8th vintage stylized facts

(20e weighted sample)

CompNet – 25 October 2021
Disclaimer

- This is a report including data available as of October 2021.
- All results have been reviewed and disclosure methods approved to ensure no confidential information is disclosed.
- Compilation of the data would not have been possible without the active participation and support of dozens of individuals from each of the data providing institutions. We thank them all for their work.
There are 2 kinds of samples in the CompNet dataset.

All firms: This includes all firms in the business economy with at least one employee.

20e sample: This includes only firms with 20 or more employees. By omitting the smallest firms, the 20e sample improves cross-country comparability and coverage.

We use the 20e weighted sample in this presentation. Data is aggregated at 3 levels: 2-digit NACE Rev.2 sectors, 1-digit NACE Rev.2 sectors (macro-sectors), and country level.
## Time coverage

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Country</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>2000-2018</td>
<td>Netherlands</td>
<td>2007-2018</td>
</tr>
<tr>
<td>Croatia</td>
<td>2002-2019</td>
<td>Poland</td>
<td>2002-2019</td>
</tr>
<tr>
<td>Denmark</td>
<td>2001-2018</td>
<td>Romania</td>
<td>2007-2019</td>
</tr>
<tr>
<td>France</td>
<td>2004-2018</td>
<td>Slovenia</td>
<td>2002-2019</td>
</tr>
<tr>
<td>Germany</td>
<td>2001-2018</td>
<td>Spain</td>
<td>2008-2018</td>
</tr>
<tr>
<td>Italy</td>
<td>2006-2018</td>
<td>Switzerland</td>
<td>2009-2018</td>
</tr>
<tr>
<td>Lithuania</td>
<td>2000-2019</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Industry coverage

- There are 9 macro-sectors included in the dataset:
  - Manufacturing
  - Construction
  - Wholesale and retail trade
  - Transportation and storage
  - Accommodation and food service activities
  - Information and Communication
  - Real Estate
  - Professional, scientific and technical activities
  - Administrative and support service activities
Productivity and related indicators
TFP is derived from the industry-level OLS Cobb-Douglas specification.
On average, the region experienced anemic annual productivity growth of 0.47%.
There is a general uptrend for productivity in most countries.
Romania stands out with productivity increase of over 20% from 2010 to 2019.
Productivity dispersion

- Productivity dispersion is the difference between p90 (frontier) and p10 (laggard) of labour productivity distribution.
- The productivity gap between top and bottom firms becomes wider since 2010 for the region.
There are increases in dispersion in most countries.
Only Finland, France and Italy shows an overall decrease in dispersion.
• Going into the actual productivity level of laggard and frontier firms, the changes in dispersion mostly come from changes in productivity of frontier firms over the years.
• Productivity of laggard firms remains stagnant.
Labour cost is measured in thousands of Euros.
Overall labour cost increases gradually over time for EU.
Most countries follow the overall trend of increasing labour cost.
Finland, Germany and Spain are the exceptions. France also reports a sharp drop after 2016.
The ratio of Value added over revenue - a measure of the profit rate, displays cyclical patterns in most countries.
A firm is financially constrained when its total investment is positive and larger than its cash flow, conditional on a negative annual change in debt and equity.

Most countries have less than 20% of their firms being financially constrained. The only exception is France where the share is 30%. 
Figure plots the relation between share of financially constrained firms and VA-based log labour productivity. All available mac-sectors (1 digit sectors) and countries are pooled.

- There is a negative correlation. Firms tend to be more productive when they are less financially constrained.
• Capital intensity is the ratio of real capital over labour.
• Most countries have higher capital intensity after the crisis in comparison to pre-crisis levels.
• Capital intensity in Italy, Finland, Germany, and Sweden decrease over the sample period.
• Portugal and Spain also show drastic drops after 2014.
Allocation, concentration, and others
Allocative efficiency is measured as the difference between the weighted average and the unweighted average of labour productivity. Number of employees is used as the weight in this chart.

Low allocative efficiency is a sign of labour misallocation as less productive firms have disproportionally large employment shares.

The overall trend in EU shows better allocation over time, as 12 out of 19 countries have stable or increased allocative efficiency in recent years.
The 3 charts compare the Herfindahl–Hirschman Index calculated using different weights: revenue, value-added, and labour.

The ranking of firm concentration generally does not change much across the 3 methods. However, the difference between the highly concentrated countries and the others is more significant for the VA-based HHI and the revenue-based HHI.

Denmark, Hungary, Slovakia and Slovenia are the most concentrated countries overall.
We compare the average export/revenue ratio across countries. Export value takes around 20%-40% of revenue in most countries. Slovenia reports the highest ratio at 46%, while France has the lowest ratio at 17%.
Appendix
Looking at labour productivity by different firm sizes, larger firms tend to have higher productivity. Firms with < 50 employees and firms with 50 to <250 employees generally have their productivity move in similar patterns. The largest firms (more than 250 employees), while still respecting the general trend in each country, move faster than the smaller firms. The productivity gap between the large and small firms thus increase over time in some countries: Denmark, Finland, Spain and Sweden.

Some countries have the reversed pattern, where the larger firms are less productive, including Belgium and Slovenia.
TFP index for manufacturing sector shows similar patterns to the country index for most countries.

Denmark and Netherlands show weaker growth within manufacturing, while Italy shows stronger growth.
Validation

8th Vintage CompNet
Productivity growth

- Growth rate of average TFP is shown in the chart. Solow residual is used for CompNet.
- CompNet indicator tends to move in same direction as TFP from other sources. It is more volatile in some countries.

Sources:
- PWT: https://www.rug.nl/ggdc/productivity/pwt/?lang=en
- Conference Board: https://conference-board.org/retrievelfile.cfm?filename=TED_1_AUGUST20211.xlsx&type=subsite
Comparison – OLS vs ACF

- Log TFP comparison between OLS and ACF.
- Similar patterns in all countries.
- ACF for Poland is more volatile.
Annual growth rate of nominal wage

- Wages and salaries variable from Eurostat - V13320
- Identical trends from both sources.
- CompNet data is more volatile in Belgium, Netherlands, and Spain

Annual growth rate of nominal value added

- Value added variable from Eurostat - V12150
- Also identical trends from both sources.
- Slight variations in Belgium, Poland, and Sweden, but the general direction is similar between CompNet and Eurostat.

Export dynamics (2004=1)

- CEE countries: HR, CZ, LT, PL, SK, SI;
  Non-CEE countries: DK, FI, FR, SE.
- 20e sample CompNet
- Similar patterns across CompNet and Eurostat in both country groups.

Export dynamics (2004=1)

### Percentage of exporting firms in CompNet and Eurostat

<table>
<thead>
<tr>
<th>Country</th>
<th>CompNet</th>
<th>Eurostat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Croatia</td>
<td>73%</td>
<td>38%</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>70%</td>
<td>49%</td>
</tr>
<tr>
<td>Denmark</td>
<td>83%</td>
<td>77%</td>
</tr>
<tr>
<td>Finland</td>
<td>80%</td>
<td>64%</td>
</tr>
<tr>
<td>France</td>
<td>68%</td>
<td>50%</td>
</tr>
<tr>
<td>Germany</td>
<td>74%</td>
<td>53%</td>
</tr>
<tr>
<td>Hungary</td>
<td>73%</td>
<td>65%</td>
</tr>
<tr>
<td>Lithuania</td>
<td>71%</td>
<td>73%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>83%</td>
<td>76%</td>
</tr>
<tr>
<td>Poland</td>
<td>68%</td>
<td>75%</td>
</tr>
<tr>
<td>Portugal</td>
<td>74%</td>
<td>41%</td>
</tr>
<tr>
<td>Romania</td>
<td>99%</td>
<td>44%</td>
</tr>
<tr>
<td>Slovakia</td>
<td>83%</td>
<td>74%</td>
</tr>
<tr>
<td>Slovenia</td>
<td>93%</td>
<td>79%</td>
</tr>
<tr>
<td>Sweden</td>
<td>99%</td>
<td>78%</td>
</tr>
</tbody>
</table>

- For manufacturing sector, firms with at least 10 employees.
- Data is average from 2016 to 2018.
Overall, there is no significant divergence between CompNet and SAFE.

However, the share of credit constrained firms in Compnet is lower than in SAFE for most countries, except Belgium.

In SAFE, a firm is defined as credit constrained if: the firm reports loan applications which were rejected; the firm reports loan applications for which only a limited amount was granted; the firm reports loan applications which were rejected by the firms because the borrowing costs were too high; the firm did not apply for a loan for fear of rejection (i.e. discouraged borrowers).

https://www.ecb.europa.eu/stats/pdf/surveys/sme/SAFE_main_series.zip - for SMEs (sizeclass 2,3,4)