Micro-data linking and macroeconomic indicators: First results for Switzerland

26th Meeting of the Wiesbaden Group on Business Registers

Session 4 Administrative Data

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1. Background

- Rapidly evolving economic structures (globalization, digitalization, etc.)
- Rising demands for new statistics …
  …. but strong political pressure to reduce/limit burden on respondents
- New approach for statistical production (away from stovepipes to integrated production)
- New opportunities provided by the introduction of the unique enterprise identification number (UID) and centralized registers
- Cooperation with data producers outside of FSO (mainly Customs and VAT)

2. Framework of analyses carried out at FSO

- **References:** (a) System of National accounts / GDP; (b) structural analysis of the Swiss economy (global value chains, etc.)
- **Basic issues:** (a) Can we use administrative data to complement survey data / generate new data ?; (b) Can administrative data eventually replace survey data?
- **2 case studies focusing on:**
  (a) VAT data – Business and enterprise register (BER) – Structural business statistics
  (b) Customs declarations – BER – Short-term statistics (for NACE 24)

3. Characteristics of data (1)

A. VAT data

- Available since 2008, integrated and used since reference year 2011
- 2/3rd of firms provide information ("original values"); 1/3rd is missing (exemption from VAT; group turnover; …) ➡ Imputations and distribution of Group turnover
- No real treatment in order to have statistical outputs - quality controls mainly based on fiscal reasoning

3. Characteristics of data (2)

B. Customs data

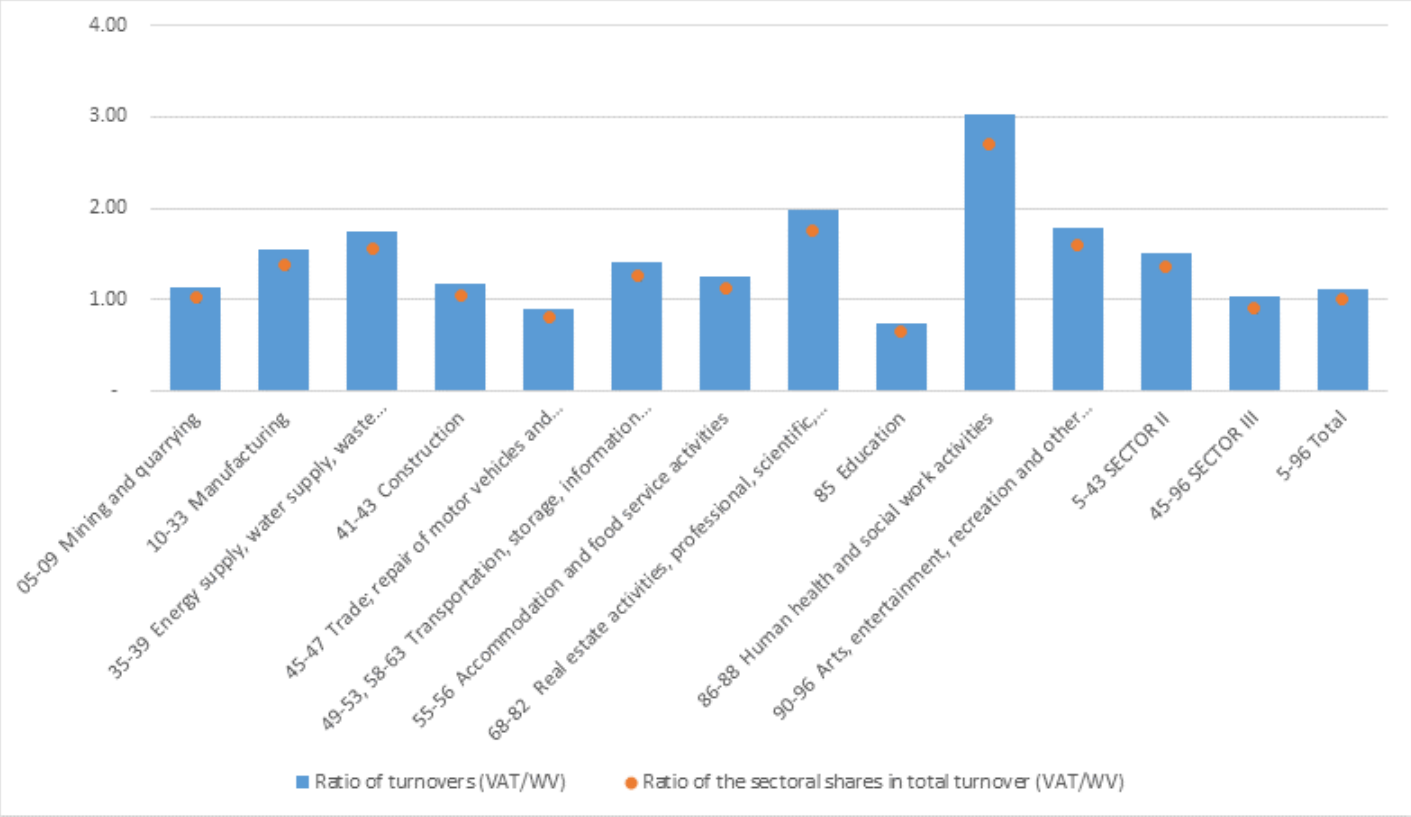
- Well-established statistical tradition (International Merchandise Trade statistics - IMTS)
- UID compulsory in 2016 - New products like Trade by enterprise characteristics (TEC) – also useful for FATS
- Many variables (statistical value, code of country of origin of the goods/ code of final destination, product description, etc.)

4. Case studies (1)

A. Comparison of turnover from surveys and administrative data

- Two sources for turnover analyzed: VAT turnover and Production and value added statistics (WV) turnover
- 1st finding There are substantial differences. In general, VAT turnover > WV turnover

Differences between the two sources



Source: Federal statistical offce

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- 1st finding There are substantial differences. In general, VAT turnover > WV turnover
- 2nd finding Generic elements explain differences in many areas

Some generic elements which help to understand the differences

- Content of the information provided by enterprises
- Trading, gambling and special activities
- Declaration by one unit for the group (consolidated turnover) and subsequent (re)allocation on units which are members of the group

4. Case studies (1)

A. Comparison of turnover from surveys and administrative data

- Two sources currently analyzed: VAT turnover and Production and value added statistics (WV) turnover
- 1st finding There are substantial differences. In general, VAT turnover > WV turnover
- 2nd finding Generic elements explain differences in many areas
- 3rd finding Branch specific elements sometimes play a major role

4. Case studies (2)

B. Using Customs data to analyze activities related to "Manufacture of basic metals"

1st finding Trade is concentrated in a limited number of firms

In 2016

Six firms accounted for 17.6% of all exports of **goods** and for 22.2% (as an importer) and 29.2% (as a consignee) of all imports of **goods** made by Swiss firms

These firms accounted for 62.7% of exports resp. 65.7% (as an importer) and 87.6% (as a consignee) of imports of **nonmonetary gold** (e.g. gold ore, scrap material, investment bars)

Trade figures (1)

Exports in CHF, 2016

	Total exports	Rank among exporters	Exports of nonmonetary gold	Exports of nonmonetary gold (%)	Special customs regimes (%)
A	989'482'318	33	353'410'272	35.7%	0.0%
B	9'965'134'450	7	9'306'831'853	93.4%	0.0%
C	328'897'801	>50	302'602'304	92.0%	0.0%
D	21'231'953'893	2	21'085'702'024	99.3%	0.0%
E	19'495'439'881	3	17'202'741'113	88.2%	0.0%
F	67'504'318	>50	150'949	0.2%	0.0%
	52'078'412'661		48'251'438'515	92.7%	0.0%

Source: Federal Customs Administration

Trade figures (2)

Imports in CHF (importer perspective), 2016

	Total imports	Rank among importers	Imports of nonmonetary gold	Imports of nonmonetary gold (%)	Special customs regimes (%)
A	130'767'546	>50	43'839'924	33.5%	0.9%
B	12'059'636'341	5	10'904'087'418	90.4%	0.0%
C	236'917'008	>50	47'096'144	19.9%	0.0%
D	27'176'138'339	1	26'899'799'848	99.0%	0.3%
E	18'426'834'640	2	15'523'904'248	84.2%	0.0%
F	7'600'621	>50	344'331	4.5%	11.6%
	58'037'894'495		53'419'071'913	92.0%	0.1%

Source: Federal Customs Administration

Trade figures (3)

Imports in CHF (consignee perspective), 2016

	Total imports	Rank among consignees	Imports of nonmonetary gold	Imports of nonmonetary gold (%)	Special customs regimes (%)
A	17'186'351'157	3	16'728'506'632	97.3%	0.0%
B	12'197'464'141	4	11'040'057'776	90.5%	0.0%
C	237'299'139	>50	47'096'144	19.8%	0.0%
D	27'547'736'463	1	27'270'904'570	99.0%	0.3%
E	19'111'808'502	2	16'097'468'127	84.2%	0.0%
F	8'420'599	>50	303'933	3.6%	10.3%
	76'289'080'001		71'184'337'182	93.3%	0.1%

Source: Federal Customs Administration

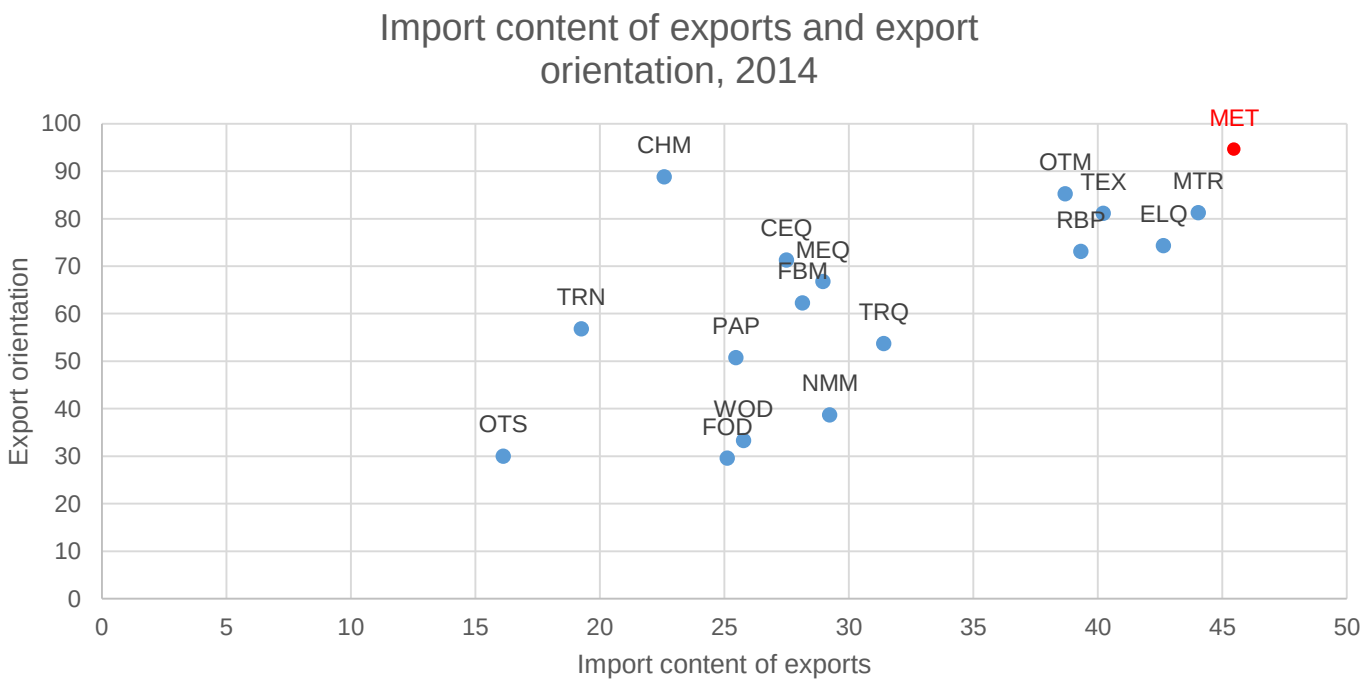
4. Case studies (2)

B. Using Customs data to analyze activities related to “Manufacture of basic metals”

1st finding Trade is concentrated in a limited number of firms

2nd finding The activity is highly integrated in global value chains (GVC)

Manufacture of basic metals



Source: OECD (2017), Switzerland: Trade and Investment Statistical Note

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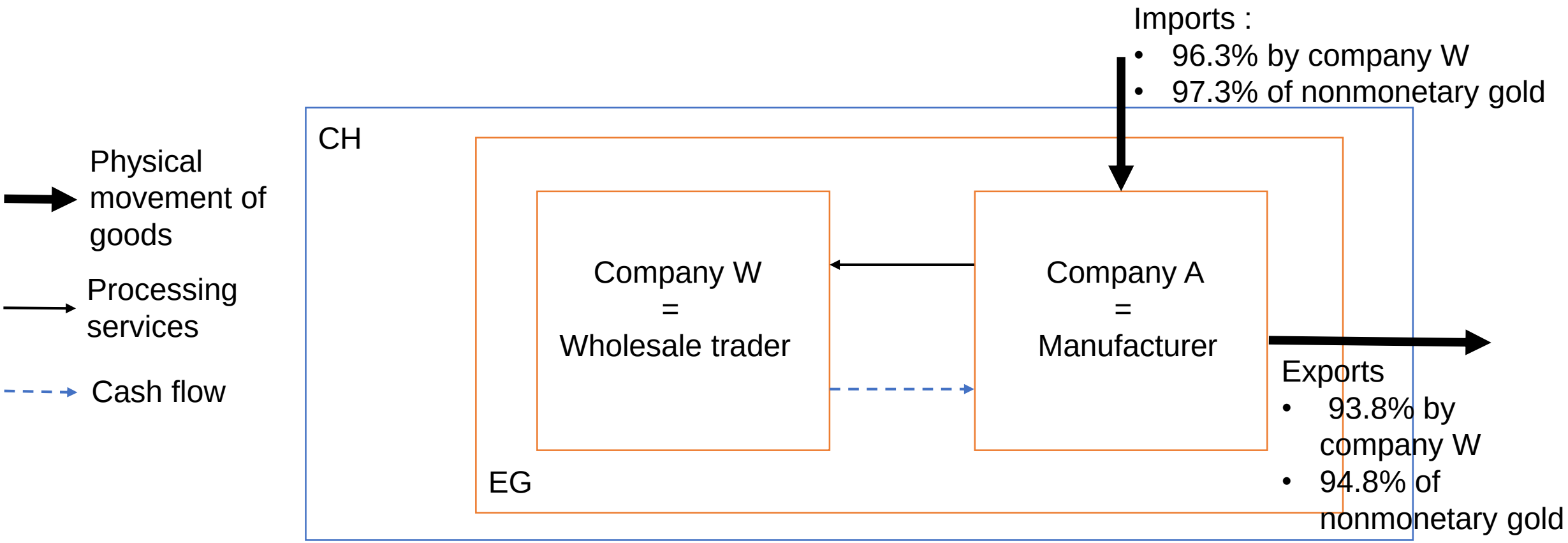
3rd finding Business models are different

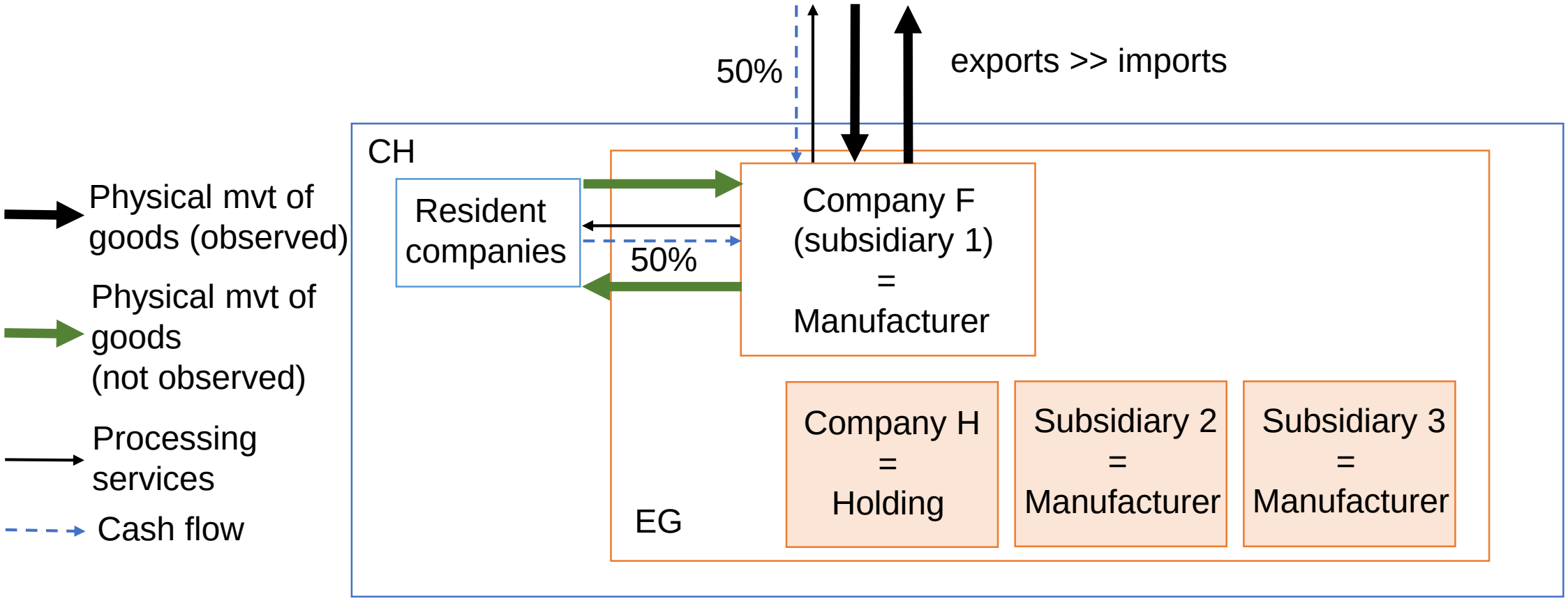
Business models: Example of Company A



Business models: Example of Company A

- Company A rarely stands as the importer on the customs declaration but as the consignee
- Nonmonetary gold sent to company A is primarily imported by company W, which is a Swiss non-financial corporation classified in « Wholesale of metals and metal ores »
- Companies A and W belong to the same foreign multinational enterprise group with the parent company being located in the EU
- Nonmonetary gold is « reexported » from company A's location by company W primarily to Asia.
- In 2016, company A has reported that 80% of its annual turnover was generated via the provision of processing (i.e. refining) services on the domestic market

Business models: Example of Company F



Business models: Example of Company F

- Company F is part of a Swiss multinational enterprise group
- No flows of goods and services between the Swiss entities of the group and « intra-group trade » seems limited (10.5% of imports, 15.1% of exports)
- The role of nonmonetary gold for company F is marginal
- Company F generally stands both as the importer and consignee on the customs declarations
- Processing fees account for nearly all of the turnover => Company F does not own the merchandise
- Around 50% of the processing fees as exports of service => merchandises are owned by non-resident entities

5. Preliminary conclusions

1. Micro-data linking indeed provide large potential for new products and new insights on the functioning of the Swiss economy
2. Administrative data also useful for the management of surveys
3. We can produce more / very detailed information without raising the burden on respondents
3. But … Not all administrative data warehouses can be easily «recycled»

   Statistics might be heavily impacted if administrative rules change

   It remains to be seen if administrative data can really replace items/positions currently surveyed - apparently no burden reduction

In short: Promising but challenging “work in progress” in Switzerland!

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