WORKING PAPER

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The Use Tables for Imported Goods and for Trade Margins

An Integrated Approach to the Compilation of the Belgian 1995 Tables

(JEL-codes: C67, C81)

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Abstract

This paper describes the compilation of the use tables for imports of goods and for trade margins for Belgium in 1995. It introduces a methodological novelty by integrating the compilation of both tables and systematically exploiting the fact that large parts of intermediary consumption and investment (i.e. those directly imported by the using firms) as well as exports (the direct exports by producers) bear no trade margins.

In order to do this we used intrastat and extrastat data on imports and exports of goods in 1995. The results of this approach differ significantly from those of a proportional distribution of imports and margins. Many statistical offices resort to this proportional distribution because of a lack of survey data on the destination of trade margins and imports. In Belgium the proportional approach is less appropriate because the product detail is too limited and the national account data are firm-based without distinguishing local kind of activities.

I Introduction

The European System of Accounts 1995 (ESA 95) prescribes that input-output tables are to be derived starting from the supply and use tables. Though interesting in their own right, the use table for imports and the use side trade margins table are viewed here as crucial steps in the conversion of the supply and use table (SUT) into an input-output table for total and domestic output.

A supply table shows, for each product (one line on the table), the value of production in each industry (a column) as well as the total value of imports. Similarly, the use table shows, for each product, its use for intermediate consumption in each industry, as well as its use for final consumption, gross capital formation and exports (also shown in columns).

The use table for imports is analogous to the use table, but is restricted to imported goods and services. By deducting the use table for imports from the total use table, the use table for domestic output can be obtained. The distinction between imported and domestically produced uses is crucial for most input-output based analyses.

The use side trade margins table has the same form of a use table. For each good it presents the trade margins paid by its purchasers. A trade margin is defined as the difference between the actual or imputed price realized on a good purchased for resale and the price that would have to be paid by the distributor to replace it at the time it is sold (European System of Accounts, 1995, par 3.60). There are trade margins on most goods but not on services.

This trade margins table is one of the tables needed to convert the use table, which is valued in purchaser prices (the price paid for a good by the user), into basic prices (the price received by its producer), so that it is comparable to the supply table. Apart from trade margins these price concepts also differ because of transport margins and taxes minus subsidies on products.

As we begin the process of compiling the use table for imports and the use side trade margins table, we have a supply table valued at basic prices and a use table valued at purchaser prices compiled by the Belgian National Bank. The supply table also contains a transformation into purchaser prices. Thus there is a column for transport margins, trade margins, import duties and taxes, and also one for other product taxes and subsidies. This outlines the problem that we face here. In addition, the ESA 95 requires a distinction between retail and wholesale trade margins that was not yet made in the supply table.

To solve this problem, we have a database containing import and export flows of goods at the level of the Combined Nomenclature (CN), which is the most detailed product classification in statistics (Eurostat Input-Output manual, 2002). These

data correspond to the intra / extrastat database available in EU countries. In addition to the product, the database from the Belgian National Bank allows us to identify the importing or exporting industry and to make a distinction between intra- and extrastat trade flows as well as to identify the type of transaction (sale, goods in transit, returned goods, subcontracting etc.). Industries are identified by their NACE-BEL code, which is the 4 digit NACE code plus a one-digit Belgian extension.

It is a straightforward process to use detailed international trade statistics to help to produce the use table of imported goods. We shall demonstrate that, especially in an open economy, these statistics are just as useful for compiling the use table of trade margins. At the same time, we shall show the advantages of a truly integrated compilation of both tables.

The basic idea behind this integrated approach is that no trade margins exist on goods imported directly by firms that use these goods for their own intermediate consumption or investment. Similarly, there are no trade margins on direct exports by producers. We have estimated that in 1995 more than 36% of goods imported in Belgium were imported directly by firms for their own intermediate consumption. Up to 63% of exports were direct exports by producers. In order to use this information, we introduced a distinction between the supply and demand of a product on the overall and internal (or national) markets.

A second advantage of our approach is that it allows to identify what proportion of imports is used for export in the context of goods in transit, returned goods, merchanting and other important special cases which should be excluded from imports or exports according to the ESA-rules but are not always directly observed.

The integrated approach, based on detailed trade data, offers various other possibilities, such as deriving the use table of import duties and taxes, producing a geographical breakdown into intra-EU and extra-EU imports and improving the breakdown of wholesale and retail margins. Some of these have already been put into practice.

The importance of imports and trade margins is illustrated by their weighting in the supply and use of goods in Belgium. In 1995, imports amounted to 42% of the total supply of goods. Trade margins amounted to 13% of the total use of goods. In spite of the huge sums often involved, the compilation of both use side tables is typically fraught with problems of data availability, while most IO compilation textbooks offer little guidance, usually in the form of suggesting plausible assumptions.

In part 2 we discuss the methodology and results of the compilation of the use table of imports of goods. In part 3 the same is done for the use side table of trade margins.

II Compilation of the use table of imported goods

A. Literature

Ideally, in order to compile the use table for imports one should have access to the results of an import destination survey. While it is available in some countries[1], most countries like Belgium do not have such survey data.

In view of this reality, the 1995 European System of Accounts (para. 9.49) states:

"The use table of imported products should be compiled by exploiting all information available on the uses of imports, e.g. for some products the major importing enterprises may be known and for some producers information on the amount of imports may exist. However, in general, direct statistical information on the use of imports is scarce. This information has therefore usually to be supplemented by assumptions by product group."

The suggestion above that (combined) information on imports by product and industry is not usually available is too pessimistic. In Belgium such information is available, and in view of their extrastat and intrastat obligations, the construction of similar databases ought to be feasible in most EU countries.

The problems are not, however, limited to the availability of trade data by industry. The (draft version of) the Eurostat Input-Output Manual (2001) sums up the problems that arise when working with a database yielding combined information on imports of products by industry. We mention three of them:

- Goods imported by a manufacturing enterprise can be used for intermediate consumption or for capital formation. It is not always possible to distinguish between intermediate and capital goods on the basis of the nature of the good.
- Many products are imported by traders who are not their final users.
- The high level of product detail available in import statistics cannot be exploited fully because the level of product detail is usually much less in the supply and use table.

These problems are significant in the Belgian context. They provide no excuse, however, for not using detailed import and export data. As for the difference between capital formation and intermediate consumption, we had a table of investments by SUT product and sector. Within a given cell of the use table the allocation of imports between investments and intermediate consumption was done proportionally.

1. As in Israel: Simcha Bar-Eliezer (1989) "compilation of import matrices".

The proportion of imports realised by wholesalers and retailers has greater significance in an approach where the trade margins table is compiled simultaneously. The manual also seems to ignore the usefulness of export data both for the compilation of the use table of imports and for that of the use side trade margins table.

The Eurostat IO manual rightly states that the low level of product detail in the use table makes it theoretically unattractive to allocate imports proportionally to all users. A proportional allocation of imports implies that imported products are level of 231 goods, and not even at the level of the combined nomenclature classification. A further increase in the number of products in the use table would alleviate this problem but would exacerbate another one, since a more detailed use table contains more errors.

This is likely because the compilation of the use table is based on a survey of a limited sample of firms. In that case, comparing it with imports at the more detailed product level may lead to underestimation of the use of imports for intermediate consumption, since intermediate consumption itself is wrongly distributed between products. Since such errors were already present at the level of the 231 goods in the use table, we had to design a procedure to prevent them from affecting the use table of imports at a more aggregated level.

B. Data and general approach

Our data are based on the import and export statistics that all Belgian firms performing such transactions have to supply to the Belgian National Bank[1] (BNB) in the context of Belgium's intrastat and extrastat obligations. The database yields:

- the (5-digit) NACE-BEL activity code of the importing/exporting industry or trader;
- the product according to the combined nomenclature (8 digits) with a conversion to the products in the supply and use table;
- the type of transaction involved (sale, returned goods, subcontracting etc.);
- the distinction between imports and exports within and outside the European Union.

One crucial factor affecting the quality of the data is that these four dimensions can be combined.

The allocation of imported goods to the use table or their “destination” is done in three steps. First it is considered which imports can be directly allocated to exports. Next, we determine the proportion of imports used directly for intermediate consumption or investment by the importing industry. The third step allocates the import of traded goods. Practically all goods destined for consumption form part of this group.

1. A detailed description of the information supplied by firms can be found in the documents issued by the Instituut voor de Nationale Rekeningen “Handleiding intrastat” and “Toelichting extrastat”.

As has already been indicated, the allocation of imported goods and trade margins on these (and other) goods are integrated. This means that we will already comment briefly on the allocation of trade margins at certain stages. More general issues related to trade margins are discussed in part 3.

The calculations were carried out using SAS programs. These allow sufficient flexibility to mix general mathematical and accounting operations with interventions for specific products or industries where needed. We describe the steps in the next 3 sections, and discuss the results in section 2.6.

C. Imported goods destined for export

Below we discuss the various cases in which imports are directly allocated to exports in their order of implementation.

1. Goods in transit and other special transactions

Goods in transit through Belgium cross the national borders but are not bought or sold to a Belgian party or otherwise linked to intermediate use, investment or production in Belgium. The ESA 95 therefore stipulates that these should be excluded from imports and exports.

Import and export statistics for goods do, however, often comprise such flows as they also cross the national borders. In EU countries this is the case for goods in transit coming from or going to non-EU countries. Happily, the BNB was able to isolate these transit flows so that they could be deducted from imports and exports before producing the supply and use table.

Besides goods in transit, there are certain other cases where the type of transaction indicates a close link between imports and exports. Some goods only leave or enter the country temporarily because they are sent abroad for exhibitions or for minor repairs. The ESA says that such goods that leave the country temporarily, since they are generally returned within a year in their original state and without change of ownership, should be excluded from imports and exports. In contrast, goods that enter the country temporarily to be exported within the same year are to be treated as imports destined for export. This distinction is ignored and both flows of goods are still included in the imports and exports figures in the supply and use table.

In our trade data they can be identified through their transaction type. Therefore, if a good is imported and exported by the same sector, and the transaction type is one of goods to be returned or returned goods, the imports are allocated to exports (as far as export values allow). In 1995 55.6 billion BEF (=1.4 billion Euro) of imports were destined for export in the context of these transaction types.

2. Merchanting

The ESA-rules also stipulate that no import or export is recorded when merchants or commodity dealers buy from non-residents and then sell again to non-resi-

dents within the same accounting period. It does not matter whether the merchant (or international trader) is a resident or a non-resident. If he is a resident, the difference between the selling price and the purchase price is not to be considered as a trade margin, but as an exported trade service.

In contrast to goods in transit and the other special transactions discussed above, however, goods purchased by Belgian traders to resell them abroad cannot be distinguished directly from other imports or exports in the trade data. In both cases the transaction type is a normal purchase.

In a country like Belgium, which often serves as a distribution centre for the European market, the inability to separate this fraction of imports from the imports destined for the national economy is hazardous, both for analysis and international comparisons. Yet it does not necessarily affect the equilibrium of the supply and use table for a given product. This is probably the reason why the BNB opted not to try to exclude flows of goods that are the result of merchanting.

Since exports are entered on the use table and are valued in purchaser prices, while imports are entered on the supply table and are valued in basic prices, this choice does imply that there are also (exported) trade margins realised on those goods. This is obviously another reason for imported goods to be destined for export. Thus, although this issue can be ignored when compiling the supply and use tables, this certainly is not the case when constructing the use table of imports (and that of trade margins).

In order to address the problem of estimating merchanting by residents, we have made full use of the detail provided in the trade data.

We begin by estimating a maximum value for merchanting done by all (importing) industries and for all goods. In equation (1) we say that:

$$\max MERCH_{pq} = \sum_{j \in q} \left[\sum_{j \in p} \min(m_{ij}, x_{ij}) \right] \quad (1)$$

Here $MERCH_{pq}$ is the value of the merchanting of SUT product p by SUT industry q. SUT refers to the Supply and Use Table, which comprises 231 goods and 135 industries. On the right of the equals sign, m_{ij} and x_{ij} are the import and export value of good i in industry j. Goods are defined here at the level of the 8 digit combined nomenclature, while industries are defined at the level of the 5 digit NACE-BEL industries.

Equation (1) is likely to yield a maximum value for merchanting because merchanting implies that exactly the same good that is imported is also exported during the same year. The formula adds the condition that imports and exports are realised by the same industry. This is done to ensure that imports are not mistakenly allocated to exports of similar goods that are produced and exported by other firms. The latter is more likely if the importing and exporting industries are not the same.

The industry condition excludes cases of merchanting where more than one Belgian trader intervenes. In some cases this is too restrictive. Still the estimate in (1) should generally be considered as a maximum value. We have therefore only accepted a trade flow as merchanting in cases where, within a given SUT industry

and product, there were both too many imports as compared with intermediate consumption and too many exports as compared with production. Merchanting occurs in both trade and non-trade industries, but is relatively more important in wholesale industries.

The equation used in the program was somewhat more complex than equation (1), because the latter neglects the valuation problem. Since exports are valued in purchaser prices, they include wholesale trade margins (and possibly taxes and subsidies on transport margins). We used 2/3 of the quotient MG/TS2 as a proxy for the (wholesale) trade margins rate on merchanting (with MG being the trade margins and TS2 being the total supply in purchaser prices for each product). The trade margin rate on merchanting was also limited to a maximum of 20% for wholesalers and 10% for other industries.

3. Imports of capital goods and exports in the case of disinvestment

The gross fixed capital formation in the use table consists of both positive and negative values. Positive values include new or existing fixed assets purchased. Negative values include existing fixed assets sold. If fixed assets are sold between residents, this has no effect on the total investment of a country.

If fixed assets are bought from non-residents, investments and imports increase. Similarly, if they are sold to a non-resident, investments decrease while exports increase. If both occur simultaneously, and the amounts are large, a situation may arise in which the value of imports exceeds that of investments in a given industry and for a given investment good.

From our discussion in the Luxemburg Eurostat workshop on the Compilation and Transmission of tables in the input output framework (November 2002) we learnt that it is possible to make the imports used for investment exceed the amount of investment in such cases. This would be preferable to allocating the excess imports to other uses (like exports).

Although we suspect that there has been some disinvestment of capital goods which were exported, while new ones were imported (particularly in the case of airplanes), we do not have data on disinvestment by product. Therefore, it is assumed that no situations arise where exports that are disinvestments are larger that the fraction of investments that is not imported in any branch.

If this does occur, and the exported goods are similar to the imported ones, the program may have identified these flows wrongly as merchanting, so that some goods imported for investment were destined to exports. A proper treatment of this problem involves the existence of detailed data on disinvestments (by product and branch). In that case investments in each branch could be increased with disinvestments in each branch, so that there is enough place to destine all imported investment goods.

D. Imports destined for intermediate consumption, investment and inventory changes of materials and supplies

A crucial distinction was made between imports by a trade and a non-trade sector. Trade industries are the sale, maintenance and repair of motor vehicles and retail sales of automotive fuel (both in NACE division 50), wholesale (NACE 51) and retail trade (NACE 52). Imports by trade industries are primarily traded goods, while imports by non-trade industries are most likely to be destined directly for intermediate consumption or investment.

There is, however, also a significant amount of trade activity by non-trade industries. This trade activity is called secondary trade. To distinguish it from other uses of imported products, we compare imports directly with intermediate use and investments for each SUT product and industry combination. To be able to compare imports with intermediate consumption and investment they have to be valued in the same prices. Given our starting point, we don't have a table of taxes and subsidies and trade and transport margins that could be used to express the use table in basic prices.

We do, however, know one important thing: there are no trade margins on direct imports for own intermediate consumption and investment. Since there could be transport margins, and certain specific taxes (i.e. import duties, stamp duties and excise taxes) on these imported products, we convert imports into purchaser prices by augmenting them with a proportional share of these transport margins and taxes. Because there are no excise taxes and stamp duties on exports, the denominator excludes exports for these taxes, thus increasing the shares of other uses. Import duties are only attributed in the case of an extrastat import.

Once imports have been converted into purchaser prices, the basic rule is simple. If imports of a given SUT product in a given SUT industry are lower than the sum of its intermediate consumption and investment of this product, they are allocated to these destinations in full. The allocation between the two is proportional.

If imports of purchaser prices are higher than the sum of intermediate consumption and investment, two options exist. It is possible that they may be destined for intermediate use, but cannot be placed there because the use of that product was underestimated or because the imported products will not be used until the following year. It is also possible that the imported goods are destined for resale. A multinational firm with plants in Belgium, for example, is likely to offer imported goods that are close to those produced in Belgium to increase its product mix.

An excess of imports over intermediate consumption and investment for a given product in a given industry can therefore be due to an underestimation of the use, an increase in the inventory of raw materials or the existence of a secondary trade activity. To distinguish between these three possibilities we also compare imports with uses at a more aggregated product level.

It should be remembered that the SUT table available to us is rectangular. It contains more products than industries, particularly with respect to goods. For 231 goods, there are only 73 producing industries including agriculture, mining, manufacturing, energy and water. For our additional comparison we compare imports with uses at the level of the 73 goods that correspond to the producing industries. The underlying idea is that the errors in the estimation of intermediate

use and investment by product are likely to be smaller at a more aggregated product level.

A typical error is for the use table to omit materials and supplies with a small but positive level of intermediate consumption in a given industry These errors occur because those products are not mentioned in the survey that details purchases, or because firms that use them are not sampled. The large number of cases where a relatively small imported value corresponds to a zero value of intermediate consumption is an indication of the presence of such errors. If untreated, the sum of all these errors leads to a downward bias in the estimate of the share of imports used for intermediate consumption. A similar result is obtained in the case of investment.

Therefore, it is only if imports (in purchaser prices) exceed intermediate consumption and investment at the level of the 73 goods, that the imports of that particular industry are not fully destined for its intermediate consumption or investment.

Contrary to what one may believe, implementing this rule does not make it impossible to compile a use table of imports at the level of the 231 goods. To do this, we use the inventory changes of materials and supplies as a balancing tool. Table 1 below illustrates how this was done. It shows the imports and intermediate consumption of CPA product 20 (wood and wood products etc.) in SUT industry 31A1. That industry combines the electrical machinery and apparatus industries 31.1, 31.2 and 31.3.

Columns 3 and 4 of table 1 show that while there are imports of all wood products there is only one (wooden containers: CPA product 20.4) with positive intermediate consumption. In the light of possible errors in the use table, it is not surprising that this is the CPA product with the largest import value.

If the total imports of product 20 (2367 thousand euro) are compared with its total intermediate consumption in industry 31A1 (8899 thousand euro), there is no problem. Since we suspect that the use of the other products is underestimated[1], we do not treat imports of these as traded goods, but allocate them to an increase in the inventory of materials and supplies. To make sure that the import share of intermediate consumption is estimated correctly at the higher product level, we increase the imports used for intermediate consumption of CPA product 20.4 by the excess imports of the other products. To compensate for this in the row for product 20.4, we allocate a negative contribution of the same amount to the change in inventories of materials and supplies in the use of imports table.

1. We also assume that the use of wooden containers is overestimated due to a balancing-process that departs from the use of correct totals for intermediate consumption by industry.

TABLE 1 - Computing the use table for imports in the case of errors in the use table (figures in thousands of euro's)

	CPA Product code	Intermediate Consumption	Imports	Imports for inventory increase	Imports for intermediate consumption
Wood, sawn, planed or impregnated	20.1	0	44	44	0
Veneer sheets, plywood, laminboard, particle board, fibre board and other panel and boards	20.2	0	402	402	0
Builders' joinery and carpentry, of wood	20.3	0	2	2	0
Wooden containers	20.4	8899	1889	-478	2367
Other products of wood; articles of cork, straw and plaiting materials	20.5	0	30	30	0
Wood and products of wood and cork, articles of straw and plaiting materials	20	8899	2367	0	2367

The benefit of this approach is that it keeps the advantages of working at the detailed product level, without making errors at the more aggregate level of 73 goods. It is the latter product level that matters for the computation of the input-output matrix, since the use matrix must be square before it can be converted into an input-output matrix.

One drawback is that at the detailed product level the use table for imports may contain products for which imports appear to have a negative impact on inventory changes of materials, which is counterintuitive. At the higher product level, however, these negatives disappear completely. Moreover, the negative contributions of some industries to inventory changes may be reversed by positive ones in others even at the detailed product level.

The solution illustrated in table 1 is only applied if imports valued in purchaser prices do not exceed the sum of the intermediate use and investment for a given industry at the level of the 73 goods. Otherwise excess imports are treated either as traded goods or as uncompensated increases in inventories.

If the imported goods with excess imports are similar to the output for the sector, they are treated as imports destined for resale. If not, the imports are allocated to increases in inventories of materials and supplies. These increases in supplies are not compensated by decreases in other products. A product is declared to be similar to the output for a industry if there is a positive output in the supply table at the aggregated product level (the 73 goods). The reason for applying this rule is that if a producing unit engages in a trade activity, we believe that it is more likely to do so in products that are close to its own output. Obviously, the imports that are traded still have to be allocated to a part of the use table. How this is done is explained in the next part.

E. The allocation of imports destined for resale

International trade data provide useful information, even for the destination of traded imports. These data enable us to determine the supply and demand on the (Belgian) internal market and are used to distinguish the imports of consumption goods.

1. Supply and demand on the (Belgian) internal market

So far we have been able to allocate a proportion of imports directly to intermediate consumption and investment by the importing non-trade industries. We have also allocated some imports directly to exports in the context of merchanting and special types of international goods flows.

Table 2 below summarises the results obtained so far. We were able to link 36.4% of the value of the imported goods directly to own intermediate use by the importing industry, while 3% was linked with own investment. A large share of imports was allocated to exports, both in the context of merchanting (19%) and the other forms of re-export discussed earlier (1.3%). A share of 2.2% was allocated to inventory changes in the importing industry.

All imports that have already been allocated add up to 67.3 billion euro, which is 62% of the total import value. All these import flows have one feature in common. They are not traded in the Belgian internal market. The Belgian internal market includes all goods and services that have been traded (at least once) between two Belgian residents. If only one of the parties is a resident, the good forms part of total demand and supply, but not of demand and supply on the internal market.

Once a good has been traded between two Belgian residents, our trade data do not enable us to determine its destination directly, which is why the share of still unallocated imports, given in the last column of table 2, equals the share of imports offered on the Belgian internal market. In total 41.3 billion euro or 38% of imports of goods were offered on the internal market.

The table shows that the fraction of imports that is offered on the Belgian internal market differs greatly between products. The product-level in table 2 is that of the P31-product classification, which has a direct link with the NACE and CPA classifications. Since services are not considered here, we only show the results for the 19 of the P31 products that mainly correspond to good flows.

At levels of 6.2%, 21.6% and 24.6% the Belgian internal market is lowest for energy holding raw materials (including coal, natural gas & crude petroleum), for Chemicals, chemical products and manmade fibres and for Basic metals and fabricated metal products. This reflects the high share of imports of these goods that could be allocated directly to the intermediate consumption of the importing industries.

TABLE 2 - The directly allocated imports and those offered on the (Belgian) internal market[1]

Code and description of P31 product		Imports	Share of imports directly allocated to:					% of imports offered on internal market
		(euro millions)	Merchanting	Other reexports	Own interMediary cons.	Own investment	Inventory changes	
		=100%	(%)	(%)	(%)	(%)	(%)	(%)
AA	Products of agriculture, hunting and forestry	4008	19.6	0.2	46.0	1.4	1.3	31.5
BB	Fish and other fishing products	211	8.9	0.2	28.1	0.0	1.0	61.8
CA	Coal and lignite; peat; crude petroleum and natural gas; uranium and thorium	2958	1.8	0.2	91.1	0.0	0.7	6.2
CB	Metal ores and other mining and quarrying products	5878	10.2	1.2	14.1	0.0	0.7	73.9
DA	Food products, beverages and tobacco	8823	19.5	0.6	27.6	0.0	2.4	50.0
DB	Textiles and textile products	5571	16.9	1.3	33.3	0.0	3.0	45.5
DC	Leather and leather products	983	14.2	0.7	16.5	0.0	4.7	63.8
DD	Wood and products of wood and cork	1078	18.1	0.4	36.2	0.0	3.0	42.2
DE	Pulp, paper and paper products; recorded media; printing services	4000	17.2	0.9	42.5	0.0	2.3	37.1
DF	Coke, refined petroleum products and nuclear fuel	2975	12.6	1.1	32.2	0.0	2.8	51.3
DG	Chemicals, chemical products and man-made fibres	16006	24.1	1.7	50.1	0.0	2.5	21.6
DH	Rubber and plastic products	3655	13.2	0.9	38.0	0.0	4.7	43.1
DI	Other non metallic mineral products	1755	21.7	0.4	35.0	0.0	7.9	35.0
DJ	Basic metals and fabricated metal products	10198	11.0	0.5	58.4	2.0	3.6	24.6
DK	Machinery and equipment n.e.c.	7391	21.4	2.1	16.3	20.5	1.5	38.3
DL	Electrical and optical equipment	10176	24.4	2.9	22.4	8.3	2.1	39.6
DM	Transport equipment	16647	19.8	1.4	38.9	2.9	0.9	35.9
DN	Other manufactured goods n.e.c.	5209	25.1	0.7	9.6	2.6	2.1	59.9
EE	Electrical energy, gas, steam &hot water	1095	0.0	0.0	18.9	0.0	0.1	80.9
TOTAL		108618	19.0	1.3	36.4	3.0	2.2	38.0

1 Import data are expressed in basic prices and only include goods. They equal all imports (P7) of the supply table of the P31 products AA to EE, except the payment of royalties and license fees to non-residents. These are imported services attached to the good or service the right is based on. Thus the table omits an import value of 834 million Euro of imported services attached to products AA to EE.

Besides imports, the supply in the internal market also contains a proportion of domestic production. Because they do not involve a transaction between two Belgian residents, direct exports of own production and production of own investments are excluded from the supply and demand on the internal market. Since we do not have a table of self produced investments by industry and by product, we do not deal with this issue in any more detail in this paper and we set the corresponding values to zero.

To determine the share of production that is directly exported, we compare the production as stated in the supply table with the export figures in our international trade data. This is done at the (combined) level of the 231 SUT goods and 135 SUT industries. As production is valued in basic prices and exports in purchasing prices, this requires a conversion of exports into basic prices. As in the case of imports used for own intermediate consumption, however, there are no trade margins on direct exports by producers. Exports are also excluded from certain

taxes, such as excise taxes and stamp duties. This reduces the potential valuation difference between production and exports greatly and enables a reliable comparison.

The result of this exercise is illustrated in table 3, which gives the share of production directly exported and that offered on the internal market. All figures are valued in basic prices.

TABLE 3 - Production directly exported and that offered on the internal market.

Code and description of P31 product		Production (basic prices) (million euro)	Direct exports of own production (basic prices) (million euro)	Share of production directly exported (%)	Share of production offered on internal market (%)
AA	Products of agriculture, hunting and forestry	7078	323	4.6	95.4
BB	Fish and other fishing products	105	17	16.5	83.5
CA	Coal and lignite; peat; crude petroleum and natural gas; uranium and thorium	0	0		
CB	Metal ores and other mining and quarrying prod.	1021	479	46.9	53.1
DA	Food products, beverages and tobacco	23256	7547	32.5	67.5
DB	Textiles and textile products	7852	4913	62.6	37.4
DC	Leather and leather products	345	203	58.9	41.1
DD	Wood and products of wood and cork	2158	661	30.6	69.4
DE	Pulp, paper and paper products; recorded media; printing services	9074	1877	20.7	79.3
DF	Coke, refined petroleum prod. And nuclear fuel	5172	2492	48.2	51.8
DG	Chemicals, chemical prod. And man-made fibres	21270	14705	69.1	30.9
DH	Rubber and plastic products	5032	2841	56.5	43.3
DI	Other non metallic mineral products	5559	1941	34.9	65.1
DJ	Basic metals and fabricated metal products	18887	10812	57.2	42.8
DK	Machinery and equipment n.e.c.	8236	3893	47.3	52.7
DL	Electrical and optical equipment	7787	4141	53.2	46.8
DM	ransport equipment	17458	13658	78.2	21.8
DN	Other manufactured goods n.e.c.	3940	1354	34.4	65.6
EE	Electrical energy, gas, steam and hot water	8895	113	1.3	98.7
TOTAL		152394	71970	47.2	52.8

In total 72 billion euro or 47.2% of production of goods is exported directly. The remaining 52.8% of production is offered on the internal market. As in the case of imports, there are large differences depending on the type of goods. In accordance with the strong international focus in the corresponding industries, the share of direct exports is clearly higher than average for textiles (62.6%), chemicals (69.1%) and transport equipment (78.2%).

The significance of determining the direct exports of own production for compiling the use table of imports, however, lies not on the supply, but on the demand side. It implies that a large share of exports can be excluded as a destination for imports, since they are already linked with production. When valued in purchaser prices, direct exports of production amount to 73.7 billion euro. This is no less than 62.7% of the export value of goods (of 117.6 billion euro[1]).

1. This number is the sum of all exported goods for P31-products AA till EE.

Before giving figures for the demand side of the internal market, we will explain how we have used trade data to allocate a proportion of imports directly to consumption.

2. The import of consumption goods by trade industries

As almost all imported goods that are destined for consumption pass through wholesale and / or retail trade, imports used for consumption form part of the internal market. Yet it is possible to allocate some of these imports directly to consumption.

With imports known up to the level of the Combined Nomenclature (CN) at 8 digits, some imported goods can be identified as intermediate goods, investment goods or consumption goods. An example is crude oil, which is only used for intermediate consumption. Even at that level of detail goods can have multiple uses though. Examples of these are refined petroleum products like gasoline and gasoils, which can be used both for intermediate consumption and consumption. A similar problem exists for many investment goods, which often also appear in the intermediate use. The list of products in the combined nomenclature changes annually, which makes it difficult to produce a stable classification of goods destined for intermediate use, consumption and capital goods, although such attempts have been made.

Given the existence of goods with multiple uses we chose not to work with a list of exclusive consumption goods, but to set out rules that say which imported CN goods are *mainly* consumption goods.

For realising this, we use the information about the activity of the importers of a good. A CN good is said to be mainly a consumption good if it corresponds to a SUT product with positive consumption, and the import share of retail traders is at least 5% of the total imports at the level of the combined nomenclature (CN). The share of retail trade in the total import value is also 5%. This includes retail trade except motor vehicles and motorcycles (NACE 52), retail trade services of motor vehicles (NACE-BEL 50.103), retail trade services in parts and accessories for motor vehicles (NACE-BEL 50.302) and retail trade services in motor fuel (NACE 50.5).

When applying this rule, 29% of the imported CN products are consumption goods. The rule to determine which CN product is mainly destined for consumption could possibly be improved[1]. With a minimum import share of retail trade of 10%, 23% of imported CN goods would still have been consumption goods. We also continue to take account of the importer's industry. Imports by non-trade industries were never directly destined for consumption. The treatment of these is explained in the previous sections. On the other hand, all imports by retailers were destined for consumption (except where this is impossible given consumption values).

1. One might add the import share of wholesalers that specialise in consumption goods to determine whether imported goods are consumption goods. In fact, our list of imported goods mainly destined for consumption could be compared with the BEC (Broad Economic Categories) classification made by the United Nations Statistics Division (UNSD).

Applying the rules outlined above, all CN (mainly) consumption goods imported by food, beverages and tobacco wholesalers (NACE 51.3) and wholesalers of household goods (NACE 51.4) were immediately allocated to consumption. These wholesale industries have respective shares of 3.6% and 9.6% of total imports. Imports of CN consumption goods by other wholesale industries were not immediately allocated to consumption, since these industries are specialised in intermediate goods and capital goods. It is not impossible that a proportion of their imports goes to consumption but this is decided in the last phase, where all the unallocated imports and domestic production are destined. This phase is described in the next section.

Table 4 below shows the imports directly allocated to consumption both in basic prices (column [1]) and in purchaser prices (column [5]). When expressed in basic prices, imports allocated to consumption can be compared with imports, which is done in column [2].

In total 7.2% of imports was directly destined for consumption. When added to the 62% of imports already destined, this makes a total share of 69.2% directly allocated imports. The share of imports that could be directly allocated to consumption is, at 56.2% and 52.4% respectively, highest for fish and other fishing products and for leather and leather products. These are typical consumption goods that are less frequently produced in Belgium.

The table also allows one to compare imports directly destined for consumption with total use and with total demand on the internal market. For this purpose, these imports were also given in purchaser prices. Note the large difference between the amounts in column [1] and [5]. This was mostly due to the wholesale and retail trade margins on (imported) consumption, an issue which is discussed in part 3.

TABLE 4 - The demand on the Belgian internal market and imports directly allocated to consumption

Code and description of P31 product		Imports directly Allocated to Consumption (basic prices) (euro millions) [1]	Share of Imports directly allocated to Consum-ption % [2]	Total Use (purchaser prices) (euro millions) [3]	Total Demand on the Internal Market (purchaser prices) (euro millions) [4]	Of which: Imports directly allocated to Consumption *(purch. Prices)* (euro millions) [5]
AA	Products of agriculture, hunting and forestry	385	9.6	13053	9649	574
BB	Fish and other fishing products	119	56.2	458	351	206
CA	Coal and lignite; peat; crude petroleum and natural gas; uranium and thorium	0		3168	346	0
CB	Metal ores and other mining and quarrying products	2	0.0	7464	5309	2
DA	Food products, beverages and tobacco	2219	25.1	39450	26894	3245
DB	Textiles and textile products	1841	33.0	16684	8275	3220
DC	Leather and leather products	515	52.4	2161	1516	1112
DD	Wood and products of wood and cork	44	4.1	3570	2238	58
DE	Pulp, paper and paper products; recorded media; printing services	223	5.6	14418	9855	294
DF	Coke, refined petroleum products and nuclear fuel	0	0.0	13253	9008	0
DG	Chemicals, chemical products and man-made fibres	260	1.6	45849	16807	640
DH	Rubber and plastic products	98	2.7	9788	4670	130
DI	Other non metallic mineral products	40	2.3	8333	5097	67
DJ	Basic metals and fabricated metal products	32	0.3	31142	12250	70
DK	Machinery and equipment n.e.c.	336	4.6	18575	9716	575
DL	Electrical and optical equipment	332	3.3	22661	11343	733
DM	Transport equipment	704	4.2	37173	12563	830
DN	Other manufactured goods n.e.c.	672	12.9	11133	7513	1127
EE	Electrical energy, gas, steam & hot water	0	0	10284	9023	0
TOTAL		7823	7.2	307723	161883	12885

A comparison of the totals in columns [4] and [5] teaches us that the imports directly destined for consumption (valued in purchaser prices) make up 7.9% of the demand on the internal market. The remaining proportion of the demand on the internal market, which amounts to 149.5 billion euro (or 48.7% of the total use of goods) forms the basis for destining the imports still unallocated (see section 2.5.3).

It is interesting to note that in Belgium, with 162.4 compared to 306.7 billion euro, the internal market for goods is only about half the size of the total goods market. A similar result is obtained if one compares the size of the two markets in terms of basic prices. Valued in basic prices, the supply and demand on the internal market for goods equals 122.4 billion euro, which is 46.8% of the total demand and supply of 261.8 billion euro. In basic prices the goods-market restricted to transactions between Belgians is therefore less than half the size of the total market.

It should be remembered that all traded imports, except those re-exported by merchants, belong to the internal market. For a given good, the complement of

the share of the internal market summarises the extent to which production is internationalised.

3. The destination of the remaining imports

Of the total import value of goods of 108.7 billion euro, a total of 33.6 billion Euro has not yet been allocated. These imports were proportionally distributed over the parts of intermediate and final demand that were not yet linked to imports or production (the latter in the case of direct exports). This was done at the level of the 231 SUT goods and 135 SUT industries.

As always, we took account of valuation differences, which implied the attribution of trade and transport margins and taxes and subsidies to these imports.

F. The resulting use table of imported goods

Application of the methodology described in the previous sections resulted in two use tables of imported goods, one valued in basic prices and one in purchaser prices.

Table 5 is a synthesis of the use table of imported goods valued in purchaser prices expressed as a percentage of the use table of goods. Columns [2] to [6] in Table 5 show the shares of intermediate consumption, consumption, investment, inventory increases and exports that are imported. In total 48.3% of intermediate use, 37.4% of consumption, 54.3% of investments and 30.4% of exports of goods are imported.

It should not be surprising that inventory increases stemming from imports are more than eight times larger than total inventory increases. This is the case because imports can only lead to inventory increases, while the total net stock changes are sometimes negative and close to zero. Likewise the negative figures in column [5] are all due to a (usually small) total inventory decrease.

Table 5 allows a comparison of our computed use table of imports with the results obtained if all imports are spread proportionally over the use table. If the only product detail available were what is given here, the import percentage of all cells in the use table would equal the total use percentage given in column [7]. It is apparent from the table that the import shares usually differ significantly from those in the last column.

TABLE 5 - The Use table of imported goods as a share of different uses[1]

Code and description of P31 product		Inter-Mediate consump-tion PROP DISTR (%) [1]	Inter-Mediate consump-tion (%) [2]	Consump-tion (%) [3]	Invest-ment (%) [4]	Inventory changes (%) [5]	Exports (%) [6]	Total Use (%) [7]
AA	Products of agriculture, hunting and forestry	*34.2*	32.3	37.5	52.6	106.9	50.7	*36.8*
BB	Fish and other fishing products	*68.5*	56.3	76.2		162.9	53.5	*68.5*
CA	Coal and lignite; peat; crude petroleum and natural gas; uranium and thorium	*99.4*	99.2	53.6		3442.1	98.0	*99.3*
CB	Metal ores and other mining and quarrying products	*65.5*	67.2	98.5		952.7	87.3	*80.9*
DA	Food products, beverages and tobacco	*25.7*	29.9	26.7		150.1	21.9	*26.8*
DB	Textiles and textile products	*38.8*	50.7	67.9		-427.7	21.1	*45.0*
DC	Leather and leather products	*72.3*	63.2	94.5		738.8	46.6	*78.9*
DD	Wood and products of wood and cork	*33.3*	34.1	58.8		-176.0	24.4	*33.4*
DE	Pulp, paper and paper products; recorded media; printing services	*25.8*	28.6	23.9		121.6	39.1	*31.2*
DF	Coke, refined petroleum products and nuclear fuel	*31.3*	37.3	12.9	0.2	360.1	19.8	*27.2*
DG	Chemicals, chemical products and man-made fibres	*41.8*	59.2	25.8		217.4	26.7	*41.2*
DH	Rubber and plastic products	*43.6*	54.1	51.7		2102.0	18.9	*42.1*
DI	Other non metallic mineral products	*21.1*	23.2	32.7		-7745.3	19.0	*24.1*
DJ	Basic metals and fabricated metal products	*35.5*	52.2	51.2	20.6	-270.1	12.2	*35.2*
DK	Machinery and equipment n.e.c.	*43.2*	55.6	66.8	53.1	675.3	32.9	*46.7*
DL	Electrical and optical equipment	*52.0*	61.3	55.2	67.0	-193.6	46.0	*57.5*
DM	Transport equipment	*73.6*	86.7	54.0	58.5	585.6	25.5	*49.1*
DN	Other manufactured goods n.e.c.	*47.8*	42.6	52.8	26.6	1166.6	64.8	*55.3*
EE	Electrical energy, gas, steam and hot water	*10.2*	11.3	10.0		-47.2	11.8	*10.9*
TOTAL		*39.8*	*48.3*	*37.4*	*54.3*	*821.7*	*30.4*	*41.0*
TOTAL in the case of proportional allocation at SUT product & industry level			*39.8*	*39.1*	*47.0*	*21.9*	*43.6*	*41.0*

1 Imports and uses are expressed in purchaser prices. Imports only include goods, while the uses also include imported and exported services (royalties and licensee fees). For the commodities mentioned in the table 0.7% of the intermediary use (P2) was an imported service. This figure can be added to the 48.3% of imported goods to find the % of P2 imported in the complete use table of imports.

A more interesting comparison is the one with a proportional allocation of imports at the level of the 231 SUT goods and 135 SUT industries. This is, in fact, the approach to which many statistical offices will resort if they decide not to make use of trade data similar to ours. In this proportional allocation, imports (expressed in basic prices) are allocated between uses according to the weighting of these uses in the use table (expressed in purchaser prices). To convert the resulting uses of imports into purchaser prices, we added the sum of trade & transport margins plus taxes on imports obtained from our non-proportional compilation. This way we can exclude differences between columns [1] and [2] that are due to a difference in valuation.

The percentages given in column [1] give the share of imports in intermediate use in the case of a proportional allocation. Those in the last row give the totals for each use in the case of a proportional allocation.

A comparison of column [1] and [2] reveals that, while the proportional allocation of imports does well for some goods (where the percentages in column [1] and [2] are close), it generally underestimates the share of imports in intermediate consumption. At 39.8%, the total import share in intermediate consumption of proportional distribution is clearly less than the 48.3% we obtain. The proportional allocation obviously underestimates the share of imports in intermediate consumption of chemical products, basic metals, machinery equipment, transport equipment, etc.

A part of this underestimation of the import share of intermediate consumption at the SUT product/industry level is due to errors in the use table itself (as explained in section 2.4). This illustrates the limits of the benefits that can be obtained from working at a higher level of product detail while maintaining a proportional allocation of imports.

The proportional allocation seems less harmful in terms of determining the share of consumption that is imported. Our approach yields a share of imports in consumption of 37.4%, while a proportional allocation leads to a share of 36.2%. This overall share masks some differences between the two approaches for individual products. For example, because there is only one fishing product in the SUT the proportional allocation yields a consumption share of imports equal to the total share of imports, that is: 68.5%. In our approach this share is estimated at 76.2%.

In the case of exports, on the other hand, there is a significant difference. In the proportional distribution, 43.6% of exports result from imports. In our computations this share is limited to 30.4%.

One might still be surprised by the huge share of exported goods originating (without transformation) from imports. This is due to the fact that the import and export figures in our SUT table include large flows connected to merchanting as well as other forms of re-exports. Ignoring this and simply stating the import share of exports as zero would lead to much larger errors in the use table of imports. If required, the data generated by our approach make it possible to remove imports destined for export from the import and export figures in the supply and use tables.

III The destination of trade margins

In this part we describe our methodology for reallocating trade margins, separating trade margins on imports and distinguishing wholesale from retail trade margins. We then present the results.

A. Methodology for reallocating trade margins

A trade margin is defined in the European System of Accounts of 1995 as:

"…the difference between the actual or imputed price realised on a good purchased for resale and the price that would have to be paid by the distributor to replace the good at the time it is sold or otherwise disposed of."

Trade margins are thus only defined in the case of *goods*. There are trade margins on domestic production and imports. The only condition is that the goods must have been bought at least once for the purpose of resale. The distributor may or may not belong to a trade sector. In the latter case they are called secondary trade margins.

The construction of the use table of trade margins is one of the necessary steps in transforming a use and supply table into an input-output table (ESA, par 9.34 and 9.38).

Typically a supply table is only valued in basic prices, while a use table is only valued in purchaser prices. In the SUT framework it is enough to have the totals for trade and transport margins and taxes and subsidies for each product. When these are added to the total supply it is converted into purchaser prices and is thus comparable to total use. The supply table also has some rows that indicate where trade (and transport) margins are produced.

When compiling an Input-Output table one must be able to compare each cell of the use table with each cell of the supply table. This means that both must be valued in the same prices. To convert the use table into basic prices a table is needed that reallocates trade margins to the uses of the products to which they pertain[1]. In other words we have to make explicit which part of the cost borne by an intermediate or final user is a trade margin.

This reallocation of trade margins is not an easy task. The Eurostat Input-Output Manual proposes to start by determining the share of purchases served by trade in each cell of the use table. The manual does not indicate how this can be done. Instead it is considered to be unlikely that reliable information can be obtained by

1. A similar table is necessary for transport margins and taxes and subsidies.

surveying users of goods. That is because users are often unaware of the distribution channels along which their goods have passed and traders do not usually reveal their margins to them.

We cannot propose a solution that accounts for all differences in trade margin rates between distribution channels, but our approach does make it possible to identify large areas of intermediate consumption, investment and exports where no trade margins exist. In table 2 it was shown that 36.4% of imported goods were used directly for intermediate consumption by the importing industry. If valued in purchaser prices, this corresponds to 34.8% of total intermediate consumption of goods. Similarly, 3% of imports are directly used for investment by the importing industry. This corresponds to 19.5% of total investments in goods.

It can be argued that there could be trade margins on goods imported by the industry that uses them, since firms may resell imported raw materials or capital goods to competitors. One example of this may be the joint purchase of goods in order to obtain quantity discounts. In such cases of cooperation, however, trade margins are typically very low. They only serve to compensate for eventual prepayment or storage costs.

Even more impressive than the share of intermediate consumption or investment that is excluded from trade margins is the share of exports excluded from trade margins. In table 3 we showed that 47.2% of production was directly exported by the producer. No trade margins are expected on these direct exports, which amount to 62.7% of the export value of the goods.

In this first step we have therefore determined some significant areas of the use table where there are no trade margins. The next steps, although useful for this purpose, go beyond determining the use table of trade margins. They are therefore discussed separately.

B. Determining the trade margins on imported goods

All imports that are not directly linked to intermediate consumption and investment or special forms of re-export are traded goods, which means that there are trade margins on them. With the exception of imports destined for export in the case of merchanting, all these goods are traded at least once on the Belgian internal market.

We have assumed that there were no trade margins on re-exported imports in the case of special transactions. Trade margins on merchanting were determined as explained in section 2.3.2. This was done before other trade margins were allocated, so that it is still possible to remove imports and exports related to merchanting as well as the trade margins on them from the SUT table.

In a second step the total trade margins for each non-trade industry (known from a row in the supply table) were partly allocated to its imports destined for resale. In other words we determined the share of secondary trade margins realised on imports. Which imports were destined for resale is explained in section 2.4. The trade margin rate applied to these imports destined for resale is the quotient of the sectoral secondary trade margins for its total trade turnover.

The trade margins on imports used for export in the context of merchanting form part of both the use and the supply table of trade margins. The trade margins on other imports of traded goods only form part of the latter. They are useful, however, in helping to separate trade margins on imported goods from those on other goods.

C. Separating wholesale and retail trade margins

The Eurostat Input-Output Manual (draft 2001, p. 107) describes wholesale and retailing as follows:

"Wholesale is the re-sale (sale without transformation) of new and used goods to retailers, industrial commercial and institutional or professional users; or to other wholesalers. Retailing is the re-sale of new and used goods, mainly to the general public for personal or household consumption or utilisation."

We will apply this definition strictly when separating wholesale from retail trade margins. This means that wholesalers realise retail trade margins when they sell to households for consumption, and retailers realise wholesale trade margins when they sell to firms or other professional users.

It also implies that retail trade margins are inseparable from household consumption or investment. In the Belgian 1995 supply and use table, the only investments that households can make are in the building and construction of houses. There are no trade margins on construction services. This implies that no retail trade margins exist besides consumption by households. This forms the basis of equation (2) which expresses the relationship between the wholesale trade margins rate (whmr) and the retail trade margins rate (retmr) for each SUT product x:

$$whmr_x RESTIMD_x + (whmr_x(1 - retmr_x)z_x + retmr_x)cons_x = IMM_X \qquad (2)$$

In equation (2) IMM is the sum of the trade margins realised on the internal market. It is equal to all trade margins minus the trade margins allocated to exports in the context of merchanting. CONS is total household consumption and RESTIMD is other demand in the internal market. RESTIMD is equal to those parts of intermediate consumption, investments, inventory changes and exports that have not been directly allocated to imports or exports. CONS and RESTIMD are valued in purchaser prices.

The equation says that on other demand on the internal market (RESTIMD) there are only wholesale trade margins. On consumption there are always retail trade margins and for a fraction given by z there are also wholesale trade margins.

A consumer good only gives rise to wholesale trade margins if retailers have not directly imported it or bought it from domestic producers. Therefore z is approximated by (1-0.475)(1-a), where a is the import share of retailers and 0.475 is the general share of supermarkets in sales of consumer goods. The latter share is taken as a proxy for the part of distribution that omits wholesalers.

Except for IMM we no longer work with trade margins as such, but with wholesale and retail trade margin *rates*. These are the quotient of wholesale or retail trade margins divided by wholesale or retail turnover. It is easier to collect information and form an idea of trade margin rates than of the trade margins

themselves. With z, RESTIMD, CONS and IMM known, equation (2) still has two unknowns: the rates *retmr* and *whmr*. As an additional condition we therefore impose that:

$$Retmr_x = g_x whmr_x \quad (3)$$

The factor g is the ratio of the retail to the wholesale trade margin rate. We know that this factor is usually greater than one, since the retail trade margin rate tends to be higher than the wholesale trade margin rate. For some goods, such as food and tobacco, textiles, clothing, footware, gasoline and gasoil we have gathered specific information about this trade margin rate ratio. In general g has been fixed at 2.

Now it is possible to solve equation (2) by rewriting it as:

$$-z_x CONS_x retmr_x^2 + (RESTIMD_x + z_x CONS_x + g_x CONS_x) retmr_x - g_x IMM_x = 0 \quad (4)$$

The positive root of this quadratic expression gives the retail trade margin rate. By multiplying this by CONS, we can find the retail trade margins. The difference between these and IMM are the wholesale trade margins.

In the use table of trade margins, all the retail trade margins obtained are allocated to consumption, while wholesale trade margins on consumption are separated from other destinations.

D. The use side table of trade margins

Table 6 below shows trade margins as a percentage of intermediate consumption, consumption, investment, inventory increases, exports and total use (valued in purchaser prices). These trade margins are consistent with the use table of imports calculated by the same (SAS) program. There are no cells where trade margins are bigger than use minus the use of imports valued in basic prices.

In total, trade margins represent 12.6% of the total use of goods. The share of trade margins is, however, as high as 33.8% in the case of consumption, while it is only 6.3% for exports and 9.6% for intermediate consumption. This reflects the large proportions of exports and intermediate consumption that have been excluded from trade margins.

In this respect, the 16.8% trade margin on investment is rather high. This is partly due to the fact that the fraction of exports and intermediate consumption that was excluded from trade margins (62.7% and 34.8% respectively) was higher than that on investments (19.5%).

TABLE 6 - Trade margins as a percentage of different uses

Code	Description of P31 product	Inter-Mediate consump-tion PROP DIST (%) [1]	Inter-Mediate consump-tion (%) [2]	Con-sumption (%) [3]	Of which: Whole-sale margins (%) [4]	Of which: Retail margins (%) [5]	Invest-ment (%) [6]	Inven-tory changes (%) [7]	Exports (%) [8]	Total Use (%) [9]
AA	Products of agriculture, hunting and forestry	*12.0*	9.3	34.7	*6.5*	*28.2*	4.5	18.3	11.8	*14.1*
BB	Fish and other fishing products	*28.5*	7.4	41.6	*5.8*	*35.7*	-	18.3	10.5	*28.5*
CA	Coal and lignite; peat; crude petroleum and natural gas; uranium and thorium	*5.0*	4.1	36.3	*7.9*	*28.4*	-	999.9	7.8	*5.1*
CB	Metal ores and other mining and quar-rying products	*8.9*	9.4	0.3	*0.1*	*0.3*	-	123.3	1.2	*4.2*
DA	Food, beverages and tobacco	*12.5*	7.6	27.7	*3.7*	*24.0*	-	12.2	4.7	*15*
DB	Textiles and textile products	*11.1*	6.7	40.8	*4.2*	*36.6*	-	-5.5	4.5	*16.3*
DC	Leather and leather products	*27.5*	11.7	48.3	*4.0*	*44.3*	-	22.8	12.9	*32.7*
DD	Wood and prod. of wood/ cork	*7.6*	8.8	23.4	*4.2*	*19.2*	-	-0.5	3.7	*8*
DE	Pulp, paper and paper products; recorded media; printing services	*6.1*	5.4	19.5	*3.7*	*15.9*	-	13.2	9.3	*8.4*
DF	Coke, refined petroleum products and nuclear fuel	*14.6*	14.1	18.8	*6.5*	*12.3*	39.4	87.1	5.1	*13.4*
DG	Chemicals, chemical products and man-made fibres	*14.8*	15.0	66.3	*9.7*	*56.6*	-	40.5	9.1	*16.6*
DH	Rubber and plastic products	*9.3*	10.2	41.0	*6.1*	*34.9*	-	97.4	4.0	*8.8*
DI	Other non metallic mineral prod.	*9.0*	9.8	37.0	*6.1*	*30.9*	-	-448.7	5.2	*9.8*
DJ	Basic metals and fabricated metal products	*5.0*	6.4	33.3	*3.5*	*29.8*	8.4	-23.1	2.2	*5.1*
DK	Machinery and equipm. N.e.c.	*15.5*	15.6	42.2	*6.2*	*36.0*	15.4	89.5	10.2	*15.0*
DL	Electrical and optical equipm.	*14.1*	12.9	52.1	*14.9*	*37.3*	25.6	-23.0	12.8	*19.1*
DM	Transport equipment	*6.2*	6.1	19.9	*8.0*	*11.9*	12.0	39.2	3.2	*7.1*
DN	Other manuf. goods n.e.c.	*19.4*	11.6	40.2	*6.6*	*33.6*	14.5	36.6	7.5	*16.6*
EE	Electrical energy, gas, steam and hot water	*0*	0	0	*0*	*0*	0	0	0	*0*
TOTAL		*10.6*	*9.6*	*33.8*	*5.8*	*28.0*	*16.8*	*90.0*	*6.3*	*12.6*
TOTAL in the case of proportional allocation at SUT product & industry level			*10.6*	*19.0*			*15.3*	*25.5*	*11.5*	*12.6*

A second reason for this is that trade margins tend to be higher on investment goods. This can be deducted from the last row of the table, which shows the share of trade margins in the case of a proportional allocation at the SUT product and industry level. This proportional allocation puts a relatively higher share of trade margins on consumption and investments than on other uses. This reflects the fact that trade margins are generally higher on products that are mainly used for these purposes. The proportional distribution still, however, seriously underesti-mates trade margins on consumption, inventory increases and investment, and overestimates the share of trade margins in intermediate consumption and ex-ports when compared to our results.

Columns [3] and [4] of table 6 show how trade margins on consumption are divided between wholesale and retail margins. Due to the higher trade margin rate on retail trade and the assumption that wholesale margins were not present in a fraction z of consumption expenditure, retail trade margins dominate the total trade margins on consumption.

The total amount of retail trade margins was estimated at 12.9 billion euro. As the total amount of trade margins realised by the retail industries under NACE 50 and 52 was estimated at 18.7 billion euro, this may still be an underestimation of retail trade margins. It implies that retailers realise a large fraction of their sales and margins by selling to other firms and professionals.

IV Conclusions

We have demonstrated that both when compiling the use table of imported goods and the use side trade margins table, detailed import and export data with combined information on the products traded and the trading industries are extremely useful. The data used should exist in all EU member states, since they form the basis of export and import flows of goods published for all EU-countries by Eurostat.

The information in such a database on exports is just as vital as the information on imports, both for the use table of imports and for the reallocation of trade margins. First, the comparison of production with exports at an industry level makes it possible to determine the fraction of production that is directly exported by the producing industry. These direct exports include no trade margins and obviously cannot be the destination of imports.

The second reason is that only the comparison of imports and exports at a very detailed product and industry level makes it possible to isolate imports destined for export in the case of merchanting or other forms of re-export. We do not see how merchanting, that is where imports are destined to be re-sold abroad by Belgian traders, can be separated from other imports and exports without making extensive use of international trade data at a detailed product and industry level.

As much as 62.7% of the Belgian export value in 1995 was found to consist of direct exports of own production. Likewise as much as 19% of the import value of goods was directly destined for export in the case of merchanting.

Detailed import data are also useful because they can be compared with the intermediate consumption and investment figures for each SUT industry and because they make it possible to isolate goods that must be mainly destined for consumption.

By combining these possibilities we have been able to allocate 69.2% of the import value of goods directly to the right cell in the use table.

As well as showing the usefulness of international trade data, this paper also shows the benefits that can be achieved by integrating the compilation of the use table of imported goods and the use side table of trade margins. We have computed a use table of imports and a use side trade margins table that are fully consistent with each other without the need for any subsequent ad-hoc adjustments.

The resulting use tables of imports and trade margins are very different from those that would be obtained if imports and margins were allocated proportion-

ally to uses. This is true even when making comparisons with a proportional allocation at the detailed product level.

Finally a distinction was made between demand and supply in the (Belgian) internal market, restricted to deals between Belgian residents, and total demand and supply. The concept of the internal market was useful for our purposes because it is the part of demand and supply where trade margins are concentrated and imports cannot be allocated by simply looking at the industry of the importer.

The size of the internal market is also an inverse indicator of the extent to which the production and use of a good is internationalised. The concept of the internal market, along with that of the direct exports by producers, may, therefore, also be of more analytical interest.

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