

# Distributive trades: statistical units, classification, turnover, output, NA, PPI(?) and the international statistical mess

Alain GALLAIS Insee



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# Structure of the presentation

1. Definitions, purposes
2. Statistical units
3. Classification
4. Sales, turnover, output
5. What National Accounts need exactly
6. Price indices and quality adjustment (on goods, on services)
7. Conclusion:
  - Can we save Eurostat statistician Sven KAUMANNNS?
  - Can we help National Accounts compilers?
  - Can we recommend anything?



# 1. Definitions – wholesale trade

› According to ISIC rev.4 (div 46) and IRDTS 2008:

*“Wholesale trade is defined as the resale (sale without transformation) of new and used goods to retailers, business-to-business trade [...] or resale to other wholesalers, or it involves acting as an agent or broker in buying merchandise for, or selling merchandise to, such persons or companies. The principal types of wholesale trade businesses are:*

*merchant wholesalers [...],*

*sales branches and sales offices (but not retail stores) that are maintained by manufacturing or mining units apart from their plants or mines [...] and that do not merely take orders to be filled by direct shipments from the plants or mines.*

*Other types of wholesale trade businesses are merchandise and commodity brokers, commission merchants and agents [...]*

*While by definition, wholesalers do not transform goods, they frequently physically assemble, sort and grade goods in large lots, break bulk [...]*”

Only goods

Boundary between trade and industry

Turnover <> sales



# 1. Definitions – retail trade

› According to ISIC rev.4 (div 47) and IRDTS 2008:

*“Retail trade is defined as the resale (sale without transformation) of new and used goods mainly to the general public for personal or household consumption or utilization, by shops, department stores, stalls, e-commerce retailers, mail-order houses, hawkers and peddlers, consumer cooperatives, etc. The goods sold in this division are limited to those usually referred to as consumer goods or retail goods. Therefore, goods not usually entering the retail trade, such as cereal grains, ores, industrial machinery, etc., are excluded. [...] Some processing of goods may be involved, but only as incidental to selling, for example, sorting or repackaging of goods, installation of a domestic appliance, etc. Retail trade also includes the retail sale by commission agents and activities of retail auctioning houses.”*

Assimilation  
between  
retail trade  
and  
household  
final  
consumption

Boundary  
between  
trade and  
industry

Turnover  
<> sales



## 2. Statistical units: LKAU or enterprises

› According to SNA 2008 and IRDTS 2008:

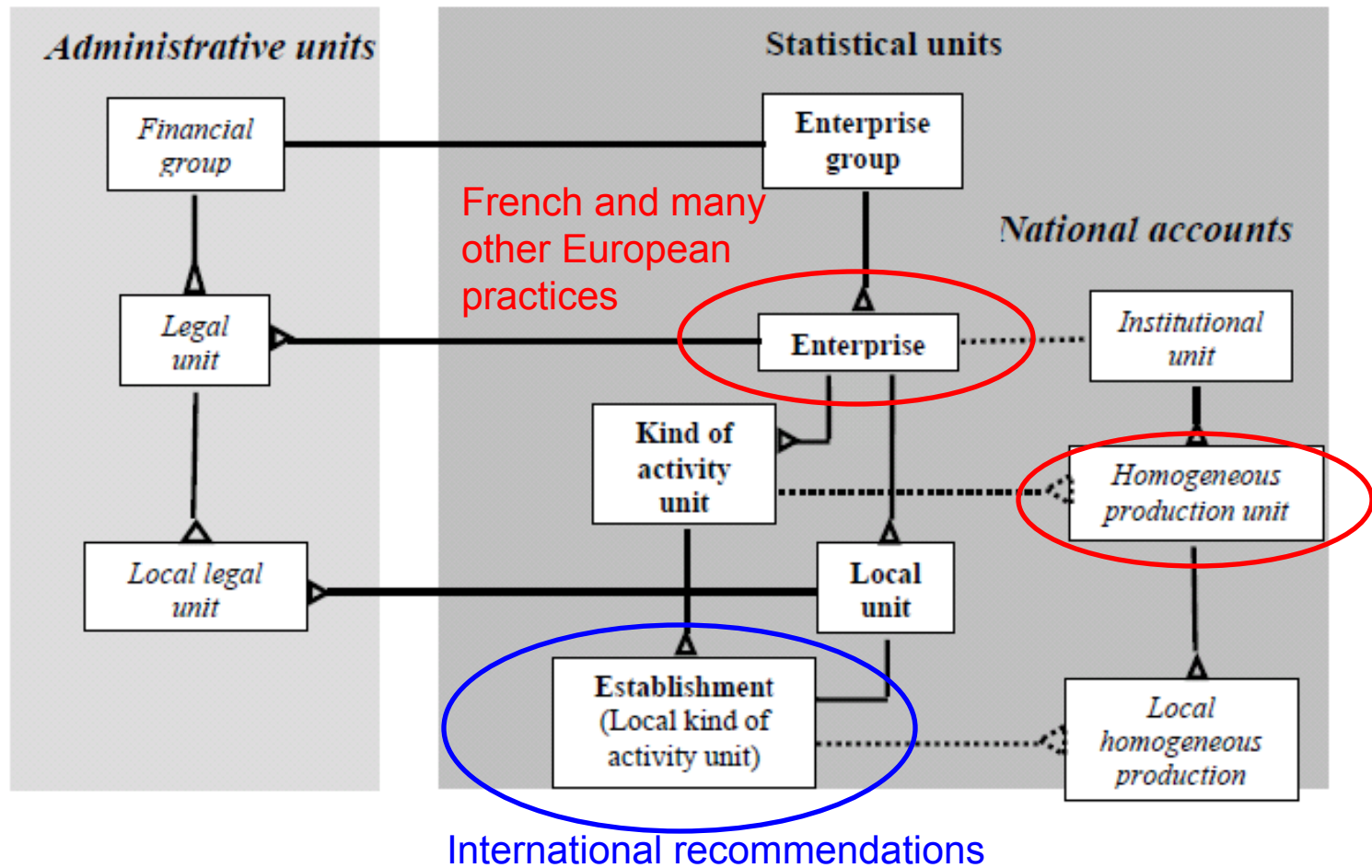
*“2.27. In recognition of the fact that the 2008 SNA recommends the establishment as the most appropriate statistical unit for production and employment data and that compilation of homogeneous and geographically distributed data is to be ensured, countries are encouraged to use the establishment as a statistical unit for distributive trade statistics. In the majority of cases, the establishment and the enterprise are the same [...]. However, if an establishment is a part of a multi-establishment enterprise, it may not have access to all the necessary (for example, financial) information. [...].”*

› Anyway, in the European practice, Structural Business Statistics (EU reg. n° 295/2008) rely on (statistical) enterprises (EU reg n° 696/93), including multiannual breakdown of turnover by activity, and for trade activity by products. This should be the main source of NA in Europe and encourage Homogeneous Production Units rather than LKAU.

*“The enterprise is the smallest combination of legal units that is an organizational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations. An enterprise may be a sole legal unit.”*

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## 2. The relationship between statistical units





## 2. Consequences of choice of a different statistical unit

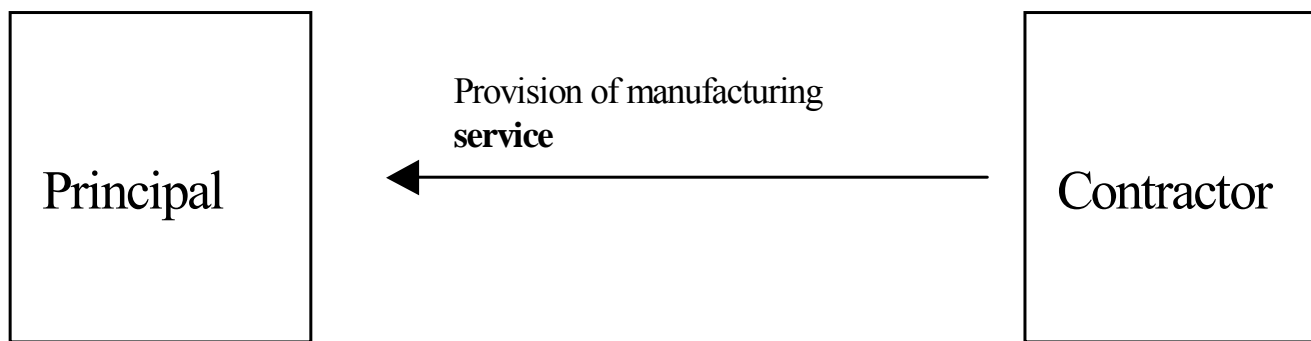
- › Countries relying on establishments (US, Canada...) should cover the “manufacturer’s sales branches and sales offices”, in spite of some conceptual or practical difficulties:
  - J. GORKO, B. MURPHY and D. FRIEDMAN, US: *“Manufacturer’s sales and branch offices are included in Wholesale Trade, even though their prices may be set by the manufacturing arm of the company. In most cases, title is held by the manufacturing arm of the company until the sale is complete. [...] In many cases, respondents considered the manufacturers’ sales and branch offices merely an extension of the manufacturing facility and not a separate Profit Maximizing Center.”*
  - V. NORRMAN, SE and M.-B. GARNEAU, CA : *“Drawing a line between the manufacturer and this wholesale activity can be difficult and is wholly dependent on the way a firm keeps its books. ”*
- › Countries relying on enterprises (France and many European countries) would not cover them. International comparisons are therefore biased.





### 3. Classification: the case of global outsourcing in manufacturing – official rules

- › In 2007, the UNSD provided a clever guidance for classification of principals that outsource all the production process, and their contractor, relying on the ownership of the input, and so of the output:
  - if the principal owns the main material input:

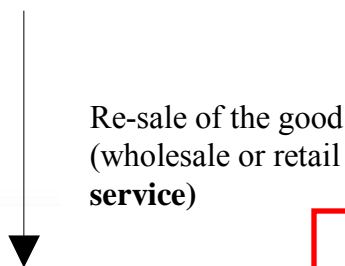
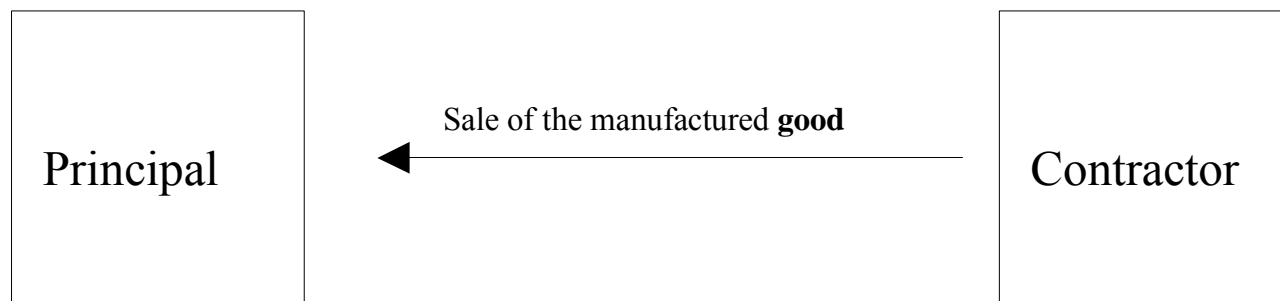


The principal produces the good, after having intermediately consumed the material input it has purchased. The contractor produces a “manufacturing service”. Both units (and both products) are classified in manufacturing.



### 3. Classification: the case of global outsourcing in manufacturing – official rules

- if the contractor owns the main material input:



The principal is then only a trader.

The good has been produced once, and only once, in each case.

These rules were integrated in ISIC rev.4 (consistently with CPC ver.2) and NACE rev.2.



### 3. Two kinds of heretics: the “all in manufacturing” and the “all in trade”

› According to Vera NORMAN, SE and Mary Beth GARNEAU, CA (also in the US paper):

– “Adoption of this concept is not universal. [...] In development of the NAICS 2012 classification, the United States and Mexico have decided to classify all Factoryless Goods Producers in manufacturing [they may or may not own the input materials]. The basis for this decision is both conceptual and practical and is expected to provide a consistent and stable classification framework.”

– “A third approach is followed by Japan. The JSIC (Rev. 12) classifies all factoryless goods production into wholesale trade in an activity called “manufacturing-wholesale trade.””

A good can be “produced” twice

A good can have “never been produced”

e 10



### 3. What about the resale of services? What about the commissions on services?

- › In ISIC rev.4 and the guidance provided by UNSD in 2007, a unit outsourcing totally the production of this service is classified in the same service industry:
  - *“In the case the principal sub-contracts the complete provision of service-producing activities, including construction, both the principal and the contractor are classified as if they were carrying out the complete service activity.”*
- › But nothing is said about commissions earned for having re-sold a service.
- › In her paper on retail trade in Canada, Mary-Beth GARNEAU quotes three examples of “re-sale of services”, included implicitly in retail trade:
  - *“Inclusions: [...] commission revenue and fees earned from selling goods and services on account of others, such as selling lottery tickets, bus tickets and phone cards”*
- › Next revision of ISIC and CPC should treat explicitly this case (seems correct, anyway).



## 3. and 4. Turnover and sales - classification

- › In both wholesale and retail trade, units re-selling goods are mixed with units that earn only commissions on goods sold for the account of a third party. In this latter case, the turnover does not coincide with sales of goods (but only with sales of an intermediation service).
- › The European classifications have missed this essential distinction for retail trade (div. 47)! It is the beginning of problems for Eurostat statistician Sven KAUMANNS...
- › Also, even when re-selling goods, some retail trade units (perhaps some wholesale trade units) invoice some commercial services:
  - Sven KAUMANNS, EU: *“It is well known that supermarkets and department stores open up new revenue streams, eg. by asking their suppliers for publicity expenditure subsidies for putting a product in their advertisements or asking for product start-up funding before they list a new product.”* Other examples page 11 are perhaps not “trade services”.
- › This latter kind of commercial services seems to be missing in all international classifications. They were particularly developed in France (“commercial cooperation”, “product (reference) listing”) but were obliged to diminish in January 2009 (LME law), when it disturbed industrial PPI too. Another reason for turnover <> sales.



## 2. and 4. turnover and sales – European SBS

- › In European SBS annex “distributive trade”, the link between the turnover of a distributive trade enterprise and the sales by products (kind of trade services in section G) is approximatively correct, with this regret that commissions are mixed with gross sales in retail trade:

### 4. Enterprise characteristics for which multiannual statistics are to be compiled:

| Code                                      | Title   | Comment          |
|---|---|------------------|
|   | Information on forms of trading by enterprises                                      | Division 47 only |
| 17 32 0                                   | Number of retail stores   |                  |
| Breakdown of turnover by type of activity |   |                  |
| 18 10 0                                   | Turnover from agriculture, forestry, fishing and industrial activities              |                  |
| 18 15 0                                   | Turnover from service activities  |                  |
| 18 16 0                                   | Turnover from trading activities of purchase and resale and intermediary activities |                  |
| Breakdown of turnover by product type     |   |                  |
| 18 21 0                                   | Breakdown of turnover by product (according to Section G of CPA (*))                |                  |

(\*) Council Regulation (EEC) No 3696/93 of 29 October 1993 on the statistical classification of products by activity (CPA) in the European Economic Community (OJ L 342, 31.12.1993, p. 1). Regulation as last amended by Regulation (EC) No 1882/2003.

## 2. and 4. turnover and sales – European STS

- › But in European STS, this distinction between sales of an enterprise and re-sale of goods was forgotten (both secondary activities and commissions or the like):

ANNEX C

### RETAIL TRADE AND REPAIR

#### (a) Scope

This Annex applies to the activities listed in Division 47 of NACE Rev. 2.

#### (b) Observation unit

1. The observation unit for all variables in this Annex is the enterprise.
2. The use of other observation units can be decided in accordance with the procedure laid down in Article 18.

#### (c) List of variables

1. The statistics in this Annex comprise the following variables:

| Variable | Name                       |
|----------|----------------------------|
| 120      | Turnover                   |
| 210      | Number of persons employed |
| 330      | Deflator of sales          |

- › Eurostat STS methodological handbook: *“the deflator of sales in retail trade is a deflator not of the service provided but of the goods sold. The prices used to calculate the deflator for an activity are calculated as a weighted average of the relevant price indices of the goods sold by that activity.”*



# 4. Turnover and sales in retail trade: an attempt of a proposal for reconciling all options

› Quite complicate, anyway, to satisfy Eurostat statistician Sven KAUMANNNS:

Breakdown of distributive trade turnover

| Turnover: sales of goods |   |  |   | Turnover: sales of trade services like<br>goods   |  | Sales of goods not<br>included in turnover  |
|--------------------------|---|--|---|---|--|---|
| Products sold            | Private labels  |  | national or local<br>brands                 | Commercial services<br>invoiced to goods<br>providers (other than<br>commissions recorded<br>next column) | Commissions<br>on sales for<br>the account<br>of a third party |   |
|                          | Sale of goods<br>manufactured<br>by the<br>enterprise | Sale or resale of goods ordered as principals<br>bought from an affiliate (not manufactured by<br>enterprise) include private labels<br>with ownership of main<br>material input | without ownership of<br>main material input |   |  | Resale of goods<br>purchased to a non-<br>affiliate, neither<br>outsourcing<br>contractor |
| good 1                   |   |  |   |   |  |   |
| good 2                   |   |  |   |   |  |   |
| good 3                   |   |  |   |   |  |   |
| good n                   |   |  |   |   |  |   |

| Turnover: sales of services other than trade |  |
|--|--|
| service 1                                    |  |
| service 2                                    |  |
| service 3                                    |  |
| service n                                    |  |

› Of course, would not solve the problem or large scale suppliers recorded in manufacturing...





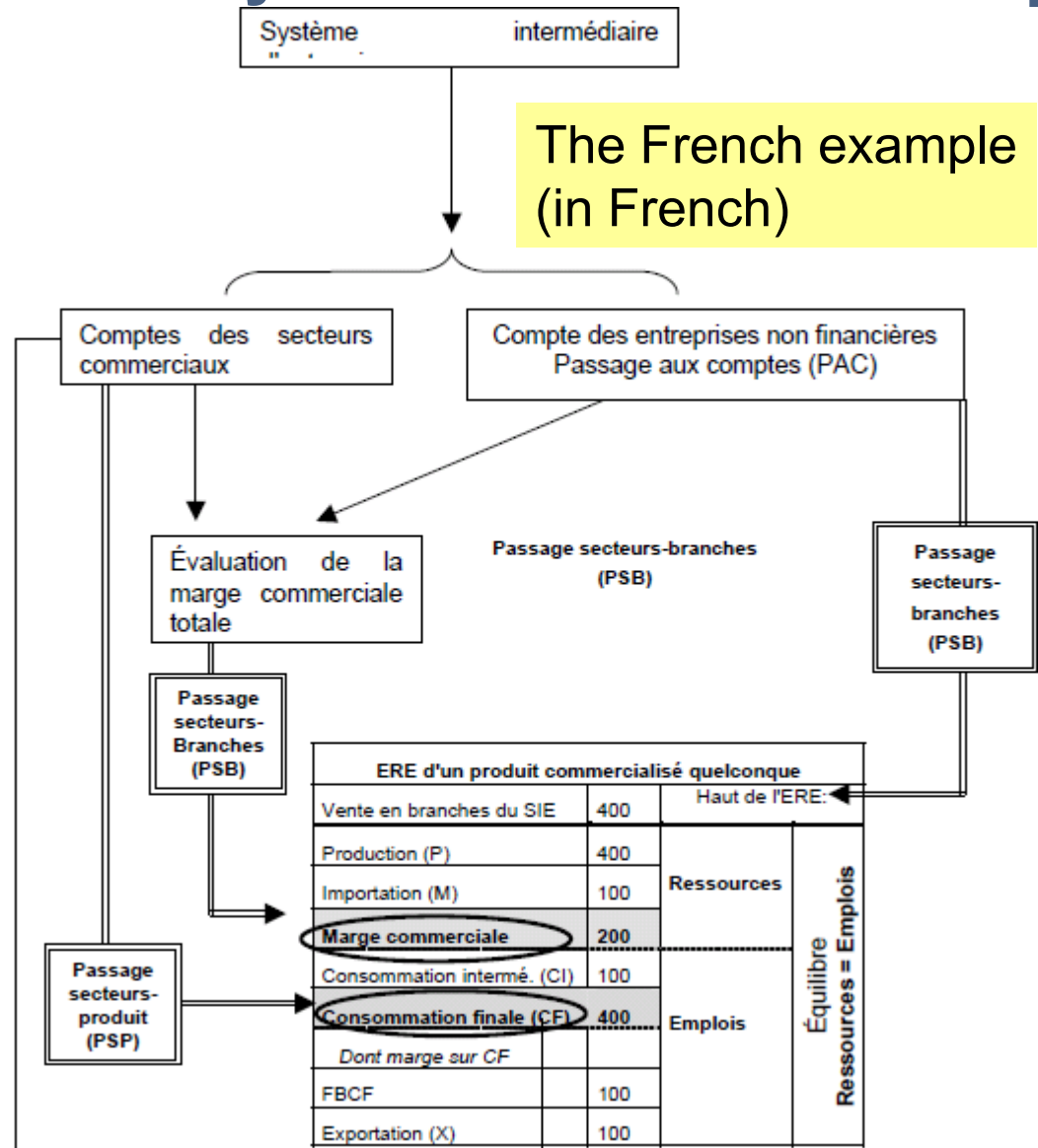
## 4. Output: calculation of trade margins

- › ESA 95, quoted by V. NORRMAN, SE and M.-B. GARNEAU, CA:
  - “a trade margin is the difference between the actual or imputed price realized on a good purchased for resale and the price that would have to be paid by the distributor to replace the good at the time it is sold or otherwise disposed of”;
- › Replacement cost rather than historical cost of purchase, in order to exclude holding gains: o.k. conceptually, but sometimes hard to estimate, and many wholesalers “buy when it is low and sell when it is high”, without being considered as financial units.
- › Fine remarks of V. NORRMAN, SE and M.-B. GARNEAU, CA in the bottom of page 12 to explain that the trade margin can be volatile due to other costs than cost of goods, or because of financial strategies. Complicate the picture for the breakdown between volume and price....

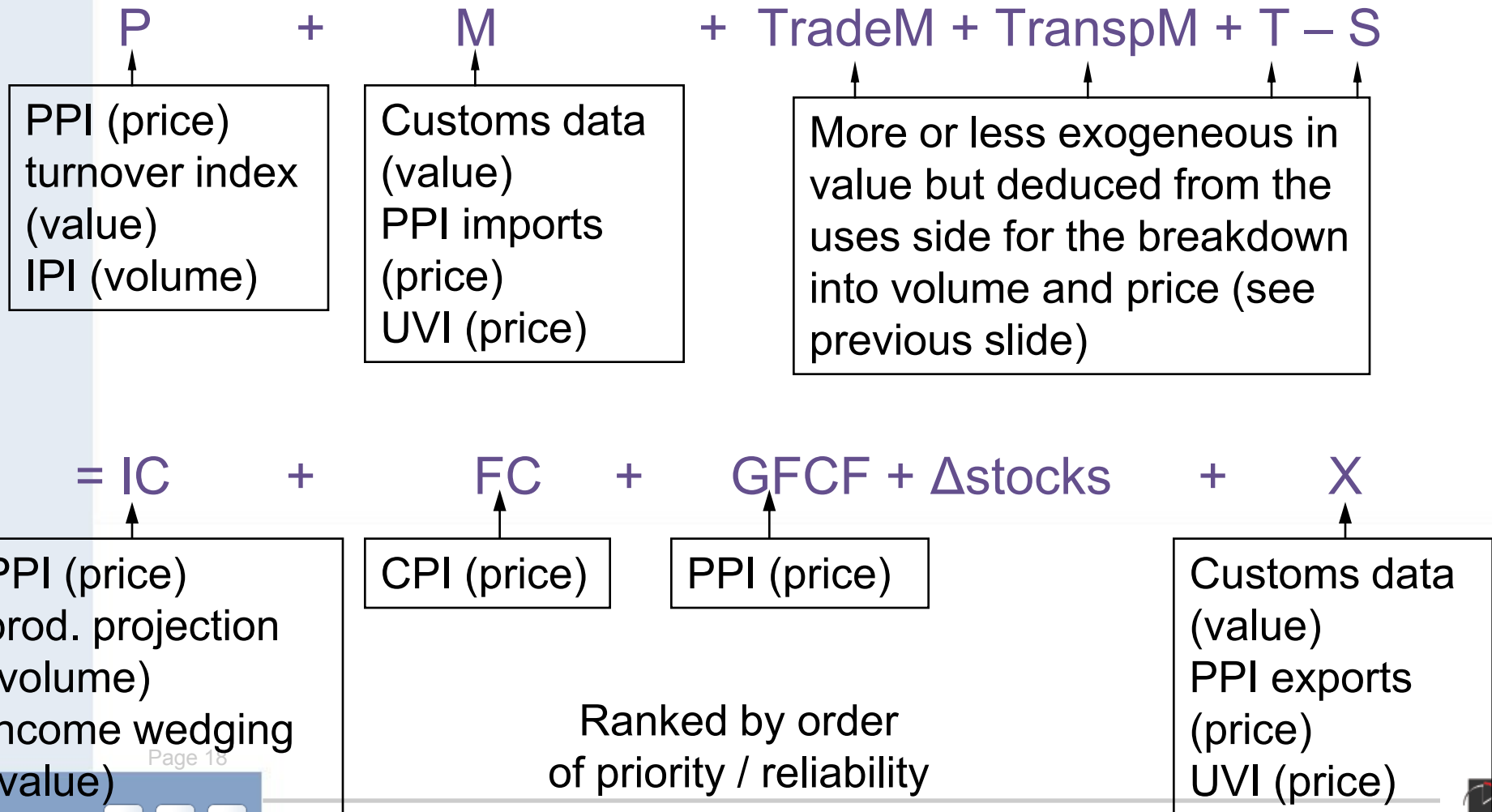
# 5. What do NA need mainly in current value?

- › An accurate estimate of (wholesale + retail) trade margin by product;
- › An accurate estimate of sales to households for final consumption;
- › An estimate of trade margin for each use;
- › An accurate estimate of other sales of services, by type (and users): commissions, rear margins...

The French example (in French)



# 5. What do NA need exactly as price and volume indices for commodity flows of goods?





## 5. The 2 possible methods for trade margins according to ESA 95

- › *“10.38. The most important flows in category (c) are those whose value at current prices is obtained as a difference between the values of two flows of goods. This arises in the case of trade margins, [...]. By one method, estimates of trade margins at constant prices can therefore also be made by difference, by subtracting the constant-price value of goods bought for resale from the constant-price value of goods resold by these trades. An alternative method of measurement would be to extrapolate the trade margins of the base year either by the volume of sales or by the volume of purchases made by the wholesale and retail trades. To be correct, this alternative has to take into account the fact that trade margins vary among different products and uses. This is explicitly acknowledged in the supply and use tables.”*



## 5. Anyway, the EU handbook on price and volume measures in NA recommends “margin prices indices”

- › *“The A method for margin output is a method taking the changes in quality of the trade services into account. So far, the only method that can do so - in theory - is by taking the difference between deflated sales and deflated purchases. It should be stressed though that it is necessary to continue research into more accurate descriptions of the trade industry, in order to improve the volume measurement and in general our understanding of the trends in wholesale and retail trade.*
- › *A number of countries are experimenting with "margin price indices". These are price indices that view the margin as the price of the trade service provided, and follow these margins over time keeping the quality of the trade services constant. This method has the potential of becoming an A method, provided it can indeed take appropriate account of quality changes.*
- › *As a B method can be used the assumption that the volume of margins follows the volume of sales, or - equivalently - that margin-to-sales ratios are constant in constant prices. This should preferably be applied in the framework of detailed supply and use tables in constant prices, and - if possible – in such a way that shifts between outlets are included in the volume component of output.*
- › *Any other methods, in particular the deflation of margin output directly by a sales price index, are C methods..”*

C = forbidden



## 5. But there were some hesitations...

- › The handbook defines the quality of the trade margin service:
  - the price level
  - the quality of the products
  - the quality of the trade service provided, e.g.
    - the range of products on sale (can one buy everything one needs in one shop or does one have to go to several shops)
    - the accessibility of the shop (availability of parking space, distance from home, opening hours, etc.)
    - general service level of the staff (friendliness, knowledge of the products, guarantees, waiting times at check-out, etc.).
- › But says: *“these services change continuously over time. [...] It is however very difficult to exactly define the types of services provided [...] does not allow such measurement.”* Hence, only the type of outlet is taken into account, for an implicit quality adjustment. <> Outlet => <> volume
- › More philosophically, it says *“They supply services rather than goods (although consumers may have a different perception of this)”* and quotes the Boskin commission, which criticised the US CPI for the existence of the so-called *“outlet substitution bias”*. Change of outlet => change in price

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## 6. CPI, PPI, MPI and trade margin S-PPI

- › Note that if the Boskin commission is right, and/or if the CPI compilation considers “homogeneous varieties” (without differentiation by kinds of outlets), the direct measurement of trade margin S-PPI would not provide spontaneously the right estimate.
- › If trade margin S-PPI are to build, do they need really a new price collection, or could they not be satisfied by current PPI, MPI and CPI?
  - It could be the same logic as NA option B, but it could be done at finer detail, with CPI re-weighted according to the margins by kinds of outlets, industrial PPI and MPI restricted to purchase by traders...
  - It would be uncertain for wholesale trade and retail trade separately, but put together for NA, it would not be a problem. Anyway, would only deserve a B+ score...
- › “S-PPI” of retail sales by kinds of outlets, re-compiled from CPI, can have some interest (is it the Norwegian way?)



## 6. Trade margin S-PPI directly measured and quality adjustment on the service provided

- › US, CA and AU explain that it is difficult to measure explicit quality adjustment on services provided, but they try:
  - US paper: *“Theoretically, quality adjustments should be performed when marketing characteristics are changed. [...]. However, unless a hedonic model is developed, [...]. Unless an analyst received information from the reporter that a price change was a direct result of the change in marketing, no quality adjustment for changes in marketing can be made.”* Also, US implements implicit quality adjustment on class of suppliers and customers.
  - CA paper: *“If there is a change in the level of service provided by the retailer, an initial attempt at valuation includes a discussion with the respondent to see if there is some reasonable and objective value that can be assigned. If this is not possible, then the alternative is to simply link to show no change.”*
  - AU paper: *“To assist in identifying any changes in outlet specific quality characteristics the ABS maintains a close relationship with all data providers. [...] While these characteristics may not lend themselves to ready measurement, it is clear that they are linked to the specific outlet providing the goods. When a quality change is identified, the results for the specific location are excluded from that periods calculation (with price change for that outlet being imputed from the remaining outlets in the sample).”*



## 6. Trade margin S-PPI directly measured and quality adjustment on the goods sold

- › As an intermediate aggregate between output, imports of a variety of good on one side and final consumption or other uses of this same good on the other side, the trade margin S-PPI should consistently be quality adjusted on the quality of the good re-sold.
- › American and Canadian methodologies express an implicit quality adjustment on the good re-sold (if the good is different, the service is different), but they cannot treat apparently the continuous quality change of a good (for instance: computers). Hence, they can be biased according to CPI measures.
- › The Australian methodology (CPI deflation of the sales, then measurement of change in percent margin) is by construction the most consistent with the quality adjustment of goods in CPI.



## 6. Trade margin S-PPI directly measured and volatility

- › Seasonality (quoted by Canada)
  - › Near-zero prices because of “loss leaders” (sold for a loss in order to attract customers on other products) or clearance prices can distort the indices (quoted by Canada and US)
- ⇒ high volatility of the method, which was not forecast by the “Voorburg Quality Assessment Framework”, where the Canadian retail trade S-PPI gets the maximal score >
- ⇒ the Australian method, lying on a group of products, seems conceptually more robust. Anyway, very close to the second method admitted for NA.



## 7. Conclusion: my personal recommendations (1)

### › High priority

#### – classification issues:

for the next round of ISIC, CPC, NAICS, JSIC and NACE, treatment of total outsourcing in manufacturing should be harmonized, if possible maintained as it is now in ISIC, CPC and NACE. But trading principals should be counted apart in distributive trade (they deserve a specific analysis, together with manufacturing);

commission on services and re-sale of services should be defined;

commission and other commercial services should be identified at an upper level in NACE and CPA.

#### – statistical unit:

for international comparisons, Eurostat should at least distinguish clearly what it wants by industry and what it wants by group of goods (re-sales only or sales + re-sales: to be precised).



## 7. Conclusion: my personal recommendations

### › Medium priority

- S-PPI should be developed for commission services;
- CPI could be exploited in order to get different indices, for different kinds of outlets, and compare the difference between average (price changes) and (average price) changes (difference of outlet seen as difference of volume or difference of price).

### › Low priority

- development of directly measured trade margin S-PPI. In this case the Australian method could be promoted (to be checked when the American, the Canadian and the Australian results are available to be compared). Medium or high priority if NA do not yet practice the method classified B by the Eurostat handbook on price and volume measures in NA.