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REGISTRATION OF PROCESSING IN MAKE AND USE TABLES AND INPUT-OUTPUT TABLES

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Summary

The way processing is registered in statistics has important implications for the picture these provide of the economy. It determines for instance the reflection of the production structure by means of input/output type tables and the depiction of international flows in foreign trade statistics.

In the course of a revision of the Dutch National Accounts the registration of processing has recently been discussed again. This paper presents the main arguments in this discussion. These draw of course mainly on the Dutch situation but have some more general meaning too. It is meant to serve as a contribution for the discussions on the statistics on services in the Voorburg group.

The arguments primarily regard the effects of the registration of processing on input-output type tables and input-output-quotes, but some other points of view have been taken into account also: for instance links with basic statistics, user wishes and international guidelines.

Although the paper draws upon work done in the Dutch Central Bureau of Statistics, it is strictly for the responsibility of the authors; the views taken do not necessarily reflect the view of the CBS.

1 Introduction.

There is a longstanding debate about whether processing abroad should be reported in gross or net figures. This question is often linked to the question whether processing should be regarded as production of goods or production of services, a gross registration being equalled to the first point of view and net registration to the latter.

Choices made in this respect heavily influence the way the economy is described in the National Accounts, especially the description of the production process by means of input-output type tables. The main focus of this report is on what registration of processing makes most sense in this framework.

Of course National Accounts cannot be seen in isolation. They draw on many statistics which, from the point of view of the National Accountant, can be seen as basic statistics but which often serve a specific information need in their own right. Relevant with regard to processing are the statistics of production by industry and the foreign trade statistics. In this report it is considered whether the proposals made for the registration of processing in the National Accounts fit in with present registration in the Dutch basic statistics without questioning this registration as such. Many of these statistics, certainly those on foreign trade, are up to international standards so that the conclusions in this respect may be acknowledged general validity to a certain extend.

Although the processing of the statistical data may be somewhat more country-specific, the description of this in the Dutch situation and of some problems involved may serve as an illustration of general interest too.

This paper draws on reports written as a basis for discussion in the framework of the revision of the Dutch national accounts now on its way, notably by De Boer, Wind, Ypma, Takema and Baart. These reports are written in Dutch and unpublished, therefore no specific references are given.

2 Choice of registration

2.1 Concepts and alternatives

Processing can be defined as a treatment of goods, paid for by the client, which increases the value of the goods. Characteristically, the processed products remain in possession of the client, while the raw materials needed for the processing count as part of his intermediate consumption.

Parties or countries can participate actively or passively in processing arrangements. Seen from the point of view of the Dutch economy active processing means that a foreign client has his goods processed in the Netherlands (e.g. oil refineries); we speak of passive processing where Dutch clients have there goods processed abroad (e.g. making up garments). This actually comes down to temporary imports and exports respectively.

Processing thus can be seen as a production process and, when parties in different counties are involved, international trade. Choices on the registration of processing in statistics therefore have effects on the statistics describing both these phenomena: statistics on the production by industries and input-output tables on the one hand and foreign trade statistics on the other. As mentioned before, the basic choice to be made in this respect is between a gross and a net registration.

For the foreign trade statistics gross registration means that for passive transactions the goods to be processed are included as exports and the processed goods as imports of the activity group concerned. For active processing gross registration means that the goods to be processed in Holland are registered as imports and the processed goods as exports. In a net registration, for passive processing only the payment made for processing (imports) and in active processing only the payment received (exports) are booked.

For the description of the production process gross registration of processing means that the goods to be processed make up part of the production value of the passive party and the intermediate consumption of the active party. Furthermore it means that the processed goods are included in the production value of the active party and in the intermediate consumption of the passive party. Net registration means that the goods to be processed are not included in the intermediate consumption of the active party nor in its production value. For the passive party, with respect to the processing only the value added by the active party is entered as intermediate consumption.

Thus, the net registration of processing makes it look similar to a service affecting an existing good, for instance repairing a car. It makes no sense, though, to say that if one chooses for this registration this implies that processing is to be seen as a service. Up to now, no single criterion or set of criteria has come up which is generally accepted to distinguish goods from services and it is even doubtful whether statisticians should try to do so. Still, if one wants to, more substantial criteria are available then the choice of net or gross

registration, like the degree in which the goods are transformed, the personal contact between parties etc.

Processing covers a wide range of production processes, like painting cloth, refining oil, manufacturing clothes, putting chairs in airplanes, spinning wool etc. etc. Thus, a great variety of production processes can be observed, differing in nature and extent of the transformation process. With respect to the latter it is important to distinguish between processing as one stage in the production of a commodity or as a complete production process. This distinction is particularly relevant for the choices to be made for the registration of processing in the National Accounts and especially input-output type tables as will appear from the next section. These type of tables describe on a macro- and meso-economic level the production structure of an economy and serve to facilitate analyses of the production. We will start with processing as a stage of a production process because this is the most general case.

2.2 Processing as part of the production process

The most general situation in processing is that of a company buying raw materials, processing them to some extent first and then sending them to another company for further processing. The latter processing typically consists of some special sub-processing, like the coating of pipes. The resulting products are subsequently either processed further or sold. Generally speaking, no change of ownership takes places, so money flows are restricted to the payments for the processing.

In these cases, from a macro- or meso-economic point of view gross registration will result in a particularly obscure description of the production process. First of all, gross registration leads to three entries of intermediate consumption: two for the commissioning party and one for the processing company. Intermediate consumption for the commissioning party is registered first when the purchased raw materials are booked; subsequently, the processed goods are included under intermediate consumption as well. For production there is a similar effect: for the commissioning party production is made up of final products and of goods to be processed. For the processing industry the production equals the value of the processed goods. Thus, production as well as intermediate consumption is grossed up. In such a situation, an interpretation of input/output quotes is difficult to make.

To illustrate this, the following example may serve. Consider a closed economy in which the basic metallurgic industry is predominant. This industry is made up of two companies A and B, both performing the same production process: they produce iron pipes, sheets, bars etc. Because of the nasty climate all these products can only be used when coated; both companies perform this part of the production process also. In a set of use and make tables this economy might look like this:

Example 1. An economy without processing

USE TABLE

	met. ind. A	met. ind. B	other ind.	fin. cons.	total
pipes	-	-	50	-	50
sheets	-	-	70	-	70
bars	-	-	80	-	80
other prod.	20	20	80	700	820
sub total	20	20	280	700	1020
val. add.	80	80	540	-	700
total	100	100	820	700	1720

MAKE TABLE

met. ind. A	met. ind. B	other ind.	total
40	10	-	50
30	40	-	70
30	50	-	80
-	-	820	820
100	100	820	1020

Now assume company B thinks it will be better off if it has company A perform the coating, itself concentrating on the production of iron. In a net registration the use- and make-tables would look as follows:

Example 2. An economy with processing as sub-activity, registered net

USE TABLE

	met. ind. A	met. ind. B	other ind.	fin. cons.	total
pipes	-	-	50	-	50
sheets	-	-	70	-	70
bars	-	-	80	-	80
coat-ing	-	10	-	-	10
other prod.	25	15	80	700	820
sub total	25	25	280	700	1030
val. add.	85	75	540	-	700
total	110	100	820	700	1730

MAKE TABLE

met. ind. A	met. ind. B	other ind.	total
40	10	-	50
30	40	-	70
30	50	-	80
10	-	-	10
-	-	820	820
110	100	820	1030

Resulting quotes would change slightly. For instance the income quote of company A would change from 80/100 to 85/110. This is quite realistic as company B only commissions a small sub-activity to company A. Completely different quotes would however result when a gross registration would be applied. The income quote of company A would then change to 85/200 and that of B to 75/290. The income quote for the total basic metallurgic industry would change from 160/200 (=0.8) to 150/390 (=0.4) in a gross registration in stead of 150/220 (=0.7) in a net registration. Next example illustrates the gross registration:

Example 3. An economy with processing as a sub-activity, registered gross

USE TABLE

	met. ind. A	met. ind. B	other ind.	fin. cons.	total
pipes	8	-	50	-	58
sheets	35	-	70	-	105
bars	47	-	80	-	127
coated prod.	-	100	-	-	100
other prod.	25	15	80	700	820
sub total	115	115	280	700	1210
val. add.	85	75	540	-	700
total	200	190	820	700	1910

MAKE TABLE

met. ind. A	met. ind. B	other ind.	total
40	18.	-	58
30	75	-	105
30	100	-	127
100	-	-	100
-	-	820	820
200	190	820	1210

The gross registration would also lead to very disturbing effects for the total of the basic metallurgic industry. The income quote would change from 160/200 in the non-specialised situation to 160/390 in a gross registration, suggesting a completely different production structure. In a net registration the change would be much more realistic: the resulting quote would be 160/210.

When parties in different economies are involved, gross registration also leads to unrealistic import and export quotes. All this is especially disturbing when trends in time are to be analysed because gross registration leads to unrealistic jumps in these quotes. Gross registration leads to a very bizarre situation when the processed goods are final products which are sold without further processing. In a gross registration these final products are registered as intermediate consumption of the passively processing industry group.

Another objection against gross registration is that it does not follow observable money flows. When the active and passive processing companies belong to the same economy no gross money flows are registered at all, only the payment made for the processing is recorded in company records. With regard to company bookkeeping the same applies in fact when processing is commissioned abroad. Only in foreign trade statistics a registration of the gross money flows is employed. This however is only occasioned by registration practices: Basically flows of goods are recorded for which, just because of custom regulations, a price has to be given too. On the basis of this, values are imputed; these do not reflect money flows however. Thus, it can be concluded that in general gross registration also has the disadvantage of necessitating imputations, which can only be made for international processing.

2.3 Processing as complete production process

Less common, but not unimportant, is the case in which a company sends raw materials to a another company to have them processed to final products. In this case the processing company carries out the same activities as it would if the final products were manufactured on their own account. From a physical point of view it requires just as much raw materials and auxiliary materials, employing the same kind of capital goods and labor. An important example of this in the Netherlands is the refinement of crude oil commissioned by foreign companies. The choice between net registration and gross registration is more complicated here than in general. Consider the example of an economy with one refinery producing only on own account. All crude oil is imported. Depicted in make and use tables this economy might look like this:

Example 4. An economy without processing

USE TABLE

	mining	oil. ref.	other ind.	fin. cons.	ex-ports	total
crude oil	-	20	-	-	-	20
oil prod.	-	-	20	10	10	40
other prod.	5	-	-	100	-	105
sub total	5	20	20	110	10	165
val. add.	15	20	85	-	-	120
total	20	40	105	110	10	285

MAKE TABLE

mining	oil ref.	other ind.	im-ports	total
20	-	-	-	20
-	40	-	-	40
-	-	105	-	105
20	40	105	-	165

Now suppose that a company in another economy would commission the refining of another amount of crude oil to our oil refining company of say 20 units, thus doubling the size of operations. Assuming the production quotes constant this would occasion a doubling of production and value added. A gross registration would neatly show this:

Example 5. An economy with processing as complete production process, registered gross

USE TABLE

	mining	oil. ref.	other ind.	fin. cons.	ex-ports	total
crude oil	-	40	-	-	-	40
oil prod.	-	-	20	10	50	80
other prod.	5	-	-	100	-	105
sub total	5	40	20	110	50	225
val. add.	15	40	85	-	-	140
total	20	80	105	110	50	365

MAKE TABLE

mining	oil ref.	other ind.	imp-ports	total
20	-	-	20	40
-	80	-	-	80
-	-	105	-	105
20	80	105	20	225

A net registration however would suggest completely different production structures. In a gross registration the income quote of the oil refining company would stay 20/40 or 40/80 whilst in the net registration it would change to 40/60. In this case it is precisely the gross registration which gives the most stable description of the production process. With a net registration shifts between normal production and processing result in large jumps in the input/output quotes. Unlike in the cases dealt with above gross registration therefore is to be preferred. Next example shows how a net registration would work out:

preferable from the point of view of the National Accounts, although in some specific cases an exception has to be made. National Accounts being not the only statistics in which processing figures, it is also necessary to consider what registration is practiced in other statistics and whether the proposed registration of processing fits in with these practices. This is all the more so when a clear link between the National Accounts and its basic statistics is desired. The next section will go into these questions, drawing on the Dutch situation.

2.4 Linking up with basic statistics in the present Dutch situation

At present in the Netherlands the statistical information on processing can be found in the production statistics of industries and foreign trade statistics. The production statistics are on a yearly basis and provide data on production, intermediate consumption, wages, imports and exports etc. The foreign trade statistics are published monthly; they are based on customs declarations obligatory for goods crossing the border.

On the questionnaires for the production statistics for industry groups the amounts paid or received for passive or active processing respectively are to be booked under the headings 'charged by third parties for services rendered by companies outside the Netherlands' and 'charged to third parties for repairs and work rendered for companies outside the Netherlands'. Companies outside the Netherlands also include branches of the own company. For the amounts paid and received for processing within the Netherlands the questionnaires have similar headings. The production statistics thus observe a net money flow: money paid or received for processing done.

On the customs documents details are given by type of transaction for both imports and exports. A customs declaration states values and volumes. The value of a consignment is determined by the declarant, in accordance with EC regulations. In the case of processing abroad the foreign trade statistics observe two goods flows, converted to money flows (with the aid of values). The initial goods flows and the return flows - imports and exports in the case of active processing and exports and imports in the case of passive processing - are registered separately, that is on the moment they leave respectively enter the country.

For the linkage to the National Accounts it is important to note that:
- in the production statistics amounts paid and received for processing are registered as net amounts;
- in the foreign trade statistics complete goods flow are registered; recording the values stated on the declaration documents implies a gross registration.

Thus, in the case of net registration, there is a direct relation between the National Accounts and the production statistics but not with the foreign trade statistics. Different registration in the National Accounts of processing abroad and at home is not an attractive option. It would give the wrong impression of different activities and partly destroy the link between the National Accounts and the production statistics. This is also a point in favor of net registration of transactions on behalf of processing abroad.

Example 6. An economy with processing as complete production process, registered net

USE TABLE

	mining	oil. ref.	other ind.	fin. cons.	ex-ports	total
crude oil	-	20	-	-	-	20
oil prod.	-	-	20	10	10	40
proc. oil	-	-	-	-	20	20
other prod.	5	-	-	100	-	105
sub total	5	20	20	110	30	185
val. add.	15	40	85	-	-	140
total	20	60	105	110	30	325

MAKE TABLE

mining	oil ref.	other ind.	imp-ports	total
20	-	-	-	20
-	40	-	-	40
-	20	-	-	20
-	-	105	-	105
20	60	105	-	185

The only important example of this situation in the Netherlands is the refinery of crude oil. And it is exactly here that a number of practical problems exist with regard to the observation of the processing transactions and an adequate description hereof: net registration is not possible, even if desired. In oil refining on account of foreign companies, often only certain fractions of the oil are delivered back to the owner. For the remaining fractions there is no market in the country of the owner or the price becomes too high because of transport costs. Sometimes it is agreed that the remaining fractions serve as payment for services rendered. The Dutch refinery industry e.g. can use all remaining fractions in its own refining process. Apparently petrol not extracted from the crude oil supplied by the owner is sometimes even delivered to the owner in exchange for other fractions which stay behind and is thus registered as export of processed products.

It will be obvious that in this case it is not possible to reach a reasonable isolation of the processing transactions. There is no other option than to process and publish "normal" and "processing" transactions mixed together. In fact processing transactions are then implicitly treated as normal transactions. This results in a gross registration which admittedly necessitates some imputations. However, because of the barter character of a large part of the transactions involved these would be needed for a net registration as well.

Thus, it may be concluded that in general a net registration is

However, this does not imply that the link with the foreign trade statistics has to be sacrificed completely. It is possible to connect up the input-output type tables with the totals in these statistics, although indirectly. For instance, connecting up with make and use tables can on an aggregate level be achieved just by adding two rows to these tables and by entering the appropriate values. For passive processing a row is needed containing in the columns exports and imports of the use- respectively make-table the values of the exports of the goods to be processed and for active processing one containing in the same columns the value of the imports of such goods. If amounts paid are also booked under imports of goods and amounts received under exports, there is an exact match with the totals of foreign trade statistics without disturbing the picture of the production structure or violating the input output quotes. If necessary, the extra rows can be split up over a number of categories, such as textile products, chemical products and metal products.

By way of illustration an example in which we consider again the economy depicted in example 2, but now doing the coating for a company in another economy. If, for instance, this company would commission the coating of 100 units to our economy, the imports would amount to 100 and exports to 110. Value added in this example would of course exceed that of example 2 with 10 units because the coating is not used as intermediate consumption but exported. A bit compressed, this would look in a net registration like this:

Example 7. Passive processing, registered net

USE TABLE

	met. ind.	other ind.	fin. cons.	ex- ports	total
steel prod.	-	200	-	-	200
coat- ing	-	-	-	10	10
other prod.	40	80	700	-	820
sub total	40	280	700	10	1030
val. add.	170	540	-	-	710
total	210	820	700	10	1740

MAKE TABLE

met. ind.	other ind.	im- ports	total
200	-	-	200
10	-	-	10
-	820	-	820
210	820	-	1030

Introducing an extra row for processed steel products to regain the connection with the foreign trade statistics can be done in two ways. First of all, a row could be entered just near the other commodities produced by the oil refineries, thus offering a comprehensive description

of this industry. Secondly, a row could be added below the tables as such, thus stressing the "external" character of this more or less artificial commodity. The first option in our example would look like this:

Example 8. Passive processing, registered net & linked with foreign trade statistics

USE TABLE

	met. ind.	other ind.	fin. cons.	ex-ports	total
steel prod.	-	200	-	-	200
coat-ing	-	-	-	10	10
proc. steel	-	-	-	100	100
other prod.	40	80	700	10	820
sub total	40	280	700	110	1130
val. add.	170	540	-	-	710
total	210	820	700	110	1840

MAKE TABLE

met. ind.	other ind.	im-ports	total
200	-	-	200
10	-	-	10
	-	100	100
-	820	-	820
210	820	100	1130

Thus, conclusion can be drawn that net registration links up best with the sources. There is a direct relation with the production statistics, while the relation with the totals of the foreign trade statistics and thus the balance of goods on the balance of payments is kept intact. Another important argument is that in this way there is also a direct relation between the goods and services domain and the financial domain in the National Accounts, as payments take place in net amounts. Thus, from the point of view of the National Accounts as such as well as in connection with the basic statistics, a net registration seems most appropriate. This however does not necessarily imply that the users of the data are served best. The next section will consider briefly possible user preferences.

2.5 What benefits the user most?

In previous sections attempts have been made, without this being expressed explicitly, to consider the issue from the user's point of view. The user benefits from a clear description of the economic process which approximates reality as directly as possible and with the best possible connection between basic statistics and the National Accounts. A lack of uniformity in the registration is confusing to the user. Thus the

user benefits most from a net registration. By way of illustration it may be mentioned that the Central Planning Bureau of the Netherlands has often requested figures without the transactions concerning processing. For various reasons this request has always had to be refused. It is not inconceivable that users would want to obtain separate data on processing transactions alongside the information from the make and use tables and input-output tables. In our opinion demands like this should be given serious consideration.

The conclusion that users preferences presumably go into the same direction we took from a National Accounts point of view is a very important and even decisive one. However, we have to deal not only with national users but also with users in the rest of the world. On behalf of these it is important to consider whether the proposed registration fits in with the international recommendations. The next section will treat this question.

2.6 International guidelines

For the Netherlands, being a EC member country, two sets of international guidelines are relevant: the European System of Integrated Economic Accounts, the ESA, and the UN System of National Accounts, the SNA. As these appear not always te be in accordance with each other, we will consider successively what guidelines these systems have to offer for the registration of processing in National Accounts.

a) ESA

From sections 356 ff and 375 ff it can be read that imports and exports of goods should include processing flows. With regard to repair goods the ESA seems to contradict itself. In section 358, particularly note 4 it is noted that these goods should be booked as normal exports of goods. In section 359, however, it is stated that they should ultimately be reported in net figures after all. It explains how this should be realised.

Strictly speaking, the net registration of processing transactions is in conflict with ESA regulations. With a little good will however, it can be said that in the net-registration variant we advocate (see example 8) the processed goods are included in imports and exports of goods. This only applies for the total level, however, not per commodity group.

b) SNA

If we have interpreted the text correctly, the SNA deals with transactions on behalf of processing very subtly. Section 6.134 mentions "processing". This is then subsequently defined as the refining of raw materials to end products. In this case gross registration is required. (N.B. in oil refinery the term "processing deals" is popular).
In the description under table 6.4 (page 117) the word "improvement" is used. In our opinion "improvement" can be interpreted as processing in the sense of the execution of a certain sub-activity. In this case they require net registration.
If our interpretations are correct, the recommendations made in this paper correspond quite well with the SNA guidelines.

Strictly speaking our variant of net registration is in conflict with the SNA guidelines, as the totals of imports and exports are inclusive of processed goods because of the extra rows proposed for the make and use tables. However, it is very easy to comply with SNA guidelines by omitting the extra rows in the make and use tables. On the commodity group level the variant complies completely with the SNA guidelines. The necessary gross registration of refined crude oil and oil products is in accordance with the SNA regulations for "processing". With respect to repair goods, the SNA is strictly in favor of net registration.

Remarkably the ESA and SNA apparently seem to prescribe different accounting rules. If this is true, it should not go unnoticed in the present revision process of the SNA, achieving convergence between the international guidelines being one of its aims. From the preceding sections it follows of course that we think an adaptation of the ESA in the direction of the SNA most appropriate.

3 Dutch practice

In the Netherlands statistical information on domestic processing can be found in the production statistics under the headings "charged by third parties for services rendered by domestic companies" and "charged to third parties for work rendered for domestic companies". Only data on money flows are available. Data on payment per industry and receipts per industry are matched during the balancing of the make and use tables. The result is a net registration of passive and active domestic processing. Data on quantities and per commodity group are not available, nor on gross flows so that a gross registration, even if wanted, is not possible.

In the Netherlands data regarding international processing are available per commodity group on quantities and values, while per industry group only money flows are known. In principle the positive balance - by definition - of the value of the total goods flows to and from the country of processing equals the total payments received for the processing. In reverse, for the country for which the processing is done, the negative balance of the value of the total goods flows to and from the country equals the total payments made for the processing. Thus, the total amounts estimated on the basis of the production statistics for payments received for processing in Holland or made for processing abroad should equal the balances found in the foreign trade statistics. However, in practice great differences occur.

These can be occasioned by various causes. First of all, the production statistics are partly on a sample basis, so sampling errors may play a role. Secondly, data on processing are only asked in the production statistics of manufacturing industries, whilst the trade sector and the services sector might also engage in processing. Thirdly, it is often very difficult to track down related processing flows on imports and exports in the foreign trade statistics. One problem is that, just because of the processing, goods change in character. Another problem is sometimes that part of the payment for the processing is in kind, for instance the processing party keeping part of the processed goods as payment. Another problem is that processed goods may be shipped to other countries, not crossing the border of the principal anymore.

This means that often after confrontation the production statistics data or foreign trade data (or both) have to be adjusted, resulting in a more consistent picture of the processing activities. Often it is not possible to carry out this adjustment process on a very detailed level. The initial flows and return flows frequently are not easy to match in view of the intermediate processing phase. Then, when it is possible to match import and export flows pertaining to the same processing activities, there still is the problem of relating these to the money values in the production statistics, in other words to assign the goods transactions to an industry group. For these reasons it is often only meaningful to apply the confrontation on a more aggregated level. In these cases, totals of imports and exports of several commodity groups and money flows of various industry groups are set opposite each other. After adjustment, a distribution across activity groups can be made on the basis of the original distribution. Only when ingoing and outgoing

goods flows can be linked unambiguously is it possible to confront these with the data on processing of the commissioning or processing industry group.

To give an impression of the importance of processing abroad, the following rough summary (in millions of guilders, current exchange rate is fl 2.10 to $ 1.00):

	ACTIVE		PASSIVE	
	import	re-export	export	re-import
agricult. products	100	128	145	297
oil (products)	4309	4406	-	-
ore/metal	623	829	359	446
chemical products	1196	1299	224	428
textiles etc.	359	417	806	1367
machines/instruments	1902	1951	2095	2728
others	145	185	372	350
total	8634	9215	4001	5615

It is clear that in the Netherlands active processing activities by order of non-residents especially deal with crude oil, oil products, machinery and instruments etc. and chemical products. With respect to the passive transactions machines/instruments etc. and textiles and textile goods play an important part. The total imports of passively processed goods amounted to 5.6 thousand million guilders in 1985. The total exports of actively refined goods were worth 9.2 thousand million guilders in the same year.

4 Conclusions

For the description of the production process in the framework of National Accounts for processing net registration is in general to be preferred. This registration leads in most cases to the most realistic depiction of the production structure and to relatively stable input-output quotes. An exception has to be made when processing amounts to a complete production process; in the Netherlands this is only relevant for oil refineries.

The recommendation of a net registration does not imply that processing is to be seen as a service in all cases; a classification in categories like "goods" and "services" when needed at all should be made on the basis of substantial criteria and not just on the way of registration.

Net registration provides a fairly straightforward connection with the basic statistics: in the Netherlands statistics on the production by kind of activity and foreign trade statistics. It gives a direct link with the production statistics whilst a connection with the totals of the foreign trade statistics can be brought about by adding extra rows to the use and make matrices.

The recommendations made in this report presumably reflect main user preferences. They appear to be in accordance with conventions and registration rules of the present SNA but not with those of the ESA.