

The role of different types of firms in GVCs

GGDC 25th Anniversary Conference

Stephen Chong, Rutger Hoekstra, *Oscar Lemmers*, Ilke Van Beveren, Marcel van den Berg, Ron van der Wal, Piet Verbiest



Statistics
Netherlands

Overview

- Motivation
- Methods
- Results
- Conclusions
- Current and future work

Motivation - general

Work on GVCs using Multi Region IO-tables

- Looking through the value chain
- Interconnectedness and dependencies
- Role of services much larger than thought
- Different view on trade (im)balances

All on industry level

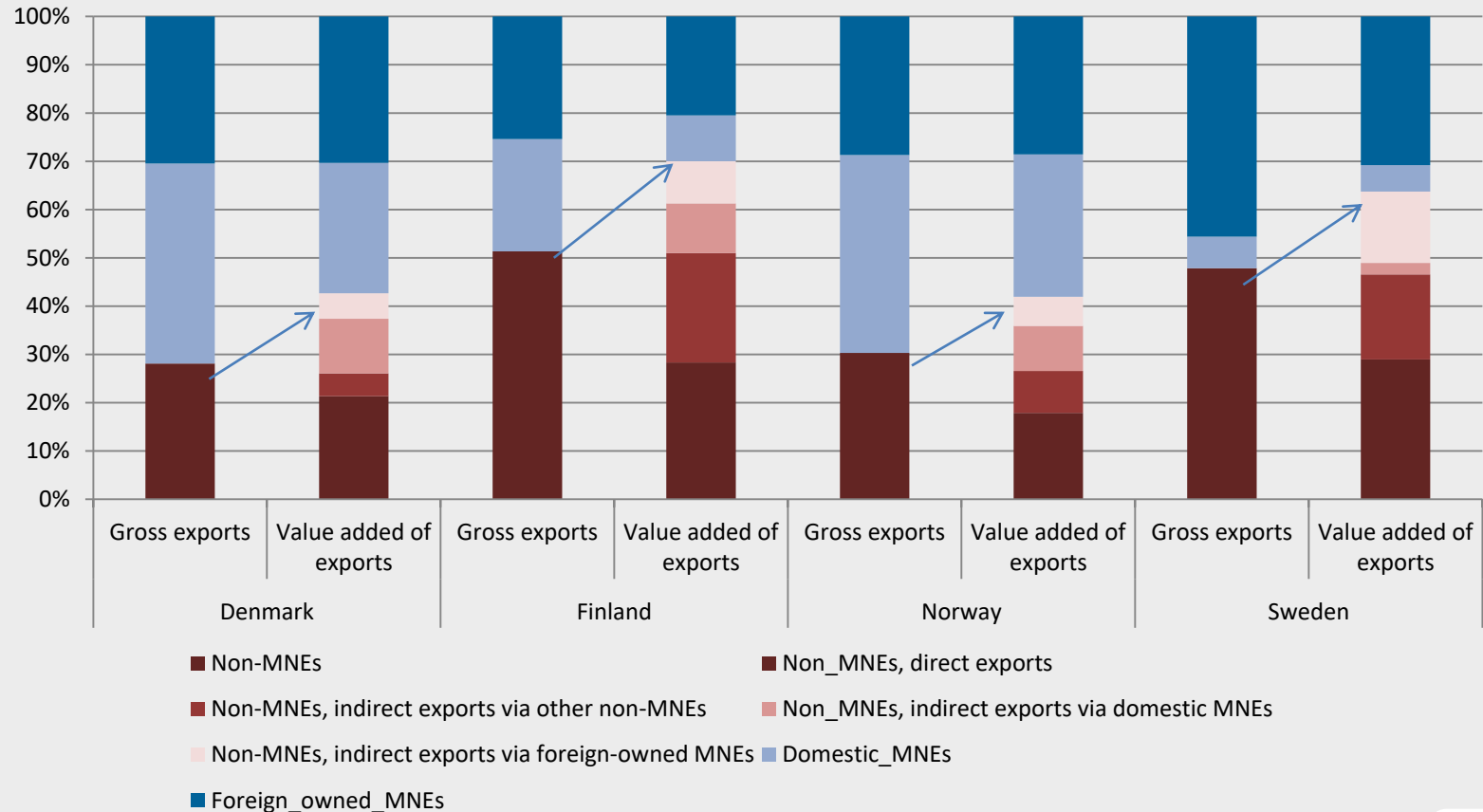
- But there is large heterogeneity in industries
- Probably introduces upward bias in VAX estimates
- Policy often interested in types of firms, eg SMEs or multinationals

Examples from literature

- USITC (2010) splits industries in US IO table into SME and large enterprise parts
- Yang et al. (2015) split industries in Chinese IO table into processing and non-processing parts
- WTO-OECD TiVA MRIOs consider heterogeneity for China and Mexico
- Nordic countries and OECD (2017) considered 3 types of heterogeneity in the Nordic countries: size, type of trader, type of multinational

Non MNEs: important upstream

Shares of firms in gross exports and in exported value added, 2013



Source: Nordic Countries and OECD (2017)



Motivation - why SMEs?

Ministry of Economic Affairs: interested in SMEs in general
Ministry of Foreign Affairs: internationalisation of SMEs

- SMEs are less prone to export
- Fear that they might miss opportunities
- Especially in markets outside Europe, eg China
- Several programs to support their internationalisation

But: maybe SMEs are benefitting from economic growth abroad due to participation in value chains?

Ministries funded the project to get quantification

Methods: an extended IO-table

- Industry level: input output table, industry x industry
- Or country x industry X country x industry

Here one needs an extended IO-table or extended MRIO:

	Manufacturing SME	Manufacturing Large	Services SME	Services Large	Exports	Household consumption	Government consumption	Gross fixed capital formation	Rest	Total output
Manufacturing SME										
Manufacturing Large										
Services SME										
Services Large										
Imports										
Value added										
Total output										

Methods: splitting the IO table

Piacentini & Fortanier (2015) split IO tables into SME/large using share of SMEs in

- Total output
- Value added
- Imports
- Exports

(by industry)

Methods: using extended SUT

To create an input output table, use supply use table

So for an extended IOT, use extended SUT

For example, a use table such as:

	Output of industries					Final use			Total output
	Manufacturing SME	Manufacturing Large	Services SME	Services Large	Exports	Household consumption	Government consumption	Gross fixed capital formation	
Products of manufacturing									
Products of services									
Value added									
Total output									

Methods: why the extended SUT?

- Conceptually nicer
- Maximum use of the microdata at Statistics Netherlands
- Imports and exports of goods
- Imports and exports of services
- Structural Business Survey (VA, intermediate demand, output)
- Prodcom (survey asks output by product)

All at enterprise level

Methods: five size classes

1. 0-49 employees (small)
2. 50-249 employees (medium)
3. 250+ employees (large)
4. < 250, part of enterprise group with 250+ employees **or** foreign owned enterprise <250 employees
5. Not split

Allows for different delineation of SMEs: is a small subsidiary of a domestic/foreign multinational an SME?

Results section: such firms are put at the large enterprises

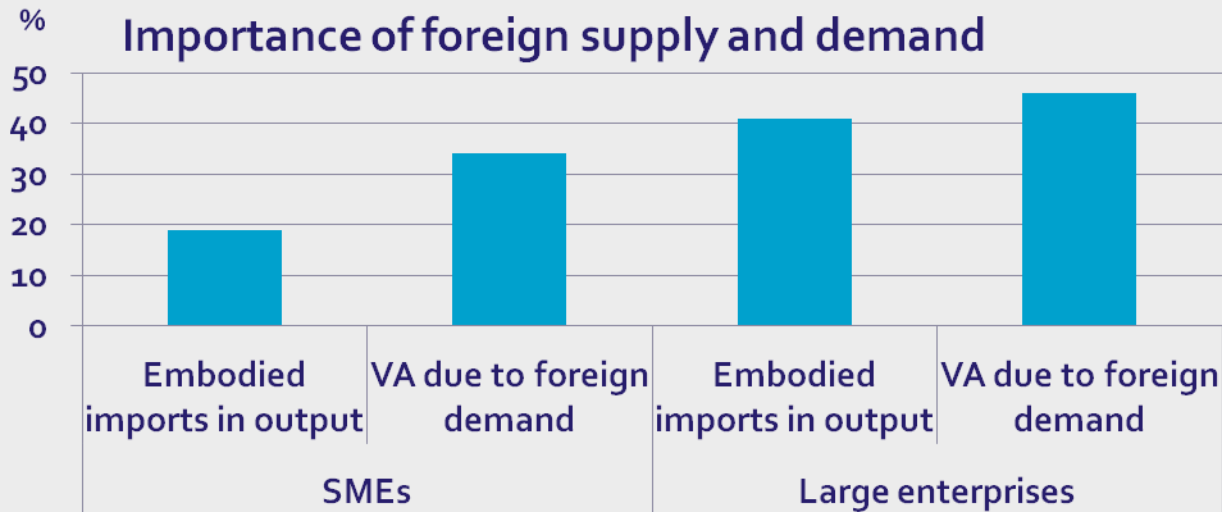
Methods: construction extended IOT

- Assign size classes to the enterprises
- Match this file to SBS (Structural Business Statistics) and distribute supply and use on product level by industry x size class
- Other methods to distribute in industries without SBS
- Assign size class to moonlighting, illegal activities etc
- Check results and adapt when necessary
- Add trade data to split input and output in domestic/foreign parts

(very similar to usual construction SUT/IOT)

Results (I) Importance of imports/exports

Big differences between SMEs and large enterprises...



Results (II) Similar to the literature

- SMEs are important suppliers of large exporters
- Thus large spillovers from large exporters to SMEs
- Hence mutual dependence
- In value added and employment

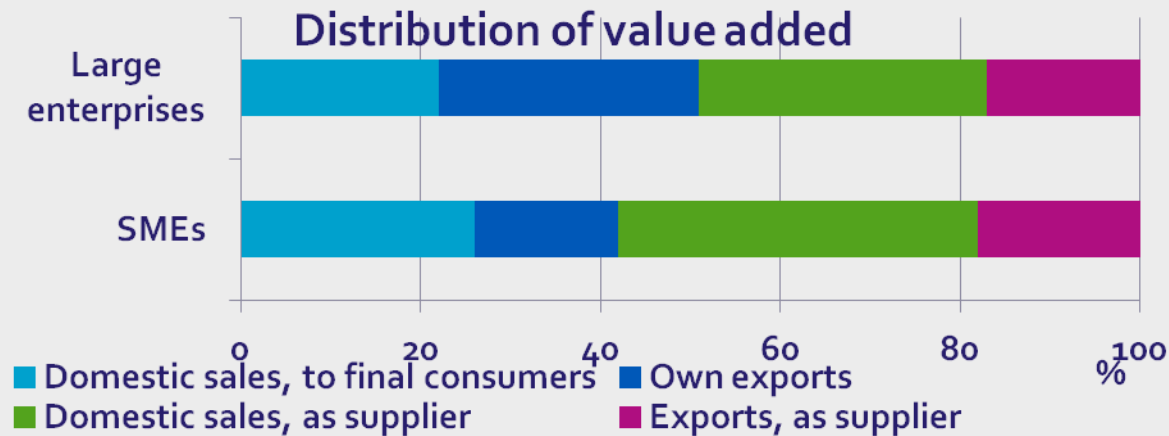
This type of results was known from literature, for other countries and therefore expected.

Value added of project: verification & quantification.

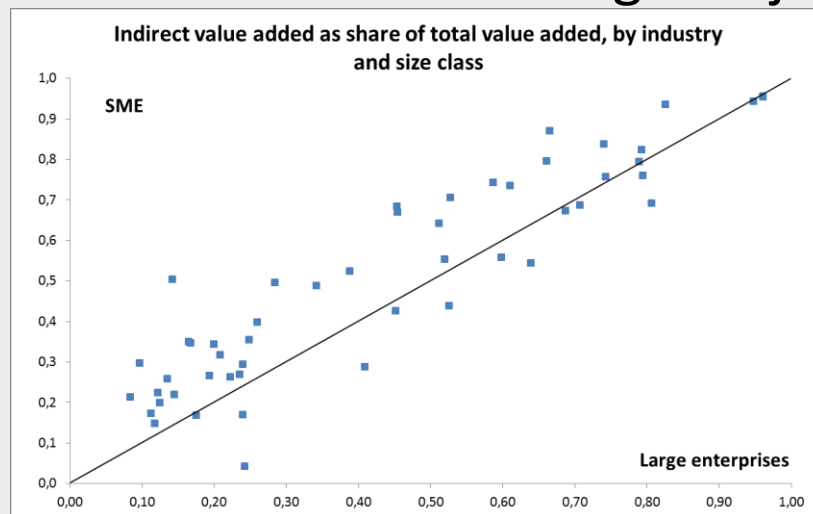
But also new types of results!

Results (III) SMEs have different roles

Macro: SMEs more indirect VA than large enterprises

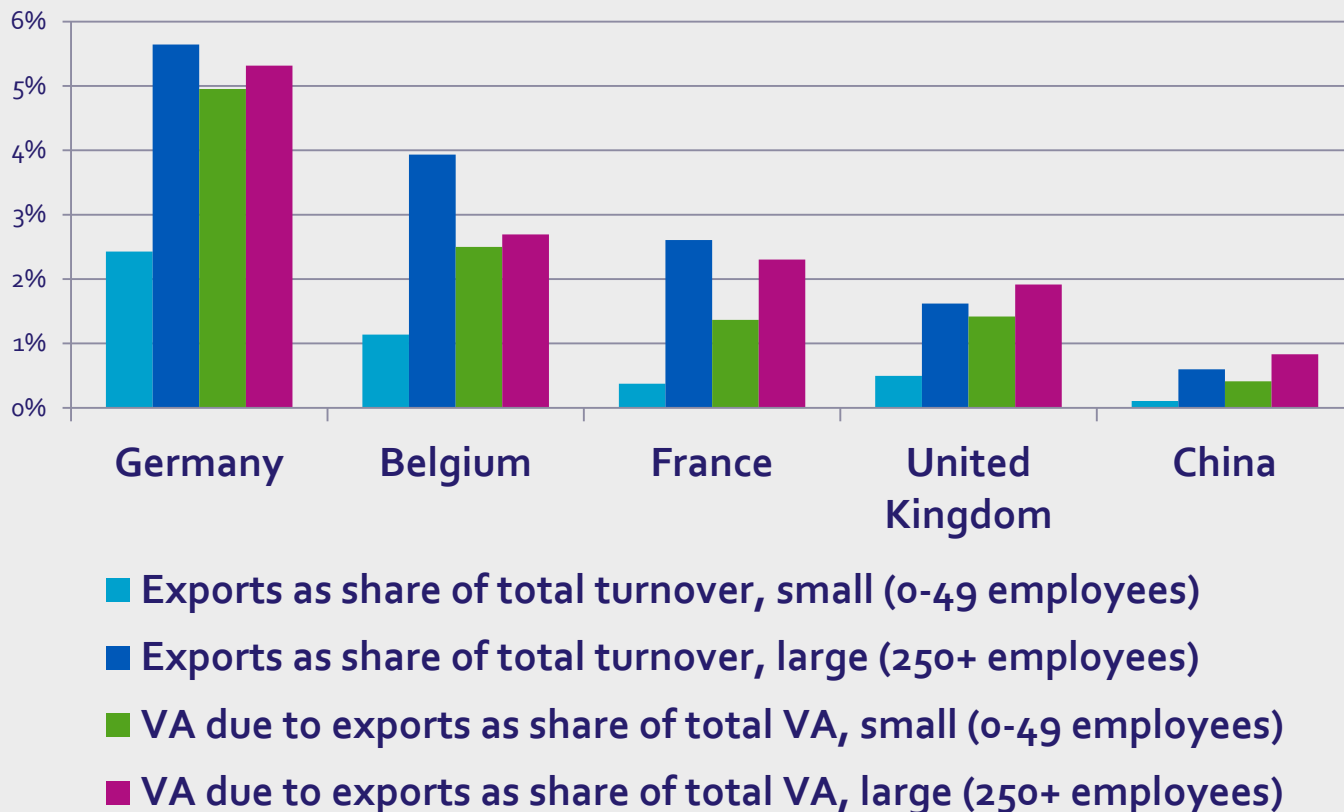


Meso: same conclusion for large majority of industries



Results (IV) Countries to export to

Big differences between small and large enterprises when considering gross exports of goods, small when considering VA



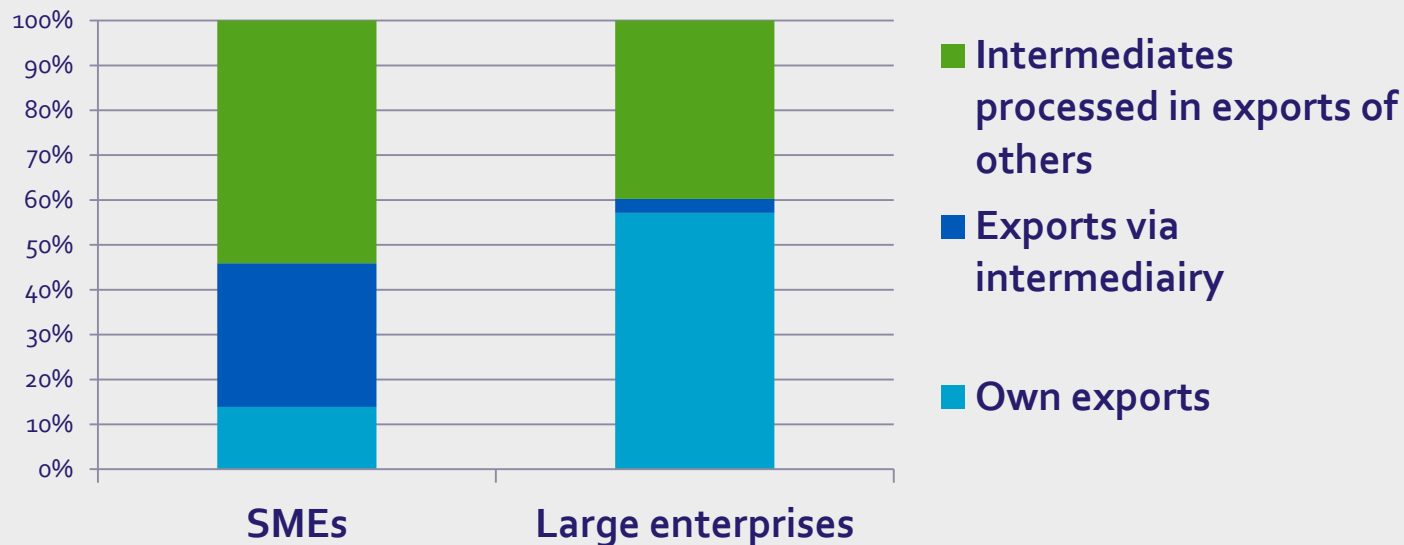
Even for countries far away!



Results (V) Different channels to export

Trade statistics and National accounts assign trade differently – to actual trader and producer, respectively.

Share of VA due to exports of Dutch produced goods by export channel



A blessing in disguise? Allows to make some estimates about the different channels enterprises use to export.

Conclusions

- The results clearly show heterogeneity
- Try to take that into account
- Improving accuracy and relevance

Microdata demanding, leading to very detailed SUT and IOT
(published version: 78 products, 58 industries mostly
split in 3 size classes, unpublished version more detail)

Also time resource demanding: more than 1 fte

Current & future work

- Compare results of this resource demanding approach to results of efficient yet coarse approach (Piacentini & Fortanier, 2015)
- Project for multinationals using latter approach
- In general: micro-macro link
- Add information about people, jobs, wages, tasks

Thank you for your attention!

Questions, suggestions, remarks?

Oscar Lemmers

o.lemmers@cbs.nl