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EXTERNAL TRADE AND INTERNAL GEOGRAPHY

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Summary of the paper

- The likelihood that individual firms are engaged in exports is explained by firm attributes and location characteristics
  - Basic argument: *local presence of firms that penetrate foreign markets may reduce entry costs for other potential exporters ("export spillover hypothesis")*
- Contribution:
  - (1) focus on a type of firm for which "spillovers of export information" may be particularly important ⇒ domestic non-affiliated firms (independent firms)
  - (2) control for attributes of individual firms (size, human capital, physical capital, import, labor productivity)
  - (3) elaborate measure(s) of potential for "spillovers of export information"
    ⇒ frequency of persistent exporters in region

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Summary of the paper

- Empirical analysis confirms the “export spillover” hypothesis
  - Probit model
  - Frequency of persistent exporters in the same industry (2-digit NACE) is statistically significant and positive
  - Support for a general influence of agglomeration phenomenon (regional size)
  - Most important for small non-affiliated firms as compared to larger (non-affiliated) ones

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Background and Motivation

- Large literature on the determinants of export performance at various levels:
  - Nations / Industries / Regions
  - Following Bernard and Jensen (1995), a growing preference analyses at the level of individual firms (surveys by Greenaway and Kneller 2007, Wagner 2007):
- What increases firms' propensity to enter export markets?
- Exporting is associated with significant fixed entry costs
  - => Productivity thresholds // more productive firms self-select into an export status
- Characteristics of a firm's location may reduce these entry costs
  - "External trade" and "internal geography"

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Background and Motivation

- **The nature of entry costs and the role of location characteristics**
  - Due to “informal” barriers to trade, as opposed to rather classical trade barriers such as transportation costs and tariffs
  - Incomplete information about international trading opportunities and contract enforcement uncertainty
  - They explain the “mystery of the missing trade” or the fact that nations rather trade with themselves than with each other – despite the steady fall of those classical barriers to trade.
  - Ex.: customer preferences // toll inspections // product standards // contract laws and enforcement // negotiation practice // formal and informal institutions
  - Informal trade barriers can be conceptualized by TCE-framework
- **Spatial proximity to exporting firms may facilitate the flow of such knowledge and information among firms, thus reducing entry costs (“agglomeration externalities”)**

Background and Motivation

- Mixed empirical evidence of local export spillovers
  - Aitken et al. (1997): probability that Mexican plants export uncorrelated with the local concentration of overall exporters
  - Bernard and Jensen (2004): no evidence that geographic spillovers may increase the probability of U.S. manufacturing plants' entry into exporting
  - Greenaway and Kneller (2008): spillovers associated with regional and industry agglomeration relevant to successful entry of new manufacturing exporters in the UK
  - Becchetti and Rossi (2000): geographical agglomeration of SMEs in a delimited area significantly affects the probability of firms becoming exporters
  - Chevassus-Lozza and Galliano (2003): positive link between a firm's decision to export and the local concentration of exporters

This paper: help clarify the obvious inconsistencies behind the existence of local export spillovers as regards export entry

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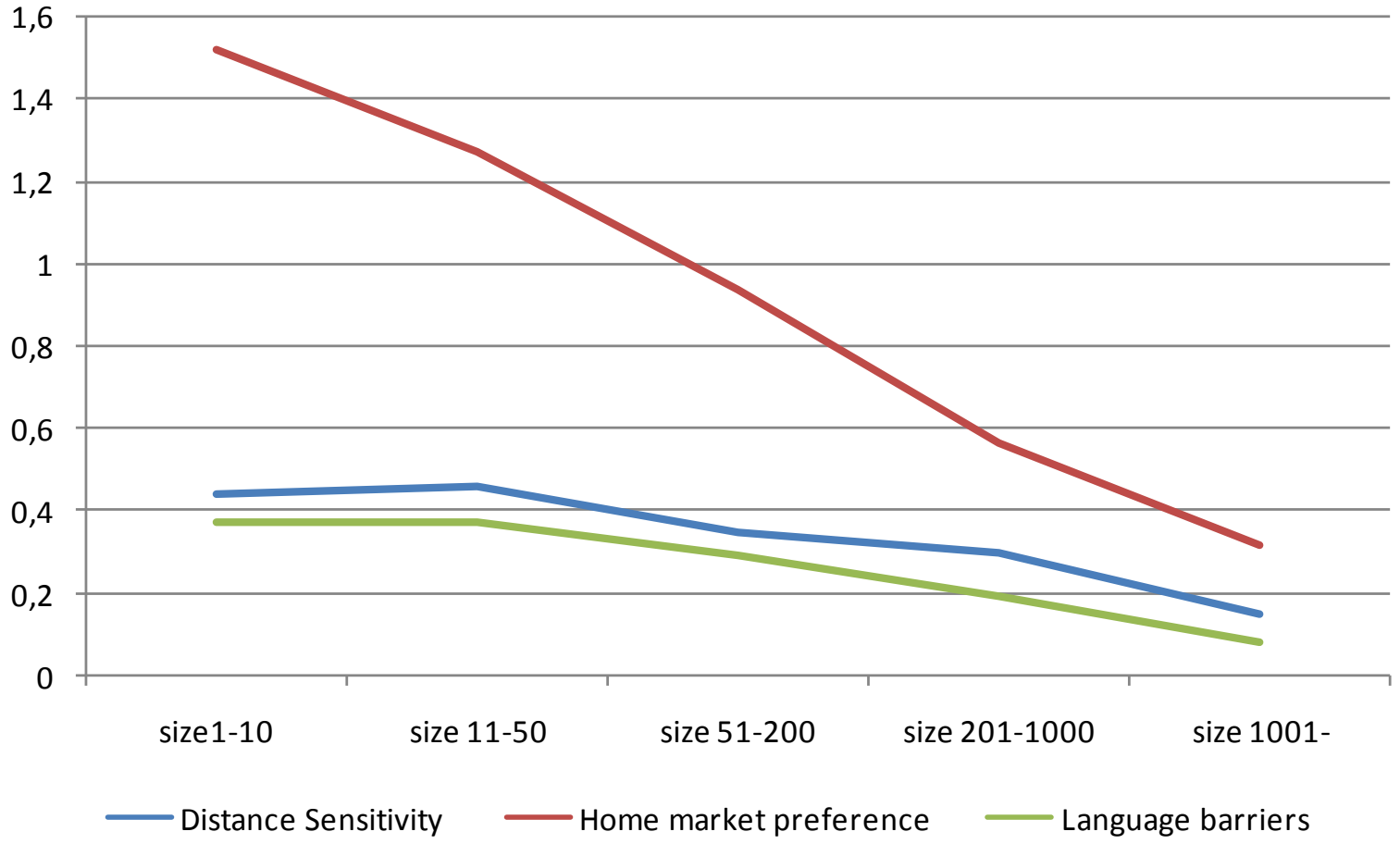
Paper contributions

- Focus on the frequency of persistent exporters as a source of "export knowledge"
  - Persistent exporters export repeatedly over time; they trade more goods and have export links to a large set of countries as compared to temporary exporters (see e.g. Andersson and Lööf 2009).
  - Accordingly, domestic firms more likely to "learn" to become exporters by being exposed to persistent exporters as opposed to occasional ones

- Firms without affiliation to a company group (e.g. MNE)
  - Information and knowledge flows from local environment more important
  - Limited internal resources due to size and non-affiliation to MNE or domestic corporation
  - Barriers to export may be particularly large => role of knowledge and information flows



$$n_{c,i,t} = f\left(Y_{c,t}, Y_{c,t}^{cap}, d_{c,t}, D_{c,t}^{Home}, D_{c,t}^{Language}, \mathbf{x}\right)$$

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Transmission Channels for Local Spillovers of Export Entry

- Location characteristics and knowledge flows:
  - Identification issue: location-specific external economies may be observationally equivalent to exogenous natural advantages implying concentration of exporters in the same region
  - "Export service sectors" may also be expected to be large in regions with density of exporters (→ market interactions).
  - Control for other regional characteristics (region dummies // overall concentration)

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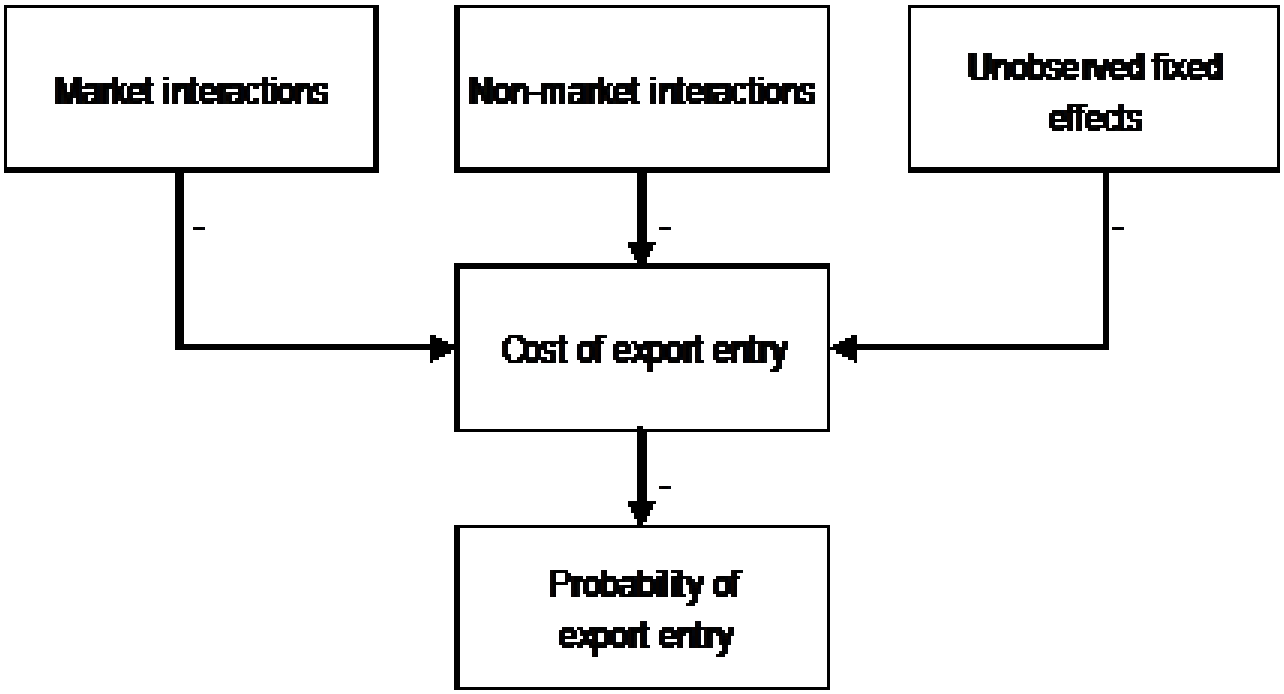
Transmission Channels for Local Spillovers of Export Entry



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Hypotheses

- *H1: The local presence of persistent exporters in the same sector (2-digit NACE) significantly increases the likelihood that domestic non-affiliated firms will become engaged in exporting activities themselves. Thus, we expect the transmission channel of local export spillovers to be non-market mechanisms.*

- *H2: These local export spillovers of export entry operating via non-market mechanisms will be particularly strong for smaller non-affiliated firms as opposed to larger non-affiliated firms*.

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Data

- Swedish data 1997-2004
- Balance-sheet information matched with data on export and import of manufactures, ownership structure and education-length of employees.
- Firms in manufacturing sectors (NACE 15-36)
- Spatial identifier: municipalities (290 in Sweden) => aggregated to 81 functional regions (regional unit of analysis)
- Persistent exporters in a region identified by studying the export status of each firm over the 8-year period 1997-2004
- Non-affiliated firms singled out through information of ownership structure

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Variables in the analysis

Variable	Unit/Definition	Expected sign	Aimed to measure
Control variables 1: firm attributes			
Employment	No. of employees	+	Efficiency (Sjöholm 2003) / Plant success (Ber./Jens2004a)
Human capital	Share of workforce with higher than primary education	+	Quality (of the product) (Sjöholm 2003) / labor quality (Ber./Jens2004a)
Physical capital	Value of machinery and buildings	+	Quality
Labor productivity	Value-added per employee	+	Efficiency / Plant success
Lagged export status	Dummy variable	+	Past success
Import status	1 if firm has imports, 0 otherwise	+	Foreign links of firm

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Variables in the analysis

Control variables 2: location characteristics			
Region size		+	General agglomeration phenomenon
Location Quotient based on employment	2-digit NACE	+/-	Industry specialization
Metroregions Stockholm, Göteborg, Malmö	Dummy variable	+/-	Metroregion activity
Region dummies, industry dummies, time dummies, 5 OECD industry classes			
Explanatory variable of interest: local export spillovers			
Persistent exporters in same industry	2-digit NACE normalized by region size	+	Presence of local export spillovers
Dependent variable			
Export status	(1 if positive exports, 0 otherwise)	-	Export market entry of firm

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Empirical Strategy

- Probit model
- Dependent variable: export status (1 if positive exports, 0 otherwise)
- Pooled data 1997-2004
- 4 estimations:
  - Non-affiliates $\geq$ 10 employees and $\geq$ 25 employees (differences between size-classes)
  - In- and excluding lagged export status

	1-10 employees	>10 employees
Lagged export status	-	-
Import	0.430*** (0.0117)	0.332*** (0.0276)
Human capital	-0.0352 (0.0832)	-0.233** (0.118)
Value-added per employee	0.000274*** (0.0000562)	0.000237*** (0.0000722)
Employment	0.00382*** (0.00133)	0.000686 (0.000494)
Physical capital	0.0000255 (0.0000245)	0.00000635 (0.0000103)
Persistent exporters in industry	0.0891*** (0.0162)	0.0467 (0.0252)
Size	0.000386** (0.000183)	0.000560** (0.000240)
LQ employment	-0.0169*** (0.00362)	-0.00957 (0.00498)
Metroregions	-0.592*** (0.178)	-0.309 (0.177)
Time dummies?	Yes	Yes
Region dummies?	Yes	Yes
Sector dummies?	Yes	Yes
# observations	13 309	2 920

	1-10 employees	≥10 employees
Lagged export status	0.637*** (0.00991)	0.536*** (0.0306)
Import	0.278*** (0.0126)	0.187*** (0.0238)
Human capital	-0.120 (0.104)	-0.178 (0.120)
Value-added per employee	0.000155*** (0.0000464)	0.000122* (0.0000629)
Employment	0.00178** (0.000783)	0.000366 (0.000304)
Physical capital	0.0000152 (0.0000142)	0.00000492 (0.00000617)
Persistent exporters in industry	0.0603*** (0.0208)	0.0409 (0.0271)
Size	0.0603*** (0.0208)	0.0409 (0.0271)
LQ employment	-0.0115** (0.00448)	-0.00975* (0.00536)
Metroregions	-0.0366 (0.300)	-0.0534 (0.200)
Time dummies?	yes	Yes
Region dummies?	Yes	Yes
Sector dummies?	yes	Yes
# observations	13 309	2 920

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Summary and Conclusions

- Results consistent with “export spillover hypothesis”
- Frequency of persistent exporters significant and positive in all specifications
- Negative effect of specialization peculiar, but consistent with Malmberg et al (2000).
- Proximity to persistent exporters particularly important for small non-affiliate firms

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Further research

- Control for regional export service industries/export agents as sources of enhanced export propensity (if data available)
- Incorporate MNEs as export spillover source into analysis (if this kind of ownership data is available)
- Control for role of internet/broadband in firm export propensity (e.g. number of broadband hubs – per capita – in region
- Test for destination-specific local export spillovers (→ gravity model predictions)
- Test hypothesis if local export spillovers apply to differentiated products (due to higher information needs associated with them) rather than for bulk goods (Rauch 1996)
- Examine role of local export spillovers in firms' export performance