

# External trade by activities and size-classes of enterprises



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## 1. Introduction

Statistics on the trade in goods have traditionally focused on presenting trade flows between countries broken down by products. Much less attention has been paid to trade operators and their characteristics. By linking trade operators with general business registers it is possible to make foreign trade statistics more comparable with structural business statistics. This method complements common trade statistics as it allows answering questions like which economic sectors contribute most to volume of external trade and what is the contribution of different size enterprises to trade.

The merging of external trade statistics and structural business statistics is of great interest to most users. Thus far, the availability of these products has been limited, since on the one hand, external trade does not belong to the scope of business statistics, and on the other hand, methodological and practical issues have restricted the feasibility to merge trade statistics with business registers in many Member States. The compiled statistics are based on the national concepts and breakdowns which are not directly comparable with other Member States.

In 2002, Eurostat launched a pilot project with two main objectives: first, to test the feasibility of merging trade registers with business registers, and second, to produce predefined tables broken down by enterprise characteristics. This working paper presents the main findings of the pilot study.

## 2. Methodology

### 2.1 Activity or product?

The concept of activity is sometimes problematic in the field of external trade statistics. It is not always clear whether the activity refers to economic activity of the statistical unit or to products classified according to their economic origin.

The starting point is the following concepts:

- Classification of activities. The classification of activities is NACE Rev. 1,<sup>1</sup> which is designed to categorise data related to statistical units. In the frame of external trade statistics, the NACE Rev. 1 classification refers to the economic activity of the trade operators, i.e. the enterprises active in external trade.
- Classification of products. The classification of products with relation to activities is CPA,<sup>2</sup> which distinguishes each type of goods and services in such a way that it is normally produced by only one activity as defined in NACE Rev 1. External trade statistics by CPA can be produced explicitly by using the correspondence table between the product classification used in external trade statistics, the Combined Nomenclature, and the CPA.
- The link between the CPA and NACE Rev 1 can be seen in coding. At all the levels of the CPA, the coding of the first 4 digits is identical with that used in NACE Rev 1.

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<sup>1</sup> NACE is derived from the French «Nomenclature statistique des Activités économiques dans la Communauté Européenne » (Statistical classification of economic activities in the European Community). Legal base for NACE classification was given by Council Regulation (EEC) No 3037/90. It was amended Commission Regulation (EEC) No 761/93 (NACE Rev. 1) and Commission Regulation (EC) No 29/2002 (NACE Rev. 1.1).

<sup>2</sup> Classification of Products by Activity in the European Community, Council Regulation (EEC) No 3696/93. CPA was elaborated in 1993, updated in 1996 and a new version, in line with the updated NACE Rev. 1.1 was introduced in 2003.

Explicit trade statistics by activities (NACE Rev. 1) of trade operators are not usually possible to compile in the frame of external trade statistics without a link with business register. Instead, implicit figures are often provided by using the products by activities (CPA) as a substitute for activities. Theoretically, this method could be used for estimations of certain trade flows, for instance exports of the manufacturing sector, because the majority of the goods traded by each enterprise should be typical products of that industry, i.e. commodities whose CPA category corresponds with the NACE category of the enterprise, as the link between these classifications indicates.

However, it is important to note that this approach does not provide the trade figures of that industry; it rather links the traded products with the industries which have manufactured them. As only the primary and manufactured goods are covered by international trade statistics, all the trade is consequently allocated to these sectors. The services sector, whose theoretical outputs are classified as services, is thus overlooked. This is particularly problematic for imports, where the services sector usually has an important role and the link between manufactured and traded products is not apparent.

Besides the problems with correct allocation of trade flows to the services sector activities, the allocation within the manufacturing sector may be difficult as well. An enterprise in a given manufacturing sector may trade products of other sectors as well as of its own sector. Therefore any attempt to measure trade flows of each activity sector by using products should be interpreted with caution.

The following example of manufacturing and trading of motor vehicles illustrates these concepts. Motor vehicles are manufactured and exported by enterprise A. The activity of the enterprise A is thus defined as a manufacturer of motor vehicles under NACE Rev.1 sub-section DM (class 3410) and the products of the activity, motor vehicles, are classified under the corresponding CPA sub-section DM (class 3410). Besides motor vehicles, the enterprise A exports tyres, which are classified under CPA sub-section DH (class 2511). In the importing country, enterprise B, which is the purchaser, is classified under NACE Rev. 1 section G (class 5010, sale of motor vehicles).

In this example, the enterprise A exports both typical products of industry and other products. The enterprise B belongs to the services sector and imports products of other sectors.

## **2.2 Business and trade registers**

EEC Council Regulation No 2186/93 on business registers for statistical purposes requires Member States to set up business registers of all enterprises carrying out economic activities contributing to the gross domestic product as well as their dependent local units and the legal units responsible for those enterprises. Business registers contain essential identification information, such as name and address, and stratification information, such as size class and main economic activity of businesses. All statistical units should be recorded, with the exception of NACE Rev. 1 sectors A (agriculture, hunting and forestry), B (fishing) and L (public administration and defence; compulsory social security), whose inclusion is optional.

EC Regulation No 638/2004, the Basic Regulation for the statistics between Member States, together with various Implementing Regulations, requires Member States to set up a register of intra-Community trade operators. The unit of reference, i.e. trade operator, is generally the legal unit, although the regulations do not define it explicitly. The

register of extra-Community trade operators is not mandatory according to the Basic Regulation for the statistics on the European Union's trade with non-member countries (Council Regulation No 1172/95). However, many Member States have established a special register of extra-Community traders. The unit of reference for extra-Community traders should be likewise the legal unit.

### 2.3 Linking trade and business registers

The regulation concerning business registers defines the link between the business registers and the intra- and extra-Community trade operators. The business registers regulation includes a requirement for specific variables to be kept at legal unit level referring to "intra-Community operators" and to "other associated files, including customs files" (variables 1k and 1j, respectively). Thus the possible link between registers can be obtained through a common unit of reference: the legal unit. The same regulation also defines the link between the legal unit and the enterprise, which is the statistical unit used in this exercise.<sup>3</sup>

The link between the enterprise in business register and trade operator in trade register is in general a direct one-to-one relation. However, there may be cases where an enterprise declares trade through several trade operators. In order to harmonise the reference units, the trade operators should be aggregated to enterprise level before matching with business register.

Trade registers may contain units which are not included in the business register. Usually, these are operators which do not belong to the coverage of the business register, such as enterprises belonging to NACE Rev. 1 sectors A, B and L or non-resident traders. The matching may also be influenced by non-response, thresholds or time lag of registration etc. In some Member States the matching rates were impaired by the missing common identifier between registers.

Depending on reporting Member State and trade system, the matching rates of this exercise ranged from 81 % to 100 %, in terms of value.<sup>4</sup> Generally, the matching rates were higher in intra-Community trade flows than in extra-Community trade flows.

### 2.4 Trade data

Nine Member States (Belgium, Denmark, Germany, Italy, Netherlands, Austria, Portugal, Finland and Sweden) participated in the exercise and provided data to Eurostat. All the included Member States produced most of the required tables on intra-EU trade. Data on extra-EU trade were not available for Austria, Germany and the Netherlands. The reference year is 2000 for Germany and Austria and 1999 for the others. In the final tabulation, only the trade figures of identified trade operators which were matched successfully with Business Registers, are used.<sup>5</sup>

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<sup>3</sup> The Council Regulation (EEC) No 696/93 – statistical units for the observation and analysis of the production system in the Community defines enterprise as "the smallest combination of legal units that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations. An enterprise may be a sole legal unit".

<sup>4</sup> Only the trade above statistical assimilation threshold was included.

<sup>5</sup> NACE Rev. 1 activity sectors A, B and L are excluded.

### 3. Results

#### 3.1 Trade by activities

Table 1 presents an aggregate view of the trade by activity sectors and by products of activities. Regarding exports by activities, the share of the whole manufacturing industry sector (NACE Rev. 1 sections C – F) was on average 73 % while the services sector (NACE Rev 1. sections G – O) accounted for 27 % of the total value. Within the manufacturing industry sector, the largest sub-sections were the manufacture of transport equipment (14 %), the manufacture of machinery (10 %) and the manufacture of electrical equipment (9 %). The distributive trade was the biggest contributor within the services sector, covering on average 18 % of total exports.

Regarding imports by activities, the contribution of the services sector was considerably bigger than in exports, covering on average 55 % of the value of the total imports. This is mainly caused by the dominant role of the distributive trade. The distributive trade accounted for 44 % of total imports, which was almost as much as the share of the whole manufacturing industry sector (45 %). The largest division within the distributive trade was the wholesale trade, which recorded almost one third of the total imports. The biggest sub-section within the manufacturing was the manufacture of transport equipment with 8 % while the manufacture of chemicals and the manufacture of electrical equipment recorded 6 % each.

Table 1 shows also the 8-country aggregate trade flows broken down by the products of activities (CPA). Because this classification focuses on traded products, it gives quite a different view of trade. By CPA, practically all of the traded goods (99 % of exports and 96 % of imports) were classified as products of manufacturing industries. This indicates a significant disparity compared to the trade flows by activity: the corresponding shares by NACE Rev. 1 were only 73 % and 45 %, respectively.

Looking at the results at the level of CPA subsection, the most important product classes for exports were transport equipment, electrical and optical equipment and machinery. For imports the respective were electrical and optical equipment, transport equipment and chemicals.



**Table 1: Trade by activities (NACE Rev. 1) and products by activities (CPA), aggregate of 8 Member States.<sup>6</sup>**

Nace Rev. 1 / CPA		Exports		Imports	
		NACE	CPA	NACE	CPA
Agriculture and fishing	A-B	.	1%	.	4%
<b>Manufacturing Industries</b>	<b>C-F</b>	<b>73%</b>	<b>99%</b>	<b>45%</b>	<b>96%</b>
Mining and quarrying	C	0%	1%	0%	6%
Manufacturing	D	73%	97%	43%	90%
Manufacture of					
food, beverages and tobacco	DA	4%	6%	4%	7%
textiles & textile products	DB	4%	6%	3%	5%
leather & leather products	DC	1%	2%	1%	1%
wood & wood products	DD	1%	2%	1%	1%
pulp, paper & printing	DE	4%	5%	2%	3%
refined petroleum products	DF	1%	1%	3%	3%
chemicals	DG	8%	12%	6%	13%
rubber & plastics	DH	3%	3%	2%	3%
non-metallic minerals	DI	2%	2%	1%	1%
basic metal & metal products	DJ	7%	9%	4%	9%
machinery	DK	10%	14%	3%	9%
electrical & optical equipment	DL	9%	15%	6%	16%
transport equipment	DM	14%	17%	8%	15%
other manufacturing	DN	2%	4%	1%	3%
Electricity & gas	E	0%	0%	2%	0%
Construction	F	0%	.	0%	.
<b>Services</b>	<b>G-O</b>	<b>27%</b>	<b>0%</b>	<b>55%</b>	<b>0%</b>
Distributive trade	G	18%	.	44%	.
Motor trade	50	2%	.	8%	.
Wholesale trade	51	16%	.	32%	.
Retail trade	52	1%	.	4%	.
Transport	I	2%	.	3%	.
Finance	J	0%	.	1%	.
Real estate and business services	K	6%	0%	5%	0%
Other services	L-O	0%	0%	2%	0%

Table 2 presents the breakdown of exports by NACE Rev. 1 sectors (at section and sub-section level) in 8 participating Member States. The share of the manufacturing industries varied considerably between Member States: in Finland, Portugal, Italy and Sweden it was over 80 % of total exports, while it was 55 % in Belgium and 67 % in Denmark.

Looking at figures at the level of NACE Rev. 1 sub-section, the manufacturers of transport equipment made up at least 10 % of the total exports in each participating Member States except in Finland and Denmark. The manufacture of chemicals and the manufacture of basic metals were among the most important sectors in most Member States, ranging from 11 % (Belgium) to 4 % (Portugal) and from 12 % (Austria) to 4 % (Denmark and Portugal), respectively. The manufacture of pulp, paper and printing was the most diversified sector: Finland (23 %) had the highest share and Denmark (1 %) the lowest. The manufacturers of electrical and optical equipment were the biggest contributors to the exports in Finland and in Sweden and were also significant exporters in other Member

<sup>6</sup> Sum of intra- and extra-EU trade of 8 Member States (BE, DK, DE, IT, AT, PT, FI, SE). A detailed breakdown by activities is not available for NL.

States, with the exception of Belgium. In Italy and Denmark the manufacture of machinery was the biggest exporting manufacturing sub-section.

In addition, certain manufacturing sectors dominated exports in many Member States. For instance, in Germany, Italy, Portugal, Finland and Sweden, there was at least one economic sector which accounted for at least 18 % of the total exports, whereas in Belgium and Denmark, where the share of the services sector was higher, there were no manufacturing sectors generating more than 12 % of the total value of exports. In Austria the manufacturing recorded 74 % of the total trade but there were no single dominating sector within it.

**Table 2: Exports by activities (Nace Rev. 1) in 8 Member States.**

Nace Rev. 1		BE	DK	DE	IT	AT	PT	FI	SE
<b>Manufacturing Industries</b>	<b>C-F</b>	<b>55%</b>	<b>67%</b>	<b>68%</b>	<b>87%</b>	<b>75%</b>	<b>89%</b>	<b>91%</b>	<b>81%</b>
Mining and quarrying	C	0%	3%	0%	0%	0%	1%	0%	1%
Manufacturing	D	54%	63%	68%	87%	74%	88%	91%	79%
Manufacture of									
food, beverages and tobacco	DA	6%	13%	3%	5%	3%	5%	2%	2%
textiles & textile products	DB	4%	2%	2%	9%	4%	19%	1%	1%
leather & leather products	DC	0%	1%	0%	4%	1%	7%	0%	0%
wood & wood products	DD	1%	1%	1%	1%	3%	4%	6%	3%
pulp, paper & printing	DE	2%	1%	3%	2%	6%	5%	23%	10%
refined petroleum products	DF	1%	0%	0%	1%	0%	2%	2%	0%
chemicals	DG	11%	10%	8%	8%	5%	4%	5%	5%
rubber & plastics	DH	2%	3%	2%	4%	4%	2%	2%	2%
non-metallic minerals	DI	1%	1%	1%	3%	1%	4%	1%	1%
basic metal & metal products	DJ	8%	4%	6%	8%	12%	4%	7%	8%
machinery	DK	3%	12%	8%	18%	9%	4%	11%	10%
electrical & optical equipment	DL	4%	8%	8%	8%	11%	14%	25%	20%
transport equipment	DM	10%	1%	24%	10%	12%	13%	5%	16%
other manufacturing	DN	2%	4%	1%	5%	2%	2%	1%	1%
Electricity & gas	E	0%	1%	0%	0%	1%	0%	0%	0%
Construction	F	0%	0%	0%	0%	0%	0%	0%	0%
<b>Services</b>	<b>G-O</b>	<b>45%</b>	<b>33%</b>	<b>32%</b>	<b>13%</b>	<b>25%</b>	<b>11%</b>	<b>9%</b>	<b>19%</b>
Distributive trade	G	37%	29%	16%	10%	19%	10%	7%	12%
Motor trade	50	6%	1%	1%	0%	5%	0%	1%	1%
Wholesale trade	51	30%	27%	14%	9%	13%	9%	6%	11%
Retail trade	52	1%	1%	1%	1%	1%	1%	0%	1%
Other services	H-O	8%	3%	16%	3%	6%	1%	2%	7%

Table 3: Regarding imports by NACE Rev. 1 sectors, the services sector enterprises accounted for more than half of trade in each participating Member State with the exception of Italy, where the manufacturing industries recorded 57 % of the total trade. Denmark (72 %) had the highest share of total imports generated by the services sector. Also in Belgium, Austria and Sweden the services sector accounted for at least 60 % of the total imports. The majority of it was contributed by the distributive trade, ranging from 38 % in Germany to 63 % in Denmark. In most Member States the most important sectors within manufacturing were either the manufacture of transport equipment or the manufacture of electrical equipment.

**Table 3: Imports by activities (Nace Rev. 1) in 8 Member States.**

Nace Rev. 1		BE	DK	DE	IT	AT	PT	FI	SE
<b>Manufacturing Industries</b>	<b>C-F</b>	<b>39%</b>	<b>28%</b>	<b>45%</b>	<b>57%</b>	<b>39%</b>	<b>45%</b>	<b>47%</b>	<b>40%</b>
Mining and quarrying	C	0%	0%	0%	0%	0%	0%	0%	0%
Manufacturing	D	37%	26%	43%	53%	37%	43%	46%	39%
Manufacture of									
food, beverages and tobacco	DA	4%	4%	3%	5%	2%	5%	3%	3%
textiles & textile products	DB	2%	2%	2%	4%	2%	5%	1%	1%
leather & leather products	DC	0%	0%	0%	2%	1%	2%	0%	0%
wood & wood products	DD	0%	1%	0%	1%	1%	1%	0%	1%
pulp, paper & printing	DE	1%	1%	2%	2%	2%	1%	3%	2%
refined petroleum products	DF	2%	0%	3%	4%	1%	5%	6%	0%
chemicals	DG	6%	3%	5%	9%	3%	3%	4%	3%
rubber & plastics	DH	1%	1%	2%	2%	2%	1%	2%	1%
non-metallic minerals	DI	1%	1%	1%	1%	1%	1%	1%	1%
basic metal & metal products	DJ	5%	3%	3%	6%	4%	3%	5%	4%
machinery	DK	2%	4%	3%	4%	4%	2%	3%	4%
electrical & optical equipment	DL	3%	3%	5%	7%	6%	6%	13%	8%
transport equipment	DM	9%	1%	12%	5%	7%	7%	4%	10%
other manufacturing	DN	1%	2%	1%	1%	1%	1%	1%	1%
Electricity & gas	E	1%	0%	1%	3%	1%	1%	1%	0%
Construction	F	1%	0%	0%	0%	1%	1%	0%	1%
<b>Services</b>	<b>G-O</b>	<b>61%</b>	<b>72%</b>	<b>55%</b>	<b>43%</b>	<b>61%</b>	<b>55%</b>	<b>53%</b>	<b>60%</b>
Distributive trade	G	47%	63%	38%	39%	55%	51%	48%	51%
Motor trade	50	9%	9%	4%	11%	10%	12%	8%	7%
Wholesale trade	51	34%	51%	29%	26%	36%	35%	37%	41%
Retail trade	52	4%	3%	5%	2%	8%	5%	3%	4%
Other services	H-O	14%	9%	17%	5%	7%	3%	5%	8%

### 3.2 Trade by activities and products of activities

As described in the Chapter 2.1, the conceptual link between activities and products indicates that most of the output of each enterprise should belong to the same CPA class with its NACE activity class. But it is common that an enterprise may produce goods or services which are not considered as typical outputs of that industry, especially when it has significant secondary activities. Besides analysing the trade flows by activities or by products separately, it is advisable to examine them together. It is possible to reconcile trade of enterprises by products, thus focusing on the question how big share of the trade of an enterprise consists of typical products of that industry. This approach is particularly interesting in exports because it allows reconciling exports with production statistics.

When measuring trade by activities and products, the traded commodities should be allocated to the economic activity of the trading enterprise and classified either as typical products of the activity or other products. Table 4 shows the reconciliation at aggregate level.<sup>7</sup> On average, 87 % of goods exported by manufacturing industry enterprises were considered as typical products of that industry.<sup>8</sup> The ratios were at highest in the manufacture of food products, manufacture of textiles and manufacture of leather, where 93 percent of the exports consisted of typical products. The lowest ratios were recorded in electricity and gas supply (49 %), manufacture of rubber and plastic products (69 %) and manufacture of refined petroleum products (74 %).

<sup>7</sup> One should pay attention to the fact that in this kind of analysis, the results are sensitive to the level of classification.

<sup>8</sup> Enterprises belonging to service industries are not included in Table 4 since the typical products of such industries are not goods.

Regarding imports, on average 64 % of the products imported by the manufacturing industry enterprises were typical products of that industry. The ratios were at highest in manufacture of electrical equipment, manufacture of chemicals and manufacture of basic metals. Likewise, the lowest ratios were found in electricity and gas supply (19 %), manufacture of refined petroleum products (30 %) and manufacture of rubber and plastic products (36 %).

**Table 4: Trade by activities (Nace Rev1) and products (CPA): typical products/others, aggregate of 8 Member States.<sup>9</sup>**

Nace Rev. 1		Exports		Imports	
		Typical products	Others	Typical products	Others
Mining and quarrying	C	83%	17%	59%	41%
Manufacture of					
food, beverages and tobacco	DA	93%	7%	66%	34%
textiles & textile products	DB	93%	7%	69%	31%
leather & leather products	DC	93%	7%	71%	29%
wood & wood products	DD	88%	12%	57%	43%
pulp, paper & printing	DE	91%	9%	69%	31%
refined petroleum products	DF	74%	26%	30%	70%
chemicals	DG	88%	12%	77%	23%
rubber & plastics	DH	69%	31%	36%	64%
non-metallic minerals	DI	87%	13%	41%	59%
basic metal & metal products	DJ	80%	20%	73%	27%
machinery	DK	87%	13%	65%	35%
electrical & optical equipment	DL	91%	9%	81%	19%
transport equipment	DM	87%	13%	65%	35%
other manufacturing	DN	82%	18%	40%	60%
Electricity & gas	E	49%	51%	19%	81%
<b>Average</b>		<b>87%</b>	<b>13%</b>	<b>64%</b>	<b>36%</b>

An alternative view to examine the relationship between activities and products is to allocate products to the activity of the trader. This reconciliation shows which economic sectors are involved in trading of each category of products. To simplify the analysis, external trade operators are classified into three separate groups according to activity and product as follows: first, the services sector was considered as a single group, and second, the manufacturing industries were divided into two groups depending on whether a given product was traded by an enterprise belonging to the corresponding NACE category as the product (same industry) or not (other industries). By using this reconciliation it is possible to identify products which are mostly traded by the services sector.

The distribution of trade of CPA products by industries is presented in Table 5. On average, 64 % of the goods were exported by enterprises of the same NACE sub-section as the product. The services sector accounted for 27 % and the different sub-section the remaining 9 %. Over 70 % of the exports of paper and wood products, textiles and transport equipments were recorded by manufacturers. The contribution of the services sector was at biggest in the exports of electrical equipment and chemicals.

<sup>9</sup> Sum of intra- and extra-EU trade of 8 Member States (BE, DK, DE, IT, AT, PT, FI, SE). A detailed breakdown by activities is not available for NL.

Regarding imports, the services sector imported 55 % of total the products. 29 % of imports were recorded by the enterprises belonging to the corresponding NACE sub-section as the imported product and 16 % by the enterprises classified under different NACE sub-section than the product. Regarding the biggest product sub-sections, over 60 % of the imports of electrical equipment and transport equipment were recorded by the services sector while the enterprises of same sector were most active in imports of food products, chemicals and basic metals.

**Table 5: Distribution of trade of CPA products by industry of trading enterprise, aggregate of 8 Member States.** <sup>10</sup>

CPA		Exports			Imports		
		Same industry	Other industries	Services sector	Same industry	Other industries	Services sector
Agriculture and fishing	A,B	.	11%	89%	.	32%	68%
Mining and quarrying	C	23%	15%	62%	1%	61%	38%
Food, beverages and tobacco	DA	66%	2%	32%	36%	4%	60%
Textiles & textile products	DB	70%	4%	25%	34%	6%	60%
Leather & leather products	DC	69%	6%	25%	35%	6%	59%
Wood & wood products	DD	74%	6%	20%	33%	13%	53%
Pulp, paper & printing	DE	80%	5%	15%	41%	10%	49%
Refined petroleum products	DF	45%	6%	49%	33%	19%	48%
Chemicals	DG	61%	7%	32%	35%	18%	47%
Rubber & plastics	DH	59%	22%	19%	22%	31%	48%
Non-metallic minerals	DI	68%	10%	22%	21%	27%	53%
Basic metal & metal products	DJ	67%	11%	22%	35%	20%	45%
Machinery	DK	62%	17%	21%	24%	25%	51%
Electrical & optical equipment	DL	57%	9%	33%	28%	9%	63%
Transport equipment	DM	75%	6%	20%	34%	3%	63%
Other manufacturing	DN	51%	11%	37%	13%	9%	78%
Electricity & gas	E	57%	1%	42%	88%	1%	11%
<b>Average</b>		<b>64%</b>	<b>9%</b>	<b>27%</b>	<b>29%</b>	<b>16%</b>	<b>55%</b>

### 3.3 Trade by size-class of enterprises

The structure of external trade can be reconciled also by size-class of traders, in terms of number of employees.<sup>11</sup> This approach shows the contribution of enterprises of different sizes to total trade. The breakdown is shown in Table 6. On average, the biggest enterprises with 1000 or more employees accounted for one fourth of exports and one fifth of imports, while the corresponding figures of the smallest enterprises with less than 10 employees were 17 % and 18 %, respectively.

<sup>10</sup> Sum of intra- and extra-EU trade of 8 Member States (BE, DK, DE, IT, AT, PT, FI, SE). A detailed breakdown by activities is not available for NL.

<sup>11</sup> The number of employees is defined as those persons who work for an employer and who have a contract of employment and receive compensation in the form of wages, salaries, fees, gratuities, piecework pay or remuneration in kind. The definition is based on Commission Regulation (EC) No 2700/98 for structural business statistics.

Table 6 shows also the breakdown between the manufacturing industries and the services sector. The contribution of the biggest enterprises to total trade flow is more evident in the manufacturing industries than in the services sector: the largest enterprises with 1000 or more employees recorded one third of exports and 36 % of imports of the manufacturing industries, while they account for only 4 % of exports and 7 % of imports of the services sector. Respectively, 45 % of the total exports of the services sector and 27 % of the imports of the services sector were contributed by the smallest enterprises.

**Table 6: Trade by size-class of enterprise, average of 9 Member States.**<sup>12</sup>

Number of employees	Exports			Imports		
	Total	Manufacturing Industries	Services sector	Total	Manufacturing Industries	Services sector
0-9	17%	7%	45%	18%	7%	27%
10-49	15%	12%	23%	19%	11%	25%
50-249	22%	24%	18%	24%	22%	26%
250-999	21%	25%	10%	19%	24%	16%
1000 +	25%	33%	4%	20%	36%	7%

Table 7: The biggest enterprises were by far the most dominating in the trade flows of Finland and Sweden; over half of exports and about 30 % of imports were generated by them. The smallest enterprises with less than 10 employees had the highest share of trade in Belgium and Denmark. In exports, they accounted for at least one third of the trade, while in imports their contribution was more than one quarter.

**Table 7: Trade by size-class of enterprise in 9 Member States.**<sup>13</sup>

	Number of employees	BE	DK	DE	IT	NL	AT	PT	FI	SE
Exports	0-9	33%	37%	15%	10%	13%	12%	6%	2%	6%
	10-49	12%	11%	21%	20%	20%	7%	12%	5%	7%
	50-249	15%	21%	32%	27%	31%	27%	29%	13%	16%
	250-999	19%	22%	24%	18%	22%	30%	27%	23%	22%
	1000 +	21%	9%	8%	24%	15%	24%	26%	57%	50%
Imports	0-9	29%	26%	19%	13%	11%	17%	10%	8%	13%
	10-49	14%	22%	26%	18%	22%	17%	23%	18%	19%
	50-249	22%	24%	32%	23%	32%	27%	33%	21%	19%
	250-999	17%	18%	18%	20%	19%	21%	15%	24%	21%
	1000 +	17%	9%	5%	26%	16%	18%	19%	30%	29%

<sup>12</sup> Sum of intra- and extra-EU trade of 9 Member States (BE, DK, DE, IT, NL, AT, PT, FI, SE). Data by enterprises, whose number of employees is unknown, are excluded.

<sup>13</sup> Data of Germany are not comparable with other Member States due to high number of enterprises whose number of employees was missing. These were mostly big enterprises with multiple locations.

#### **4. Conclusions**

This pilot study shows that by merging trade registers with business registers it is possible to achieve better comparability between trade and business statistics. The method provides new aspects of the structure of external trade and complements the information of business statistics. Trade statistics by activities show the contribution of true economic sectors to total trade, which is often different than the view provided by statistics by products. Trade by size of enterprises allows analyzing the effects of international trade on employment.