3)	(4)
WAGE	−0.046	−0.029	−0.005	0.028
	(0.028)	(0.020)	(0.031)	(0.026)
PROD	0.142***	0.073***	0.120***	0.011
	(0.021)	(0.018)	(0.019)	(0.013)
INPDT	0.092***		0.092***	
	(0.011)		(0.011)	
INPCS	0.025*		0.050***	
	(0.014)		(0.012)	
BOTH	0.077***		0.093***	
	(0.011)		(0.011)	
NEWMKT		0.019		0.025**
		(0.013)		(0.012)
N	4521	1852	3609	1185
pseudo R^2	0.183	0.185	0.172	0.159

Note. Marginal effects computed at means with robust standard error in parenthesis. Discrete change from 0 to 1 for dummy variables. Columns (1) and (2) are for CIS3 regression, while columns (3) and (4) are for CIS4 regression. Sector dummies included. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Innovation effects: export shares results

	CIS3		CIS4	
	(1)	(2)	(3)	(4)
RWAGE	-0.638^{**}	-0.627^{*}	0.318	0.698^{*}
	(0.266)	(0.369)	(0.256)	(0.373)
RPROD	1.303^{***}	1.171^{***}	1.037^{***}	0.778^{***}
	(0.147)	(0.199)	(0.136)	(0.202)
INPDT	0.457^{***}		0.271^{***}	
	(0.096)		(0.126)	
INPCS	-0.019		0.075	
	(0.116)		(0.111)	
BOTH	0.291^{***}		0.342^{***}	
	(0.083)		(0.095)	
NEWMKT		0.047		-0.015
		(0.118)		(0.127)
N	3699	1680	3014	1110
R^2	0.425	0.478	0.407	0.510

Note. Robust standard error in parenthesis. Columns (1) and (2) are for CIS3 regression, while columns (3) and (4) are for CIS4 regression. Sector dummies included. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

From macro to micro

- Countries' competitive advantage is shaped by their relative technological position. The result is grounded in firms' behaviour.
- Favor models of trade based on **quality sorting** more than **efficiency sorting**, along the conclusions grounded on the evidence at the *product level* in Manova and Zhang (2012).

Intermediaries in International Trade: Our Contribution

- Who is trading?
- What do they look like?
  - Differences between Wholesalers and Manufacturers
- What are the product and destination markets characteristics that determine the choice of Ws versus Ms?
- What are the implications for aggregate trade flows?
  - Adjustments of product portfolio - product adding and dropping
  - Response to exogenous shocks - exchange rate

Related Literature: Intermediaries in International Trade

Wholesale firms account for:

- 10% of exports in Italy
- 10% of exports in the US (Bernard, Jensen and Schott, 2009)
- 14% of exports in Sweden (Akerman, 2010)
- 20% of exports in China (Ahn, Khandelwal, and Wei, 2011)
- 20% of exports in France (Crozet et al, 2011)

- The figures are, on average, twice as big on the import side (work in progress)

Related Literature: Empirics

- Wholesalers are smaller and have lower exports
  - Bernard, Jensen, Redding and Schott (2010) [US]; Ahn, Khandelwal and Wei (2011) [China]; Akerman (2010) [Sweden]; Crozet et al (2011)[France]
- Wholesalers help solving market fixed export costs
  - Ahn, Khandelwal and Wei (2011); Akerman (2010)
- Wholesalers export share positively related to distance and negatively to GDP
  - Akerman (2010); Ahn, Khandelwal and Wei (2011); Crozet et al (2011)[France]

Related Literature: Theory

- International trade as an outcome of search and networks
  - Rauch, Watson (2004); Petropoulou (2007)
- Wholesalers facilitate the matching between exporters in country of origin and importers in destination countries
  - Blum, Claro and Horstmann (2011)
- Intermediary as an alternative technology to direct exporting
  - Akerman (2010), Ahn, Khandelwal and Wei (2011), Felbermayr, Jung (2011); Crozet et al (2011)[France]
- Intermediaries $\neq$ indirect exporters
  - Only intermediaries show up in customs trade data

Italian Data

- Statistiche del Commercio Estero (COE) Custom data
  - Transactions level data: export values and quantity of the firm for HS6 product-country destination pairs
  - All cross-border transactions, 2000-2007
- Archivio Statistico delle Imprese Attive (ASIA)
  - Census of all operating businesses: sales, employment, main activity of the firm (NACE code)
  - Manufacturers (M) and Wholesalers (W) defined according to their primary NACE 3 digit industry

Country and Product data

Country-level

- GDP – World Bank Development Indicators
- Distance – CEPII
- Market Cost (cost of Exporting) – World Bank Doing Business
- Governance – World Bank governance dataset

Product-level

- Entry/Exit Rate: min (entry, exit) (Source: computation on custom data)
- Coefficient of Variation (Source: price dispersion computed on custom data)
- Relation Specificity (Source: Nunn, 2007)
- Tariffs: HS6 product-country level import tariffs (Source: WITS)

Export volumes and Number of Exporters

Table 1

Year	Total Exports (billion)	Manuf	Whol Share (%)	Retail	Others
2000	246.79	85.09	9.85	0.74	4.32
...	...	...	...	...	...
...	...	...	...	...	...
2007	350.57	85	11.27	0.84	6.91

Year	Exporters (N. of firms)	Manuf	Whol Share (%)	Retail	Others
2000	137347	57.3	26.43	7.67	8.6
...	...	...	...	...	...
...	...	...	...	...	...
2007	128472	54.77	27.91	6.88	13.3

Differences between type of exporters

- Sales, Employment

$$\ln(Y_f) = c + \delta D_f^W + \beta D_f^X + \gamma(D_f^W \cdot D_f^X) + \varepsilon_f$$

Table 3

	ln Sales$_f$	ln Employment$_f$	ln Sales/Empl.$_f$	ln Exports$_f$
D_f^W	-0.111***	-0.533***	0.433***	-1.047***
D_f^X	2.775***	1.533***	1.229***	
$D_f^W \cdot D_f^X$	-0.081***	-0.489***	0.388***	

- Ms are 12% larger in terms of sales and 70% in terms of employment

Differences between type of exporters

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- Exporters are larger – both Ms and Ws

Differences between type of exporters

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- Sales per employee are higher at Ws, especially for exporters

Differences Between Export Types

- Countries, Products

$$Y_f = c + \delta D_f^W + \varepsilon_f \qquad if \quad D_f^X = 1$$

Table 4

	$Products_f$	$Products_f$	$Products_f$	$Countries_f$	$Countries_f$	$Countries_f$
D_f^W	-1.269***	3.005***	1.668***	-4.562***	-0.158***	-1.630***
ln Employment		4.180***			4.307***	
ln Exports			2.805***			2.801***

- Ws unconditionally export fewer HS6 products and reach a smaller set of countries

Differences Between Export Types

- Countries, Products

$$Y_f = c + \delta D_f^W + \varepsilon_f \qquad if \quad D_f^X = 1$$

Table 4

	$Products_f$	$Products_f$	$Products_f$	$Countries_f$	$Countries_f$	$Countries_f$
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ln Employment		4.180***			4.307***	
ln Exports			2.805***			2.801***

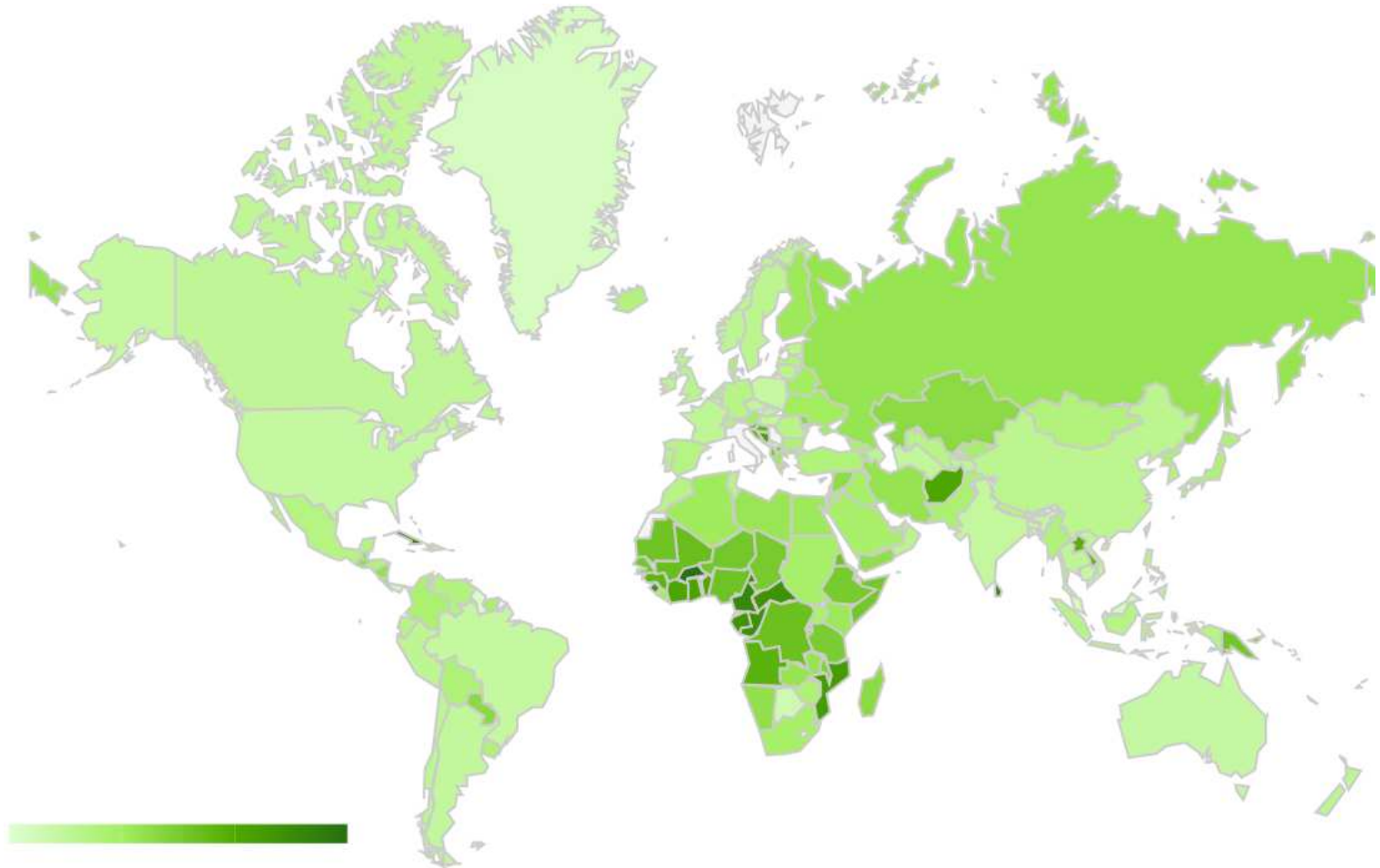
- Controlling for size, coefficient for number of HS6 products is positive
- Ws serve fewer countries also when adjusting for firm size

Differences between type of exporters: summary

- Ms are 12% larger in terms of sales and 70% in terms of employment
- Exporters are larger. Holds both for Ms and Ws
- Sales per employee are higher at Ws, especially for exporters
- Ws unconditionally export fewer HS6 products and reach a smaller set of countries
- Controlling for size, coefficient for number of HS6 products is positive
- Ws serve fewer countries also when adjusting for firm size

Intensity map of Wholesalers shares around the world

Google Chart Tools - Intensity map

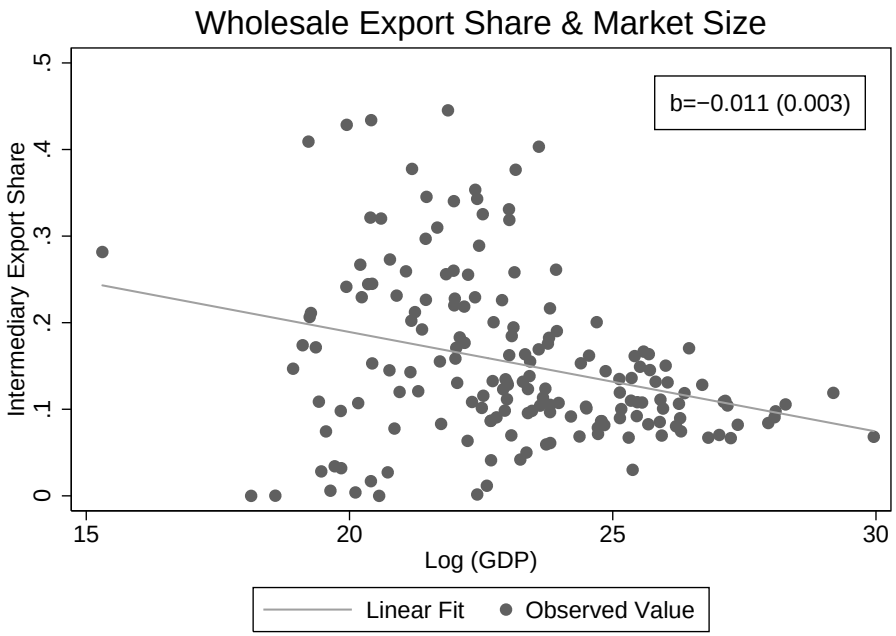


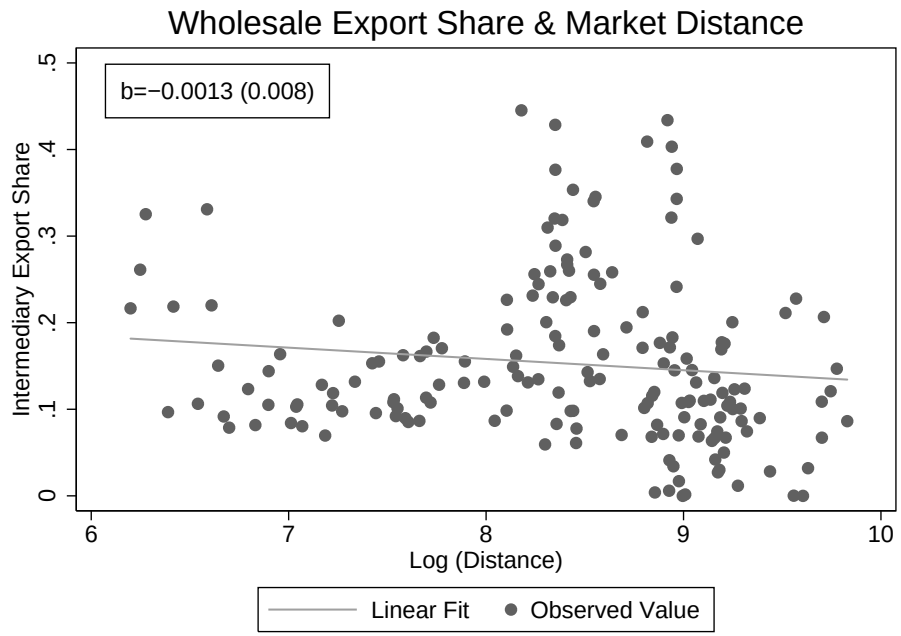
Markets characteristics

- What market characteristics make it more likely that Ws are chosen for exporting?
- Market characteristics
  - Size - GDP
  - Distance
  - Markets specific costs of exporting - Market Costs
  - Contracting environments - Governance Indicator

Intermediary Export Share: markets size and distance

Figure 5

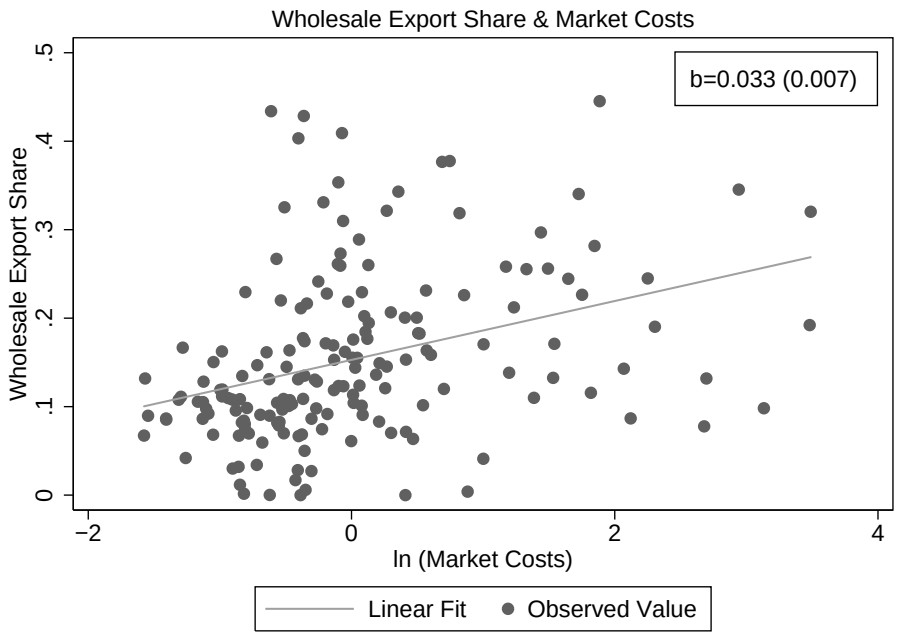


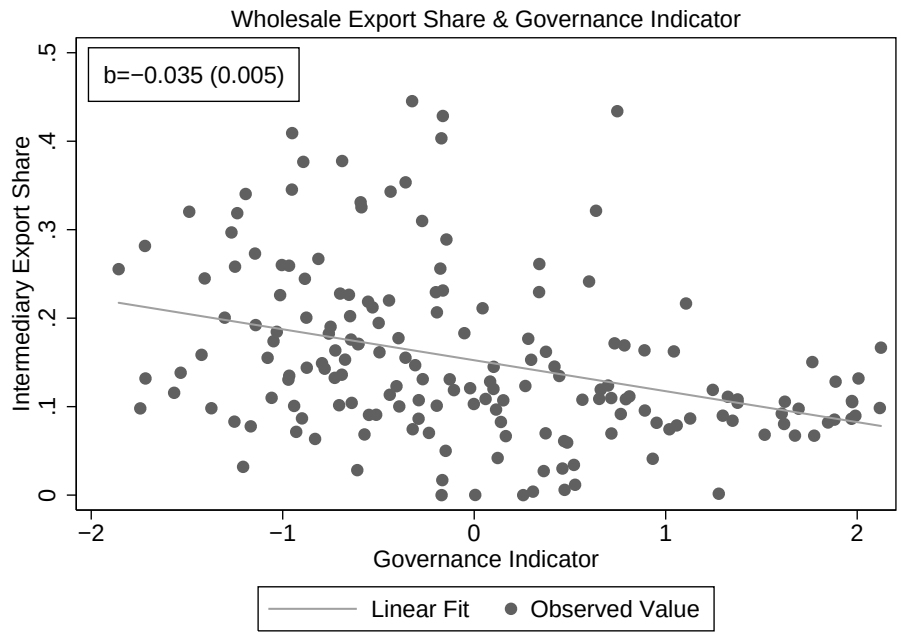


- Ws export share is declining in GDP→ in smaller markets fixed costs have to be spread over fewer units
- No relationship with distance

Intermediary Export Share: market costs and governance

Figure 6





Wholesalers export share

- increases with the market specific fixed costs
- falls with the level of contracting environments

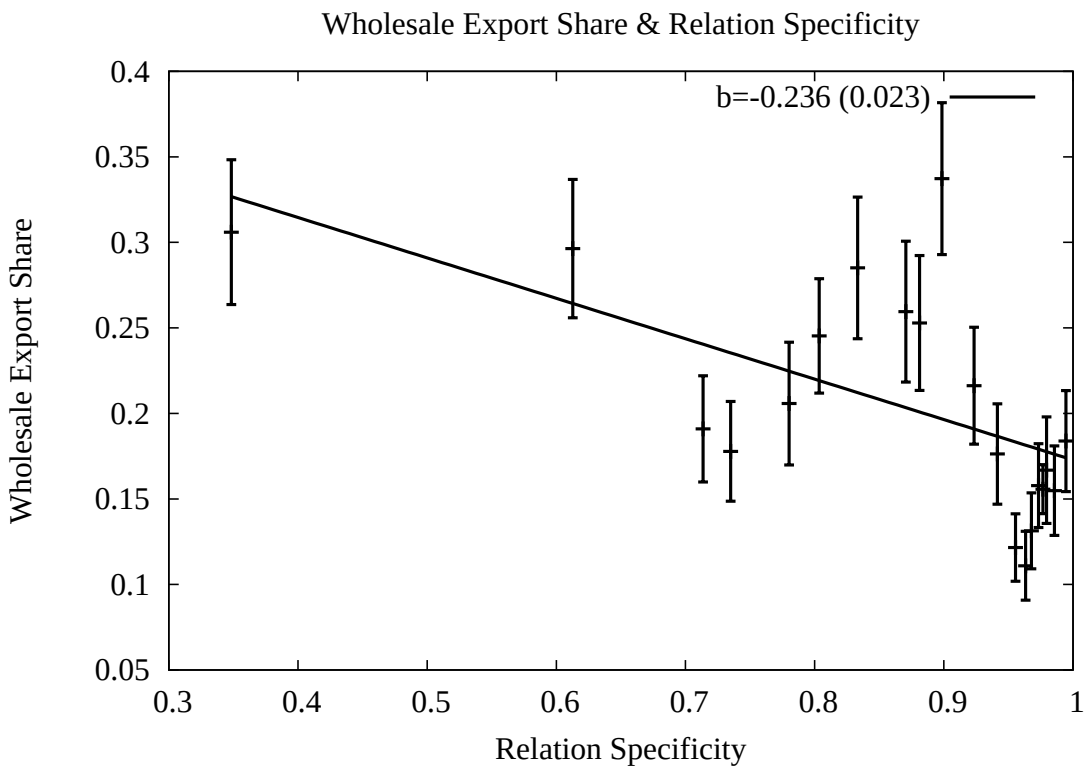
Product characteristics

- First evidence of the role of product-specific factors in the choice of indirect exporting
- What product characteristics make it more likely that Ws are chosen for exporting?
- Product characteristics
  - Complex goods whose production requires highly specialized inputs are more likely to be handled by Ms
  - The share of exports managed by Ws and Ms is related to the degree of product differentiation
  - The magnitude of product sunk costs of entry matters for the choice of the export mode
- Results hold also in multivariate specification (see paper)

Intermediary Export Share and relation-specificity

- Relation-specificity variable (Nunn, 2007) to measure the commodity contents of the product

Figure 7 (top left)

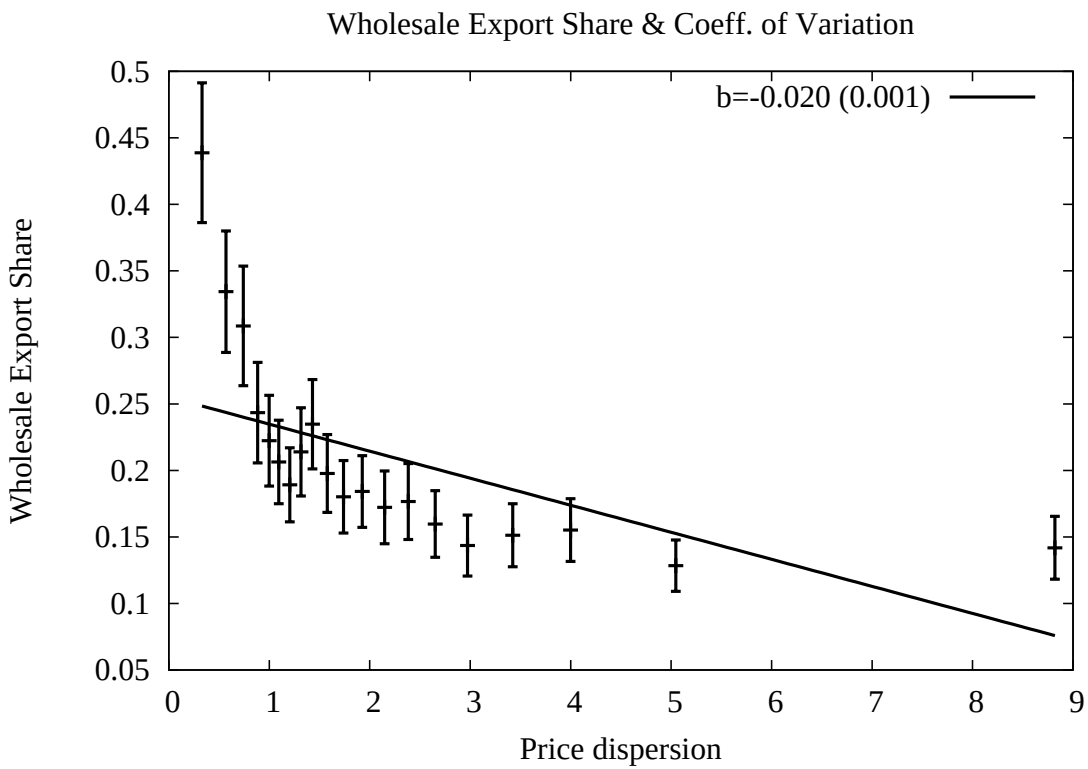


- Wholesalers are more likely to handle less complex products $\rightarrow$ low level of relation-specificity

Intermediary Export Share and price dispersion

- Coefficient of variation of export unit values as a proxy of product differentiation

Figure 7 (top right)

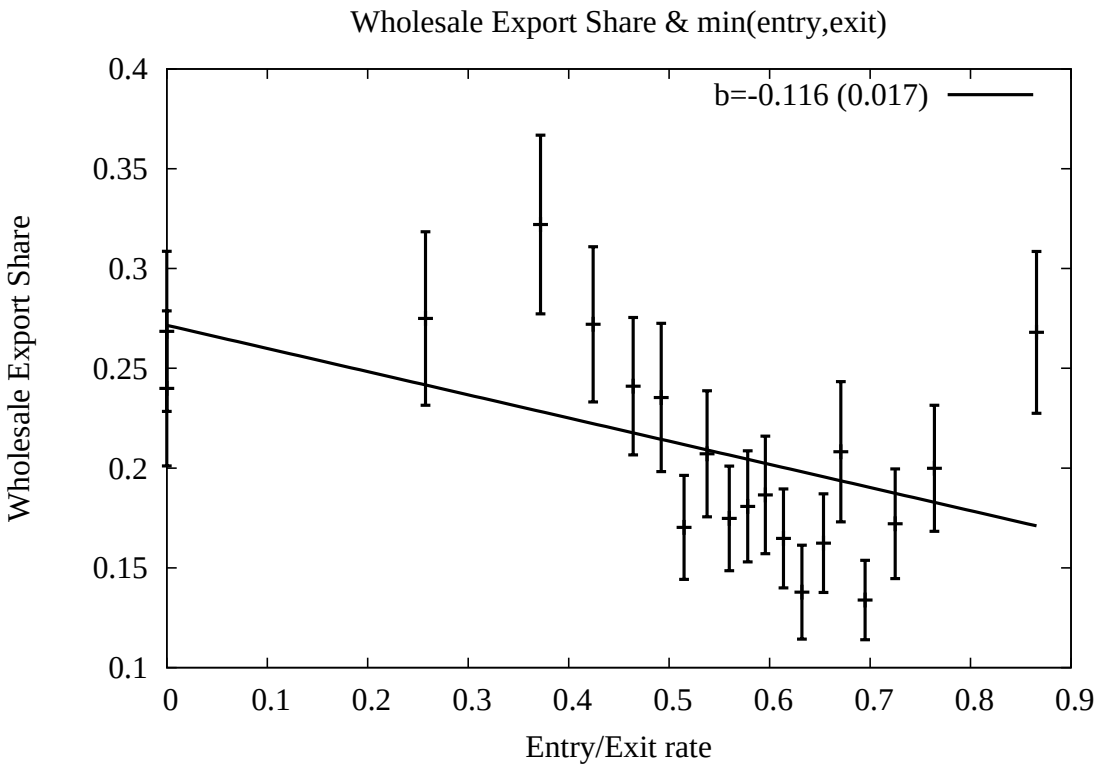


- Wholesalers have higher export shares in homogeneous products $\rightarrow$ low coefficient of variation

Intermediary Export Share and entry/exit

- Min(entry, exit) to measure product sunk costs of entry

Figure 7 (bottom left)



- Wholesalers export share increases with the sunk costs of entry $\rightarrow$ low rates of entry/exit

Intermediaries and exogenous shocks

- Do Ws and Ms respond differently to exogenous shock? Along which margins Ws and Ms adjust?
- Fluctuations in real exchange rates as measures of exogenous changes

$$RER_{ct} = ER_{ct} \frac{CPI_t}{CPI_{ct}}$$

- Extensive and intensive margins of firm's exports to a destination:

$$\ln X_{fc} = \ln Prod_{fc} + \ln avgX_{fc}$$

- The estimation equation:

$$\Delta \ln Y_{fct} = c_1 + \delta_1 D_f^W + \beta_1 \Delta \ln RER_{ct} + \gamma_1 \Delta \ln RER_{ct} * D_f^W + d_j + \varepsilon_{ct}^1$$

Intermediaries and exogenous shocks

Table 10

Annual Differences

	ln X_{fc} (1)	ln X_{fc} (2)	ln $Prod_{fc}$ (3)	ln $Prod_{fc}$ (4)	ln Avg X_{fc} (5)	ln Avg X_{fc} (6)
D_f^W	-0.015***		-0.001		-0.014***	
ln Real Ex Rate	-0.519***	-0.461***	-0.186***	-0.086**	-0.333***	-0.375***
$*D_f^W$	0.042*	0.017*	-0.046**	-0.046*	0.087**	0.064*
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	Yes	No	Yes	No	Yes

Clustering at Country-Year level

- An appreciation of the euro currency is associated with a decrease of firm exports
- Exports fall less for Ws than for Ms (3.7-8.4%)

Intermediaries and exogenous shocks: Aggregate Implications

$$\Delta \ln Y_{ct} = c_1 + \delta D_c^W + \beta_1 \Delta \ln RER_{ct} + \gamma \Delta \ln RER_{ct} * D_c^W + d_j + \varepsilon_{ct}$$

Table 12

	Annual Differences			
(Above)	ln X_{ct} Median (1)	ln X_{ct} Median (2)	ln X_{ct} Mean (3)	ln X_{ct} Mean (4)
D_c^W	0.0215		-0.004	
ln Real Exchange Rate$_{ct}$	-0.269**	-0.499***	-0.232**	-0.460***
$*D_c^W$	0.253*	0.511***	0.224**	0.497***
	Year FE	Year-Country FE	Year FE	Year-Country FE

- Destinations with wholesale export share above the mean or median have elasticities that are insignificantly different from zero

Conclusion

- The work on intermediaries points out that there are multiple ways to access foreign markets
- The results highlight the importance of the joint determination of firm-type, product mix and destination country
- The evidence indicate that intermediary exporters face lower sunk costs of participation in the export market
  - Wholesalers are less responsive to common external shocks to profitability because they are better able to adjust along the extensive margin
- Part of the ongoing 'Who is trading' project. To understand short and long run responses of trade flows to aggregate shocks and policy, we must understand who is trading