Statistics Netherlands

PROCESSING, PRODUCTION ABROAD AND MERCHANTING IN THE NATIONAL ACCOUNTS

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The views expressed in this paper are those of the author and do not necessarily reflect the policies of Statistics Netherlands.

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1 – Introduction

One of the most far-reaching changes in the ESA 2010 as compared with its predecessor ESA 1995 is that the principle of economic ownership is applied universally and without exceptions. This has important consequences for the international trade (both in goods and in services). In article 1.51 (f) this is stated as follows:

> *the application of the rules on change of ownership of goods has been made universal, resulting in changes to the recording of merchanting, and goods sent for processing, both abroad and in the domestic economy. This results in goods sent for processing abroad being recorded on a net basis, as opposed to a gross basis in the 1993 SNA and the ESA 95. This change has significant implications for the recording of such activities in the supply and use framework*

Not only international trade, but also the delineation of production between the domestic economy and the rest of the world will change significantly. In case of goods sent abroad for processing for example, the processor abroad will no longer be seen as a producer of goods, but as a producer of services.

In this report first the most important consequences of the new concepts will be described (chapter 2). In addition to 'processing of goods' attention will also be given to other transactions of which the registration is influenced by the new ESA 2010 concepts, like for example 'merchanting of goods'.

Chapter 3 describes the several attempts that have been undertaken within Statistics Netherlands to obtain the required statistical information. Not all of these attempts have been equally successful. One of the reasons is that part of these attempts took place before the international discussion on best practises started. Since our first attempts to get the required statistical data, a number of international activities have started, aimed at clarifying the new concepts and at coordinating the way they should be implemented (for example the Eurostat TF "Goods sent abroad for processing" and the compilation of a UN "Guide to measuring global production").

Nevertheless, also the less successful attempts to obtain the required data will be described here; they may be useful for others that also struggle with the same problems.

This chapter also shows how the revised national accounts figures according to ESA2010 have eventually been made for the revision year 2010. Attention will also be given to the way quarterly figures and preliminary yearly figures will be made and in possible future improvements in the methods applied so far.

Finally, in chapter 4 some new revised figures for the Dutch economy will be presented.

2 - Implication of the ESA2010 concepts: some examples

2.1 Introduction

ESA 2010 requires that the rules of change of ownership of goods should be applied universally as the criterion for the transfer of goods from one economic unit to another. Especially in cases of transactions between resident and non-residents units this will be immediately visible. The consequences of the new rules for transactions between resident units are less drastic.

The principle of change in ownership is not new: it was already present in ESA 1995 (see for example ESA 1995 art 3.132). However two aspects are striking:

1. In many of the border cases (processing, merchanting, transactions between affiliates) an exception concerning the ownership rule was made in ESA 1995, for example by assuming a change of ownership even though this was clearly not the case, and

2. The distinction between economic and legal ownership was not explicitly made in ESA 1995 and not elaborated.

Ad 1:

In practice this meant that the decisive criterion for import of export of goods was the physical crossing of the international border of the goods and not the change of ownership between a resident and an non-resident unit. The border cases mentioned under 1 did usually not get special attention, since in practise the decisive criterion for imports or exports was crossing the border of the goods (ESA 1995 art. 3.133):

- Goods sent abroad for processing or to be repaired: In this case goods cross the border without change in ownership. Nevertheless according to ESA 1995 these goods should be recorded both in imports and exports of goods, although no change of ownership occurs;

- Merchanting: In this case the goods do not actually cross the border, but there is a change of ownership. Still, ESA 1995 excluded these goods from imports and exports of goods.

- Deliveries between affiliated enterprises (branch or subsidiary, or foreign affiliate): ESA 1995 dictated that a change of ownership had to be imputed whenever goods are delivered between affiliated enterprises, even if it was clear that no such change of ownership took place in reality.

In fact, because of these exceptions to the rule of change of ownership as the decisive criterion for import or export of goods, the real criterion was the crossing of the border of the goods. As a consequence, available information in the International Trade in Goods Statistics (ITGS) for determining change of ownership was not used and the quality of this information was not guarded in any way. This was for example the case with the "Nature of transaction codes" (NoT)[1]. The quality of the NoT codes supplied to Statistics Netherlands is not checked in any way, and the second digit has never been used. And even though it is well known within Statistics Netherlands that there are many enterprises in the Netherlands that receive goods from or deliver goods to foreign affiliates, no attempts were made to establish whether these physical deliveries also meant a change of ownerships of these goods; under ESA 1995 this was unnecessary.

Ad 2:

The distinction between economic and legal ownership received little attention in the past, since the ownership principle was not actually used in the foreign trade statistics.

[1] The Nature of transaction serve to determine the different characteristics of international flows of goods. In the case of processing of goods the codes 4 (goods sent abroad for processing) and 5 (processed goods returning from abroad) provide useful information. The second digit gives information on the (expected) return of the goods after processing. In case of NoT 4 this means: NoT 4.1: Goods expected to return to the initial country of export after processing; NoT 4.2: Goods not expected to return. In case of NoT 5 this means: NoT 5.1 Goods returning to the initial country of export; NoT 5.2: Goods not returning to the initial country of export.

Besides that, the ESA 1995 did not make an explicit distinction between legal and economic ownership. However, with the introduction of ESA 2010 this distinction became relevant. At that moment it appeared that the concept of 'economic ownership' was unclear, both to employees of Statistics Netherlands who visited companies to inform them of the new reporting rules, and to some of the companies that were visited by Statistics Netherlands.

A special decision scheme was developed as an instrument to make the new concepts clear to the reporting companies and to decide whether or not companies were the economic owners of the goods (see annex 1). This will be discussed further in chapter 3.

The application of the rules on change of ownership of goods without exceptions has consequences for foreign trade and for the division of production processes over the national economy and the rest of the world. Although it is often said that the distribution of income generated by the production process over the countries involved is not influenced by these rules, this is not necessarily true.

Below some examples of processing, merchanting and production abroad are given. In the rest of this report references will be made to these examples.

2.2 Example 1: Processing, the goods return after processing to the initial country of export

This example describes what can be called the 'classical' form of processing: semi-manufactured goods are sent abroad for further processing. After processing the finished goods return to the country of origin.

Description:

Company A sends (semi- manufactured goods) abroad for processing by company B. The goods have a value of 100. Intermediate consumption of company A, necessary for making these goods, is 60. The processing costs (fee of company B) are 20. This means that the goods have a value of 120 after processing. Company B buys some additional raw materials with a value of 10 for the processing (to be paid out of his fee). The finished products return to the home country of company A and are without any further transformation sold by company A for a value of 130 to final users in the Netherlands.

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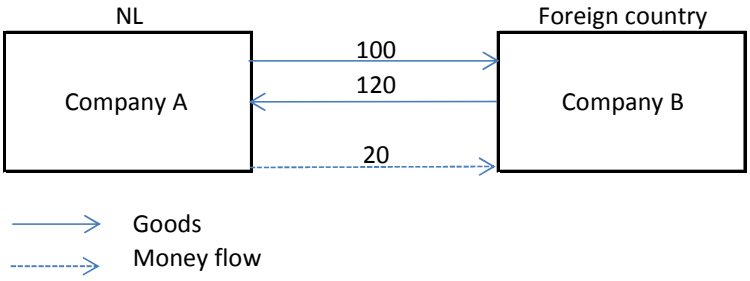
Scheme 1 provides the physical flows of goods and the money flows that take place between the two countries involved.

Scheme 1



It is clear that the import and export of goods is not fully reflected in the money flows. In this example the balance (net import of 20) is correctly reflected in the money flow. Whether this would be true in the 'real world', is unclear. The export and import of goods are not real market transactions (with market prices), the import (and payment) of the market fee is. Therefore it is not evident that the balance of the value of the good flows equal the value of the service fee.

How these transactions should end up in the national accounts (NA) of the Netherlands is shown in table 1:

Table 1

According to ESA 1995			
Company A			
Production value	230		(130+100)
Intermediate consumption	180		
Of goods		180	(120+60)
Of services		---	
Value added (gross)	50		
Int. trade			
Imports:	120		
Goods		120	
Services		---	
Exports:	100		
Goods		100	
Services		---	
Trade balance (E-I)	-20		

According to ESA 2010		
Company A		
Production value	130	
Intermediate consumption	80	
Of goods		60
Of services		20
Value added (gross)	50	
Int. trade		
Imports:	20	
Goods		---
Services		20
Exports:	---	
Goods		---
Services		---
Trade balance (E-I)	-20	

Which statistical sources are available to measure these transactions:?

In the case of registration according to ESA 1995:

- ITGS

  The figures from ITGS can be directly used in this case: the transactions we need to measure (120 en 100) concern flows of good that actually cross the border and are included in the ITGS figures.

- Structural Business Statistics (SBS)

  In the Dutch Structural Business Statistics companies are asked to report the net value of 'processing', i.e. only the processing fee (in this case 20).

  To get the correct figures for the NA, we have to calculate the gross figures that correspond to the net processing fee from the SBS, i.e. the value of the flows of goods involved (100 and 120). In case the NoT codes of the ITGS are of good quality, this is not a problem. If the NoT codes are not reliable (as is the case in the Netherlands), gross flows have to be estimated. Although the value of imports and exports is unknown, the balance (net value) is known. This estimation of gross flows will very likely cause some statistical discrepancies in the supply and use of goods. During the balancing of the Supply an Use table (SUT) these discrepancies can be eliminated.

In the case of registration according to ESA 2010:

- ITGS

  The values from ITGS have to be corrected for the value of the imports and exports that are connected with the processing of the goods. At short notice this will be difficult to do in the case of the Netherlands, because the NoT codes are of insufficient quality as was stated before. In the near future (starting the reporting year 2012) this will be possible, because the NoT codes will be monitored carefully starting that year.

- ITSS

  Also starting with the reporting year 2012, the international services connected with processing (the service fee) will be asked in the International Trade in Services Survey (ITSS)

- SBS

As stated above, in the Dutch Structural Business Statistics companies are asked to fill in the net value of the processing service, which is fully in line with the new regulations.

Conclusion: The situation described in this example (goods sent abroad for processing that return to the initial country of export after processing) can be described adequately starting the reporting year 2012. Since the starting year of the national accounts revision in the Netherlands was the year 2010, an alternative method had to be applied for the reporting years 2010 and 2011. This will be described in chapter 3.

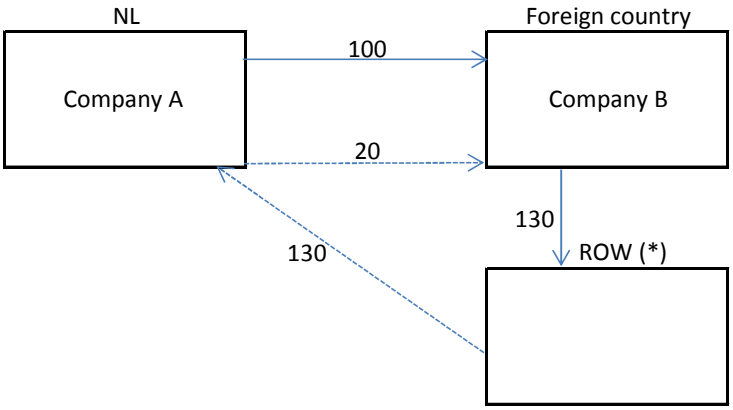
2.3Example 2: Processing, the goods do not return after processing to the initial country of export

The difference between this case and the one described above is that the finished goods do not return to the country of origin after processing, but are sold directly from the country of the processor to the final users.

Description:
Company A sends (semi- manufactured goods) abroad for processing by company B. The goods have a value of 100. Intermediate consumption of company A, necessary for making these goods, is 60. The processing costs (fee) are 20. This means that the goods have a value of 120 after processing. Company B buys some additional raw materials with a value of 10 for the processing (to be paid out of his fee). The finished products do not return to the home country of company A and are without any further transformation sold by company A for a value of 130.

Scheme 2 provides the physical flows of goods and the money flows that take place between the two countries involved.

Scheme 2



(*) - Other than reflected in this picture, the ROW also includes the home country of company B, in other words the finshed goods can also be sold in country B.

Goods
Money flow

Table 2 shows how these transactions should be recorded in the NA of the Netherlands:

Table 2

According to ESA 1995				***According to ESA 2010***		
Company A				Company A		
Production value	230		(130+100)	Production value	130	
Intermediate consumption	180			Intermediate consumption	80	
Of goods		180	(120+60)	Of goods		60
Of services		---		Of services		20
Value added (gross)	50			Value added (gross)	50	
Int. trade				Int. trade		
Imports:	120			Imports:	20	
Goods		120		Goods		---
Services		---		Services		20
Exports:	230			Exports:	130	
Goods		230	(100+130)	Goods		130
Services		---		Services		---
Trade balance (E-I)	110			Trade balance (E-I)	110	

Which statistical sources we have at our disposal to measure these transactions?

In the case of registration according to ESA 1995:

- ITGS

  The figures from ITGS only measure the initial export of the goods that are sent abroad for processing (export of 100). The return of these goods (value 120) and the final sale abroad (value 130) are not measured since these goods to not re-enter the Netherlands after they have been processed.
- SBS

  Company A will report a production value of 130 and the intermediate consumption of 80 (60 for the goods the company bought and 20 for the service fee). This is a net registration, but a gross registration is required under ESA 1995.

Getting the required figures for NA from these sources is quite a challenge. The Structural Business Statistics provides a net registration, but a gross registration is required. In contrast to example 1 ITGS does not help much here: not only are most of the required international flows missing, but also the resulting trade balance is wrong. Since the objective of this report is not to solve measurement problems that are connected with the implementation of the ESA1995, it suffices to conclude here that, although the implementation of the new ES2010 rules may cause several measurement problems, the same holds for the ESA1995 rules.

In the case of registration according to ESA 2010:

- ITGS

  Only the initial export of the goods sent abroad (value 100) for processing is measured. If the NoT codes are of sufficient quality (at 2-digits level), the missing part of the export could be estimated. In that case it would be known that the export of the semi-manufactured goods is not the total export value of company A: the fee of 20 (available for the SBS and also from ITSS in the future) and the profit mark-up of 10 (to be estimated from the SBS) should be added.

  As mentioned before, this will be difficult to do in the Dutch case at the moment, since the NoT codes are of insufficient quality. In the near future (starting the reporting year 2012) this will be possible. Still, even then the second digit of the NoT codes will not be used. Therefore it will not be

possible to distinguish this case from the case described in example 1, i.e. the case where the goods do return after processing. This means that other ways are needed to detect and estimate the (part of) the goods that do not return after processing. This will be elaborated further in chapter 3.

- ITSS

  Also starting with the reporting year 2012 the international services connected with processing (the service fee) will be asked in the ITSS.

- SBS

  Like stated above, in the Dutch Structural Business Statistics companies are asked to fill in the net value of the processing service, which is fully in line with the new regulations.

Conclusion: The situation described in this example (goods sent abroad for processing that do not return to the initial country of export after processing) will cause some difficulties. Because the second digit of the NoT codes is missing, it is not easy to detect the goods that do not return after processing. In chapter 3 alternative possibilities to detect these goods will be explored.

The previous two examples described the situation of processing, i.e. goods were initially sent to a processor to be processed. Another possibility which will be described in example 3 is the case where the principal does not sent semi-manufactured goods abroad to be processed, but decides to board out the whole production process (in the remainder of this report this will be called 'production abroad'). In that case a manufacturer abroad actually produces the entire good but for a fixed fee, so without being the economic owner. The economic owner is considered to be to producer of the goods. Of course, the principal can buy all or part of the inputs needed for the production process. A special case of production abroad is the case were the principal doesn't buy any inputs himself (factoryless producer). In fact, between 'classical' processing as described in example 1 (with returning goods after processing) and the factoryless producing (production abroad) there is a whole range of possibilities, which will not all be described in detail here.

2.4 Example 3: Production abroad.

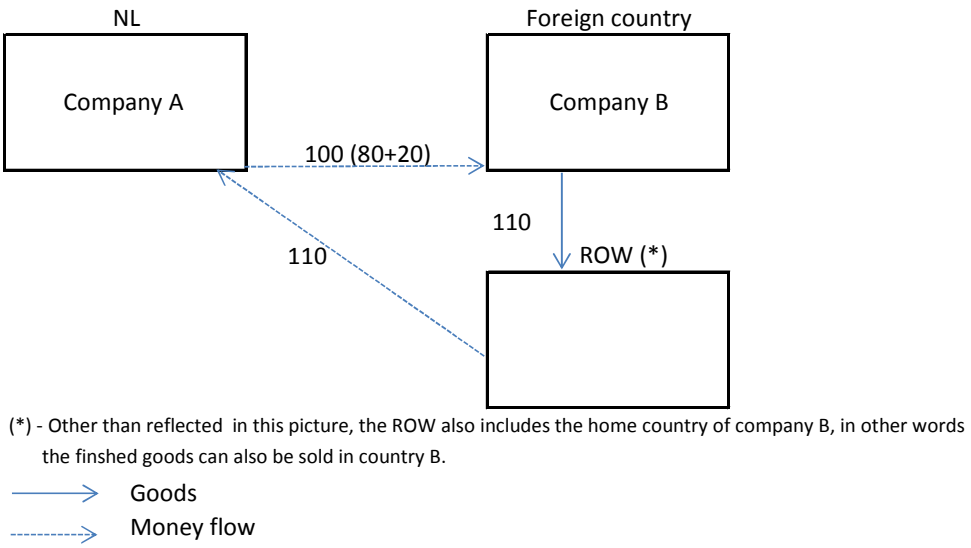
The difference between this case and processing examples above is that the whole production process takes place abroad, but controlled and owned by the principal.

Description:

Company A has designed an electronic device (protected by patents). The company decides to board out the production of the device to a foreign company B. Company B is allowed to buy the inputs (according to the specifications of company a) and assembles the device according to the blueprints provided by company A. Company B receives a fee for his manufacturing activities of 20. (including the purchase of some inputs); Company A buys the rest of the inputs (value of 80) directly in the country of company B. After they have been produced, the goods are sold by company A for a value of 110. The goods do not enter the territory of the home country of company A, but are directly sold all over the word after they have been produced.

Scheme 3 provides the physical flows of goods and the money flows that take place between the two countries involved.

Scheme 3



How should these transactions end up in the NA of the Netherlands (table 3):

Table 3

According to ESA 1995			***According to ESA 2010***		
Company A			Company A		
Production value	10		Production value	110	
Intermediate consumption	---		Intermediate consumption	100	
Of goods		---	Of goods		80
Of services		---	Of services		20
Value added (gross)	10		Value added (gross)	10	
Int. trade			Int. trade		
Imports:	---		Imports:	100	
Goods		---	Goods		80
Services		---	Services		20
Exports:	10		Exports:	110	
Goods		---	Goods		110
Services		10	Services		---
Trade balance (E-I)	10		Trade balance (E-I)	10	

Which statistical sources we have at our disposal to measure these transactions:?

In the case of registration according to ESA 1995:

- ITGS

  ITGS will not measure any flow of good, which is correct for the ESA1995 registration, since there is no import or export of goods.

  ITSS:

  It is possible that companies reported this in some cases as a merchanting service in ITSS. If so, it would end up in the NA as presented in table 3 (export of services).

- SBS

  It is possible that companies reported this activity as trade, international buying and selling of goods they did not produce themselves, but we cannot be sure that this was always the case. If they did, the trade margin would end up in the production value like presented in table 3.

If these transactions are reported in both ITSS and SBS as described above, the figures would end up in the NA as presented in table 3. If they were only reported in one of these survey, this would have to be corrected in the balancing process. Finally, If they are lacking in both surveys, the transaction would not be recorded in the NA at all.

In the case of registration according to ESA 2010:

- ITGS

  ITGS will not record any import or export of goods. Nevertheless according to the ESA2010 concepts there should be imports and exports. ITGS is not a useable source in this case.

- SBS

  Since the reporting year 2010 Statistics Netherlands asks companies specifically to report not only their domestic production (and inputs needed for that production), but also the production in the rest of world of which they are the economic owner, including the inputs they buy for that production. This information is used not only to estimate the correct production value and intermediate consumption, but also to estimate the import and exports of goods involved in this 'production abroad'.

The last example to be discussed here concerns 'Merchanting'. Merchanting can be defined as the purchase of goods by a resident (of the compiling economy) from a non-resident combined with the subsequent resale of the same goods to another non-resident without the goods being present in the compiling economy (ESA2010, art. 18.38). Because of the strict application of the principle of change in economic ownership, the way merchanting will be recorded in the NA will change significantly.

2.5 Example 4: Merchanting of goods

The last example to be discussed here concerns 'Merchanting'. Merchanting can be defined as the purchase of goods by a resident (of the compiling economy) from a non-resident combined with the subsequent resale of the same goods to another non-resident without the goods being present in the compiling economy (ESA2010, art. 18.38). Because of the strict application of the principle of change in economic ownership, the way merchanting will be recorded in the NA will change significantly.

Description:

A Dutch resident buy goods from a resident of country B for an amount of 80 and sells the goods within the same recording period to a resident of country C for 100.

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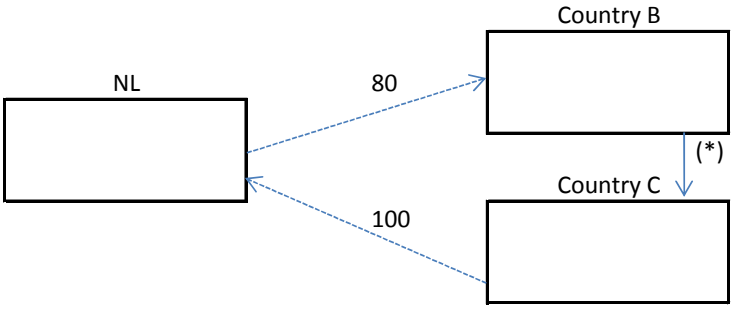
Scheme 4 provides the physical flows of goods and the money flows that take place between the countries involved.

Scheme 4



(*) - The physical flow of goods is not necessarily between B or C.

Goods
Money flow

Table 4 describes how these transactions should be recorded according to ESA 1995 and ESA 2010.

Table 4

According to ESA 1995			***According to ESA 2010***		
Company A			Company A		
Production value	20		Production value	20	
Intermediate consumption	---		Intermediate consumption	---	
Of goods		---	Of goods		---
Of services		---	Of services		---
Value added (gross)	20		Value added (gross)	20	
Int. trade			Int. trade		
Imports:	---		Imports:	---	
Goods		---	Goods		---
Services		---	Services		---
Exports:	20		Exports:	20	
Goods		---	Goods		20
Services		20	acquired under merchanting		-80
			sold under merchanting		100
			Services		---
Trade balance (E-I)	20		Trade balance (E-I)	20	

Which statistical sources are available to measure these transactions?

In the case of registration according to ESA 1995:

- ITGS

  There are no physical flows of goods between the Netherlands and the rest of the world, so ITGS provides no information.
- ITSS

  In this survey companies are asked to fill in the net value (sales-purchases) of their merchanting transactions.
- SBS

  In the Dutch Structural Business Statistics[2] companies are the value of sales and purchases of merchanting. The net value (sales – purchases) is the required production value.

From the available information from ITSS an SBS the required figures for merchanting could be estimated.

In the case of registration according to ESA 2010:

- ITGS

  Even though merchanting should be recorded as trade in goods according to the ESA 2010, ITGS does not measure any flow and is of no use in the case of merchanting.
- ITSS

  Although according to ESA2010 (and (BPM6) merchanting is trade in goods and not in services, Statistic Netherlands decided to continue to ask companies about their merchanting transactions in the future, because ITGS has no means to cover these transactions. The only difference is that ITSS will ask the gross values (both purchases and sales) in the future, and not only the net values.
- SBS

  In the Dutch Structural Business Statistics companies are the value of sales and purchases of merchanting (see foot note 5). The net value (sales – purchases) is the required production value.

[2] Questions on merchanting are only part of the SBS for wholesale- and retail-trade companies.

Conclusion: The recording of merchanting on a gross basis as trade in goods will not cause substantial problems within the Dutch NA.

3 – Estimation methods

3.1 Introduction

This chapter discusses the way the transaction figures for processing, production abroad and merchanting according to ESA 2010 were compiled by Statistics Netherlands. This will be explained making use of the examples described in chapter 2.

The starting year for the national account revision was 2010. At the time the work started at Statistic Netherlands, not all statistical sources were suited for measuring the desired transactions correctly. For example, the NoT codes in ITGS were not reliable (they are from 2012 on) and the questions on 'production abroad' in the SBS first started in 2011. This means that the methods used for the national account compilation in the first revised years (2010, 2011) differ from those for later years, simply because not all statistical sources were available. This chapter will describe both the estimations and estimation methods for the first statistical years, as well as the methods that will be used after all statistical sources will have adapted to the new accounting rules.

3.2 Processing; goods that return after processing (example 1, par. 2.2)

3.2.1 Estimates for 2010 and 2011(definite estimates)

One of the first attempts to estimate the international trade according to the ESA 2010 rules was for 'goods sent abroad for processing or repair' and 'merchanting' for the year 2009. The estimation method used is described in the report *'The Dutch approach to cross border transactions in the national accounts', Kees van der Ende and Piet Verbiest, August 2011*, and will therefore not be explained here at length.

In short, information was combined from SBS and Prodcom to estimate the (inward and outward) processing fees for each branch. These fees were recorded as exports and imports of services and were used to eliminate import and export flows of goods from

ITGS (see example 1, table 1). A disadvantage of the method used is, that it assumes that goods sent abroad (or from abroad to the Netherlands) will always return after processing, which is in reality clearly not true. However, at the moment the estimates were made, no information was available to correct this (later on some extra corrections were made for leakages; see 3.3).
This method has been applied for the years 2010 and 2011. Another serious disadvantage is, that the method can only be applied for the definite yearly estimates of the NA, because the SBS is a yearly survey and the results are available about 18 months after the end of the reporting year.

3.2.2 Estimates for 2012 and 2013 (preliminary estimates)

Starting with the reporting year 2012 reliable information on processing flows from ITGS (NoT codes 4 and 5) will be available. However, it will be difficult to use these values in the estimation process. Because they have been acquired with a completely different method than the figures for 2010 and 2011, using these values will surely lead to discontinuities. A possibility would be to use the changes in the value from ITGS NoT codes 4 and 5 to extrapolate the 2011 figures. However, to be able to calculate yearly changes in value, we need these ITGS NoT figures for two subsequent years, so the first possible year to use these figures in this way is the year 2013.
The same holds for ITSS figures: ITSS delivers processing fees starting in 2012. No sooner than 2013 these figures can be used to extrapolate figures from the previous year.

Therefore to estimate the 2012 figures, the import- and export-values of the processing flows estimated for 2011 will be extrapolated with the yearly change 2012/2011 of the relevant goods.

Starting with the year 2013 the annual changes from the ITGS goods with NoT code 4 and 5 may be used, and also the annual changes on import and export of processing fees from ITSS.

3.2.3 Future yearly estimates (definite and preliminary from 2014 onwards)

Table 5 (see below) shows the information available for each yearly estimate in the future. Depending on the available information one of the methods above will be applied.

3.2.4 Quarterly estimates

Due to lack of information the quarterly import and export figures for processing for the reporting years 2011-2013 will be implicitly estimated. The yearly ITGS-figures (corrected for processing as describe above) will be will be divided over the quarters using the quarterly pattern of the original ITGS-data (i.e. not corrected for processing). This means in fact that no specific quarterly pattern for processing flows is used; the processing flows are supposed to have the same quarterly pattern as the rest of the international trade in goods.

Starting with the first quarter of 2014 actual figures (year-on-year quarterly changes) of the processing flows from ITGS and ITSS can be used.

Table 5: Processing: overview available(*) sources

	ITSS	ITGS		SBS	Prod-com	Other sources
	Processing fees	NoT codes 4 and 5 of good quality	information on leakages	Industrial services (inward/outward	Industrial service (inward)	Leakages for large companies
Specific yearly estimates 2010 -2013						
definitve years						
2010 and 2011				x	x	x
2012 and 2013	x	x	x	x	x	x
preliminary years						
2012 and 2013	x	x	x			x
Future yearly estimates 2014 onwards						
Definitive	x	x	x	x	x	x
Preliminary	x	x	x			x
Specific quarterly estimates 2010 -2013						
quarters of 2010						
quarters of 2011						
quarters of 2012	x	x				
quarters of 2013	x	x				
Future quarterly estimates 2014 onwards	x	x				

(*) - Not all the available information is necessarily used for each estimate

3.3 Processing; goods that do not return after processing (example 2, par 2.3)

3.3.1 Introduction

All the estimates for processing described in 3.2 assume that the processed goods return to the initial country of export after they have been processed. Of course, in reality this is often not the case and part of the processed goods will be sold directly from the country were they have been processed. From the comparison of table 1 and table 2 it shows that this has no influence on the registration of transactions in the production account of the NA, but it does influence the registration of international trade in goods in the NA.

Since the second digit is lacking in the Dutch ITGS (see foot note 1), we have no complete picture of goods that do not return to the initial country after processing. This makes it difficult to make standard corrections for leakage of processing flows.

Of course, in practise the way processing transactions are estimated in the case goods do not return after they have been processed, does not really differ from the methods described above for goods that do return. In fact, all processing transaction have been estimated at once, using the methods described in par. 3.2. Only to keep the description understandable, both types are described separately in this report. The only difference is, that in some cases some specific corrections for leakages have been made. Only this corrections will be described below for the different estimates.

3.3.2 Estimates for 2010 and 2011(definite estimates)

Corrections for leakages have been made for specific large companies. These companies have been selected at the NA-department by combining information from SBS, ITGS and Prodcom. Also some of the companies were detected by the so-called 'Large cases unit'[3]. Import and export of these companies is corrected for leakages.

Of course, in this way only the largest leakages can be detected and repaired. For other smaller leakages no explicit corrections were made for 2010 and 2011. This causes imbalances in the SUT between supply and use of commodities. During the balancing process of the SUT these imbalances have been removed. This is done by correcting

[3] At statistics Netherlands a special large cases unit exist that monitors the 300 largest enterprises. It detects and repairs inconsistencies in the response of the enterprises in the surveys and repairs these inconsistencies.

the import and export goods, because that is where the imbalances arise as can be seen in example 2.

3.3.3 Estimates for 2012 and 2013 (preliminary estimates)

For these preliminary estimates no specific corrections were made. The 2011 figures (including the abovementioned corrections) were extrapolated as described in par 3.2.2.

3.3.4 Future yearly estimates (definite; 2012 onwards and preliminary; 2014 onwards)

In the future (starting with the reporting year 2012) leakages will be detected at a more systematic level. This will be done at the department responsible for the compilation of the ITGS figures and not at the NA-department (as was the case for 2010 and 2011). Companies of which the figures have to be corrected because of leakages will be detected by profiling, information from the large cases unit and information from the NA-department.

It is likely that also in the future only for the definite yearly estimates specific corrections for leakages will be made; preliminary yearly estimates will be drawn up by extrapolating the definite figures of the previous year.

3.3.5 Quarterly estimates

No attempts will be made to make corrections on a quarterly basis. The method described in 3.2.4 will be applied, without any further corrections.

Table 5 gives an overview of the information that will be available for all the estimates of the NA.

3.4 Production abroad (example 3, par. 2.4)

3.4.1 Introduction

A few years ago it became clear that ‘production abroad’ could not be measured with the available statistical information. Contrary to ‘processing’, ITGS is of no help here, since flows of goods have to be added to the international trade that never cross the border and are not detected by ITGS at all. Because the SBS survey was the most promising, it was decided that extra questions should be asked to obtain the necessary

information. To get all the necessary information a lot of extra questions are needed. In the report mentioned earlier (see par 3.2.1), a list of questions can be found that should be answered by companies to get a full picture of production abroad. In practice this was not feasible since the trend is to ask companies less questions and not more. Besides, it is very likely that some of the question would be hard to answer for a lot of companies.

In the end it was decided that for 2010 only two questions would be adapted in the SBS questionnaire. Companies were asked to report not only the value of their production in the Netherlands, but also the value of production abroad of which they were the economic owner[4]. Very soon it became clear that the concept of 'economic ownership' was unclear, both to employees of Statistics Netherlands who visited companies to inform them of the new reporting rules, and sometimes also to some of the companies that were visited by Statistics Netherlands. Therefore a special form was designed to make this concept clear and to detect companies for which this was relevant (see annex 1).

Regrettably, in the 2010 questionnaire the two components (production in the Netherlands and production abroad) were asked in one combined and not in two separate questions. Because of that it was hard to detect directly the companies that reported a value for 'production abroad'. Therefore, the annual change in production value 2010/2009 from the SBS was compared with the production change according to the Prodcom. The Prodcom only reports the production that takes place on Dutch territory, so production abroad does not influence the value of the Prodcom. If for a company the annual change 2010/2009 of the production value in the Prodcom deviated much from that in the SBS this meant that that company probably reported a value on production that took place abroad in the SBS. In this way a number of companies were selected in 2010.

Having learned from the 2010 experience, in 2011 there were two separate questions in the SBS questionnaire for production: one for production within the Netherlands, and one for production abroad (the question of intermediate consumption was also split in two).

[4] This was also done for the intermediate consumption belonging to the production

With the aid of this statistical information from the SBS survey on these companies, the necessary corrections for imports and exports were made: The intermediate consumption belonging to production abroad was added to the imports of goods and the production abroad was added to the export of goods (see table 3). The balance of both was added as an import of services[5].

This method has been applied for 2010 and 2011 and will also be applied in the future for the definite yearly figures of the NA.

3.4.2 Preliminary yearly estimates and quarterly estimates.

Because the SBS is a yearly survey and the results are only available about 18 months after the end of the reporting year, this method described above cannot be applied for preliminary yearly and quarterly estimates. Because there is no information available on production abroad at the moment these estimates are made, no separate estimate will be made in the foreseeable future. Instead, the figures calculated for the definitive year will be extrapolated using ITGS data.

3.5 Merchanting of goods (example 4, par 2.5)

3.5.1 Introduction

Because merchanting was considered a service under ESA 1995 and BPM5, it was part of ITSS (only the net margin) until and including the reporting year 2013. However, the ITSS figures were of debatable quality due to the fact that they were based on models. Nevertheless, these figures were used in the NA estimates of exports of services.

Information on merchanting can also be found in the SBS. Of course, this information is only available for the definite yearly estimates. In the SBS you can find gross values of merchanting (purchases and sales), but regrettably only for the wholesale trade[6]. These figures were also used in the NA estimates as production of merchanting services. During the balancing procedure of the SUT both figures were reconciled. Of

[5] This differs from the way production abroad was treated in example 3. There the balance of production and int. consumption was 30, but an import of services of 20 was imputed. This means an extra profit margin for company A. It is realistic to assume that some extra profit will be made, however, because no information is available it was decided to impute the balance of import and exports of goods as an import of services.

[6] Merchanting is also part of retail trade in the SBS, but the purchases and sales connected with merchanting are combined with other purchases and sales and cannot be identified separately.

course the resulting figures remained weak, since the supply side (production) was based on incomplete data (only wholesale trade) and the use side (export) was based model estimates.

Although merchanting does no longer belong to international trade in services according to ESA2010/BPM6, the ITSS questionnaire will ask companies for their gross flows of merchanting starting the reporting year 2014. Of course, following the new concepts this should be part of ITGS, but ITGS has no means to detect these flows because they do not actually cross the border. The registration in the SBS will not change (only gross flows for wholesale trade).

3.5.2 Estimates for 2010 and 2011(definite estimates)

The estimates made for these years are mostly based on SBS data. These are gross data (purchases and sales of goods for merchanting), which is an advantage because we have to monitor gross flows of goods according to ESA 2010 (see table 4). A disadvantage is of course that the data are not complete: only wholesale trade is covered.

To tackle this problem the ratio of merchanting to total wholesale trade was used to make estimates of merchanting in other branches of industry[7].

Because the SBS classification of wholesale trade is very detailed it can be linked quite well to specific branches of industry. For example, wholesale trade in vegetables and fruit (a separate branch in wholesale trade) can be linked to vegetable and fruit processing, a separate branch within food products. Using the ratio of merchanting to total trade and assuming that the same relationship exists in the branch of industry under scrutiny and that the merchanting fee is of the same order we can make assumptions as to the value of merchanting in other branches of industry.

In this way gross merchanting flows were estimated for all branches of industry.

3.5.3 Estimates for 2012 and 2013(preliminary estimates)

No specific estimates will be made. The results drawn up for the definite year 2011 (see 3.5.2) will be extrapolated with the yearly based on ITSS data (old data, net fee; see table 6).

[7] The method applied is described in detail in the report "The Dutch approach to cross border transactions in the national accounts"

3.5.4 Future yearly estimates (definite and preliminary from 2014 onwards)

Table 6 shows, that starting with 2014 two independent sources will be available for the *definite yearly estimates*: The SBS data on wholesale trade and the results from ITSS. The SBS data can be extended to all branches (as described above in 3.5.2) and used as production value of merchanting, and the ITSS value can be used for import and export of goods.

For the *preliminary yearly estimates* only ITSS data will be available, since this is a quarterly survey. The (yearly change in) ITSS data can be used to extrapolate the figures calculated for the previous definite year. Of course, this procedure can only be used starting with the reporting year 2015, because we need two successive years of revised ITSS data to be able to calculate the yearly change.

3.5.5 Future quarterly estimates

In the future (starting with the first quarter of 2014) new ITSS data on gross flows of merchanting will be available. Starting with the first quarter of 2015 year-on-year quarterly changes can be calculated, which can be used to extrapolate the quarterly figures of the previous year.

Table 6: Merchanting: overview available sources

	ITSS		SBS
	net value (old method)	gross values (new method)	Wholesale; gross values
Yearly estimates 2010 -2013			
definitve years	x		x
preliminary years	x		
Future yearly estimates 2014 onwards			
Definitive		x	x
Preliminary		x	
Quarterly estimates 2010 -2013	x		
Future quarterly estimates 2014 onwards		x	

4 – Some results for 2010 and 2011

Table 7 shows the preliminary results for 2010 and 2011 of the consequences of the conceptual change (ownership criterion instead of crossing the border).

Table 7: Internatonal trade in ITGS and NA : consequences of the new concepts

	2010			2011		
	Import cif	*Export fob*	*Trade balance*	Import cif	Export fob	Trade balance
	mln euro			*mln euro*		
I - ITGS source information	***331913***	***371549***	***39636***	**364921**	**409250**	**44329**
a. - Processing of goods	*-21628*	*-23050*	*-1422*	-22363	-27722	-5359
b. - Production abroad	*1417*	*11946*	*10529*	2923	13239	10316
c. - Merchanting			*5262*			6254
Goods acquired under merchanting		*-44810*			-52548	
Goods sold under merchanting		*50072*			58802	
d. - International flows of good between affilites (*)	*-5054*	*-4889*	*165*	-4109	-3930	179
e. - Conceptual changes (a+b+c+d)	**-25265**	**-10731**	**14534**	**-23549**	**-12159**	**11390**
II - NA figures (*)	**306648**	**360818**	**54170**	**341372**	**397091**	**55719**

(*) - These are figures corrected only for the 'change in ownership' criterion and therefore not the final NA estimates.
Beside these corrections, there are other correction to be made that fall outside the scope of this report

The corrections for processing (a) cover both inward and outward processing. The same is true for production abroad (b) and flows between affiliates (d).

Flows between affiliated enterprises (c) has not been discussed earlier in this reports and needs some explanation here. In the past flows between affiliates in ITGS were considered to be ‘transit trade’ since no change in ownership took place and therefore these flows were not included in the international trade figures. However, ESA 1995 explicitly stated that in the case of international trade between affiliates a change of ownership had to be imputed whenever goods are delivered between affiliated enterprises, even if it was clear that no such change of ownership took place in reality. The is way these flows were added to the imports and exports of goods as ‘re-exports’

of goods. In ESA 2010 this imputation is no longer allowed so these flows have been deleted.

Finally it needs to be mentioned that the NA-estimates (II) presented at the bottom of the table are not the final figures for international trade of goods in the NA, because only correction made to fulfil the change of ownership criterion are presented here. Besides this corrections other corrections have to be made (for example corrections connected with the illegal economy, online trade, continuity and balancing corrections).

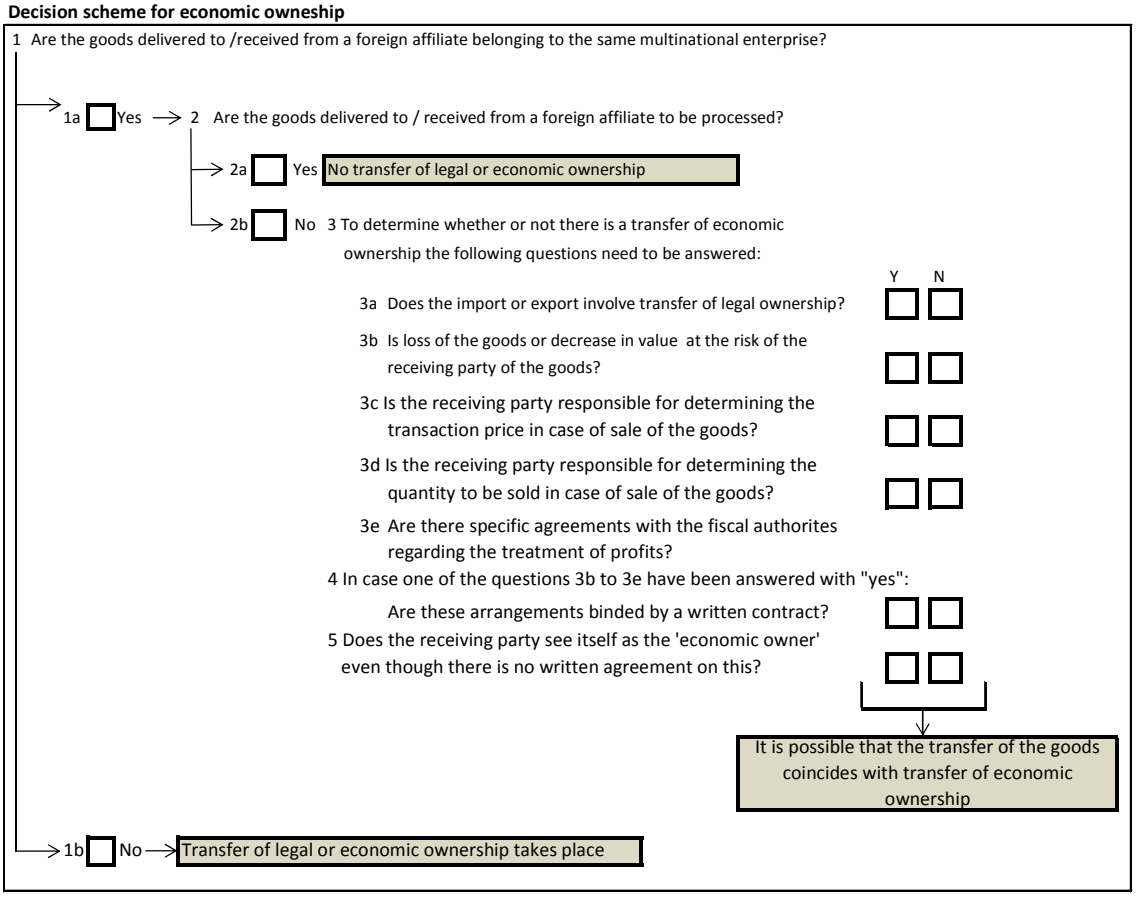
Statistics Netherlands

Annex 1: Example instructions for determining economic ownership

General decision rules for assigning economic ownership:

1. Starting point is legal ownership, which means that we start from the principle that (change of) legal ownership in general coincides with (change in) economic ownership.
2. In the case of flows of goods between afiliates rule (1) does not always applies; in the case of fully independent entities it does.
3. In case of 'processing of goods' the general rule is that no change of ownership takes place.
4. The answer to the question whether or not a unit is the economic owner can not always be found in a simple way by following the decision sche below. It is therefore meant as a tool to make a decision.

Decision scheme for economic owneship



Annex 2: List of abbreviations

ITGS	International Trade in Goods Survey (monthly servey)
ITSS	International Trade In Services Survey (quarterly survey)
ESA	European System of Accounts
BPM	Balance of Payment Manual
SBS	Sructural Business Statistics (detailed yearly survey on turnover, costs, etc of companies)
NoT	Nature of Transaction, coding system in ITGS
SUT	Supply- and Use tables of national accounts
NA	National Accounts.