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Manufacturing services on inputs owned by others

and some considerations on ownership principle
in new economic classifications

Alain Gallais, INSEE, France

The views expressed in this paper are those of the author alone and do not necessarily represent the position of INSEE or any other organization with whom the author may be affiliated.

1. What is a good? What is a service? How these notions are philosophical and change with time

We could think that the partition of “products” between goods and services is something natural, and that economic classifications and statistics have remained unchanged since decades on this point, except that new goods and above all new services occur every year. In fact, it is not so simple, and for some years we have observed a change in this partition according to concepts, propagating slowly along international classifications and international recommendations.

1.1. The “new” concepts of goods and services

Here is the definition of goods and services in CPA 2008 introductory guidelines:

“1.2. Distinction between goods and services

Goods are physical objects for which a demand exists, over which ownership rights can be established and whose ownership can be transferred from one institutional unit to another by engaging in transactions on markets. Goods are in demand because they may be used to satisfy the needs or wants of households or the community or to produce other goods or services. The production and exchange of goods are quite separate activities. Some goods may never be exchanged, while others may be bought and sold numerous times. The separation of the production of a good from its subsequent sale or resale is an economically significant characteristic of a good which it does not have in common with a service.

Services are entities over which ownership rights cannot be established. They cannot be traded separately from their production. Services are heterogeneous outputs produced to order and typically consist of changes in the conditions of the consuming units, due to the activities of producers at the demand of the consumers. By the time their production is completed these services must have been provided to the consumers.

Problematic cases are the so-called “knowledge-capturing products”, which are outputs of a creative process carried out on own account. These “products” do not fit into the definition of services and neither are they physical objects. They may be considered, however, as “intangible goods” (such as R&D originals), even though the concept does not exist.”

The key point here is that the principle of ownership and the transfer of ownership as generating the income assimilated to the production value of a good are now considered as more important than its tangible / physical aspect and its physical measure in tonnes, metres or square metres. In our globalized and post-industrial society, it has become more and more obvious that the generation of income is more economically significant than the physical quantities locally produced.

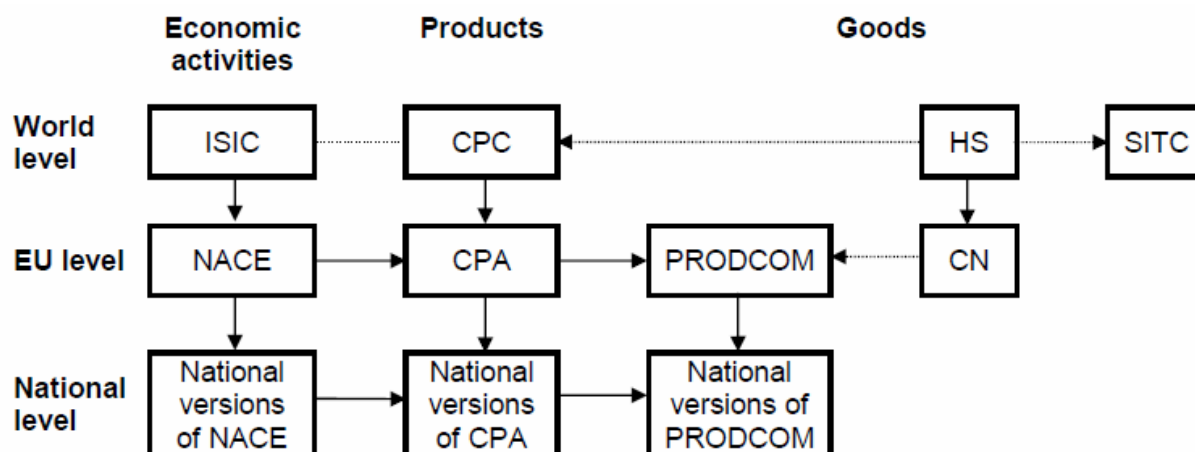
The sentence on the absence of ownership for services is largely false. The last paragraph is a reminiscence of a Peter Hill’s paper: *“Tangibles, intangibles and services: a new taxonomy for output”*, 1997, which had suggested to fully define a good by its capacity of ownership and transfer of ownership, even if intangible. This idea has not prevailed, but the new classifications rely much on this ownership principle, even for services (publishers, developers, originals...).

In National Accounts in particular, transfer of ownership is a main principle, but previous SNA 1993 had to regret 4 exceptions among which goods sent for processing (= for manufacturing services), in order to be consistent with customs statistics, which are still attached to physical movements of goods. SNA 2008 has theoretically deleted these 4 exceptions, so that the transfer of ownership admits now no contestation.



1.2. The way goods and services are defined in international classifications

In the same CPA 2008 introductory guidelines, we can see this scheme, instructive on the way goods and services are defined, as a synthesis between activities from ISIC, products from CPC and detailed content of goods from customs statistics:



is the reference classification. Classifications are linked by the structure

is the reference classification. Classifications are linked by conversion tables

Classifications are linked by conversion tables

In fact, the new classification rules of principals and contractors were already present in previous version of NACE (rev 1.1) for the boundary between manufacturing and trade, but not yet “propagated” into CPA rev1.1, still influenced by physical considerations as in ProdCom, so that a “good” could be produced “twice”.

Even if CPC has not influenced the structure of CPA (derived from NACE, hence from ISIC), it has pathed the way for the identification of services linked to industry, now separated from goods at division, group, class or sub-class level. Several kinds of services linked to industry or “goods” are listed in CPC ver.2:

CPC ver.2	
86	Support services to agriculture, hunting, forestry, fishing, mining and utilities
861	Support services to agriculture, hunting, forestry and fishing
862	Support services to mining
863	Support services to electricity, gas and water distribution (on a fee or contract basis)
87	Maintenance, repair and installation (except construction) services
871	Maintenance and repair services of fabricated metal products, machinery and equipment
872	Repair services of other goods
873	Installation services (other than construction)
88	Manufacturing services on physical inputs owned by others
89	Other manufacturing services; publishing, printing and reproduction services; materials ; recovery services
891	Publishing, printing and reproduction services
892	Moulding, pressing, stamping, extruding and similar plastic manufacturing services
893	Casting, forging, stamping and similar metal manufacturing services
894	Materials recovery (recycling) services, on a fee or contract basis

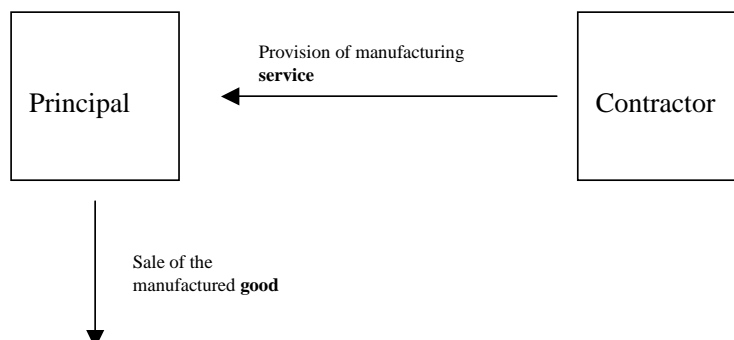
The “manufacturing services” by excellence and developed here refer to division 88 of CPC: “on physical inputs owned by others”. CPA breaks them down at sub-classes level, consistently with the industrial activity at class level. But other “industrial services” arise similar problems.



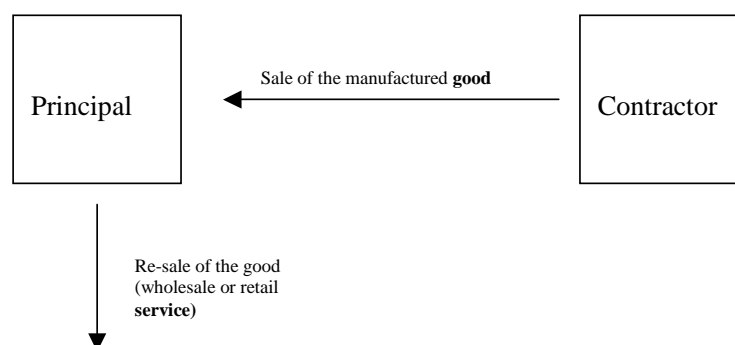
1.3. The new classification rules for outsourcing, principals, contractors and manufacturing services (UNSD, 2007) - ownership rules outside industry

The following schemes clarify the rules for subcontracting in manufacturing according to UNSD rules (2007), ISIC rev.4 and NACE 2008, whatever the respective countries of residence of the principal and the contractor, and however they are affiliated or not:

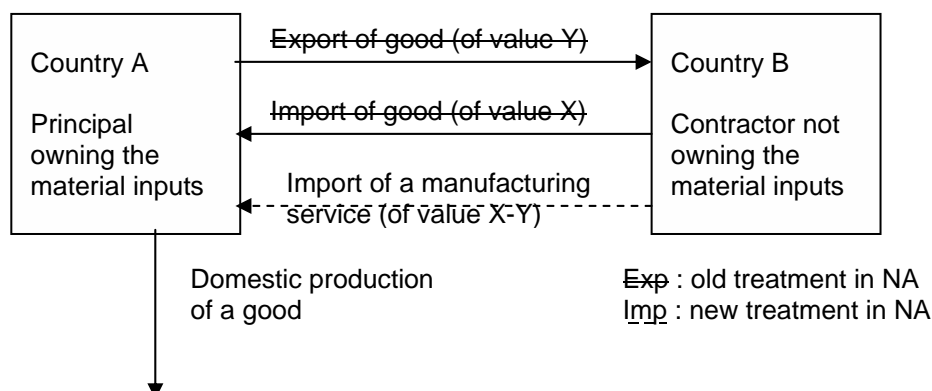
(i) Principal owns the material inputs – contractor provides manufacturing services



(ii) Principal does not own the material inputs – contractor sells manufactured goods



Consequences on international trade and goods sent for processing:

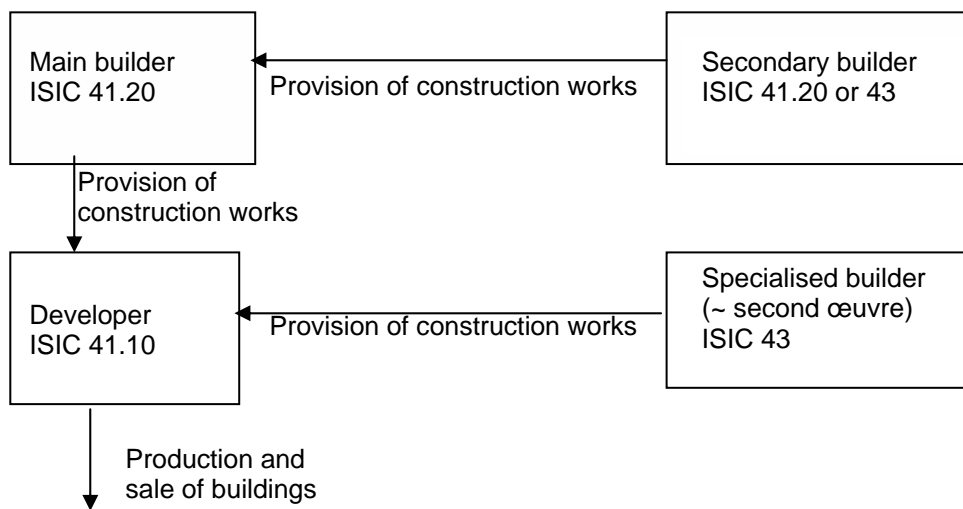
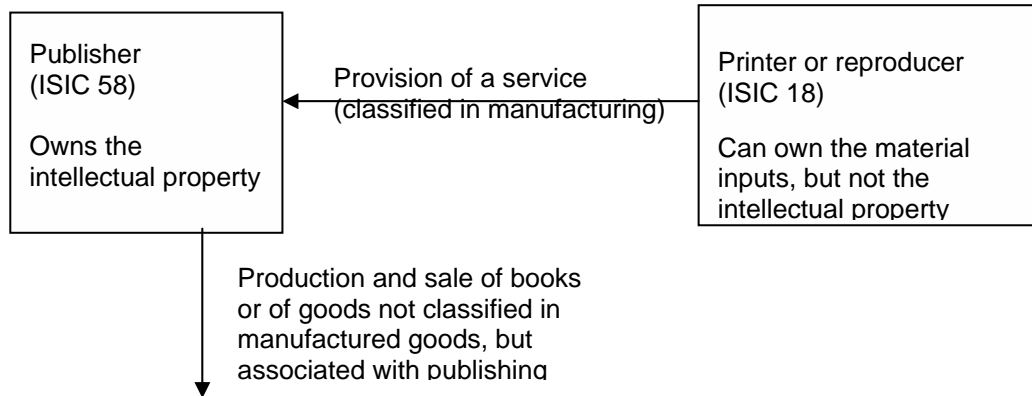


A main objective is that a good has been produced once and only once (in a certain state), and that the production value of a good corresponds to a transfer of ownership. In this perspective, the ownership of the material input is only a simple mean to “predict” the ownership of the output, which is the true philosophical principle.

The manufacturing service can include the provision of some material, supposed to be for a low amount as it is not by hypothesis the main physical input. This material can nevertheless cost more than the “pure service” provided (not to be forgotten when the price series are defined).



In some other activities, the principle of output ownership does not rely on material input ownership, but on intellectual property (publishing) or other rights (building):



With the new classifications, when an enterprise is both developer and builder (of the same building), it must be classified in developing, consistently with the product it sells, because of its ownership rights. In previous version of ISIC, the philosophy would have rather favoured a classification as builder, because of the physical processing.

In previous version of ISIC, an enterprise that was both publisher and printer was already classified as a publisher. The acknowledgement that the physical transformation is not the base of the job has had for consequence that publishing is no longer considered as a manufacturing industry. Could it be extended to the conception and sale of a smart phone?

This “new vision” of the economy outside manufacturing, where the production is attributed to the owner of certain rights (principal) and not to the physical transformer (contractor), is enlarged by NAICS to whole manufacturing: the holder of the intellectual property is seen as the producer, and conversely the contractor provides manufacturing services when he does not own or control the intellectual property and the design of the output... Of course, it is internally consistent, but does it not attribute the quality of manufacturers to traders that manage only “private labels”?

On the opposite, the Japanese statisticians rely only on the physical process. There is a risk of inconsistent international statistics on production.

The concept of ownership is so dominant in private accounting rules that the next cycle of international economic classifications will certainly not come back to the “old view” of an “old economy” relying on physical transformation and physical quantities...



1.4. How SNA 2008 wants to see manufacturing services instead of goods

SNA 2008 has clearly changed its mind compared to SNA 93, and now advocates a description of manufacturing services with net value. It only tolerates the perpetuation of old practices as a provisional option:

Chapter 28: Input-output and other matrix-based analyses

B. Flexibility in the supply and use tables

2. Goods processed by a unit not assuming economic ownership

- par. 28.15: Previous editions of the SNA have recommended that components for assembly should be recorded as delivered to the unit in country X and that the whole of the value of the completed product should be recorded as output of X and exports from X to Y. This does not match the treatment of grain milling or, for example, repairs to machinery where no such change of ownership of the goods being processed is imputed. Imputing a change of ownership of the parts to be assembled gives rise to significant data compilation problems [...] The SNA now recommends that products should only be recorded as being delivered to another unit if there is a change of ownership or, in the case where both producing units belong to the same enterprise, the producing unit taking delivery also assumes responsibility for subsequent risks and rewards of production such as deciding how much to process, what price to charge and when to sell.

- par. 28.16: The question arises of how to record the activity of assembling goods to order for another unit in the supply and use tables and the input-output table. The processes of assembly for oneself and for another are physically similar but the economics are different.

- Par 28.18: There are essentially two ways to proceed.

Table 28.2: Options for recording goods not changing economic ownership

	Year 1	Year 2	Option 1	Option 2
Cost of materials	90	90	90	180
Other costs	10	20	10	20
Total intermediate consumption	100	110	100	200
Value added	35	70	35	70
Output	135	180	135	270

Separate recording on a net basis (fee) when no change of ownership occurs

Recording on a gross basis (physical flows of goods)

- par. 28.20: It should be emphasized that it is option 1 that is the recommendation of the SNA and, for goods sent abroad for processing, BPM6. Option 2 is shown as a supplementary presentation that may be adopted for reasons of continuity with past practices. Option 1 more accurately reflects the economic processes taking place while option 2 focuses on the physical transformation process.

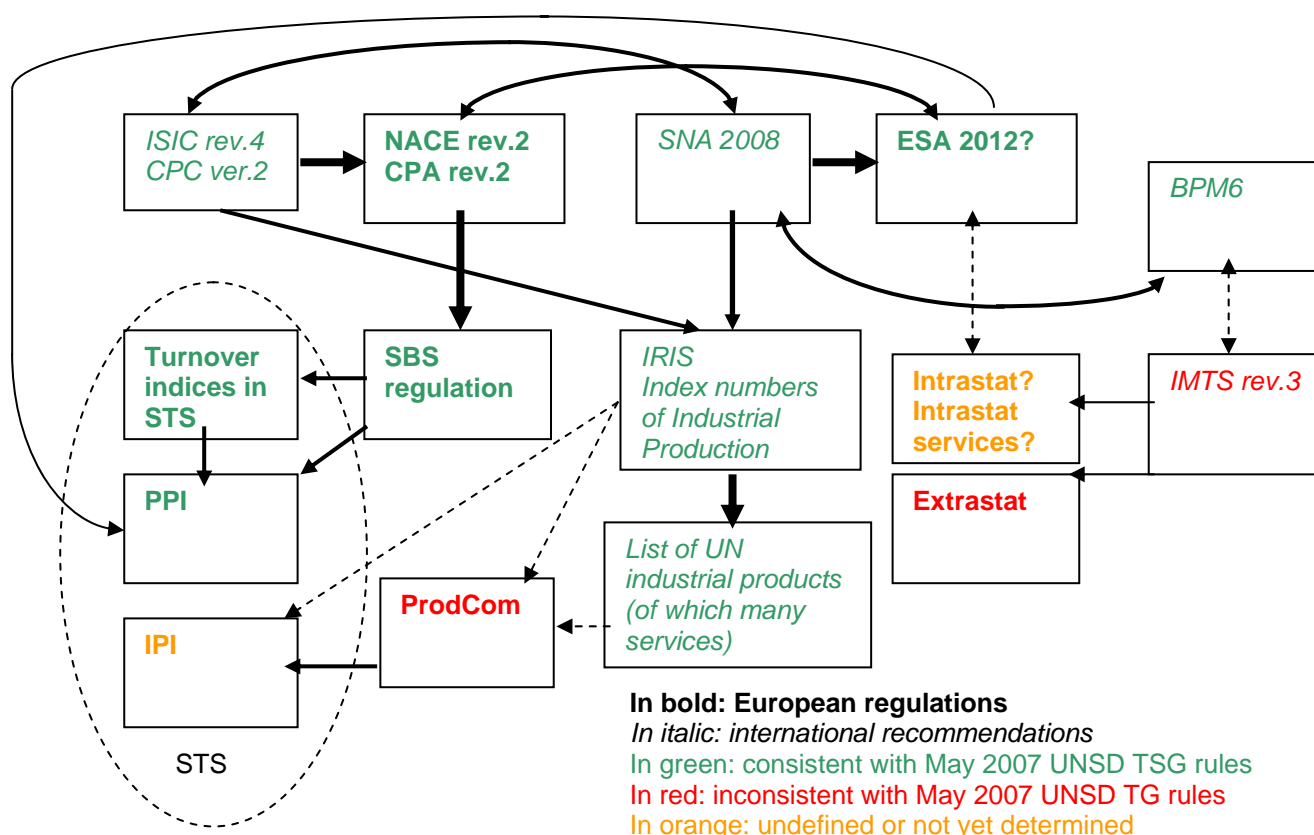
- par 28.21: When goods are sent abroad for processing, they are recorded as neither exports of goods by the country holding economic ownership, nor as imports of goods by the processing country in either the SNA or BPM6. Similarly, after processing they are recorded neither as exports by the processing country nor as imports of goods by the country of economic ownership. The only item recorded as imports and exports is the fee agreed between the economic owner and the processor.

Note that in the SNA 2008 example, manufacturing services are to be considered activity by activity, so that NA are not interested by output and prices of manufacturing services in total.



1.5. Propagation of the new concepts along the new international manuals

This scheme shows that progressively the new concepts propagate with new international manuals:



The difficulties and/or inconsistencies come from international merchandise trade statistics, which do not find easy to follow the ownership principle (but Balance of Payment has theoretically adopted the new view) and, at a European level, from the Prodcom regulation, which still relies on the local physical transformation process.

As far as PPI is concerned, the Eurostat task force on “PPI methodology” has adopted in January 2010 the new concepts, *i.e.* the measurement of “manufacturing services” prices for the net value of the service, consistently with the measure of turnover for the activity, including for the prices of the output sold on external markets (~ export prices).

For European statisticians, PPI is concerned rather than SPPI, as CPA breaks down manufacturing services by manufacturing activity concerned (in each class), and as European STS regulation is organized by activities and theoretically by kind of activity unit (products indicators are assimilated to KAU indicators).

At World level, manufacturing services could be a topic for SPPI according to CPC, but in fact most countries organize their national classification of products in line with activities, and these latter consistently with ISIC, so that formally manufacturing services are a topic for (industrial) PPI teams, not for SPPI teams, outside Europe too.

The following two sections deal with the current European practices on subcontracting in manufacturing for PPI, not only about manufacturing services but also about the identification of producers vs traders, and especially about export and import prices (on “net” or “gross” values). They are extracted from a document written for the Eurostat Task Force “PPI methodology” (2009-?), adopted by this Task Force and intended to constitute a chapter of an upcoming Eurostat methodological handbook on PPI.



2. What European countries currently do in PPI

A questionnaire dedicated to the subcontracting topic was sent on the 6th of October 2009 to the 17 countries belonging to the Eurostat Task Force “PPI methodology”, and all answered.

The national practices were largely disparate. Some countries already collected “net values” prices for contractors processing on material inputs owned by others, especially on activity/products “14: wearing apparel”, and for “output prices of the non-domestic market”. The case is much more rare for other products or import prices. One can observe some inconsistencies between domestic market, non-domestic market and import prices, or between prices and weights, but it is normal during this phase of transition of so many statistical collections on this topic (National Accounts, International Merchandise Trade Statistics...); the decision of the Task Force was that all markets had to be treated in the same way with “net” prices of manufacturing services (on inputs owned by others), consistently with the future rules of National Accounts (ESA 2012). Hence, the link with usual foreign trade statistics from customs will be weaker. Some countries answered perhaps more on what they wanted to do than on what they actually did (for instance, the Netherlands said that explicitly). Two countries said they had launched a special project on subcontracting (Finland, France), which would be fruitful in some years.

2.1 The treatment of the principals that have the complete production process done by others

In most cases, the elimination of the principals that have the complete production process done by others and that do not own the material inputs (to be classified in section G: trade, then to be excluded from the PPI collection) is supposed to have already been done in the base population (most often the ProdCom survey, with the classification perhaps derived from the Business Register only), but there is the fear that this classification could be mainly declarative, and there are rarely some explicit questions that could identify these trading principals, in order to exclude them.

Only 5 countries (Bulgaria, the Czech republic for domestic market, Lithuania, the Netherlands, Slovenia and France since year 2010) say their PPI team has the information in the ProdCom survey and is really in measure to control this exclusion.

4 countries are more radical than the rules of classifications and exclude all the principals that do not process themselves the goods they sell (even if they own the main physical input), but it is not in line with the new concepts.

2 countries do not exclude but try to separate principals / “true” producers / contractors.

2.2 The treatment of the contractors that process on material inputs owned by others

The base population provides usually a “net” value for such a case (the only exceptions are due to customs statistics when they are used for the output sold on non-domestic market) and... half countries record then “net prices”, the other half eliminate these cases from their observation (only one country tries to measure a “gross” price of the goods, consistently with the external trade, not with turnover). 3 countries reported both an exclusion and a net approach, depending on the kind of market (foreign / domestic).



For imports, the case is dissymmetric: the base population provides a “gross” value of goods and absolutely no country uses an available information on “net” value of processing services (France will try since year 2010), although this “invoice value” should be available in complement of the “statistical value” (often estimated by the custom services themselves). The Netherlands uses the information on goods for (or after) processing in order to eliminate them. Consistently with the usual foreign trade statistics from customs and the current rules of National Accounts, most countries either eliminate these cases, either try to estimate “gross” values of goods. But two countries record nevertheless “net values” prices (the Czech republic and Finland in some cases), consistently with private accounts and upcoming European National Accounts.

2.3 The treatment of double counting

The majority of countries thought that double counting is to avoid between principals and contractors prices, and most countries favour principals prices. In fact, the new rules exclude double counting, as one product is a good and the other one a manufacturing service.

2.4 Weightings

National Accounts and Structural Business Statistics are the most important sources for weightings of output, but they can be combined with each other or with other sources, as many comments precise the role of ProdCom survey or customs statistics.

For imports, customs statistics (or foreign trade statistics) are more quoted than National Accounts, but it is true that with the “old” rules of NA the two statistics are supposed to be fully consistent (well, in fact there are some theoretical treatments in SNA 93 and ESA 95 between customs statistics and NA, but they are often neglected or badly known by other statistical units). The main point is that even if “net values” prices are recorded, they are still used with “gross values” weights.

2.5 Specific experience on the record of some “net values” prices

6 countries upon 15 considered they have already a specific experience in the record of some “net values” prices for the case of the contractor that processes goods owned by others: Bulgaria, the Czech republic, Germany, Finland, Hungary, Lithuania.

In most cases, this experience concerns the treatment of activity “14: *wearing apparel*”.

The average hourly rates and the unit values relative to the goods processed are the main techniques used in order to establish the “net values” price series. Hungary has provided a list of items descriptions (see the Hungarian contribution to this VG session).



		AT	BG	CZ	DE	DK	ES	FI	FR	HU	IT	LT	NL	PL	SE	SI	TR	UK	total
1. Classification of the principals that have the complete production process done by others																			
1.1 Do you sample the enterprises for the PPI survey from:	the Business Register ?												1						1
	the SBS survey ?		1						1										2
	the ProdCom survey ?	1	1	1	1	1	1	1		1	1	1	1		1	1		1	14
	Other ? (.....)			1	1								1		1		1		5
1.2 Do you think that in this base population, the NACE rev.2 rules of classification of principals that do not own the material inputs to be processed are respected (must be classified in trade)?	I hope so, but the classification is mainly declarative and the question on the ownership of the material inputs is never asked	1		1	1		1	1	1	1	1			1			1	1	11
	Yes, this question is taken into account in practice for the classification in our base population but we do not have this info				1	1									1				3
	Yes, this question is taken into account in practice for the classification in our base population and we have this info		1	1								1	1				1		5
	Comments:...			1				1	1		1						1		5
1.3 In the PPI survey, do you recognize, isolate or eliminate the principals that have the complete production process done by others ?	We do not know and we do not ask, so we do not recognize them and have no specific treatment	1	1	1	1	1	1	1						1			1	1	10
	We eliminate only the principals that do not own the material inputs								1				1				1		3
	We eliminate all the principals that have the complete production process done by others			1	1					1	1								4
	We try to isolate principals / "true" producers / subcontractors											1			1				2
	Even if we recognize them, we have no specific treatment																		0



ANSWERS TO THE QUESTIONNAIRE RECEIVED ON 18th OF JANUARY 2010 2/4

		AT	BG	CZ	DE	DK	ES	FI	FR	HU	IT	LT	NL	PL	SE	SI	TR	UK	total
2. Identification and valuation of a contractor that processes on material inputs owned by others																			
2.1 In the base population, valuation of the <u>output</u> of such a contractor	a "net" value, consistent with its amount of sales (sales of a service, in fact)	1	1	1	1	1	1		1	1	1	1	1		1	1		1	14
	a "gross" value, estimated from the theoretical value of the goods processed				1			1									1		
2.2 In the PPI survey, what do you aim to measure?	a "net" price, consistent with the turnover	1	1	1	1			1	1	1	1	1			1				10
	a "gross" price, consistent with the goods processed							1											1
	by principle we eliminate such cases from our observations			1	1	1	1						1		1	1	1	1	9
	Comments:...							1										1	2
2.3 For the <u>imports</u> what does the base population provide you for goods come from abroad "for" or "after processing", and what do you take into account?	only gross values of goods, we do not know or we do not take into account the information "for processing" or "after processing"	1		1	1	1	1	1	1		1	1				1	1	1	12
	only gross values of goods, but we eliminate the goods imported "for" or "after processing"												1						1
	some net values. If so, please specify the source (Intrastat, Balance of Payments...):...																		0
	Comments:...		1							1	1								3
2.4 For the imports of goods "for" or "after processing", what do you try to measure?	nothing, we eliminate such cases from our survey	1			1	1			1		1		1			1		1	8
	the gross value of the good, which we ask to estimate, consistently with the customs statistics						1	1				1			1				4
	the net value of the processing service (for goods imported "after processing")			1				1											2
	Comments:...							1	1									1	3



ANSWERS TO THE QUESTIONNAIRE RECEIVED ON 18th OF JANUARY 2010 3/4

		AT	BG	CZ	DE	DK	ES	FI	FR	HU	IT	LT	NL	PL	SE	SI	TR	UK	total
3. Double counting of principals and contractors																			
3.1 When you observe both principals and contractors in your survey on output for domestic market, do you try to "eliminate double counting"?	yes, we try to keep only principals		1	1			1				1		1		1	1	1	1	9
	yes, we try to keep only contractors									1									1
	no, double counting in output hence in prices is normal				1			1	1			1							4
	Comments:				1	1									1				3

4. Weightings		AT	BG	CZ	DE	DK	ES	FI	FR	HU	IT	LT	NL	PL	SE	SI	TR	UK	total
4.1 Globally, what is the main source for the weightings of the output, from CPA4 or CPA3 to aggregated levels?	SBS data (turnover of enterprises)		1	1	1		1				1							1	6
	National Accounts (output)	1				1		1	1				1				1	1	7
	Other, comments:			1	1					1		1			1	1		1	7
4.2 Globally, what is the main source for the weightings of the imports, from CPA4 or CPA3 to aggregated levels?	customs statistics	1		1			1		1				1		1	1			7
	National Accounts					1		1					1					1	4
	Other, comments:			1	1							1			1		1		5



ANSWERS TO THE QUESTIONNAIRE RECEIVED ON 18th OF JANUARY 2010 4/4

		AT	BG	CZ	DE	DK	ES	FI	FR	HU	IT	LT	NL	PL	SE	SI	TR	UK	total
5. Specific experience																			
5.1 In case you try to measure "net" prices for "processing on inputs owned by others", do you have a specific experience on some activities/products you could expose now or later?	not applicable (we measure only gross prices or have not enough experience)	1				1	1		1		1		1		1	1	1	1	10
	yes, on the following activities/products (in CPA4):		1	1	1			1		1		1							6
	12											1							1
	14		1	1						1		1							4
	15.20			1															1
	24				1														1
	26.20			1															1
	29.10							1											1
	others								1										0
	Comments:...				1				1										2
5.2 If you have answered yes to the above question, can you summarize quickly the main method you use?	average hourly rates (value of service / man x hours, by skill qualification)		1	1	1					1									4
	unit values relatively to the <u>goods</u> processed (value of service / quantity of goods processed)			1				1		1		1							4
	unit values relatively to the <u>services</u> provided (value of service / quantity of service provided, by kind of service)		1																1
	contract prices (re-evaluation of price within the contract duration)		1																1
	model pricing																		0
	Other:				1														1



3. How France has adapted its ProdCom and PPI surveys

3.1 How France has adapted its ProdCom survey

France has launched new survey “*Enquête Annuelle de Production*” (EAP) in 2009 on year 2008, as a synthesis of old ProdCom survey (“*Enquête Annuelle de Branche*” - EAB) and of old Structural Business Survey (“*Enquête Annuelle d’Entreprise*” - EAE), on all industrial activities except food industry (divisions 10, 11 and 12).

In a first frame, like in the old SBS survey “EAE”, the “EAP” asks for the total breakdown of the turnover, between large categories of activities/products:

OUTLINES

Civil year (from 1st of January to 31st of December)

Employees on 31 st of December	_____
Number of people working for the enterprise at this date without distinction of status	
Number of months of activity	____
Should be equal to 12, except if your enterprise has been created or has ceased its activity during the civil year.	
Total turnover of the enterprise	_____ k€
To be divided in:	
SALES of industrial products including manufacturing services	CP1 _____ k€
(excluding repair and installation services of machinery and equipment)	
INSTALLATION services of machinery and equipment	CP2 _____ k€
REPAIR AND MAINTENANCE services of machinery and equipment	CP3 _____ k€
SALES of non industrial goods and services	CP4 _____ k€
(not part of manufacturing or mining and quarrying activities)	
Includes provision by network of electricity, gas, water, waste management, transportation, edition, telecommunications, rentals, packaging on a fee or contract basis, consulting, engineering, research & development, other support activities...	

Then a second frame splits the sales of industrial products “CP1” by classes of NACE/CPA (4 digits), then by ProdFra codes (with a finer detail than ProdCom), with the corresponding quantities, and broken down by economic models:

- economic model 1: principals that do not own the material inputs, to be classified in trade;
- economic model 2: principals that own the material inputs, to be classified in manufacturing and associated with manufactured goods;
- economic model 3: units processing for their own account (obvious situation);
- economic model 4: contractors that own the material inputs to process, to be classified in manufacturing and associated with manufactured goods;
- economic model 5: contractors that do not own the material inputs to process, to classify in manufacturing and associated with manufacturing services.

Economic models 2 to 5 fit with SBS requirements, 3 to 5 with ProdCom (the necessary imputation of vaue for economic model 5 is left to Eurostat’s care).



Core questionnaire “EAP”

French Business Register identifier of the enterprise: SIREN xxxxxxxx

SALES OF INDUSTRIAL PRODUCTS including manufacturing services (excluding repair and installation services of machinery and equipment)

In order to properly fill in this table, please read explicative guideline 1.

Description of the products	Sales	Breakdown of sales according to the economic model					Sold quantities
		Good processed outside the enterprise (including by another enterpr. of the same group)		Good processed by the enterprise (on the national territory)			
		Purchased in the same state on the market or to a contractor, inputs* not provided free Model 1	Purchased to a contractor, providing him free the inputs* to process Model 2	Conceived and processed by the enterprise Model 3	Conceived by a customer (principal) that has not provided free the inputs* Model 4	Inputs provided free by the customer (principal) or elementary operation on the good Model 5	
* the inputs are the material components needed to process a good (raw material, components, pieces, subsets...); these material inputs are recorded in purchases of goods in the enterprise accounts, except if they have been provided free.							
CPA 4 digits 3102 Kitchen furniture							
All products	_____ k€	___%	___%	___%	___%	___%	
ProdFra finer than ProdCom (10 vs. 8 digits) 3102100010 Kitchen furniture in wood type 1 Combined Nomenclature (CN) 33.99	_____ k€	___%	___%	___%	___%	___%	_____ pieces
3102100020 Kitchen furniture in wood type 2 Combined Nomenclature (CN) 33.99	_____ k€	___%	___%	___%	___%	___%	_____ pieces
3102100030 Kitchen furniture in wood type 3 Combined Nomenclature (CN) 33.99	_____ k€	___%	___%	___%	___%	___%	_____ kg
31027750S0 parts of kitchen furniture in wood Combined Nomenclature (CN) 33.99	_____ k€	___%	___%	___%	___%	___%	_____ pieces

Identification of manufacturing services within CPA 3102

3.2 Low importance of manufacturing services in French economy (production)

In average, manufacturing services account for 3.0 % of the total output of sections B and C of CPA (and ISIC) in France, excluding printing and recording services (division 18) and installation and repairs (division 33), but including some treatment services of metals or of plastics, which CPC classifies in division 89.

Note: economic model 2 (manufacturing principals) account for 12.6 % and economic model 4 (contractors owning the material inputs) for 4.8 %.

Table 1: French manufacturing services according to EAP, year 2009

Results of core EAP questionnaire, year 2009	Total value of output, by product	of which value of manufacturing services output	% of manufacturing services in total output	Comment
BZ + CZ = mining, quarrying + manufacturing	437 979 050	13 311 290	3,0%	
CZ = Manufacturing	432 610 147	13 291 737	3,1%	
CA Manufacture of food products, beverages and tobacco products	917 662	1 834	0,2%	
CB Manufacture of textiles, wearing apparel, leather and related products	13 093 986	825 586	6,3%	of which 489.559 in 13.30 "textile finishing services"
CC Manufacture of wood and paper products (without printing)	20 735 322	180 216	0,9%	
CD Manufacture of coke, and refined petroleum products	41 997 818	2 722 874	6,5%	
CE Manufacture of chemicals and chemical products	50 675 837	2 002 252	4,0%	
CF Manufacture of pharmaceuticals, medicinal chemical and botanical products	26 634 207	1 526 281	5,7%	
CG Manufacture of rubber and plastics products, and other non-metallic mineral products	47 265 254	1 003 658	2,1%	
CH Manufacture of basic metals and fabricated metal products except machinery and equipment	62 848 743	3 504 456	5,6%	of which 2.078.185 in 25.61 "treatment and coating services of metals; machining"
CI Manufacture of computer, electronic and optical products	21 829 030	350 064	1,6%	
CJ Manufacture of electrical equipment	19 090 512	73 703	0,4%	
CK Manufacture of machinery and equipment n.e.c.	32 313 731	415 425	1,3%	
CL Manufacture of transport equipment	81 894 730	546 464	0,7%	
CM Furniture and other manufactured goods (without installation and repairs)	13 313 314	138 923	1,0%	

3.3 How France as adapted its PPI survey

The sample for output prices is extracted from the the production by products according to “EAP” adapted to SBS requirements (economic models 2 to 5), at 4 digit level. The complete answer of selected enterprises to EAP is provided to field surveyors, in order that they know which fine products they are supposed to find in the enterprise, and that they do not mistake with goods re-sold in the same state by “trading principals” (economic model 1).

For some manufacturing classes (for instance *19.20 refined petroleum products*), the phenomenon is important enough to be taken into account *a priori*, *i.e.* field surveyors will have the target of enough price series in order to measure specifically manufacturing services prices in such a class of manufacturing, and the sample will select enterprises of economic model 5. But usually, with the cut-off sampling technique and the low importance of manufacturing services in the turnover of a given activity, they are neglected and field surveyors can only collect some occasionally (for instance when they visit the enterprise for something else, but manufacturing services account for much, too). These lone price series of manufacturing services are then aggregated with the corresponding goods (we need at least 5 price series of the same kind in order to define aggregates or sub-aggregates consistent with CPA 5 digits or 6 digits).

Manufacturing services are supposed to be more important in French imports, but it is harder to measure and to sample from customs statistics. It was thought *a priori* that they accounted for much in textile and wearing apparels, and field surveyors had the target to collect some, but finally they were not considered to worth enough in order to disseminate such a price series.

Hence, some manufacturing services price series are collected in French PPI, but no manufacturing services index is disseminated, neither for a specific class or globally, unless for class *13.30 textile finishing services*, but the whole class provides manufacturing services by definition (unlike the common case coded XX.XX.99 in CPA).

3.4 Some French examples of PPI price series corresponding to manufacturing services

ENTERPRISE: 111111111

IMPORTATIONS of products				Transactions in CPA 1413 Other outdoorwear			
IMPORTATIONS from non-euro zone in keuros without VAT : xxxx							
Code of product family	Title of product family	Purchases of the category keuros VAT excl	New / old product	Definition of price series with kind of vendor	Precisions on prices	Code of price	Weight associated if several price series within the same category keuros VAT excl
9929	Sub-contracted operations as part of manufacturing of other outdoorwear	xxxx	Old n° 5	Making of jackets for women UJA Origin Bulgaria	Average price of the month, net invoiced, VAT excl, Ex Works, in Euros / piece	2D	xxxx / 2
			N	Making of jackets for women 123 Origin Bulgaria	Average price of the month, net invoiced, VAT excl, Ex Works, in Euros / piece	2D	xxxx / 2

ENTERPRISE: 222222222

IMPORTATIONS of products				Transactions in CPA 1413 Other outdoorwear				
IMPORTATIONS from non-euro zone in keuros without VAT : yyyy								
Code of product family	Title of product family	Purchases of the category keuros VAT excl	New / old product	Definition of price series with kind of vendor	Precisions on prices	Code of price	Weight associated if several price series within the same category keuros VAT excl	Price July to Dec. 2010
9929	Sub-contracted operations as part of manufacturing of other outdoorwear	yyyy	N	Cost of making urban jacket Men	Price of making outsourced offshore, VAT excl, in Euros / piece	2A	zzzz	tt,tt
			N	Cost of making urban trousers Men	Price of making outsourced offshore, VAT excl, in Euros / piece	2A	ssss	uu,uu
			N	Cost of making casual trousers Men	Price of making outsourced offshore, VAT excl, in Euros / piece	2A	rrrr	vv,vv

Remark : BIENNIAL questionnaire, to send on the beginning of September in order to get Winter apparels (delivered since July) and on the beginning of February in order to get Summer apparels (delivered since January).

(zzzz + ssss + rrrr = yyyy)

ENTERPRISE: 33333333

DOMESTIC TURNOVER in keuros without VAT: aaaa				Transactions in CPA 1330 Textile finishing services			
Code of product family	Title of product family	Sales of the category keuros VAT excl	New / old product	Definition of price series with kind of purchaser	Precisions on prices	Code of price	Weight associated if several price series within the same category keuros VAT excl
1300	Dyeing services of fabrics and textile articles (including wearing apparel)	aaaa	N	Whole service of dyeing and finishing warp and weft, cotton predominating French production	Average price of the month, net invoiced, VAT excl, Franco, in Euros / kg, all customers, France	4A	cccc
			N	Whole service of dyeing and finishing knitted or crocheted fabrics, synthetic fibres French production	Average price of the month, net invoiced, VAT excl, Franco, in Euros / kg, all customers, France	4A	dddd

ENTERPRISE: 44444444

NON-DOMESTIC TURNOVER, for non-euro zone in keuros without VAT: bbbb				Transactions in CPA 1721 Corrugated paper and paperboard and containers of paper and paperboard			
Code of product family	Title of product family	Sales of the category keuros VAT excl	New / old product	Definition of price series with kind of purchaser	Precisions on prices	Code of price	Weight associated if several price series within the same category keuros VAT excl
4109	Folding cartons, boxes and cases, of non-corrugated paper or paperboard	bbbb	N	Machine hourly cost Destination Switzerland	Index in base 100 = September 2011	4A	bbbb

4. Conclusion

Considering the organisation by activities of most classifications of products and/or of most short term statistics compilations, manufacturing services belong to industrial PPI family, even if they require similar techniques as SPPI, hence can be better treated by SPPI teams, in subcontracting of PPI customers.

The relatively new vision of economy they translate is quite stimulating (for National Accounts, economic analysis) and challenging (especially for external trade), but in most countries they do not account for much, so that cut-off techniques for instance can neglect them totally, or usual techniques relying on ProdCom surveys (for European countries) can eliminate them because they are atypical.

Nevertheless, this case study is perhaps underestimated because not enough understood, in its principle and for its stakes (global value chain, etc.).

Some specific projects launched by some countries on this topic will help to reevaluate this first conclusion in some years, especially the Finnish project and the already existing Hungarian practice.