Exporter Dynamics Database
Version 2.0

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What we knew about bilateral trade flows and what we know now

$35.2 million
Total trade in 2013
78 exporters
$451,836 average size
Herfindahl Index: 45%
Exporter entry rate: 36%

$35.8 million
Total trade in 2013
32 exporters
$1,119,836 average size
Herfindahl Index: 92%
Exporter entry rate: 41%
... and how about total exports of a given product?

Nicaragua:
$ 105 million in
41 exporters
$2,581,599 average size
Top 5% exporters: 62%
Exporter Entry: 44%
1st-y Entrant Survival: 39%

Thailand:
$ 99 million in
643 exporters
$153,474 average size
Top 5% exporters: 84%
Exporter Entry: 48%
1st-y Entrant Survival: 34%
• Firm-level data is key to understand the micro foundations of export growth
  – It provides information about the characteristics of the exporters
  – The degree of concentration among these exporters
  – And their entry, exit and survival dynamics

• The Exporter Dynamics Database (EDD) version 1.0 filled this analytical gap by providing a comprehensive source of information on firms that export and their dynamics
Exporter Dynamics Database
What measures are included in the EDD?

- **Basic characteristics of export sector**
  - Number of exporters, exporter size (in export value), exporter growth

- **Export concentration/diversification**
  - Herfindahl indexes, share of top X% exporters, number of products or destinations per exporter, number of exporters per product or destination

- **Firm dynamics in the export sector**
  - Exporter entry, exit and first-, second-, or third-year entrant survival rates

- **Firm-product dynamics**
  - Product entry, exit and survival rates for incumbent exporters and share of new products in exporter values

- **Firm-destination dynamics**
  - Destination entry, exit and survival rates for incumbent exporters and share of new destinations in exporter values

- **Unit prices**
What is basis for constructing the measures in the EDD?

• Customs data collected for each country covers the universe of export transactions
  – Data includes in each country values and quantities exported by each firm of each product (HS 6-digit) to each destination country in each year
  – We exclude only oil sector exports (HS chapter 27)

• For products we use a consolidated set of HS 6-digit codes that are consistent across HS1996, HS2002, HS2007, and HS2012 revisions
Disaggregation levels of the EDD measures

- Exporting country-year level

- Exporting country-product-year level with product being either HS 2-digit or HS 4-digit or HS 6-digit

- Exporting country-destination-year level

- Exporting country-HS 2-digit product-destination-year level NEW

- Exporting country-ISIC 3-digit-year level NEW
Flavors of the EDD measures

• Measures at 7 different disaggregation levels are available in 4 different flavors:
  – Covering all export transactions
  – Covering export transactions for firms whose annual exports are all larger than 1,000 USD
  – Covering export transactions for manufacturing only
  – Covering export transactions for manufacturing only and for firms whose annual exports are all larger than 1,000 USD
EDD version 1.0 covered 45 countries
Data for 34 existing countries was updated
Data for 25 new countries was added
EDD version 2.0 covers 70 countries
EDD version 2.0 covers mostly the 2000s and 2010s
Public and Free Access to the Exporter Dynamics Database:

Facts and Research Findings based on the EDD
Across countries exports are highly concentrated among their largest firms

- The role of these export superstars for countries’ comparative advantage is studied in Freund and Pierola (2015, REStat)

Source: based on Exporter Dynamics Database version 2.0.
Entrant survival is higher in the presence of lower trade costs and larger networks

Survival rates of new exporters are higher in lower trade costs economies

Presence of other exporters of same product to same market helps survival of new exporters

Regressions based on measures at exporting country-HS 2-digit-destination-year level

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lagged Ln (Number of Exporters)</td>
<td>0.026***</td>
<td>0.029***</td>
<td>0.026***</td>
<td>0.030***</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Year Fixed Effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>HS 2-Digit Fixed Effects</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Destination Fixed Effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS 2-Digit-Destination Fixed Effects</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>719,409</td>
<td>719,409</td>
<td>719,409</td>
<td>719,409</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.015</td>
<td>0.047</td>
<td>0.027</td>
<td>0.098</td>
</tr>
</tbody>
</table>

Source: based on Exporter Dynamics Database version 2.0.
Sources of the great trade collapse

- The trade collapse resulting from the global financial crisis was entirely driven by the intensive margin (mean exporter size).
- After accounting for countries’ different degrees of distress from the crisis and for sectoral demand and supply shocks.

<table>
<thead>
<tr>
<th>Dummy for Global Financial Crisis Year</th>
<th>Growth in Total Exports</th>
<th>Growth in Number of Exporters</th>
<th>Growth in Mean Exports per Exporter</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td></td>
</tr>
<tr>
<td>-0.254***</td>
<td>-0.024</td>
<td>-0.230***</td>
<td></td>
</tr>
<tr>
<td>(0.030)</td>
<td>(0.014)</td>
<td>(0.023)</td>
<td></td>
</tr>
</tbody>
</table>

Export growth decomposition during the collapse

Source: based on Exporter Dynamics Database version 2.0.
How do export-sector characteristics vary with country size and stage of development?

Positive correlations between number, size concentration of exporters and either GDP per capita or GDP

Source: based on Exporter Dynamics Database version 2.0. following Fernandes, Freund and Pierola (2015, JDE)
Establishing the robustness of those correlations

Larger economies and more developed economies have: more exporters, larger exporters, and more concentration in the top 5% of firms

Even after controlling for sectoral composition of exports, differences across destination markets, and cyclical effects
What is the magnitude of the effects?

- Relative to a country at the 25\textsuperscript{th} percentile of the GDP per capita distribution (Cameroon), a country at the 75\textsuperscript{th} percentile of the GDP per capita distribution (Mexico) has:
  - 87 percent larger number of exporters
  - 84 percent larger mean exports per exporter
  - 8.2 percentage points larger share of exports accounted for by the top 5% of exporters
How do exporter dynamics vary with country size and stage of development?

Negative correlations between exporter turnover and positive correlations between entrant survival and either GDP per capita or GDP.

Source: based on Exporter Dynamics Database version 2.0. following Fernandes, Freund and Pierola (2015, JDE)
Establishing the robustness of these correlations

<table>
<thead>
<tr>
<th>Entry Rate</th>
<th>Exit Rate</th>
<th>Entrant Survival Rate</th>
<th>Net Entry Rate</th>
<th>Turnover Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>Ln GDPpc</td>
<td>-0.063***</td>
<td>-0.065***</td>
<td>-0.120***</td>
<td>-0.043***</td>
</tr>
<tr>
<td></td>
<td>(0.011)</td>
<td>(0.011)</td>
<td>(0.022)</td>
<td>(0.010)</td>
</tr>
<tr>
<td>Ln GDP</td>
<td>-0.005</td>
<td>-0.003</td>
<td>-0.002</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>(0.007)</td>
<td>(0.007)</td>
<td>(0.022)</td>
<td>(0.007)</td>
</tr>
<tr>
<td>HS 2-Digit Fixed Effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Destination Fixed Effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Bilateral Gravity Covariates</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>HS 2-Digit-Destination Fixed Effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Year Fixed Effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Observations</td>
<td>31,465</td>
<td>31,412</td>
<td>26,212</td>
<td>30,805</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.234</td>
<td>0.242</td>
<td>0.131</td>
<td>0.008</td>
</tr>
</tbody>
</table>

Source: based on Exporter Dynamics Database version 2.0. following Fernandes, Freund and Pierola (2015, JDE)

- In more developed economies, exporter entry and exit rates are lower while first-year survival of entrants is higher
- Even after controlling for sectoral composition of exports, differences across destination markets, and cyclical effects
What is the magnitude of the effects?

• Relative to a country at the 25\textsuperscript{th} percentile of the GDP per capita distribution (Cameroon), a country at the 75\textsuperscript{th} percentile of the GDP per capita distribution (Mexico) has:

  • 11 percentage points lower exporter entry and exit rates
  • 6 percentage points higher first-year survival rate of entrants into export markets
Lessons from these facts

• Exporter dynamics change as countries get richer
  • In developing countries, there is high turnover with many firms entering export markets and exiting almost immediately
  • As countries develop, entrant survival is higher as fewer but more resilient exporters enter the market

• Larger exporters and more concentration at the top of the exporter-size distribution in richer countries is consistent with allocative efficiency in export markets improving as countries develop
  • In developing countries, distortions to resource allocation inhibit the emergence of very large firms resulting in a “truncated top” (rather than a “missing middle”)
What other uses for the EDD?

• The EDD has supported external research
  – 1,112 downloads of the EDD in FY2014
  – EDD used for research on the impact of FDI promotion policies, banking crises, etc.

• The EDD has been used in WB analytical work and policy advice on trade and competitiveness
  – Reports on Bangladesh, Brazil, Dominican Republic, Ethiopia, Georgia, Malawi, Peru, South Africa, Uruguay
  – Regional reports in SSA, MENA, LAC

• The EDD can help answer understand the relationship between exporter dynamics and policy factors such as:
  – Trade costs (logistics costs, customs delays)
  – Trade barriers (tariffs, non-tariff measures, contingent protection measures)
  – Business environment or economic shocks (exchange rates)

• The EDD can be used as a tool for the impact evaluation of trade facilitation reforms and export promotion programs => Nepal
Thank You!