Discussion of

'Internalising Global Value Chains: A firm-level analysis'
By Alfaro, Antras, Chor, Conconi

Filippo di Mauro
European Central Bank
Chairman of CompNet

Asian Competitiveness Institute
NUS, Singapore

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Disclaimer: the opinions expressed in this presentation are those of the author and do not necessarily reflect the views of the European system of Central Banks or NUS.
Introduction

1. The organisers have asked for a dynamic and intuitive/not technical discussion of the main messages/importance/limitations of the paper, including discussing other relevant issues (also drawing from work done by the discussant).

2. Will do so, of course, but inevitably will provide a biased overall judgment on the paper, having to skip praising the important additional theoretical contribution to the literature (this is a top notch scholar paper)...

3. ...but instead concentrate on some weakness mostly pertaining to the empirical estimation, which may put in question its ultimate policy relevance.

4. This is obviously not full responsibility of the authors, since data related to firms GVC activities are very lacking

5. ...Will therefore give you an account of CompNet - a research network – which has provided much detail on the interaction of productivity patterns at firm level and a number of determinants, including internationalisation
My objective today

→ Make a case for a much more convinced engagement of economists for better data on GVC
Nomenclature….Claryfing the definitions and diminish the technicisms

1. The paper is very much based on previous models, built in the last few years (mostly from some of the authors) and by now “work-horses”.

2. So much so that one gives for granted a number of concepts and terms….

3. Since the authors want to strengthen the empirical underpinnings and possibly the policy relevance of their research, my recommendation is to better explain previous nomenclature, results and implications.

4. For instance,

   1) not everybody knows what “relationship-specific investments”, are, i.e. those investments made by the suppliers to adapt to the standards of the value chain. Here, I would repeat (from Antras and Helpmann, 2003) that …"The key difference between integration and outsourcing is that only integration gives the final-good producer property rights over the fruits of the relationship-specific investments”.

   2) I would also spell out what "Contractibility" is. Following Acemoglu, Antras and Helpman (2006), these are the constraints (legal, institutional) to establish enforceable contracts among the parties, i.e. main producing firm and its suppliers, for the production of the final good. The larger the fraction of non-contractible activities is, the larger the distortions in production.
Measuring “Upstreamness” and demand elasticities

• “Upstreamness” is a proxy of the degree of outsourcing, and the authors derive a novel measure of it.

• The index tells us in detail whether a specific input (or component) of a production process is produced mostly independently (i.e. several stages far away) from the final utilizing industry or closer to it. They make the case of the Tires, as entering with very diversified upstreamness into a large number of final products.

• This has the potential of being a very useful and policy relevant index, as is derived detailed I-O tables at 6 digits level (i.e. 5000 products)

• HOWEVER…It is constructed on data for 1992 and one wonders how reliable it is, considering the major revolution in production processes taking place in the last decades, including the entry of China in WTO

• Was there any double check with less detailed but more recent data?

• Also the measure of DEMAND ELASTICITIES is based on estimation Broad Weinstein (2006). Much more recent estimations are available, including at the FIRM not SECTOR level (see for instance CompNet with data 2013].

• There is a growing literature underlying that macro estimations of demand elasticities may differ by several folds from sector/firm level (Imbs, Mejan)
Explaining “Upstreamness”

• In their framework the authors identify two main variables underpinning the degree of outsourcing, which they call 'Upstreamness', - integration within the firm versus outsourcing to other independent suppliers. Namely:
  – Elasticity of demand for the final good
  – Substitutability of the inputs… ➔ The larger the elasticity with respect to the input substitutability, the more the firm will rely on Outside suppliers in the upstream Stage of Production, while integrating the downstream activities (In order to capture the surplus).

• Couple of points
  1. The intuition that they offer is not really intuitive. …..When elasticity of the final product is high and inputs relatively not substitutable, "input investments are "sequential", i.e. Marginal incentive of suppliers to made investment to fit into chain are HIGHER".

From here, it would seem that the resulting Upstreamness, comes from a choice of the suppliers and its relative incentive to participate in the chain.

Honestly, my intuition would be that trying to explain why the parent firm (presumably large and multinational) should be willing to engage such supplier in the chain, would be at least paramount important to analyse
Explaining “Upstreamness” II

2. Also, the degree of Upstreamness decision, seems to be related to only the above two factors (demand elasticity and input substitutability).

BUT, how exhaustive are these variables as proxies of actual determinants? The authors improve on that by adding the role of contractibility, i.e. The extent in which the contracts with suppliers are enforceable, which represents a good proxy for INSTITUTIONAL factors, a rather obvious determinant of the right trade off between integration and outsourcing.

But, how about, financial constraints, relative size of the firms involved, other institutional issues, infrastructure, distance, logistic considerations…? And the role of heterogenous impact of such factors across countries (analysis here is on US only)

The impression is that the framework is elegant, but efforts need to be done to getting closer to the reality, at least by acknowledging what is missing

Also, unavailability of detailed data related to the operation of GVC at the firm level hampers the entire policy relevance of this literature.

➔ In the following, will present CompNet - connecting productivity outcomes at firm level with determinants, including financial and trade
We need better firm level data ➔ The CompNet database

1. We use existing (no new surveys) firm-level data of (several millions) European firms located in some 20 countries, mostly drawn from business registers, to construct a wide set of relevant business indicators (productivity, costs, employment...)

2. The twenty (20) Country teams (National Central Banks and Statistical Institutes), run common codes to aggregate indicators at industry, macro-sector and country level in order to preserve confidentiality and **ensure data comparability**

3. In addition to sector averages, we collect the full distribution for more than 70 critical business related variables

   ➔ the information is much richer in comparison to the usual available sector aggregation

   ➔ Most notably, the database includes more than 300 joint distributions linking different firms’ characteristics
Five broad categories of variables are available...

<table>
<thead>
<tr>
<th>Productivity and allocative efficiency</th>
<th>Financial</th>
<th>Trade</th>
<th>Competition</th>
<th>Labour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor productivity</td>
<td>Investment Ratio</td>
<td>% permanet exp.</td>
<td>Weighted PCM</td>
<td>% firms that increase/decrease employment productivity or ULC between t and t+3</td>
</tr>
<tr>
<td>TFP</td>
<td>RoA</td>
<td>% sporadic exp.</td>
<td>Sector-specific mark-ups</td>
<td>Characteristics of growing and shrinking firms</td>
</tr>
<tr>
<td>ULC</td>
<td>Cash holdings</td>
<td>Export value</td>
<td>Sector-specific collective bargaining power</td>
<td>Share of High-growth firms</td>
</tr>
<tr>
<td>LC per employee</td>
<td>Leverage</td>
<td>Export value added</td>
<td>Productivity premium of exporters</td>
<td></td>
</tr>
<tr>
<td>Firm size</td>
<td>Financing gap</td>
<td>Concentration measures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital intensity</td>
<td>Collateral</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Static Allocative Efficiency</td>
<td>Equity to Debt</td>
<td></td>
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</tr>
<tr>
<td>Dynamic Allocative Efficiency</td>
<td>Cash flow</td>
<td></td>
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<tr>
<td></td>
<td>Implicit interest rate</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Trade Credit/Debt</td>
<td></td>
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<tr>
<td></td>
<td>Debt burden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credit constraint index</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Example of joint distributions

Example type of question:
Are low productive firms in a country-sector characterized by higher credit constraints?
How much is important the external dimension?

- Being an exporter is associated with higher levels of productivity (about 20%)
- During the crisis, the drop in productivity has been more pronounced for exporters
  
  *They seem to be more vulnerable to macro-economic shocks*

- Export productivity premium is highly heterogeneous, it varies sharply across countries
Conclusions

- Underlining the role of contractual issues the firm faces as it is confronted with the trade off "integration vis a vis outsourcing" is certainly important.

- While it provides an extremely neat conceptual set up to build on, the proposed localisation framework may not be over-compassing enough to proxy the broad range of actual constraints facing the firms.

- The firm level data set used to test the theory is also rather old, which is a problem as globalisation dynamics are changing rapidly. And is limited to the US only.

- The CompNet project is an attempt to take a truly cross country perspective in assessing Productivity determinants, including external factors.

- CompNet is now considering to merge hard data information out of business registers with survey-based info related to aspects related to drivers and constraints of the GVC participation of firm.

- There is a strong need for co-ordinating efforts among scholars and practitioners.
Reserve slides
Contribution of CompNet

- The EU system of Central Banks set up the Competitiveness Research Network (CompNet) in 2012
  

- Starting from existing databases (e.g. WIOD), CompNet has provided evidence on European countries’ integration and position within international production processes

- VoxEU.org has recently published a new e-book containing the main research findings
  
  http://www.voxeu.org/content/age-global-value-chains-maps-and-policy-issues
**Characteristics of firms from productivity point of view**

<table>
<thead>
<tr>
<th>Change in TFP w.r. to the cut-off (7th TFP decile)</th>
<th>No. of firms</th>
<th>Avg. turnover per firm (in €1000s)</th>
<th>Avg. no. of employee</th>
<th>Avg. Capital stock per employee (in €1000s)</th>
<th>Total Factor Productivity</th>
<th>Unit labour cost (in € per unit of value added)</th>
<th>Labour productivity (value added per employee)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remain <strong>below</strong></td>
<td>3823</td>
<td>146.1</td>
<td>27</td>
<td>157.9</td>
<td>0.653</td>
<td>0.845</td>
<td>39.346</td>
</tr>
<tr>
<td>Move below</td>
<td>1010</td>
<td>12271.1</td>
<td>66.5</td>
<td>188.5</td>
<td>0.821</td>
<td>0.886</td>
<td>48.652</td>
</tr>
<tr>
<td>Move above (switcher)</td>
<td>942</td>
<td>7805.9</td>
<td>34</td>
<td>202.4</td>
<td>1.129</td>
<td>0.65</td>
<td>68.755</td>
</tr>
<tr>
<td>Remain <strong>above</strong></td>
<td>2856</td>
<td>53921.1</td>
<td>341.9</td>
<td>248.8</td>
<td>1.546</td>
<td>0.649</td>
<td>79.394</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8631</strong></td>
<td><strong>19462.2</strong></td>
<td><strong>126.3</strong></td>
<td><strong>193.1</strong></td>
<td><strong>0.989</strong></td>
<td><strong>0.772</strong></td>
<td><strong>55.441</strong></td>
</tr>
</tbody>
</table>

Most productive firms (i.e. the ones Moving or Remain above the cut-off) tend to be:
- Larger (in terms of turnover and number of employees)
- Have a larger capital stock per employee
- Have lower Unit labor costs...
The rational of firm-level perspective

- Firm performance distribution is **very disperse** and **asymmetric**
- Rather than most firms around an “average” performance, there are lots of firms which have low productivity and only a few which are **very productive** in the “right-tail” of the distribution (the so-called “happy few”)

Why do economists care about firm heterogeneity?

Because they want resources (capital and labour) being reallocated from low to high productive firms, in order to increase the economy aggregate performance.
Exporting means moving to higher productivity

TFP density by International activity status

Global_exporter

Passive_outsourcer

Active_outsourcer

FDI

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What does empirical evidence tell? Exporting means higher productivity
Profitability (ROA) and productivity distributions

- In 2009, there has been a sharp decline in ROA.
- Low productive firms were the most affected by the crisis.
- In 2013, all productivity classes show signals of recovery.
Most productive firms are not credit constrained

- On average more productive firms are less likely to be credit constrained.
- Firms' response depends on which groups of countries they pertain to: Firms in stressed countries (Spain, Italy) were more affected by the 2009-12 crisis, particularly the least productive firms.