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**MSITS 2010 COMPILER'S GUIDE ONLINE CHAPTER 1: MEASURING MANUFACTURING SERVICES ON PHYSICAL INPUTS OWNED BY OTHERS, AND MERCHANTING**

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*This document provides WPTGS Members with the draft for chapter 1 of the Online MSITS 2010 Compiler's Guide, covering "Measuring Manufacturing Services on Physical Inputs Owners by Other, and Merchanting". WPTGS Members are kindly invited to comment on this draft chapter.*

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## **MSITS 2010 COMPILER'S GUIDE ONLINE CHAPTER 1: MEASURING MANUFACTURING SERVICES ON PHYSICAL INPUTS OWNED BY OTHERS, AND MERCHANTING**

### **1. Introduction**

1. The rise of global value chains and complex global production arrangements presents significant challenges for Balance of Payments compilers. Notable in this respect are the changes introduced in the most recent version of the IMF Balance of Payments and Investment Position Manual (BPM6) regarding current account items referred to as *manufacturing services on physical inputs owned by others* (also called *manufacturing services* or *processing* in this chapter) and *merchanting*. Both changes, reflected the recommendation that all transactions adhered to the principles of economic ownership underpinning BPM6 (and the 2008 SNA), which, in turn, better reflects the underlying economic reality underpinning global production.

2. However, whilst the conceptual basis and rationale for these changes, is clear, significant implementation challenges occur. The aim of this chapter is to provide implementation guidance through a presentation of successful national practices, and, in particular, through the findings of the work of the Informal Reflection Groups of the OECD's Working Party on International Trade in Goods and Trade in Services Statistics (WPTGS), tasked with developing material for this Chapter.

3. Before however presenting these findings, section 2 of this chapter briefly reviews the existing conceptual guidance, available in BPM6 and MSITS 2010, but also more recent sources with a specific focus on globalisation and global production, notably the UNECE's *Guide to Measuring Global Production* (GMGP) – the follow-up to earlier work conducted in the Guide on The Impact of Globalisation on the National Accounts. Section 3 discusses the main compilation challenges identified by compilers themselves, including, amongst others: the identification of reporters and populations; the measurement of the services flows and fees involved; and the recording of corresponding entries in merchandise trade statistics. Section 4 concludes by presenting a list of 'open questions' reflecting conceptual and compilation issues that remain unsolved. The accompanying Annex includes 4 longer case studies, by Canada, Ireland, Israel and Denmark.

### **2. Available conceptual guidance**

4. This section briefly summarises available international guidance in the *Balance of Payments and International Investment Position, Sixth Edition* (BPM6), the *BPM6 Compilation Guide*, the *Manual on Statistics of International Trade in Services 2010* (MSITS 2010), the *MSITS Compiler's Guide*, the *UNECE Guide to Measuring Global Production* (GMGP, published in 2015; and *Eurostat's (2014) Manual on Goods Sent Abroad for Processing*.

5. Rather than reviewing each of the publications individually, the section is organised thematically, discussing merchanting transactions, manufacturing services and, the closely related, factory-less goods producers, highlighting in-turn important delineation issues.

## 2.1 *Net exports of goods under merchanting*

### 2.1.1 *Definition*

6. Merchanting is defined in BPM6 (paragraphs 10.41 to 10.49) as the purchase of goods by a resident, of the compiling economy, from a non-resident followed by the subsequent resale of the goods to another non-resident without the goods entering the residents' compiling economy.

7. Merchanting is largely, although not exclusively, undertaken for the purposes of wholesaling and retailing and commodity dealing. An important characteristic of merchanting is the absence of changes to the physical form of the good: if the physical form of the goods *is* changed, then transactions related to the goods should not be recorded under merchanting. Minor processing costs (for example packaging books into boxes) and nonphysical contributions *e.g.* planning, management, marketing etc., *are* however considered part of the merchanting transaction.

8. If minor processing takes place, that does not change the physical characteristics of the good, a balance of payments transaction for manufacturing services on physical inputs owned by others (the 'minor processing' fee) can be included in addition to the entry for merchanting service (see also BPM6 Box 10.1)

### 2.1.2 *Recording and compilation*

9. BPM6 recommends that merchanting be recorded in the goods account of the balance of payments as net exports of goods under merchanting, as follows:

- the purchase of the goods by the merchant is recorded in the goods account, credits, as 'goods acquired under merchanting (negative credits)' of the economy of the merchant;
- the sale is recorded in the goods account, credits, as 'goods sold under merchanting'; and
- the difference between the purchase and the sale recorded as 'net exports of goods under merchanting' i.e. a credit in the goods account.

10. Importantly, the 'net' item reflects not only the merchants' margin from providing what are essentially akin to distribution services, but also any holding gains and losses<sup>1</sup> but also any changes in inventories incurred during the period. As such the 'net' item may be negative as a result of changes in inventories and holding losses.

### 2.1.3 *Conceptual and compilation challenges*

11. Three important conceptual and compilations challenges are involved in compiling merchanting transactions, as also noted for example in the *Guide on Measuring Global Production*.

- The first is how to establish if the nature of the good under ownership of the merchant has changed, which determines if a transaction should be recorded as merchanting or rather a manufacturing service.

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<sup>1</sup> Note that the 2008 SNA recommends correcting for holding gains and losses to ensure that these are not reflected as output. This difference between the two standards is on the agenda of the Advisory Expert Group to the Inter-Secretariat Working Group on the National Accounts (ISWGNA).

- The second relates to whether or not significant input from intellectual property products owned by the merchant are embodied in the value of merchanting transactions (i.e. if the merchant is an organiser of a global production processes and is therefore a Factory-less Goods Producer).
- The third challenge is more practical, namely how to identify transactions in goods that do not cross the customs frontier of the merchant.

## 2.2 *Manufacturing services on physical inputs owned by others*

### 2.2.1 *Definition*

12. *Manufacturing services on physical inputs owned by others* is defined as covering the processing, assembly, labelling, packing, and other such processes undertaken by enterprises that do not own the physical inputs concerned. Only the fee (the manufacturing service) charged by the enterprise undertaking the manufacturing service is included under this item.

13. The classic example of a manufacturing service transaction involves a principal (in country A) providing material inputs to a foreign enterprise (country B) which then undertakes some form of transformative manufacturing (e.g. processing, assembly) on these inputs (which are at all times owned by the principal). The final output is then sold and the service fee (which may be less than the difference between the cost of the material inputs and the eventual sale prices or indeed the difference between the cost of the material inputs and any imputed value included in the merchandise trade export figures in the processing economy) is recorded in the BPM6 current account, service component under the item 'Manufacturing services on physical inputs owned by others'. Common examples of manufacturing services given in BPM6 include oil refining, liquefaction of natural gas, and assembly of electronics and clothing.

### 2.2.2 *Recording and compilation*

14. Manufacturing services are recorded in the services account, and includes two supplementary items: the gross flows of the physical inputs and of the final goods. Assuming the classic case where the owner, a resident of the compiling economy, sends goods to a non-resident processor (in another economy) who processes the goods and returns them to the owner in the compiling economy, the balance of payments entries would reflect an import of manufacturing services and be recorded as follows:

- Manufacturing services on physical goods owned by others [Debit, the processing fee]
  - Goods for processing abroad-Goods sent [Credit, value of the goods sent]
  - Goods returned [Debit, value of the goods returned]

15. Likewise, in the country of the processor, an export of manufacturing services is recorded, with two complementary items:

- Manufacturing services on physical goods owned by others [Credit, the processing fee]
  - Goods for processing abroad-Goods sent [Debit, value of the goods received]
  - Goods returned [Credit, value of the goods returned]

### 2.2.3 *Conceptual and compilation challenges*

16. There are at least three conceptual and compilation challenges that a compiler must address when recording manufacturing services transactions.

- It is important to correctly value the processing services fee, recognising that this will not necessarily equal the value of the difference between the imported material inputs and exported outputs. Merchandise trade data for example will necessarily impute values for these flows and for exports, in particular the export flow may include additional value provided by intellectual property, such as software, design, brand owned by the merchanter. Further, when the processing occurs over a long period of time price changes in the eventual exported goods may also create a further wedge between the difference in input and output values and the processing fee.
- The gross flows of the goods transactions (export and import) need to be separately identified in order to be able to remove them from the general merchandise trade figures (where these gross flows should be included as per the recommendation of the IMTS 2010).
- It is important to distinguish between merchanting and processing transactions: if only minor processing occurs, goods transactions recorded in the accounts of the economy where the principal firm (that has contracted the processor) is resident should be recorded as net goods under merchanting (with the inclusion of manufacturing services imports as their intermediate consumption).
- It is also important to differentiate between processing modes of production (treated as manufacturing services exports) and conventional modes of production (treated as goods exports). Present guidelines indicate that if any material inputs are owned by the principal firm (and not the processor) then the activity should be recorded as manufacturing services, which in theory applies even if the processor itself purchases significant quantities of material inputs on its own account. This is the subject of on-going discussion.

### 2.3 *Factoryless Goods Producers (FGP)*

17. The *Guide to Measuring Global Production* introduced Factoryless Goods Producers (FGP), defined as companies that have outsourced all aspects of the material transformation process, and acquire no material inputs during that process, but that do own the intellectual property products (IPP) involved in the production. Current accounting standards record FGPs in the distribution sector and therefore by extension treat an arrangement between a domestic principal (the FGP) and a foreign processor as a *merchanting* transaction in the balance of payments. However the GMGP argues that this is an unsatisfactory arrangement as it creates an arguably archaic and arbitrary distinction between material inputs and immaterial (intellectual property) inputs, while also treating pure merchanters (i.e. firms that purchase and sell finished goods) in the same way as firms that de facto control production processes and the design of goods they eventually sell. Further, it also creates an arbitrary distinction between principals that do purchase (even insignificant amounts of) material inputs, which are classified as manufacturers, and those that do not. The GMGP however was not tasked with changing international standards in the accounting system however to mitigate their effects the GMGP recommends that FGPs, where possible, are reflected as of-which items in the accounts; which is the recommendation advocated in this chapter.

18. An example of a FGP is provided in paragraphs 2.47 and 2.48 of the GMGP. A principal in country A outsources the transformation of its athletic shoe to a foreign supplier located in country B, but provides the blueprints of production, maintains ownership of the intellectual property embedded in the shoe, and is responsible for marketing and selling the shoe. The supplier purchases the materials (according to the specifications of the principal) and the principal acquires the shoe at the factory gate price that includes the materials plus the value of the processing (compensation of the production workers) but excluding any value associated with the use of IPPs in this production process. Under current accounting

standards, if the principle sells these products directly to country C, the transaction is treated as a merchanting transaction in the balance of payments.

### 3. Addressing Compilation challenges

19. The OECD WPTGS Informal Reflection Group on *merchanting and manufacturing services*, has been addressing the challenges described above since 2015 and identified six key compilation challenges as a series of questions:

1. How can enterprises undertaking the relevant transactions be identified for survey purposes?
2. How can merchanting transactions be distinguished from manufacturing services in practice?
3. How to adequately value the manufacturing processing services fee (including in surveys)?
4. What is the best approach to record merchanting transactions that, by definition, occur outside of the compiling economy?
5. How can the gross flows of goods related to manufacturing services be removed from general merchandise trade statistics?
6. What How to use microdata data linking to enhance consistency of recording of merchanting and manufacturing services across all statistics?

20. An additional compilation concerns delineation issues concerning the identification of FGPs. This is a relatively nascent area of investigation and little compilation guidance is currently available. The GMGP contains an experimental definition of FGPs related to control of production chains and in particular the contribution intellectual property and other forms of knowledge based capital, including brands, make to overall value-added but this remains very much a frontier topic. Guidance will however be made available in this Guide when sufficient compilation experience has been developed.

#### 3.1 Identifying enterprises involved in merchanting and manufacturing services

21. Due to the nature of the transactions involved, surveys are generally considered the best data source to collect information on manufacturing services and merchanting. While, in theory, an intuitively simple approach would be to add questions to standard business surveys that ask firms to report revenues and costs related to these activities, this in turn raises burden issues and, moreover, additional challenges pertaining to sampling. Stratification methods typically used in sampling firms relate to size and industry, in other words, at least with conventional stratification methods, representivity and results would be questionable. A preferred approach in this respect therefore is to capitalise on existing sources or mechanisms that can be used to identify merchanting and processing firms, and either design surveys on the basis of this population of firms or using complementary administrative data linked to the firms.

22. For many countries, an important source for identifying enterprises is the tax records (in particular VAT or GST data). VAT records in a number of countries are integrated with customs records and can therefore be cross referenced to import/export information and so in turn manufacturing service and/or merchanting transactions. In the European context, the VAT Information Exchange System (VIES) has a cross-border dimension that can, at least, partially identify enterprises engaged in merchanting through ‘triangular trade’.

23. Customs records, when linked to business registers, are another important source, in particular the Customs Procedure Codes (CPCs); which identify the customs and/or excise regimes entered into and

removed from (where this applies). While not all Customs Services have CPCs, for those that do they provide another source to identify enterprises undertaking in particular, processing transactions. Some care is needed in their application however as they may not always be well maintained. In addition, flow mismatches may occur due to timing differences, or when third or fourth countries are involved, or when the domestic trader is not the actual merchant.

**Box 1. Using CPCs to identify manufacturing services: examples from the United Kingdom and Canada**

In the UK's customs records, a CPC code is included, which identifies the customs regime to which goods are being entered: removal from warehouse, entry to free zone, and export under Outward Processing Relief (OPR). The code also identifies the regime from which goods are being withdrawn. When linked with business registers these codes help identify enterprises involved in manufacturing services.

In the Canadian customs data, two customs' programmes have been identified that enable better tracking of inward and outward processing activities. These are the Exporter of Processing Services Program (EOPS), which allows the tax-free importation of goods by a Canadian processor for the purpose of processing the goods in Canada and subsequent export, and the Canadian Goods Abroad Program (CGAP) which entitles enterprises to full or partial relief of duties and taxes, including the value-added taxes, for goods that have been repaired, altered, or worked on outside Canada.

24. In the European context, Nature of Transaction (NoT) codes, at the 2-digit level, can also be used to identify enterprises engaged in manufacturing services, as illustrated in Table 1 below, which provides an overview of the relevant codes.

**Table 1. Nature of Transaction Codes relevant for identifying enterprises engaged in manufacturing services**

1-digit level	2-digit level
4. Operations with a view to processing under contract (no transfer of ownership to the processor)	4.1 Goods expected to return to the initial country of export 4.2 Goods not expected to return to the initial country of export
5. Operations following processing under contract (no transfer of ownership to the processor)	5.1 Goods returning to the initial country of export 5.2 Goods not returning to the initial country of export

25. Another option is to introduce checkboxes into existing surveys of (mainly multinational) enterprises to identify those enterprises undertaking international manufacturing services and merchanting; from which additional surveys could be designed that focus only on the target population. In addition to these sources, company profiling can be used to cross-check information from different statistical domains as well as from public domains such as company reports, media articles etc.

26. Compilers may also be able to identify enterprises undertaking manufacturing services if special registration arrangements exist (*e.g.* for duty reductions, export processing zones or special trade zones). Free trade zones for example are likely to have disproportionate representivity of processing firms for example, so compilers should investigate the possibility of accessing administrative data from these zones.

27. Business registers also provide a useful source for identifying enterprises engaged in merchanting activities as these are more likely to be recorded in the distribution sector, therefore narrowing the scope of firms that could be recorded in a dedicated survey. Overall, however a combination of different sources may be the most appropriate means to correctly identify all enterprises engaged in the relevant transactions, as the example in Box 2 for Belgium illustrates.

**Box 2. Identifying enterprises engaged in merchanting: example from Belgium**

The Belgian Merchanting questionnaire administered by the National Bank of Belgium collects detailed information on merchanting transactions, including information on the transaction type (goods acquired under merchanting, goods sold under merchanting, trade margins under merchanting); the partner country; currency; and value of the transaction. To be included as a respondent to the Belgian merchanting questionnaire, enterprises must meet one or more of the following criteria:

- i) the enterprise declares triangular trade;
- ii) declares more than 10 million Euro per year in Intrastat;
- iii) declares more than 1 million Euro per year in Extrastat;
- iv) has an NACE activity code starting with 451, 4531, 454 or 46; or
- v) be a known merchant or enterprise with e.g. "trading" as part of their name

### 3.2 *Differentiating merchanting and manufacturing services transactions*

28. As noted above delineating between manufacturing services and merchanting transactions is not always trivial. The key issue here concerns the degree of transformation provided by the processing firm.

29. In practice countries adopt a variety of methods to determine this delineation. One approach looks to identify whether the imported good and corresponding exported good significantly change their product classification (Harmonised Code (HS), for example change at the six digit level). This criterion has the advantage of being consistent with the definition used for re-exports in the BPM6 (10.37) and the IMTS 2010<sup>2</sup>. Although BPM5 had a different method for recording goods for processing, it did state that following the 1993 SNA methodology, goods reclassified, in a different three-digit group of the Central Product Classification (CPC), were considered to have undergone a substantial transformation.

30. The *Eurostat Manual on Goods Sent Abroad for Processing* (2014 edition) takes, as a general rule, that goods that have been processed in any way are assumed to have been transformed, while goods that have been simply repacked or labelled are not. BPM5 assumed that all processing resulted in a substantial physical change; a convention adopted in recognition of the delineation challenges.

31. It's important to note that delineation issues have implications for the flows recorded on the accounts for the principal too, as if the transaction is identified as transformative then the principal (contracting out the manufacturing service) is de facto recorded in the SNA as a manufacturer, with imports and intermediate consumption of the material inputs used by the processor and the processors' fees. This question becomes more complex when the relationship is between related parties (e.g. direct investor and an affiliate) and the owner of the material inputs is blurry.

32. The UNECE *Guide to Measuring Global Production* (para 2.82) recommends that the dividing line between manufacturing services and merchanting is whether or not the principal has obtained at least some of the material (physical) inputs prior to processing. This is seen as being consistent with recommendations outlined in ISIC, the 2008 SNA and BPM6.

<sup>2</sup> The IMTS 2010 additionally uses the criteria of where the last manufacturing is "deemed sufficient to give the commodity its essential character".

### 3.3 *How to adequately measure the manufacturing processing services fee*

33. As noted above, some care is needed in using customs data to estimate processing fees. Certainly crude estimates that take the difference between import material inputs and exported (processed) goods should be avoided as such estimates may include the value provided by intellectual property owned by the principal contracting the processing service (see also Box 3).

34. In practice therefore, because of limitations with customs data, countries typically rely on business surveys (albeit with one eye on customs statistics for anecdotal checks).

**Box 3: Reasons for differences between the value of goods before and after processing compared to the manufacturing service (i.e. the processing fee)**

*Sale of goods after processing in the economy of the manufacturer or to a third economy;* in such cases, the value of the processed goods that are returned to the owner is diminished by the value of goods sold to the economy of the manufacturer or to a third economy, the latter being separately recorded as exports by the owner of the goods.

*Incorrect assessment of the values of goods sent and returned;* since there is no sale or purchase of the goods, the values recorded by customs at the time of import and re-export are notional values, whose balance probably does not differ by the amount of the processing fee received (resulting in balance of payments errors and omissions). Also, these values may be assessed differently by the customs authorities of the economy of the sender and the customs of the economy of the receiver.

*Recording of the goods before and after processing across different periods.*

*Inclusion of holding gains or losses;* holding gains or losses accrue to the owner of the goods. However, it is likely that the changes in the value of the goods while in the possession of the manufacturing company could be included in the value of the goods and hence be mistaken for part of the manufacturing services. For example, if the price of oil changes substantially after the manufacturer takes possession of the consignment, then the value of oil after manufacturing would include the price increase, the manufacturing services, and the value of other inputs.

*Scrapping of the goods while in the possession of the manufacturer;* these goods may be included in the value of goods sent but excluded in the value of goods returned.

*Inclusion of manufacturer's overheads in the value of the goods after processing\*;* the manufacturing services should include overhead costs only to the extent they relate to the processing of the goods.

*Value of brand names in goods after processing;* for example, a shoe manufacturer's logo adds value to the goods after processing. However, this value should not be included in the manufacturing services.

*Inclusion of the value of materials sourced from the economy of the manufacturer;* materials procured by the processor as inputs in the production process and that may be sourced from the economy of the manufacturer (or sourced from third economies and then transported directly to the economy of the manufacturer) are included in the overall cost of production. It may be that only a portion of their value is reflected in the manufacturing services, the rest being inputs in other processing activities including on its own.

\* *Overhead costs include expenses related to the operation of a business. Most commonly, overhead costs include accounting fees, advertising, depreciation, insurance, interest, legal fees, rent, repairs, supplies, taxes, telephone bills, travel, and utilities costs.*

Source: Balance of Payments and International Investment Position Compilation Guide, BPM6CG

35. It should be noted that some countries still rely, to some degree, on the International Transactions Reporting System (ITRS). For example, France notes that it is able to identify and capture over 80% of merchanting through this system (direct reporters). However, even in this case, surveys are required and contacts are often made with direct reporters to ensure accuracy and quality. In addition, there are many other limitations of the ITRS (see for example BPM6 CG paras. 4.73-4.78), which has seen many countries move away from using this source for their balance of payments compilation.

**Box 4. The Situation in the United Kingdom Office for National Statistics - Short-term Solution**

The move to BPM6 saw the ONS add a new question (see below) to their International Trade in Services Survey to capture manufacturing services on the physical inputs owned by others;

*For imports: Include the fees charged by foreign businesses for the processing, assembly, labelling and packing of goods overseas that are owned by your business.*

*For exports: Include services such as processing, assembly, labelling and packing of goods that are owned by another foreign business*

In addition the ONS is investigating other possible avenues:

- Introducing a new survey;
- Matching the ONS business register to enterprises in the IMTS database;
- Using NoT codes for Intrastat transactions to make estimates; and/or
- Use partner country (mirror) information.

Source: STD/CSSP/WPTGS(2014)12

The **Israeli Central Bureau of Statistics (CBS)** measures manufacturing services as follows:

<b>Manufacturing services on physical inputs by abroad subcontractor</b>						
Israel companies which produce goods through abroad subcontractors, deal with product development, design, technical specifications, marketing, etc. while the actual production is carried out by abroad subcontractors (including intermediate stages).						
If your company produced goods through abroad subcontractors in 2011, please complete the following data:						
<b>Price of the goods abroad:</b>						
	Country	Country	Country	Total	Out of which:	
	.....	.....	.....		Payments to related enterprises	Payments to enterprises which are not related
Value of manufacturing services abroad (the total sum which was transferred to the subcontractor abroad for the goods produced)						
Value of goods dispatched to nonresidents for manufacturing						
Price of the goods purchased abroad and which were transferred to the abroad subcontractor, for the production process, without passing through Israeli borders						
<b>Sales of goods abroad</b>						
	Country	Country	Country	Total	Out of which:	
	.....	.....	.....		Revenue from related enterprises	Revenue from enterprises which are not related
Value of manufactured goods sold abroad on behalf of your company						
<b>Returning goods to Israel:</b>						
Value of goods which were produced by abroad subcontractors during 2011 and which were returned to Israel after the manufacturing process.						
<ul style="list-style-type: none"> <li>• Do you also manufacture your own goods in your company (not through subcontractors)? <input type="checkbox"/> Yes <input type="checkbox"/> No</li> <li>• Is the raw materials inventory or the inventory of products in process, connected with the production by the abroad subcontractors, recorded in your company's financial statement ? <input type="checkbox"/> Yes <input type="checkbox"/> No</li> </ul>						

36. In **Belgium** *manufacturing services* are collected in surveys F01DGS and F01CMS while *merchandising* is collected in survey F01MER. While legally the National Bank of Belgium can include all national enterprises in their surveys, the major challenge is in identifying relevant enterprises, as no specific activity code is available.

37. For manufacturing services, the following instructions are given to enterprises completing the questionnaires:

**Code A2300 - Processing of goods (manufacturing services) on goods owned by others, if the movement of the goods before or after processing has not been declared as such in Intrastat or customs:**

- *involves the processing of goods on a contractual base and with remuneration: goods are imported and are re-exported again (to the country of origin or another country) after processing in Belgium (active processing) or goods are exported and re-imported after processing abroad (passive processing). Only the service performance (the fee) has to be declared. It only includes the processing as far as **the manufacturer is not the owner of the goods and the movement of the goods is not declared or not registered** by your company either in the Intrastat or customs declaration (Extrastat) with **transaction code 4 or 4I** (transactions with a view to processing) **and/or transaction code 5 or 5I** (transactions after processing).*
- *Example: If a non-resident, owner of the goods, uses a tax representative or a direct VAT registration in Belgium, and the processing work is done by a resident manufacturer, this is considered as a processing transaction between a resident and a non-resident.*

**Code A2301 - Processing of goods (manufacturing services) on goods owned by others, if the movement of the goods before or after processing has been declared as such in Intrastat or customs.**

- *It involves the processing of goods on a contractual base and with remuneration: goods are imported and are re-exported again (to the country of origin or another country) after processing in Belgium (active processing) or goods are exported and re-imported after processing abroad (passive processing). **Only the service performance (the fee) has to be declared.** It only includes the processing as far as **the manufacturer is not the owner of the goods and the movement of the goods is registered** in the Intrastat or customs declaration (Extrastat) with **transaction code 4 or 4I** (transactions with a view to contract processing work) **and/or transaction code 5 or 5I** (transactions after contract processing work).*

38. In **Sweden**, Statistics Sweden (SCB) collects manufacturing services data question 104:

#### **104 Manufacturing services on physical inputs owned by others**

*Manufacturing services on physical inputs owned by others covers processing, assembly, labelling, packing, and so forth undertaken by enterprises that do not own the goods concerned. The manufacturing is undertaken by an entity that receives a fee from the owner. Since the ownership of the goods does not change, no general merchandise transaction is recorded between the processor and the owner. The value of fees charged for manufacturing on physical inputs owned by others is not necessarily the same as the difference between the value of goods sent for processing and the value of goods after processing. Reconstruction of vessels, aircraft and other transport equipment is included in this item.*

*Excluded are: the assembly of prefabricated construction (included in SCB code 412, Construction and installation services abroad or SCB code 413, Construction and installation services in Sweden). Labelling and packaging incidental to transport (included in SCB code 173 and 193, Other supporting and auxiliary transport services).*

39. In **France**, the Banque de France (BdF) provides the following guidance to respondents where “manufacturing services on physical inputs owned by others” is defined as follows:

*It encompasses all industrial subcontracting transactions (processing, assembly, labelling, packing, and so forth), operated by a processor that is not the owner of the processed goods. The manufacturing is undertaken by an entity that is paid a fee by the owner. The ownership of the goods does not change and goods are sent back to the economy or their owner or to a third economy after their processing.*

*Examples of processes include oil refining, liquefaction of natural gas, nuclear reprocessing, assembly of clothing and automobile, transformation of minerals and metals.*

*The fee charged for the manufacturing services by the processor is only included in this item. The fee may not be equal to the discrepancy between the value of the goods sent for manufacturing and their value after the processing.*

*Excluded from this item are the assembly of prefabricated constructions, which are included in construction and labelling and packing incidental to transport which are included in transport services.*

### 3.4 How to capture merchanting transactions outside the compiling economy

40. An important challenge with respect to collecting statistics on merchanting relates to the exact formulation of survey questions and instructions, especially with respect to questions related to the identification of the ownership of the goods. The following provides national example of approaches used by countries:

The **Israeli Central Bureau of Statistics (CBS)** measures merchanting services as follows:

The sums must be reported in one of the following currencies:  Shekels  Dollars  Euro (check with ✓)

If the transactions were originally in a different currency, do not note the currency before the conversion.

Note if the report is in: .....  Regular numbers  Thousands  Millions (check with ✓)

**International Trade in Goods**  
 If your company purchases goods abroad and later sells them abroad, without them passing through the borders of the State of Israel, note the following data:

**Price of the goods abroad:**

	Country	Country	Country	Country	Country	Country	Total (Equal to section C in Import of Services Survey, p.7)
Value of goods purchased abroad							

**Price of the goods sold:**

	Country	Country	Country	Country	Country	Country	Total (Equal to section C in Export of Services Survey, p.5)
Value of goods sold-selling price							

41. In **Sweden**, Statistics Sweden (SCB) collects merchanting data via two questions in their survey (122 and 123), described below:

**122 Merchanting (Goods not crossing the Swedish border).**

*Merchanting is defined as the purchase of goods by a Swedish party from a foreign party and the subsequent resale of the goods to another foreign party, where the goods do not cross the Swedish border. The gross value of the goods sold to foreign buyers during the period is reported as income here. The total purchasing costs for merchanting goods purchased during the period regardless of whether they have been resold or not are reported as cost.*

**123 Merchanting - Purchase cost for merchanting goods sold during the quarter.**

*The costs for goods that were reported as income under SCB code 122 (regardless of time of purchase) are reported here. Only the initial purchase amount of the good is reported as the cost. Any manufacturing services, freight charges or other related services are to be reported under the respective service type.*

42. In the **United States**, the Bureau of Economic (BEA) collects information on merchanting on its Quarterly Survey of Transactions in Selected Services and Intellectual Property with Foreign Persons (BE-125<sup>3</sup>). Instructions to respondents are as follows:

*Merchanting services (Receipts only) – Receipts for merchanting services are equal to the difference between your cost and the resale price of goods (such as crude oil, grain, and other commodities) that are both purchased and resold abroad; that is, the goods are neither imported to, nor exported from, the United States and they do not undergo significant processing during the time between when they are purchased and resold. Without regard to whether you initially purchased the goods from an affiliated or unaffiliated foreign person, report data for those transactions according to the company’s relationship with the foreign entity (foreign affiliate, foreign parent(s) and foreign affiliates of foreign parent(s) group(s), or unaffiliated foreign person) to which the goods were resold.*

43. The questions below (9 and 10) were put into the field with reporting for the third quarter of 2016. BEA will analyse the results and determine if it possible to publish them as the standard BPM6 components “Goods acquired under merchanting” and “Goods sold under merchanting”.

The screenshot shows two survey questions. Question 9 asks if the respondent reported sales of merchanting services (net receipts) on Schedule A, with options 'Yes' (leading to question 10) and 'No' (leading to instructions on page 1). Question 10 asks for the gross value of sales and purchases of goods sold under merchanting services, with a detailed note explaining that net merchanting services are the difference between cost and resale price for goods not imported or exported and not undergoing significant processing.

3. [http://www.bea.gov/surveys/respondent\\_be125.htm](http://www.bea.gov/surveys/respondent_be125.htm)

44. The second part of the questionnaire (below) is included to make it clear to respondents that goods sold under merchanting *less* goods purchased under merchanting should be equal to the net merchanting receipts reported. Experience from the previous benchmark survey revealed that it was necessary to make this clarification when following up with several survey respondents who had reported incorrectly.

REPORT IN THOUSANDS OF U.S. DOLLARS (e.g., report \$1,555,555.00 as 1,556).

Net from Schedule A	=	Gross Sales	-	Gross Purchases
1		2		3
000		000		000

45. The BEA collected additional detail on merchanting in its 2011 Benchmark Survey of Transactions in Selected Services and Intellectual Property with Foreign Persons, BE-120. The additional detail covered the gross value of sales and purchases of the underlying goods. The BEA included these questions on gross sales and purchases to determine whether it would be feasible for companies to report this information as the standard BPM6 components “Goods acquired under merchanting” and “Goods sold under merchanting.” BEA has determined that it was feasible for companies to report this information.

**Schedule F — ADDITIONAL REPORTING OF TRANSACTIONS (WITH FOREIGN PERSONS) IN MERCHANTING SERVICES**

**1. Did you report receipts for merchanting services (transaction code 22) on Schedule A?**

F1001<sup>1</sup> 1  Yes  
 2  No – Schedule F is complete.

---

**2. Are you able to report the value of sales and purchases of the goods sold under the merchanting transactions you reported on Schedule A** (Note: Sales of merchanting services are equal to the **difference** between your cost and the resale price of goods (such as crude oil, grain, and other commodities) that are both purchased and resold abroad; that is, the goods are neither imported to, nor exported from, the United States and they do not undergo significant processing during the time between when they are purchased and resold.)

F1002<sup>1</sup> 1  Yes – Go to question 3.  
 2  No – Schedule F is complete.

---

**3. (Voluntary) Enter the value of sales and purchases of the goods sold under the merchanting transactions you reported on Schedule A.**

Thousands of U.S. dollars	
F1003 1 Sales	2 Purchases
\$	\$

---

**4. The sales and purchases recorded in Question 3 were (check the appropriate box):**

F1004<sup>1</sup> 1  Based on accounting records.  
 2  Estimated by persons knowledgeable regarding these transactions.

46. In **France**, the Banque de France (BdF) provides the following guidance to respondents for merchanting<sup>4</sup>:

4. [https://www.banque-france.fr/fileadmin/user\\_upload/banque\\_de\\_france/Economie\\_et\\_Statistiques/Nomenclature\\_Definitions\\_SDDG.pdf](https://www.banque-france.fr/fileadmin/user_upload/banque_de_france/Economie_et_Statistiques/Nomenclature_Definitions_SDDG.pdf)

*It includes the purchase and the resale of goods (merchandises or raw materials) from and to a non-resident without the crossing of the French border. Goods are purchased in the aim of selling them making a profit.*

*It also includes intra-group exchange of goods (between parent companies and affiliates or between affiliates) taking part in industrial activity (spare parts, semi-finished products) which are not submitted to customs and tax procedures. These transactions do not imply making a benefit.*

*Operations are reported in flows of purchases and sales excluding transportation and insurance costs. Expenses related to transportation and insurance are reported in the relevant sections.*

*Operations carried out on the futures markets are excluded. Brokerage commission fees which have to be reported separately from transactions of goods are also excluded and reported trade-related services.*

*Transactions related to the foreign purchase of goods used on building sites and their potential resale are reported in “construction services”.*

*Respondents report in the column “expenditure” the negative exportation of the merchanting operation which represents the purchase of goods abroad. In the column “receipt”, the amount of the selling of goods to a non-resident is reported including the profit (if any).*

### **3.5 How to remove the gross flows from general merchandise trade statistics**

47. ITMS 2010 makes an important point for compilers, which is highlighted in other international recommendations, namely: It is recommended that in all cases, goods for processing and goods resulting from such processing, are to be included in the merchandise exports and imports of the countries at their full (gross) value. Compilers of balance of payments and statistics on international trade in services are required to estimate the manufacturing services on inputs owned by others and it is recommended that countries provide this estimate in their metadata on international merchandise trade statistics, preferably together, if available, with the value of imports and exports of goods for processing and goods resulting from such processing where no change of ownership takes place.

48. ITMS 2010 also provides guidance on the measurement of goods for processing in paragraphs 1.19-1.21 and 4.15(e). ITMS 2010 states that goods for processing may be brought into a country under special customs procedures, such as inward processing or processing of goods for home use as well as declared for home use. Goods resulting from processing might be returned to the sending country, sold in the country of processing or sent to a third country. The choice of the customs procedure may vary from country to country and from trader to trader, depending on many factors, such as the level of customs duties, taxation, other fees and charges and the expected clearance time. In view of the decreasing of customs duties and relaxing of other administrative requirements, the emerging practice is to declare such goods for importation for home use and, subsequently, for outright exportation as this gives traders more freedom.

49. The information gained from NoT codes and CPCs is also an important source for necessary corrections to merchandise trade statistics with regards to merchanting and processing.

50. It is possible to approximate manufacturing services – especially for reporters not captured in International Trade in Services surveys – by calculating the difference between goods sent and returned after processing (identified in the foreign trade data *e.g.* from CPCs). However, as noted above, compilers should be aware that this practice may result in either large fluctuations, or indeed incorrect valuations. For

these reasons, customs codes (i.e. NoT Codes and CPCs) should not ideally be used **as the sole source** for approximating manufacturing services on inputs owned by others. For example, some countries have reported that when both customs codes and Survey data are available, important deviations are observed between the results obtained using the customs data, and those of surveys (due to number of reasons including timing and valuation differences and missing enterprises).

51. A further problem is the quality of data reported under processing NoT codes. As processing will often change commodity codes, matching consignments becomes more difficult. Valuation may also be difficult, due to transfer pricing between affiliated enterprises which may not reflect a fair market value.

52. Countries without access to customs codes will need to rely on surveys (including the International Trade in Services survey) and in some cases direct contact with multinational enterprises (the Central Statistics Office of Ireland for example takes this approach).

53. Some international transactions present special difficulties for the valuation of the categories of goods involved due to the complexity of the transaction or the peculiarity of the goods. In other cases, transactions may not require goods valuation by the parties involved and are not accompanied by the movement of currency or credit. However, all categories of goods should be valued on the basis of the WTO Agreement on Customs Valuation and IMTS 2010 recommendations, and if the transaction value of goods for processing entering or leaving the compiling country without change of ownership is not available, the trade compilers should apply the appropriate methods contained in the WTO Agreement on Customs Valuation in order to derive the statistical value (annex D of the ITMS 2010). Goods for processing should always be valued at their full (gross) value.

### 3.6 *How to ensure consistency across statistics*

54. Given the complexity of compiling manufacturing services (and merchanting transactions), microdata linking and confrontation of different sources – most often based on a unique enterprise identifier – provide possible avenues for collecting and checking statistics on these types of transactions. Examples of data linking that compilers could investigate include linking VAT information and services surveys; linking industry sales and services surveys; linking the statistical business register with the service trade register; and linking customs information (transaction codes) and service surveys.

55. Compilers should note that potential additional complications such as: institutional or legal nature challenges (particularly if several institutions are involved in each data source); non-matches; and representativeness<sup>5</sup>.

56. Similarly, a confrontation of national statistics with those provided by partner countries (mirror statistics) can also play an important role, in particular for these complex transactions where countries often only observe a part of the puzzle.

57. The OECD and WTO have been working for several years on the development of a transparent process and methodology to estimate coherent bilateral trade in services statistics that leverages all available official trade in services data, and the balanced databases could provide an important source of information for countries

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<sup>5</sup> The OECD is currently developing a *Handbook on Linking Trade and Business Statistics* that should provide further guidance.

#### **4. Conclusions and Open Questions**

58. This online chapter attempts to provide useful information for compilers in capturing merchanting and manufacturing services transactions. Although significant progress has been made since the revisions introduced in BPM6, significant challenges remain, not least concerning emerging questions on FGPs. As an on-line guide, new guidance and experiences across all areas described in this chapter will be incorporated as they become available; including in particular across a range of open questions described below.

##### *Open questions*

59. When is a change substantive enough to change the nature of the product? When should a transaction be recorded as merchanting and not processing?

60. What is the scope to identify FGPs?

61. What other approaches can be used to accurately record merchanting flows and what methods can be used to assure that bilateral flows are consistent? Is there a case for bilateral sharing of customs data?

## ANNEX – DETAILED COUNTRY CASES

### 5.1 Statistics Canada's Project

62. Statistics Canada is undertaking a five-year project on 'Global Production Statistics' to develop, and produce statistics that better capture the global activities of national enterprises and to meet new international standards. Objectives of the project are to identify enterprises involved in manufacturing services on physical inputs owned by others and merchanting and measure this activity, and better understand factoryless goods production activities.

63. The project has three stages:

- Research - investigate new data sources; test feasibility of new questionnaires or in adding new fields to current questionnaires; investigate in-depth the full customs' database.
- Results from research - update the business frame to track and identify enterprises involved in the activities; implement questionnaire updates; begin provisional data collection, estimates and analysis.
- Implementation - integrate new data into the Macro Economic Accounts.

64. Initial feedback from stage 1 indicates that:

- Respondents need knowledge of their business production arrangements to be able to complete the questionnaires
- There do not appear to be any easy cases where all inputs are provided by the foreign client and all finished products are exported back to the client
- No cases of pure factoryless goods producing activities were found
- Tracking merchandise transactions (inward and outward) will be a great challenge

65. The investigation of the customs database revealed two Customs' programmes that will enable better tracking of inward and outward processing activities. These are:

- Exporter of Processing Services program (EOPS)
  - Allows the tax-free importation of goods by a Canadian processor for the purpose of processing the goods in Canada and subsequent export
- Canadian Goods Abroad Program (CGAP)
  - Full or partial relief of the duties and taxes, including the value-added taxes, for goods that have been repaired, altered, or worked on outside Canada

### 5.2 Central Statistics Office of Ireland

66. Ireland is a small open economy that given its taxation structure has become a well-known location for foreign-owned multinational enterprises (MNEs). As an example of the dominance of MNEs in the Irish economy, in 2015 gross value added for the following activities represented 13% of the total: Reproduction of recorded media; Manufacture of chemicals and chemical products; Manufacture of basic pharmaceutical products and pharmaceutical preparations; Manufacture of computer, electronic and optical

products; Manufacture of electrical equipment; and Manufacture of medical and dental instruments and supplies.

67. Accounting for MNEs and their transactions, especially given growing globalisation has increasingly seen more parts of the manufacturing process move to other countries which presents a complex undertaking for the Central Statistics Office.

68. In this regard the CSO has a dedicated unit (the large cases unit (LCU)) for MNEs and which has built up a relationship with the 70 or so MNEs (non-financial) in Ireland. The LCU is responsible for all contact with the MNEs and for example all CSO questionnaires are sent from the LCU.

69. In examining different sources and consistencies from NMEs, 3 types of goods for processing adjustments required for the balance of payments have been identified in Ireland.

70. Type 1 - Goods sent abroad and returned after processing (the 'classic case'). The national enterprise decides to outsource part (or all) of the production process. The goods are shipped abroad (recorded as exports in the IMTS) and after processing shipped back (recorded as imports in the IMTS), all while there has been no change of ownership. For the balance of payments, the exports and imports of the goods are recorded as zero and the processing fee is recorded as an import of service under 'Manufacturing services on physical inputs owned by others'.

#### *Irish example of type 1*

71. A multinational pharmaceutical enterprise has its European manufacturing site located in Ireland. Goods are shipped into Ireland where the product is finished and returned to the original country. Notably the value of exports in IMTS far exceeds imports (suggesting significant value added undertaken in Ireland), however there is an inconsistency with the company accounts. Discussion with the enterprise reveals that the production in Ireland is on a fee basis and no ownership is taken of the inputs or the outputs.

72. This information requires the CSO to make downward adjustments to IMTS data and record only exports of manufacturing services on physical inputs owned by others from the factory for the balance of payments, i.e. remove goods imports, remove goods exports, and record processing services exports (fee). The example shows the importance of the adjustment and how trade data can't be used in isolation. For smaller enterprises, instead of direct contact with the enterprise the PRODCOM<sup>6</sup> survey (total production sold/work done) is an opportunity.

73. Type 2 - Goods sent abroad for processing and then sold abroad. Goods produced in Ireland are sent abroad to be finished and then sold in another economy without coming back to Ireland. Ownership of the goods remains with the Irish enterprise up until they are sold.

#### *Irish example of type 2*

74. An electronics manufacturer based in Ireland with a plant of 300 workers is part of a global structure where a lot of the production is sent abroad for further testing and processing.

75. Adjustments required for the balance of payments are:

- increase the value of the export value to the final sale value;

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<sup>6</sup> EU Community survey of industrial production (compulsory for EU Member States by regulation).

- if further materials, owned by the Irish enterprise, are provided directly to the foreign processor then these need to be recorded as Irish imports; and
- record the processing fee as a service import.

76. A good source of data can be found by comparing IMTS (at 'cost price') with company accounts.

77. Type 3 - Goods purchase, processed and sold abroad. This is common for MNEs based in Ireland where they purchase goods abroad (and which are not shipped to Ireland) and then are processed abroad before finally being sold abroad. The Irish MNE at all times, up until the sale, has ownership of the goods and they never enter Ireland.

### *Irish example of type 3*

78. A pharmaceutical company based in Ireland arranges the manufacture of pharmaceuticals abroad. Bulk raw materials are purchased from abroad by the Irish company, they are provided to the processor who transforms the materials into the final goods. The goods are then sold to the final consumer without ever entering Ireland. The Irish company considers itself the owner of the inputs until the product is sold and the inventory is recorded in the accounts of the Irish company.

79. In this example the input materials are relatively cheap while the outputs are expensive drugs.

80. The Irish company makes a sizeable royalty payment as an intermediate input into the process.

81. The CSO makes the following adjustments to the balance of payments accounts:

- increase the value of the export value to the final sale value;
- the materials provided by the Irish enterprise to the foreign processor need to be recorded as Irish imports; and
- record the processing fee as a service import, namely 'manufacturing services on physical inputs owned by others'.

82. Type 3 shares commonalities with factoryless production (where the principal specifies the production, provides non-material inputs and knowhow (IPP, blueprints, etc.), and has ownership of the final good). However, the crucial difference is that the processor sources the material inputs. The principal in a factoryless goods arrangement is classified as a distributor and the activity is treated in the same way as merchanting.

### *Lessons from the CSO*

83. Goods for processing (and merchanting) adjustments in the balances of payments are significant, for example in 2015 'net exports of goods under merchanting' represented around 2% of GDP while the adjustments made to goods exports and imports to account for goods for processing represented 12% and 5% of GDP respectively. These are major amounts and point to a real need to understand, capture and record these balance of payments flows. The amounts recorded also suggest that corporations are choosing increasingly to send goods overseas for further production.

84. Questions are asked as in what is meant by 'processing'? According to BMP6 this type of manufacturing covers processing, assembly, labelling, packing and so forth. This leaves gaps and questions can arise for compilers.

85. For mirror data to be of use, countries need to publish goods for processing adjustments (to goods imports and exports). In many cases this is company level data and introduces confidentiality issues in sharing and exchanging of microdata.

86. In summary, for Ireland globalisation has seen an increase in production arrangements where the production process is split between different countries. The need to follow the BPM6 principal of ownership makes identifying these arrangements a challenge, more so considering that most of these arrangements are undertaken by MNEs and this is where the CSO has gained most experience. In this context the CSO has taken two approaches: comparing source data across the organisation (IMTS, balance of payments, PRODCOM, structural business survey (SBS), etc.); and the LCU which monitors all statistical outputs of MNEs.

### 5.3 Israel's Experience

87. In recent years Israel has seen continued growth in both merchanting and goods for processing (mostly due to globalisation and Israel participating in the "global village") which has influenced its balance of payments compilation. The Central Bureau of Statistics of Israel (the compiler of BOP statistics in Israel) soon discovered that IMTS data were insufficient to assess these flows.

88. In investigating, the CBS discovered three distinct activities being undertaken:

- Production abroad - goods being sent abroad or purchased abroad for production abroad, with the Israeli principal maintaining ownership. The goods are then either sold abroad or returned to Israel.
- Merchanting.
- Factoryless goods producers - with the FGP owning the inputs.

89. The CBS found that respondents were not indicating these activities in the Survey of International Trade in Services questionnaire as they didn't understand where these activities should be indicated in the questionnaire. The CBS noticed that at first only some industries were involved *e.g.* textile, but over time this has spread to more industries *e.g.* semiconductors.

90. The CBS had difficulty identifying the population and establishing a representative sample to start with. It found that while most enterprises involved were in the industrial sector, some involved R&D services. Given that all enterprises in Israel have a common and unique identification number it was possible for the CBS to cross-reference using not only CBS data, but administrative data (*e.g.* VAT records), and registers from societies/associations and company records.

91. An example of the type of enterprise identified by the CBS is as follows: a reputed apparel company outsources some of its production process. The sewing and finishing stage is transferred abroad while the design and modelling is done in Israel (around 35% of the value of the product). Fabrics are purchased abroad and sent directly to the subcontractor without passing through Israel. The company has 100 employees in Israel. There is a question of measuring 'know-how' here for the CBS.

92. An annex to the annual services questionnaire was established specifically for these activities, and VAT data was used confront the values provided by enterprises. In 2014 'Net exports of goods under merchanting' was 2% of total exports in the balance of payments.

93. The new annex to the services questionnaire collects the following data:

- International trade (merchanting)

- Value of goods purchased abroad
- Value of goods sold abroad
- International services (goods for processing)
  - Value of manufacturing services abroad
  - Value of goods sent from Israel to the foreign subcontractor for manufacturing
  - Value of goods purchased abroad and transferred to the subcontractor for the manufacturing process (without crossing the borders of Israel)
  - Value of goods produced and sold abroad
  - Value of goods produced and returned to Israel

#### **5.4 The Danish Experience**

94. The implementation of SNA08 and BPM6 required Statistics Denmark to embark on a project to ensure that not only were goods for processing and merchanting estimates captured and included in the compilation process, but very importantly that there was consistency across statistical domains. The project involved a number of steps and feedback mechanisms, with an understanding there would always be "Things we don't know that we don't know".

95. It was clear that new questions would need to be added to the Statistics Denmark International Trade in Services survey, and this was done and communicated to users explaining why the questions needed to be added and when the data collected from these questions would be disseminated in the balance of payments.

96. The project was undertaken in 8 steps.

##### ***Step 1 - scenarios***

97. The first step was to map out all the possible scenarios involving merchanting and manufacturing services on physical inputs owned by others. This would provide a solid understanding for the rest of the process and ensure that all possible angles were properly covered.

##### ***Step 2 and 3 - domains and variables***

98. These steps involved listing all the statistical domains to be considered and then mapping variables relevant for both compilation purposes and consistency checking. When these two were combined the following was obtained:

- International Trade in Goods Statistics
  - Flows of goods to/from processing
  - Total imports and exports (with change of ownership)
- International trade in services survey and balance of payments
  - Manufacturing services
  - Materials bought abroad intended for processing abroad
  - Goods sold abroad after processing abroad
  - Merchanting, gross flows
  - Total imports and exports
- Business accounts (SBS)
  - Total turnover
  - Turnover own goods
  - Turnover commercial goods (resale)
  - Cost of goods for resale

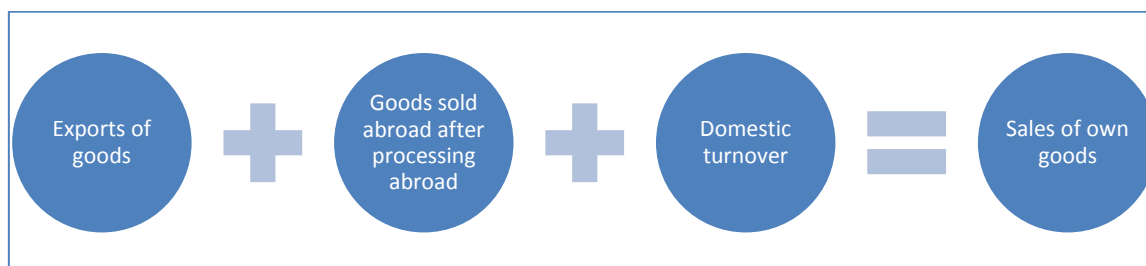
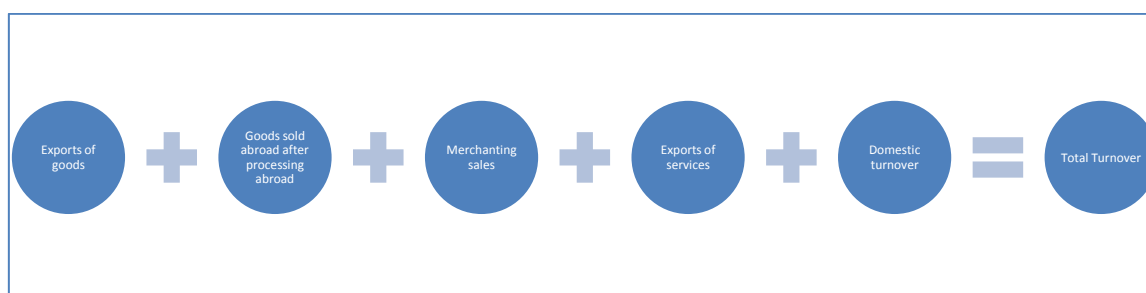
- Manufacturers' sales (PRODCOM)
  - Sales of own goods
  - Commercial goods (resale) turnover
  - Contract work for other enterprises
  - Other turnover
- Industrial turnover (STS)
  - Export turnover (own goods)
  - Domestic turnover (own goods)
- Supplementary information
  - VAT
  - European Sales List (triangular trade)
  - OFATS (number of affiliates)
  - Enterprise groups
  - Manufacturers' purchases
  - Companies' financial reports

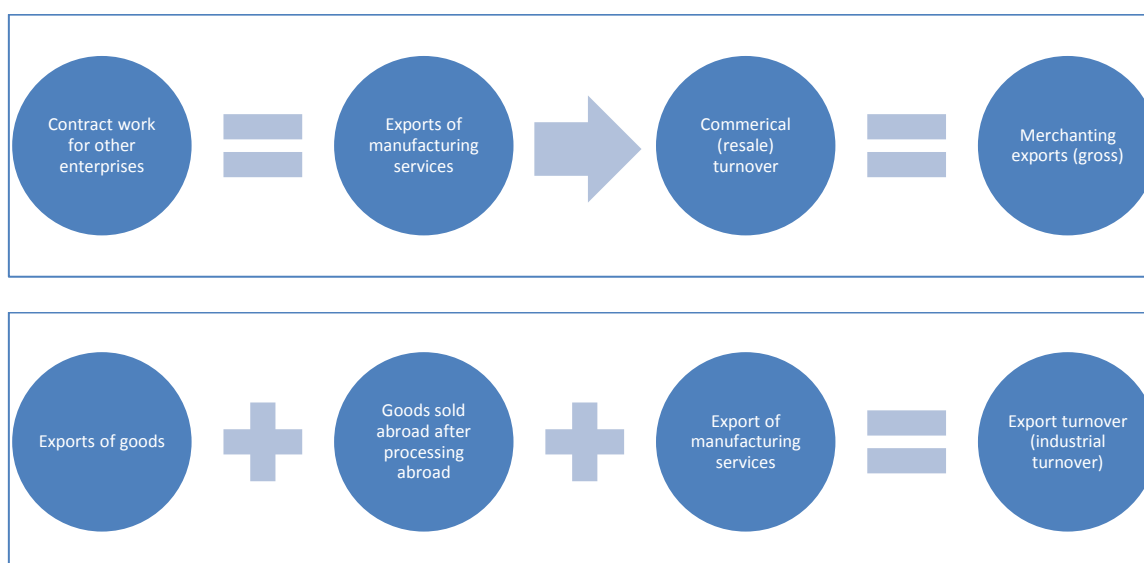
**Step 4 - linkages and consistency**

99. Step four involved identifying linkages and undertaking consistency checks. Identifying the linkages outlined a number of issues that would need to be dealt with and understood. The underlying message from this exercise was that the data can be prepared to be as comparable as possible, however, while it isn't possible to establish perfect linkages between variables and enterprises, it is possible to create linkages that can point to problems in reported data.

100. Some of the issues identified included different concepts of turnover (industrial turnover includes goods and services and IMTS includes transactions without a change in ownership). Different units *e.g.* KAU, VAT, legal units, enterprise, also caused problems. There were differences with respect to geo information, for example manufacturers' sales (SBS) include no geo distinction while industrial turnover is with the Rest of the World. However, the lack of geo information is not crucial when looking at MNEs due to relatively low domestic turnover.

101. The following consistency checks were used -





### ***Step 5 - methodological questions***

102. This step looked at methodological issues, namely those between merchanting and processing and issues with factoryless goods producers.

103. A key question is to what extent a good can be altered before it moves from merchanting to goods for processing. Statistics Denmark found that this is the equivalent distinction between “own goods” and “goods for resale”. Processing/own goods occurs when there is a “Change the condition of the goods” (BPM6); the “Physical form of the goods is changed” (ESA2010); “...physical or chemical transformation of materials...into new products” (ISIC); and there are similar rules in Customs legislation, usually when there is a change at the HS 6 digit level. The distinction is important for the gross flows in the balance of payments and for the distinction between Danish and foreign production. What is ultimately required is a consistent treatment for “Sales of own goods vs. Commercial (resale) turnover” and “processing vs. merchanting” (in difficult cases coordination is required across the organisation).

104. It is understood that a FGP has outsourced the entire physical production process while maintaining control over non-physical inputs such as blue prints and the marketing activities. Statistics Denmark, in accordance with the current international guidelines, doesn’t consider FGPs as part of the manufacturing sector given the lack of ownership of the physical inputs. And to ensure consistent treatment with manufactures’ sales etc. (which is delimited according to ISIC) the FGP activities are recorded as merchanting. However, it is understood that this isn’t really a satisfactory situation.

### ***Step 6 - confrontation***

105. Data were collected from all relevant sources at the unit level (legal number) for as long a time series as possible. The first confrontation was done at the unit level for all units across the whole collected dataset, detailed consistency checks were then run at the yearly level. Finally, enterprise group statistics were used to identify "unit connectivity" for complex enterprise groups, *e.g.* MNEs.

***Step 7 - large inconsistencies***

106. The consistency checks identified some large discrepancies, and a number of these had in fact already been identified by the national accounts as being problematic. These were placed under investigation.

107. Experience here showed that merchanting sales and goods sold abroad after processing often accounted for the discrepancies found in total turnover. There is severe underreporting of goods that do not cross the Danish borders but have Danish ownership, and particular this is even more so for MNEs where in many cases, inter-enterprise transactions are poorly reported.

***Step 8 - large enterprises***

108. Complex enterprises and enterprise structures (e.g. MNEs) make the collection of statistics complex, and in many cases are linked to the large inconsistencies (step 7). Ensuring that the statistics are correct is challenging not only for Statistics Denmark but also the enterprise, with the work being slow and time consuming. This points directly to the need to establish a large cases unit, which would allow consistency at the data entry phase, and ensure coherence between the surveys and sources with the input from the large unit involved. Experience also showed that being proactive when new data requirements are introduced and informing the large unit about the linkages and confrontation work that will be undertaken improved the overall consistency in the reporting situation from the large units.

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