Firms’ pattern of trade and access to finance

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Current research into exporters’ performance
Why are exporters better?
  • Self-selection vs. learning
Imports matter even more!
Open issues
  • Learning through innovation?
  • Why is expansion in foreign markets that sluggish?
Exporting and financial constraints
Credit crunch and firms’ exports
Policy implications
1. Current research into exporters’ performance

- Extensive research started after seminal paper Bernard & Jensen (1997) "Exceptional Exporter Performance"
  - significant premia of exporters in terms of size, productivity, wage, capital intensity, etc.

Table: Average productivity premia for exporters, VA/emp (in %)

<table>
<thead>
<tr>
<th></th>
<th>Pooled OLS</th>
<th>Fixed effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average 14 countries</strong></td>
<td>22.4</td>
<td>7.0</td>
</tr>
<tr>
<td><em>(ISGEP, 2008)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>US</strong></td>
<td>29.7</td>
<td>10.5</td>
</tr>
<tr>
<td><em>(BJRS, 2007)</em></td>
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<td></td>
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<tr>
<td><strong>France</strong></td>
<td>31.0</td>
<td></td>
</tr>
<tr>
<td><em>(Mayer &amp; Ottaviano, 2007)</em></td>
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</table>
2. Why are exporting firms better?

Two main hypotheses

- **Self-selection:**
  - only more productive firms can afford to pay the extra export cost

- **Learning-by-exporting:**
  - more intense competition and knowledge flows from foreign buyers improve the post-entry performance of export starters

- Broad evidence unanonymously points towards self-selection
  - better firms become exporters and not vice-versa
Pre- and post-entry growth premia

<table>
<thead>
<tr>
<th>Country</th>
<th>Pre-entry premia $t-3$</th>
<th>Post-entry growth difference $t+3$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Belgium</td>
<td>6.1</td>
<td>19.3</td>
</tr>
<tr>
<td>Chile</td>
<td>12.1</td>
<td>1.9</td>
</tr>
<tr>
<td>China</td>
<td>20.8</td>
<td>-4.5</td>
</tr>
<tr>
<td>Colombia</td>
<td>15.9</td>
<td>-0.1</td>
</tr>
<tr>
<td>France</td>
<td>7.5</td>
<td>-0.2</td>
</tr>
<tr>
<td>W. Germany</td>
<td>4.7</td>
<td>0.0</td>
</tr>
<tr>
<td>E. Germany</td>
<td>5.6</td>
<td>-2.2</td>
</tr>
<tr>
<td>Italy</td>
<td>17.4</td>
<td>4.3</td>
</tr>
<tr>
<td>Ireland</td>
<td>16.1</td>
<td>-1.4</td>
</tr>
<tr>
<td>Slovenia</td>
<td>-1.2</td>
<td>6.2</td>
</tr>
<tr>
<td>Spain</td>
<td>24.1</td>
<td>5.2</td>
</tr>
<tr>
<td>Sweden</td>
<td>-1.2</td>
<td>2.1</td>
</tr>
<tr>
<td>UK</td>
<td>10.9</td>
<td>3.9</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>9.9</strong></td>
<td><strong>2.5</strong></td>
</tr>
<tr>
<td>US</td>
<td>8.7</td>
<td>0.4</td>
</tr>
</tbody>
</table>

Source: ISGEP (2008), Cross-Country Differences in Exporter Premia
Source: Bernard-Jensen (1997), Exceptional Exporters Performance
3. Similarly, importing matters!

- Amiti and Konings (2007) using the Indonesian microdata:
  - benefits arising from cheaper intermediate inputs (lower tariffs) might have 10 times larger impact on firm productivity gains than that of increased import competition.

- Damijan and Konings (2010) using the Slovenian microdata:
  - impact of imports on firm performance may be more important than the one from exporting:
  - decision to import precedes the decision to start exporting,
  - productivity premia of importers is bigger than of exporters,
    - existing importers: by 30%,
    - new importers: by 150%
Productivity premia for trade starters in Slovenia
Cohorts 1994-2002
Is there a learning-from-imports?

- Vogel and Wagner (2008) using microdata for W. and E. Germany:
  - positive impact of productivity on importing (self-selection),
  - no evidence for positive effects of importing on productivity due to learning-by-importing

- Damijan and Konings (2010) using the Slovenian microdata:
  - self-selection of more productive firms into importing,
  - no evidence of learning-by-importing

- ISGEP (2010) - cross-country analysis (WiP)
  - study across 6 countries
  - similar findings
4. Causal link between trade and innovation?

- **Innovation** as a *missing link* in the effects of exporting on firm performance
  - a link from product innovation to productivity growth and decision to export in Spain (Cassiman and Golovko, 2007; Cassiman and Martinez-Ros, 2007)
  - *selection effect*

- another link from exporting to process innovation and productivity growth in Slovenia (Damijan et al., 2010a)
  - *learning effect*
Sequencing between trade and innovation

Damijan and Kostevc (2010) using Spain microdata

- Sequencing between imports, innovation and exports:
  - sequencing can go in both directions, but more likely to start with imports
  - firm’s trade status ($X, M$) impacts its ability to start product or process innovations,
  - which affects firm’s decision to start exporting (imp),
  - exporting (imp) boosts further product and process innovations

- This sequencing of firm’s learning effects from trade:
  - most important for small and in part for medium-sized firms,
  - and may benefit firms closer to the productivity frontier more than laggard firms
5. Rather slow export expansion pattern

- No instantaneous adjustment in foreign markets (as in theory)

  - 40.4 percent of firms export only one product to one market,
  - whereas only 11.9 percent of firms export five or more products to five or more markets
  - significant turnover of products

- Eaton et al. (2007) - Colombian new exporters
  - new exporters tend to be small; typically start with one market
  - high exit rates; survivors tend to expand gradually

- Damijan et al (2010b) - Slovenian new exporters
  - first year: exit rate 50%
  - exporters start on average with 1 product and 1 market
### Slovenia: Expansion along intensive vs. extensive margin

<table>
<thead>
<tr>
<th>Year</th>
<th>Intensive margin</th>
<th></th>
<th></th>
<th>Extensive margin</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Volume per market</td>
<td>No. of products</td>
<td>No. of markets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ratio*</td>
<td>cv**</td>
<td>mean</td>
<td>median</td>
<td>cv**</td>
<td>mean</td>
</tr>
<tr>
<td>1</td>
<td>1.0</td>
<td>4.0</td>
<td>2.9</td>
<td>1</td>
<td>1.6</td>
<td>1.3</td>
</tr>
<tr>
<td>2</td>
<td>1.9</td>
<td>3.4</td>
<td>4.8</td>
<td>2</td>
<td>1.6</td>
<td>1.7</td>
</tr>
<tr>
<td>3</td>
<td>1.9</td>
<td>2.7</td>
<td>5.6</td>
<td>3</td>
<td>1.6</td>
<td>1.9</td>
</tr>
<tr>
<td>4</td>
<td>2.4</td>
<td>3.2</td>
<td>6.2</td>
<td>3</td>
<td>1.8</td>
<td>2.2</td>
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<tr>
<td>5</td>
<td>2.3</td>
<td>2.6</td>
<td>7.1</td>
<td>3</td>
<td>2.0</td>
<td>2.5</td>
</tr>
<tr>
<td>6</td>
<td>2.0</td>
<td>2.2</td>
<td>8.0</td>
<td>3</td>
<td>2.3</td>
<td>2.7</td>
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<tr>
<td>7</td>
<td>2.5</td>
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<td>4</td>
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<td>3.4</td>
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<tr>
<td>9</td>
<td>3.8</td>
<td>1.7</td>
<td>17.3</td>
<td>7</td>
<td>1.7</td>
<td>4.1</td>
</tr>
</tbody>
</table>

*Source:* SORS and own calculations.

*Notes:* +Technical time, i.e. 1 indicates first year of exporting, etc.
Expansion dynamics and survival

Dynamics of Exporting Markets

<table>
<thead>
<tr>
<th></th>
<th>$Pr[\text{Survival}]$ (1)</th>
<th>$\text{Markets}_t \ (\log)$ (2)</th>
<th>$\text{Products}_t \ (\log)$ (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{Equity}_{t-1}$</td>
<td>0.111***</td>
<td>0.0576***</td>
<td>0.0744***</td>
</tr>
<tr>
<td>$\text{Employment}_{t-1}$</td>
<td>-0.0393</td>
<td>0.0207***</td>
<td>-0.00102</td>
</tr>
<tr>
<td>$\text{Return on assets}_{t-1}$</td>
<td>0.554***</td>
<td>0.154***</td>
<td>0.277***</td>
</tr>
<tr>
<td>$\text{TFPR}_{t-1}$</td>
<td>0.042</td>
<td>0.0121</td>
<td>0.0223</td>
</tr>
<tr>
<td>$\text{High school}_{t-1}$</td>
<td>-0.0149</td>
<td>0.104***</td>
<td>0.0526</td>
</tr>
<tr>
<td>$\text{Capital per employee}_{t-1}$</td>
<td>-0.0275</td>
<td>-0.0105***</td>
<td>-0.0255***</td>
</tr>
<tr>
<td>$\text{Debt-to-Assets Ratio}_{t-1}$</td>
<td>0.407***</td>
<td>0.255***</td>
<td>0.415***</td>
</tr>
<tr>
<td>$\text{Foreign Ownership}_{t-1}$</td>
<td>0.376***</td>
<td>-0.0129</td>
<td>0.0920***</td>
</tr>
</tbody>
</table>

Source: Damijan et al (2010b), Strategies of New Exporters
Factors impacting export expansion

- Export survival and speed of expansion (#mkt, #prod) crucially depends on:
  - firm own capital (equity)
  - size and skills (for #mkt only)
  - profitability (ROA), not productivity (TFP)
  - access to credit finance (D/A)
  - access to internal credit markets (MNC).

- Access to finance is essential for firm- and exports growth
6. Exports and financial constraints

- **Financial constraints as a barrier to exporting**
  - Greenaway et al (2007) - financially constrained UK manufacturing firms are less likely to export.
  - Bellone et al (2008) - less financially constrained Italian manufacturing firms will more likely to start exporting earlier, but exporting does not improve financial health of exporters.

- **Access to finance and export expansion**
  - Damijan et al (2010b) - access to finance is crucial for faster expansion along the extensive margin

- However, does improving the access to finance uniformly benefits exporters?
Does improving access to finance benefits exporters?

- Damijan et al (2010c)
  - Impact of relative debt-to-asset ratio (...) on export intensity
- utilise the generalised propensity score (GPS), also called *dose response functions*
  - allows for estimating *average treatment effect* of D/A on Exp share between continuous variables
Slovenia - Small firms (2001-2007)

Dose Response Function

Confidence Bounds at .95% level
Dose response function = Linear prediction
Slovenia - Medium firms (2001-2007)

Dose Response Function

Confidence Bounds at .95 % level
Dose response function = Linear prediction
Slovenia - Large firms (2001-2007)

Dose Response Function

Confidence Bounds at .95 % level
Dose response function = Linear prediction
Why non-monotonic relationship?

- Exporting is costly, exporters expand very slowly
- Non-monotonic relationship between access to finance and export intensity
  - less financially constrained small and medium-sized firms do not necessarily export more
- *Open issue:* it is not only about the access to finance, but...
- ...new exporters are facing several types of uncertainty
  - uncertainty about demand in foreign markets is essential
- Exporting is risky
  - large firms are more diversified in terms of a number of markets and products served, which serves as "insurance" against a failure
  - small firms are less diversified and more risk exposed, and hence might be self-constrained
7. Credit crunch and firms’ exports

- As exporting is costly, dried-up finance may affect exporters more severely
  - higher default risk and higher working capital requirements (trade credit)
  - if banks limit trade finance, exports are likely to be affected more than domestic sales
Study banking crises and exports in 23 banking crises episodes between 1980-2000

Find

- negative and significant effect of banking crises on export growth
- unlike bank finance, interfirm finance does not appear to dry up at times of crisis
- sectors characterized by a higher share of tangible assets are affected significantly less by the crisis (collateral)
- impact of "supply-side" shocks due to credit crunch is additional and independent from that of "demand-side" shocks (esp. in sectors producing durable goods)
  - these effects are stronger for deeper crises and in countries with a less developed financial system.
Amiti & Weinstein (2010)

- Study Japanese financial crises of the 1990s
  - featured defaults in short-term bank lending markets
  - using matched bank firm data
- Find causal link from shocks in the financial sector to exporters
  - limiting trade credits (less LCs) results in exports declining much faster than output
  - these effects are smaller for large firms, multinationals and firms that export mostly by air
  - size of these bank-induced export declines account for about one-third of the drop in Japanese exports
Bricongne et al (2009)

- Study the impact of current crises on French exporters
  - monthly data up to 04/2009

- Find that
  - drop in French exports is mainly due to the intensive margin of large exporters
  - small and large firms are evenly affected when sectoral and geographical specialisations are controlled for
  - firms in sectors structurally more dependent on external finance are the most affected by the crisis
Study the collapse of international trade flows during the global financial crisis using detailed data on monthly US imports.

Show that adverse credit conditions were an important channel through which the crisis affected trade volumes.

- Countries with higher interbank rates and thus tighter credit markets exported less to the US during the peak of the crisis.
- These effects were especially pronounced in sectors that require extensive external financing, have few collateralizable assets, or have limited access to trade credit.
- Exports of financially dependent industries were more sensitive to the cost of external capital.

- And this sensitivity rose during the financial crisis.
Policy implications

- Exporting is *costly* and *risky*
- Though not monotonically, firms’ exports increase with the access to finance
- Hence,
  - A/ Sound financial system is essential for promoting exports
  - B/ Fixing financial sectors will aid exporting to catch up
- Promotion of exporters needed?
  - maybe some, helping to overcome the information bias
  - but A and B are essential
  - anything more would kill the selection