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TRADE BY PRODUCT AND INDUSTRY: AN ESTIMATED EXAMPLE WITH ACTUAL DATA

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This document is for discussion and comments under agenda item 5 f and WPTGS delegates are invited to express their views on the approach taken.

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TRADE BY PRODUCT AND INDUSTRY: AN ESTIMATED EXAMPLE WITH ACTUAL DATA.

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Introduction

1. The issue dealt with here is that no detailed trade by *product* classification, which combines goods and services at a detailed level, is currently available. In fact, all detail for trade in services is presented in the Extended Balance of Payments Services classification (EBOPS) and all detail for merchandise trade is displayed in the custom's based classification: the Harmonized Commodity Description and Coding System (HS).

2. A trade by product classification would be useful for several purposes: It would help users compiling supply-use tables (SUT) or input-output (IO) tables linking their work to trade statistics. It could advance the cause of producing integrated statistics on trade in products by activity, while relying on existing data sources. Such an approach may also improve analytical links to production, employment, enterprise, including activity of multinationals and direct investment statistics.¹

3. This note is an attempt to provide an estimated example of how to combine trade in goods and trade in services in one classification based on actual data using the links of principal products to industries, all the heroic assumptions being made explicit.

4. The structure of the note is the following: Section A gives a general overview of the correspondence tables, databases and methodology used. Section B presents the correspondence of the HS 2002 merchandise trade data with the ISIC 3.1 classification, using the product classification CPC 1.1 as a link. Section C presents the correspondence of the EBOPS 2002 service trade data with the ISIC 3.1 classification also using the product classification CPC 1.1 as a link- as far as possible. Section D presents the merge of the goods correspondence of part B and of the service correspondence of section C to ISIC 3.1 and CPC 1.1 to obtain a trade by product and industry presentation. All data are presented with reference year 2007.

¹ See Bill Cave's note [STD/SES/WPTGS(2008)16] which explores the framework and advocates the needs for a trade by product classification.

Section A: General overview of correspondence tables, databases and methodology used.

5. To convert the separate trade in goods and trade in service product based classifications to a trade by product and industry classification is a challenge considering the increasing complexity of structure of trade in a globalized world (e.g. increasing globalization of the production and distribution processes, expansion of intra-firm trade, transactions with bundled goods and services components)² and the number of bold assumptions that need to be made in order to complete such an exercise.

6. This note will consequently disregard most problems identified earlier in the literature³ in particular, in the case of trade in goods the issues of re-exports, the composition of the unallocated trade, the identification of trade in second hand goods, the problem of “secondary production” etc. In the case of services the estimates of trade by industry will also be very broad brush as the EBOPS 2002 (which is not fully product based but also transactor based in the case of travel and government services) is not detailed enough to allow a “refined” one to one correspondence with CPC 1.1 and ISIC rev 3.1.

A1. A correspondence at a modest level of disaggregation and on currently available data.

7. Because currently no trade in services data are available following the EBOPS 2010⁴, ISIC rev. 4, CPC rev. 2 classifications, it was chosen, to test this proposal for an alternative “conceptual” classification of trade by product and by industry on existing and established classifications *i.e.* ISIC rev 3.1, HS 2002 and CPC 1.1 and currently available data, *i.e.* the OECD balance of payments service trade statistics (following EBOPS 2002) and the OECD customs based merchandise trade statistics (following HS 2002) **for the reference year 2007 and with partner world only.**

...at the ISIC section level

8. The tentative correspondence was prepared, at a relatively modest level of disaggregation *i.e.* at the ISIC section level. The correspondence was established between ISIC rev. 3.1 and respectively HS 2002 and EBOPS 2002 using CPC 1.1 as a link as far as possible.

...only for exports...

9. Also, only export trade data are dealt with here, as for this type of flows, the link between industries, products and trade may be seen as less problematic since

- Secondary production⁵ issues might not be as severe as in the case of imports (as the production chain should be better known).

² Introduction to the draft *International Merchandise Trade Statistics: Concepts and Definitions* 2010.

³ Dong Guo, Nohiriko Yamano, Webb Colin, *Towards Harmonised bilateral trade data for inter-country input-output analyses: Statistical issues*, STI Working Paper 2009/4.

⁴ Except for Australia that has started publishing BoP following BPM6 with the fourth quarter data of 2009 in Australian Bureau of Statistics, *Balance of Payments and International Investment Position*, September quarter 2009.

⁵ A secondary activity is an activity carried out within a single producer unit in addition to the principal activity and whose output, like that of the principal activity, must be suitable for delivery outside the producer unit. The value added of a secondary activity must be less than that of the principal activity, by

- No CIF-FOB adjustment⁶ is needed for exports.

A2. Cross cutting issues: the cases of distribution services and software licences registered in merchandise.

10. As mentioned above, this note mainly focuses on correspondence at an aggregated level, first for customs merchandise trade and then for balance of payments service trade but it also tentatively looks at the potential size of two “cross cutting” items (components with bundled goods and services) namely:

- **Distribution services** (included in merchandise trade) which estimates are important for understanding the role of these services in trade. Distribution services is also important as this headline it is one of the 12 major categories in the W/120 which is the list that identifies relevant sectors and subsectors so as to enable WTO members to undertake specific commitments under the General Agreement on Trade in Services (GATS) (Draft *MSITS 2010*). Distribution services are estimated here grounding some basic assumptions on the US BEA experiment in measuring these flows⁷.
- **Transactions of non customized software, provided on disks with a perpetual license to use** (also included in the merchandise trade and of interest for National Accounts⁸). The software licenses are looked at here more specifically because they illustrate clearly the increasingly artificial distinction between goods and services. Indeed, from a NA point of view, it is not useful to have some parts of software presented in merchandise and the some other parts in services. National Accounts are only interested in relating Intellectual Property Products like license to use to the end user. *IMTS rev. 2*⁹ does not make distinction between periodic (which could qualifies as consumption) and perpetual licenses (which could qualify as fixed capital formation) to use for non-customized “packaged” computer software and audiovisual products¹⁰. In order to get a sense of the potential size of these specific types of software licenses of interest for National accounts¹¹ and registered in merchandise trade, it was assumed here that the HS 2002 item *Discs for laser reading systems* (HS 852439) could be considered as a proxy of non customized softwares, provided on disks with a perpetual license to use.
- **“Manufacturing services” or processing services** by commodity are not dealt with here.

definition of the latter. The output of the secondary activity is a secondary product. Most producer units produce at least some secondary products. (SNA 2008, par 5.9)

⁶ The different options for estimating freight and insurance on imports are presented in the IMF, *Balance of Payments Compilation Guide* (Washington, DC, 1995), page 119.

⁷ *Improved Measures of U.S. International Services: The case of Insurance, Wholesale and Retail Trade and Financial services*, Maria Borga, US Bureau of Economic Analysis, (2006).

⁸ Those specific type of software licenses, as highlighted in Charles Aspden’s note *Proposals for the classification of intellectual property products in MSITS and EBOPS* are classified within merchandises but the revised MSITS recommends them to be combined with other licences to use software in a memorandum item and moreover it recommends that the data related to this item should be collected with all other types of software licenses using a unique Survey of international trade in services.

⁹ International Merchandise Trade Statistics: concepts and definitions, Revision 2 (IMTS, rev.2)

¹⁰ UNSD, *International Merchandise Trade Statistics: Supplement to the Compilers Manual*, pp 83-84.

¹¹ Acknowledging that, as noted at the recent November 2009 WPTGS, their delivery on a physical media is likely to become negligible in future.

A3. The correlation tables and databases used

11. As explained in IMTS compilers guide, A correlation between two classifications (*e.g.*, A and B) is a description of the relationship between the scope of their headings. That relationship can be established by means of two tables: the table correlating headings of A to B and the table correlating headings of B to A. Each table defines the scope of the headings of one classification in terms of the scope of the headings of the other. If the scope of a given heading of classification A coincides with the scope of a single heading of classification B (a “one-to-one” relationship), the correlation of that heading to classification B is definite. If the scope of a given heading of classification A is distributed among several headings of classification B (a “one-to-many” relationship), the correlation of that heading to classification B is split. Correlation tables usually contain both definite and split correlations. (*IMTS compilers guide, par. 178*)

on the goods side:

12. From United Nations web site, following correlation table were downloaded and uploaded into an Access database:

- The ISIC3.1-CPC1.1 correspondence, which is a correspondence established between ISIC 3.1 at the 4 digit level and CPC at the 5 digit level.
- The CPC1.1-HS02 which is a correspondence established between CPC at the 5 digit level and HS at the 6 digit level.

13. Merchandise trade figures were retrieved for year 2007 for all commodities (at the 6 digits level) and all OECD countries¹². from the OECD International Trade by Commodity Statistics (ITCS) database following the HS 2002 classification.

on the service side:

- The ISIC rev 3.1-EBOPS 2002 correspondence from the *Manual on Statistics of International Trade in Services (MSITS 2002)* annex was used. This correspondence was slightly refined¹³ by using the EBOPS 2002 and CPC 1.1 correspondence drafted by Ralph Becker in 2004.

14. Trade in services data were retrieved from the OECD Trade in services data by service category for year 2007 for OECD countries.

15. The “alternative presentation” of exports by product and by industry could then be presented along the lines suggested by the correspondence in Table 1 below. The first column presents the ISIC section levels **greyed out**. The second column displays the corresponding ISIC description. The third column indicates correspondence between exported goods in HS 2002, and the producing ISIC rev 3.1 industries. The fourth and fifth columns indicate if a EBOPS item (or several) correspond to the respective ISIC sections.

16. Table 1, shows that for goods, there is correspondence with HS 2002 for the ISIC 3.1 section levels A, B, C, D, E, K and O. For services, there is correspondence between all top section levels of ISIC and EBOPS.

¹² OECD membership as of January 2010.

¹³ Hong Eun Pyo, Wistrom Bettina, Guo Jiemin (OECD), *An alternative presentation of trade by product*. (2009)

17. As no one to one correspondence is possible neither on the goods side nor on the service side, some adjustments both in the merchandise trade figures and in the service trade figures were needed. Those “one to many” adjustments are described respectively in sections B and C below. The principal adjustment needed for the trade in goods figures was to remove some duplicates (where one HS item is produced by several industries). For trade in services figures, the principal adjustment made were

- * to split (evenly) some main EBOPS categories (highlighted in the table with an asterisk) across several producing industries. This is for instance the case of EBOPS item 283 Other/Agricultural, mining and on-site processing services which is split evenly between ISIC sectors A (Agriculture, Hunting and forestry), B (Fishing) and C (mining and quarrying).
- *adj* to adjust some main EBOPS items (highlighted with the mention *adj*) for their subcomponents corresponding to another ISIC section. This is for instance the case for EBOPS item 236 (Travel) which main correspondence is with ISIC section H (hotels and restaurants) and which subcomponents EBOPS 241 (Health service) and EBOPS 242 (Education services) are both split between ISIC section L (Public administration and defence) and section M (Education).

Table 1 Correspondence table of export by product (goods and services) and industry

ISIC	ISIC description	HS 2002	EBOPS	EBOPS description
A	Agriculture, hunting and forestry	HS adj. for distribution serv.	283*	Other/ Agricultural, mining and on-site processing services -
B	Fishing	HS adj. for distribution serv.	283*	Other/ Agricultural, mining and on-site processing services-
C	Mining and quarrying	HS adj. for distribution serv.	283*	Other/ Agricultural, mining and on-site processing services
D	Manufacturing	HS adj. for distribution serv.		
D22	Publishing, printing and reproduction of recorded media		284*, 278	Other/Miscellaneous business, professional, and technical services - Advertising, market research, and public opinion polling
D28	Manufacture of fabricated metal products, except machinery and equipment		284*	Other/Miscellaneous business, professional, and technical services
D37	Recycling		282*	Waste treatment and depollution
E	Electricity, gas and water supply	HS adj. for distribution serv.	231	Pipeline transport and electricity distribution
F	Construction		249	Construction services
G	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods		269	Merchandising and other trade related services (only for sale and retail sales)
H	Hotels and restaurants		957, 236 ^{adj*}	Expenditure on accommodation and food and beverage services & part of travel
I	Transport, storage and communications			Part of Transport, Travel, Communication services
I60	Land transport; transport via pipelines		205 ^{adj}	Transport
I61	Water transport		205 ^{adj}	Transport
I62	Air transport		205 ^{adj}	Transport
I63	Supporting and auxiliary transport activities; activities of travel agencies		205 ^{adj} , 236 ^{adj*}	Transport, travel
I64	Post and telecommunications		245	Communication services
J	Financial intermediation			Financial services, insurance services part of royalties and license fees
J65	Financial intermediation, except insurance and pension funding		260	Financial services
J66	Insurance and pension funding, except compulsory social security		253	insurance services

ISIC	ISIC description	HS 2002	EBOPS	EBOPS description
K	Real estate, renting and business activities	HS adj. for distribution serv.		Most of other Business services (268): Research & development, legal services, Services between affiliated enterprises n.i.e.,- Business and management consultancy and public relations services, Operational leasing services
K70	Real estate activities		284*	Other business activities
K71	Renting of machinery and equipment without operator and of personal and household goods		272, 288	Operational leasing services, Audiovisual and related services
K72	Computer and related activities		262*, 266*	Computer & information services- Royalties and license fees
K73	Research and development		279	Research and development
K74	Other business activities		274,280,284*,285,268 ^{adj}	Other/Miscellaneous business, professional, and technical services and business services not allocated elsewhere (268 adj)
L	Public administration and defence; compulsory social security		291, 241*, 242*	Government services, n.i.e., Health services, Education services
M	Education		895, 242*	Education services PCR, education related expenditure (travel)
M8090	Other education		262*	Computer & information services
N	Health and social work		896, 241*	Health services PCR, health related expenditure (travel)
O	Other community, social and personal service activities	HS adj. for distribution serv.	897*	Other/Other personal, cultural and recreational services
O90	Sewage and refuse disposal, sanitation and similar activities		282*	Waste treatment and depollution
O91	Activities of membership organizations		289 ^{adj}	Other personal, cultural and recreational services
O92	Recreational, cultural and sporting activities		266*, 288, 262*	Royalties and license fees-Audiovisual and related services-computer and information services
P	Activities of private households as employers and undifferentiated production activities of private households		897*	Other/Other personal, cultural and recreational services
Q	Extraterritorial organizations and bodies		291	Government services, n.i.e.

Notes: EBOPS items highlighted with an asterisk have multiple correspondence with ISIC sections.

^{Adj} means that only a part of the EBOPS item value is allocated to the corresponding ISIC section. However the totality of the EBOPS item value would be allocated if no data for the subcomponents of the EBOPS item (showing a different correspondence) is available.

< Table 1 could be updated with detailed CPC 1.1 and ISIC 3.1 correspondence >

Section B. The merchandise correspondence : linking ISIC rev 3.1, CPC 1.1 and HS 2002

18. Correspondence between ISIC rev 3.1 and HS 2002 is prepared using the product classification (covering both goods and services) CPC 1.1 as an intermediary link. HS series are split in the different divisions of ISIC at the 6 digit level and then summed up at the sections (or top levels) A,B,C,D,E,K, and O as presented in Table 1. Table 1 sets out for which seven sections of ISIC, corresponding merchandise trade HS series are available.

19. When an “automatic” correspondence is performed between ISIC, CPC and HS, the values obtained for total commodity exports by activity of country A are superior to the total exports declared by this same country directly through HS 2002. The correspondence then needs to be cleaned of its “one to many” correspondences, this means removing some HS “duplicates” as described in section B1 below.

B1. Removing “duplicates”- The cases of “fishing” and “discs for laser reading systems”

20. As there is no one to one correspondence between ISIC and HS - CPC being used as an intermediate -, one HS series can consequently be allocated to (or produced by) several industries, hence generating some double countings when producing a trade by industry table. Some “duplicate” HS series do then need to be removed if the total trade by industry is to be consistent with the total trade figure provided by individual countries to International Organizations. However at this level of disaggregation, these “duplicates” are not very abundant (about 80 series) when compared to the total number of HS series available at the 6 digit level (about 4900 series)

BOX 1: HS 2002-CPC 1.1-ISIC 3.1 duplicates follow different patterns

Duplicates are disseminated throughout the correspondence following different patterns. One HS code can correspond to several intermediate CPC codes within the same industry or one CPC code can correspond to several industry codes.

-One HS code corresponds to several CPC codes within the same ISIC section: One exemple is HS commodity 121299 (Vegetable prods., incl. sugar cane & unroasted chicory roots (Chicorium...)) which is allocated both to CPC codes 01990 (Other raw vegetable materials) and 01820 (Sugar cane) which both belong to Industry A (Agriculture, hunting and forestry). Another example is the case for CPC code 21612 (corresponding to HS 150500: Wool Grease & fatty substances derived therefrom including lanolin) which belongs both to manufacturing industry (ISIC D) class 1511 (Production, processing and preserving of meat and meat products) and (ISIC D) class 1711 (Preparation and spinning of textile fibres; weaving of textiles).

-One HS code correspond to several CPC codes across several ISIC sections. An example is HS commodity 220190 Ice & Snow which is allocated both to CPC codes 24410 & 18000 which correspond respectively to Industry D (Manufacturing) ISIC code 1554 (Manufacture of soft drinks; production of mineral waters) and Industry E (Electricity, gas and water supply) ISIC class 4100 (Collection, purification and distribution of water).

21. About half of the duplicates (around 35) are related to ISIC section B (Fishing) where the same HS commodity can be linked to both ISIC classes 0501 (Fishing) and 0502 (Aquaculture).

22. Another case of interest is the HS 2002 item 852439: Discs for laser reading systems which can be allocated:

- First to industry section D (Manufacture) and more precisely to the following three classes of industry section D: 2213 publishing of music; 2230 Reproduction of recorded media and 2211 Publishing of books, brochures and other publications.
- Second to the service industry section K (real estate, renting and business activities) and more precisely to class 7221 Software publishing.

23. To evaluate the relative size of this HS item is useful because some of the software licences provided on these DVDs could qualify as GFCF and be consequently of interest for national accounts. It however also be noted that the composition of this item is very heterogeneous as both high value items (like contemporary art videos of a value of more than 50,000 dollars) and low value items (reproduction of music or videos at about 10 dollars or less) can be registered in there¹⁴. So obviously, it is impossible at this stage to have a clear view of the relative size of software licenses – compared to other content - included in the transaction value of the DVDs presented in the HS item 852439 .

24. Depending on what ISIC category it is allocated to, HS item 852439 (which can consequently hold both softwares that qualify for NA GFCF and low value DVDs) has a significant impact on its size. If the totality of HS 852439 is allocated to ISIC section K, it would represents the major part (more than 90%) of the amount of international transactions in merchandise produced by this specific goods and services producing industry. If it is allocated to ISIC section D , it would represents less than 1% of the merchandise transactions allocated to the manufacturing industry. (see section *D.3 Exports of goods and services by industry* for a view on the effect of allocating HS 852439 either to section D or to section K).

25. The Tables 3, 4 and 5 below present for the total OECD, Germany, the US and Japan the impact on commodity trade data (in USD) of the removal of duplicates in the correspondance. As noted above, the category that are most affected are sections B & K.

26. When removing duplicates, the value of section B (Fishing) is divided by two. This broadly corresponds to the subtraction of the aquaculture related transactions.

27. Section K (real estate, renting and business activities) is also especially affected by the removal of duplicates. When removing duplicates, only 6.2% for the total OECD, 6.2% for Germany and 4.3% for the US of the initial amount of exports remains. Japan is less affected as a substantial (38%) part of section K is covered by HS item 370590: Photographic plates & film, exposed & developed. As explained above, the main reason is that commodity 852439: Discs for laser reading systems (excl. those for repr. phenomena other...) is corresponding to various divisions of industry section D but also to the ISIC class 7221 Software publishing in industry section K. This raises the question of how best to allocate the Discs for laser reading systems. in category the service industry section K or in the manufacturing industry section D.

¹⁴

For instance, french customs recommend that video installations (contemporary arts) should be classified with DVDs as “it is the mode of delivery” that matters for classifying items into the Combined Nomenclature. It should be noted that in the case of trade in services, it is not the mode of delivery that matters for allocating into EBOPS but the content of the service.

Table 2 Removing duplicates in HS 2002-ISIC rev 3.1 for OECD data (year 2007).

ISIC sections	Value after duplicates removal	Before duplicates removal	Difference in %
A Total	183919.20	184016.86	99.95%
B Total	12897.34	25608.20	50.36%
C Total	362373.16	362373.16	100.00%
D Total	7607130.30	8548127.93	88.99%
E Total	22964.75	23230.59	98.86%
K Total	1376.12	22351.94	6.16%
O Total	19947.46	19947.46	100.00%
Grand Total	8210608.33	9185656.15	89.39%
	Million USD		

Table 3 Removing duplicates in HS 2002-ISIC rev 3.1 for German data (year 2007).

ISIC Sections	Value after duplicates removal	Before duplicates removal	Difference in %
A Total	10224.54	10244.76	99.80%
B Total	321.48	642.57	50.03%
C Total	2070.49	2070.49	100.00%
D Total	1210131.38	1298378.56	93.20%
E Total	4070.77	4076.62	99.86%
K Total	350.62	5655.66	6.20%
O Total	649.24	649.24	100.00%
Grand Total	1227818.52	1321717.89	92.90%
	Million USD		

Table 4 Removing duplicates in HS 2002-ISIC rev 3.1 for US data (year 2007).

ISIC sections	Value after duplicates removal	Before duplicates removal	Difference in %
A Total	51565.39	51570.33	99.99%
B Total	850.68	1672.98	50.85%
C Total	16288.46	16288.46	100.00%
D Total	1022333.54	1131946.47	90.32%
E Total	995.66	1019.30	97.68%
K Total	148.27	3428.57	4.32%
O Total	7070.37	7070.37	100.00%
Grand Total	1099252.38	1212996.48	90.62%
	Million USD		

Table 1. Table 5 removing duplicates in HS 2002-ISIC rev3.1 for Japanese data (year 2007)

ISIC sections	Value after duplicates removal	before duplicates removal	Difference in %
A Total	408.07	409.20	99.72%
B Total	359.74	717.56	50.13%
C Total	228.16	228.16	100.00%
D Total	669342.08	714321.57	93.70%
E Total	0.66	0.66	100.00%
K Total	508.38	1327.50	38.30%
O Total	127.16	127.16	100.00%
Grand Total	672612.49	717131.81	93.79%

B2. Applying ISIC rev.3, CPC 1.1 and HS 2002 correspondence on data “cleaned” for duplicates.

28. From the OECD ITCS, in HS 2002 and for the reference year 2007, in the case of the US for instance, 6188 export series were extracted, 4877 (78,8%) being at the target 6 digit level. 4870, 6 digit level series were distributed across ISIC 3.1 sections using UN correspondence (with CPC 1.1 as intermediary). Included in that number of 4870 series are about 81 duplicates which were removed¹⁵. The same treatment was applied on OECD, German and Japanese data.

29. As observed in following Tables (from a.31 to a.34 and related figures), the vast majority of the commodity trade exports figures correspond to the manufacturing industry *i.e.* 87.95% for USA, 88.03% for OECD, 91.7% for Germany, 93.82% for Japan¹⁶.

30. The “non allocated” part presented in the Tables corresponds to HS code 999999 in ITCS: (Commodities not specified according to kind). The residual is the difference between the total exports extracted from the database and the sum of the non-allocated (HS 999999) and of all the six digit HS codes allocated across ISIC section levels. HS code 999999 represents up to 6.66% of Germany’s total exports which is substantial amount. The size of this HS code can be linked to the problem of non-conversion of memorandum items in the OECD and UN trade databases which is particularly acute for European countries (see below).

31. As highlighted in Improving the data quality of merchandise trade statistics. The OECD international trade by commodity statistics (ITCS) database: Allocating data from HS 6 digit to HS 2 digit¹⁷, some non standard codes and in particular Memorandum Items¹⁸ are not converted across HS classification in the OECD and UN international trade by commodity databases but “dumped” into HS

¹⁵ An option for future work could be not to remove the Goods duplicated but to split them across the ISIC section to be in line with the methodology employed for services.

¹⁶ The HS item 852439: Discs for laser reading systems was allocated here to the manufacturing industry.

¹⁷ Gonnard Eric, Serve Blandine, Webb Colin, *Improving the data quality of merchandise trade statistics. The OECD international trade by commodity statistics (ITCS) database: Allocating data from HS 6 digit to HS 2 digit*, STD/SES/WPTGS(2009)14

¹⁸ Memorandum Items are defined as special codes to process as accurately as possible special transactions and complement the HS classification for coding and disseminating every kind of customs/administrative transactions. These memorandum are particularly important when processing data from EU member countries. Confidential data are often coded in those Memorandum Items. Gonnard Eric, Serve Blandine, Webb Colin, *STD/SES/WPTGS(2009)14*, p. 3.

code 999999. This is a serious problem as in principle, and if at all possible, Memorandum Items (at the 6 digit level) for the target HS classification (here HS 2002) should also be allocated by ISIC. As the present study is based on HS 2002, the data for 2007 are converted from HS 2007 and the Memorandum Items are directly dropped in an inflating HS 999999. Efforts are being undertaken by OECD in cooperation with the UN to deal with this problem of non conversion of the Memorandum Items across the different versions of the HS classifications.

32. A closer investigation should also be undertaken on the calculated “residual” amount which represents up to 2.2% (*i.e.* 25.459 millions of USD) of the US total exports for 2007.

Table 5. OECD (2007) commodity exports by industry section.

ISIC rev 3.1	Commodity Values (million USD)	% of total
A: Agriculture, hunting and forestry	183919.2	2.13%
B: Fishing	12897.3	0.15%
C: Mining and quarrying	362373.2	4.19%
D: Manufacturing	7607130.3	88.03%
E: Electricity, gas and water supply	22964.7	0.27%
K: Real estate, renting and business activities	1376.1	0.02%
O: Other community, social and personal service activities	19947.5	0.23%
HS Not allocated	328112.7	3.80%
Residual	102908.0	1.19%
Total goods calculated from ITCS	8641629.0	100.00%

Table 6. US (2007) commodity exports by industry section.

ISIC rev 3.1	Commodity value (million USD)	% of total
A: Agriculture, hunting and forestry	51,565.39	4.44%
B: Fishing	850.68	0.07%
C: Mining and quarrying	16,288.46	1.40%
D: Manufacturing	1,022,333.54	87.95%
E: Electricity, gas and water supply	995.66	0.09%
K: Real estate, renting and business activities	148.27	0.01%
O: Other community, social and personal service activities	7,070.37	0.61%
HS Not allocated	37,731.86	3.25%
Residual	25,459.09	2.19%
Total goods extracted from ITCS	1,162,443.33	100.00%

Table 7. Germany (2007) commodity exports by industry section.

ISIC rev 3.1	Commodity value (million USD)	% of total
A: Agriculture, hunting and forestry	10224.5	0.77%
B: Fishing	321.5	0.02%
C: Mining and quarrying	2070.5	0.16%
D: Manufacturing	1210131.4	91.07%
E: Electricity, gas and water supply	4070.8	0.31%
K: Real estate, renting and business activities	350.6	0.03%
O: Other community, social and personal service activities	649.2	0.05%
HS Not allocated	88477.0	6.66%
Residual	12545.9	0.94%
Total goods extracted from ITCS	1328841.4	100.00%

Table 8. Japan (2007) commodity exports by industry section.

ISIC rev 3.1	Commodity value (million USD)	% of total
A: Agriculture, hunting and forestry	408.1	0.06%
B: Fishing	359.7	0.05%
C: Mining and quarrying	228.2	0.03%
D: Manufacturing	669342.1	93.70%
E: Electricity, gas and water supply	0.7	0.00%
K: Real estate, renting and business activities	508.4	0.07%
O: Other community, social and personal service activities	127.2	0.02%
HS Not allocated	35597.2	4.98%
Residual	7755.6	1.09%
Total goods extracted from ITCS	714327.0	100.00%

Figure 1. OECD merchandise exports by ISIC rev 3.1

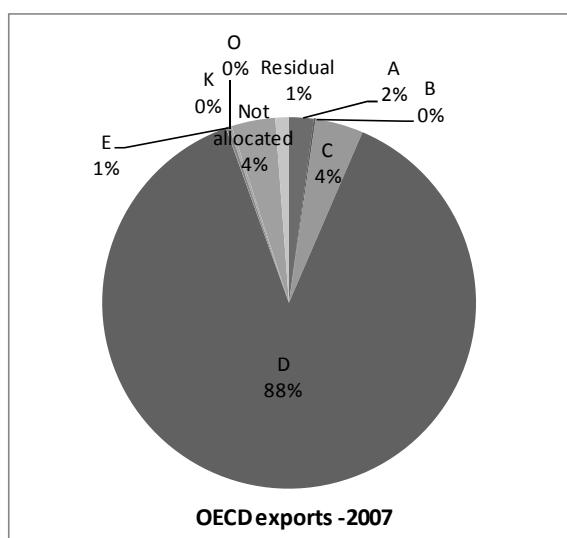


Figure 2. USA merchandise exports by ISIC rev 3.1

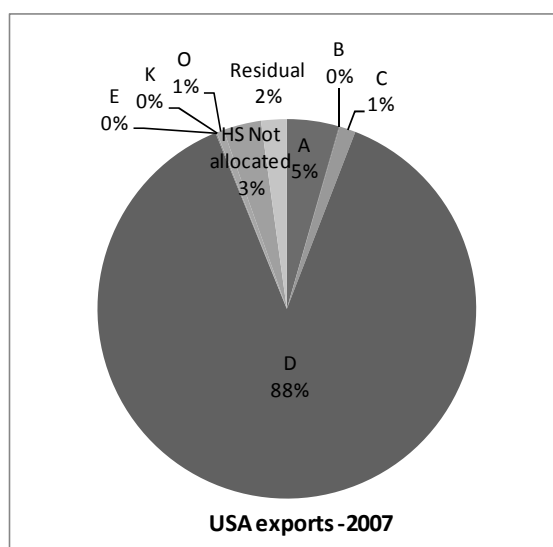


Figure 3. Germany merchandise exports by ISIC rev 3.1

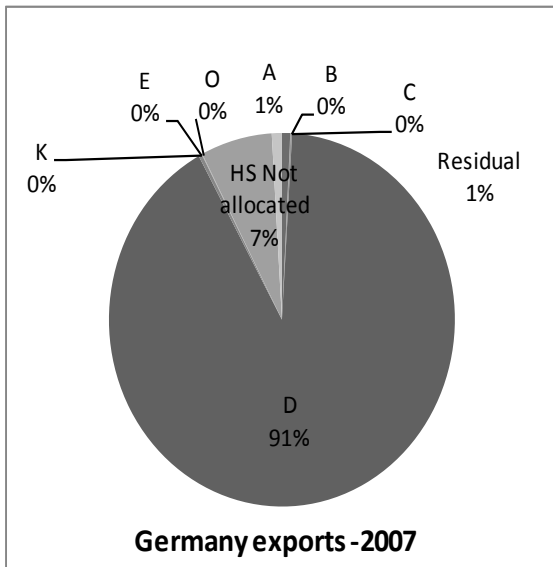
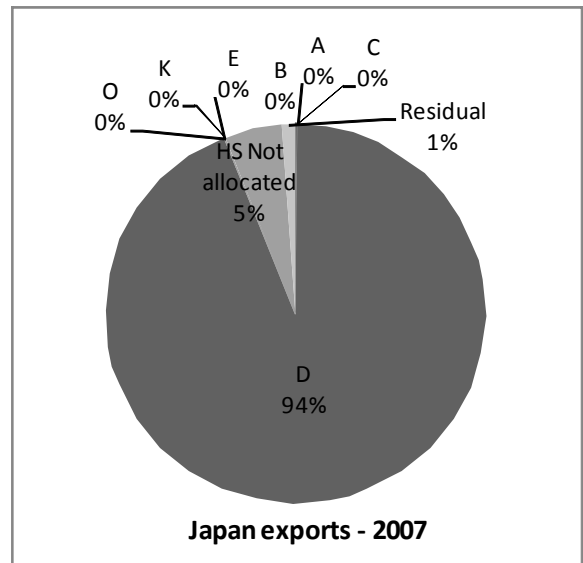


Figure 4. Japan merchandise exports by ISIC rev 3.1



B3. Dealing with distribution services

33. Following the US experimental estimates of distribution services associated with cross border trade, distribution services (included in the value of exports classified following HS) could be calculated and on the export side could represent 10 % of total services as explained in the box 2.

Box 2: U.S. experimental estimates of distribution services associated with cross-border trade

The inclusion of these distribution services in the value of merchandise trade follows the treatment recommended in BPM6 and reflects the fact that data on cross-border trade are collected by product. In this case, the product is an exported or imported good, and its value includes the distribution services used to arrange for its export or import. As a consequence, statistics on cross-border trade in services do not include estimates of distribution services provided by exporters because those services are included in the value of trade in goods.

Nevertheless, services provided by wholesalers and retailers could be important as shown by the US Bureau of Economic Analysis (BEA) estimates. BEA has constructed these estimates of distribution services associated with merchandise trade by using exports of goods of wholesalers and retailers and the average percentage of distribution services per dollar of sales of goods. For imports, it assumed that foreign wholesalers accounted for the same share of U.S. imports as U.S. wholesalers did of U.S. exports. These 2002 experimental results show that considering these figures for GATS purposes would increase U.S. exports and imports of services (resident/non-resident trade) by more than 10 percent and 20 percent respectively.

Source: *Improved Measures of U.S. International Services: the Cases of Insurance, Wholesale and Retail Trade, and Financial Services*, U.S. BEA (2006)

34. In order to get a sense of the potential size of distribution services for the 4 target zones presented in this note, the US assumptions related to distribution services were applied to merchandise trade figures of the US, Germany, Japan and the OECD.

B3.1 Identifying distribution services in commodity exports values.

35. According to the BEA study, distribution services included in merchandise trade could increase US exports and imports **of services** by more than 10 percent and 20 percent respectively (Box 2). Consequently it is assumed here that, as total distribution services included in total merchandise trade could represent 10 % of total services exports, (*i.e* 49315.7 million USD in the case US exports in 2007), it is possible to identify distribution services by Industry sections A,B,C,D,E,K,O by breaking down this total distribution services amount according to the export value share of each section in the total commodity export value. Thus this method provides us with a mean to isolate distribution services in the seven (mainly goods producing) industry sections.

Table 9 Estimated distribution services for the US.

ISIC rev 3.1	% of total	Distribution services (Million USD)
A: Agriculture, hunting and forestry	4.44%	2,187.62
B: Fishing	0.07%	36.09
C: Mining and quarrying	1.40%	691.02
D: Manufacturing	87.95%	43,371.66
E: Electricity, gas and water supply	0.09%	42.24
K: Real estate, renting and business activities	0.01%	6.29
O: Other community, social and personal service activities	0.61%	299.95
HS Not allocated	3.25%	1,600.74
Residual	2.19%	1080.0810
10% of US total services exports	100.00%	49,315.70

The same principle for calculating distribution services can be applied to OECD total, Germany or Japan as presented below.

Table 10 Estimated distribution services for the OECD total

ISIC rev 3.1	% of total	Distribution services (Million USD)
A: Agriculture, hunting and forestry	2.13%	5,363.20
B: Fishing	0.15%	376.09
C: Mining and quarrying	4.19%	10,567.03
D: Manufacturing	88.03%	221,828.67
E: Electricity, gas and water supply	0.27%	669.67
K: Real estate, renting and business activities	0.02%	40.13
O: Other community, social and personal service activities	0.23%	581.68
HS Not allocated	3.80%	9,567.97
Residual	1.19%	3,000.86
10 % of OECD total services exports	100.00%	251,995.30

Table 11. Estimated distribution services for Germany

ISIC rev 3.1	% of total	Distribution services (Million USD)
A: Agriculture, hunting and forestry	0.77%	166.58
B: Fishing	0.02%	5.24
C: Mining and quarrying	0.16%	33.73
D: Manufacturing	91.07%	19716.11
E: Electricity, gas and water supply	0.31%	66.32
K: Real estate, renting and business activities	0.03%	5.71
O: Other community, social and personal service activities	0.05%	10.58
HS Not allocated	6.66%	1441.51
Residual	0.94%	204.40
10% of Germany's total services exports	100.00%	21650.20

Table 12. Estimated distribution services for Japan

ISIC rev 3.1	% of total	Distribution services (million USD)
A: Agriculture, hunting and forestry	0.06%	7.37
B: Fishing	0.05%	6.50
C: Mining and quarrying	0.03%	4.12
D: Manufacturing	93.70%	12090.05
E: Electricity, gas and water supply	0.00%	0.01
K: Real estate, renting and business activities	0.07%	9.18
O: Other community, social and personal service activities	0.02%	2.30
HS Not allocated	4.98%	642.98
Residual	1.09%	140.09
10% of Total services extracted from TIS	100.00%	12902.60

C. The service correspondence : linking ISIC rev 3.1, CPC 1.1 and EBOPS 2002.

36. An approximate correspondence is established between ISIC rev 3.1 and EBOPS 2002, using the correspondence presented in the MSITS 2002, which was extended using EBOPS 3.1-CPC 1.1 correspondence information (see Table 1 and annex for EBOPS- ISIC correspondence)

C1. A weak correspondence between EBOPS 2002 and CPC 1.1

37. As in the case of merchandise, and even more acutely, no one to one correspondence is possible between the different ISIC rev 3.1 industry sections and the EBOPS 2002 classification which is much less detailed than the HS 2002 as it only holds 85 items. Also the EBOPS classification is only partly a product classification as two main items are transactors based namely the travel and government services. At the level of the higher aggregates of the EBOPS and ISIC classifications, an approximate correspondence is however possible. Finding correspondences principally at the level of the 12 main categories of services¹⁹ also allows to calculate OECD totals as at a finer level of the EBOPS classification, data might not be available.

Allocating EBOPS 266 (Royalties and license fee)s to ISIC 3.1.

38. One of the (many) difficult points in these (now earlier) versions of the trade and product classifications is to allocate the EBOPS item 266 royalties and license fees²⁰ across ISIC items - as those services could be produced, at least as a secondary activity by many different industries.. It was assumed here that Royalties and License fees can be allocated evenly to ISIC section K class 7221 (Computer and related activities) and section O class 9222 (Recreational, cultural and sporting activities).

¹⁹ With the exception of items 205 (transportation), 236 (travel), 268 (Other business services) and 289 (Other personal, cultural and recreational services) which find correspondence at a finer level see below.

²⁰ Which corresponds broadly to CPC 1.1 item 733 (Licensing services for the right to use non-financial intangible assets).

²¹ K7221:Software publishing

²² O 921:Motion picture, radio, television and other entertainment activities

Allocating EBOPS 262 (Computer and information) to ISIC 3.1.

39. Another example of the numerous assumptions made in the present note is the even allocation of EBOPS item 262 Computer and information services to ISIC section K division 72 (Computer and related services), section M class 8090 (Other Education), and section O division 92 (Recreational, cultural and sporting activities).

40. One service category can correspond to (or be produced by) several industries and one industry can correspond to (or produce) several types of services.

Allocating EBOPS 283 (Other/ Agricultural, mining and on-site processing services) to several ISIC 3.1 sections

41. In the context of the present conceptual correspondence, it was boldly chosen to distribute evenly each EBOPS item to the corresponding ISIC section. For instance the value of EBOPS item 283 (Other/ Agricultural, mining and on-site processing services) would be distributed equally (total amount divided by three) to the three ISIC sections

- A (Agriculture, hunting and forestry),
- B (Fishing) and
- C (Mining and quarrying).

Allocating ISIC section K division 74 (Architectural Other business activities) to several EBOPS items.

42. When Several EBOPS items correspond to on ISIC section, the EBOPS items are simply summed up to match with the ISIC section. For instance the values of the five following EBOPS items are summed up and allocated to ISIC section K division 74:

- EBOPS 274 Legal, accounting, management consulting, and public relations which corresponds to ISIC class 7412 (Business and management consultancy activities)
- EBOPS 280 Architectural, engineering, and other technical services
- EBOPS 284 Miscellaneous business, professional and technical services
- EBOPS 285 Services between affiliated enterprises
- EBOPS 268^{adj} which correspond to the item 268 other business services less available breakdown of item 268 that has a specific correspondence to other ISIC sections (see below “Adjusting EBOPS 268 Other business services”).

Adjusting EBOPS 205 (Transportation).

43. Some specific adjustments have been made for instance in the case of EBOPS item 205 (transportation): as EBOPS item 231 (Pipeline transport and electricity distribution) has been allocated to ISIC section E (Electricity, gas and water supply), and as item 231 is a component of item 205 transportation services which is allocated to ISIC section I (Transport, storage and communications), item 231 is subtracted from EBOPS item 205 when allocated to ISIC section I in order to avoid double counting.

Adjusting EBOPS 236 (Travel).

44. Following the same logic, in order to avoid double countings, the values of EBOPS items 241 and 242 which correspond respectively to Travel/Health related expenditure and Travel/education related expenditure are subtracted from the total value of EBOPS item 236²³, as

- EBOPS 241 has been evenly broken down into to ISIC sections L (Public administration and defence; compulsory social security) and N (Health and social work) and
- EBOPS242 has been evenly broken down to ISIC sections L (Public administration and defence; compulsory social security), and M (Education).

Adjusting EBOPS 289 (Other personal, cultural and recreational services).

45. In the case of EBOPS item 289 (Other personal, cultural and recreational services), if no breakdown into items 895 (Education), 896 (Health) and 897 (other) is available, item 289 is allocated to ISIC section O division 91 (Activities of membership organizations).

Adjusting EBOPS 268 (Other business services).

1. For the present exercise EBOPS services items are allocated to ISIC mainly at the level of the main categories of services. However regarding EBOPS item 268 (Other business services) -but also in the case of item 289 described earlier-, a finer level was used to feed in ISIC items as this broad EBOPS category corresponds to many different industry sections *i.e.*:

- Section A (Agriculture, hunting and forestry),
- Section B (Fishing),
- Section C (Mining and quarrying),
- Section D
 - Division 22 (Publishing, printing and reproduction of recorded media),
 - Division 28 (Manufacture of fabricated metal products, except machinery and equipment),
 - Division 37 (Recycling)
- Section G (Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods)
- And Section K (Real estate, renting and business activities)
 - Division 70 (Real estate activities),
 - Division 71 (Renting of machinery and equipment without operator and of personal and household goods),
 - Division 73 (Research and development and division),
 - Division 74 (Other business activities)

²³ Which corresponds both to ISIC section H (Hotels and restaurants) and ISIC section I division 63 (Supporting and auxiliary transport activities; activities of travel agencies).

- Also when subaggregates to EBOPS item 268 are not or partly available, an adjusted item 268 (EBOPS 268 less available components) is assigned to section K division 74 (other business activities).

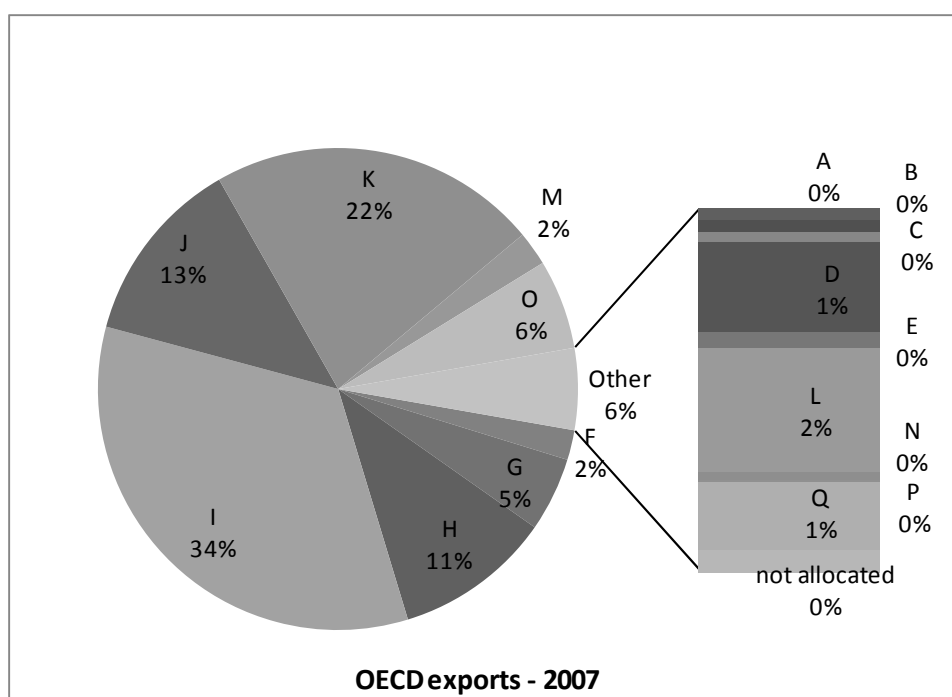
C2. Conceptual correspondence of services exports by industry section.

46. The table and figures below present for the total OECD, the United States, Germany and Japan the results of the allocation rules for trade in services by ISIC sections presented above,

Table 13. Conceptual correspondence of services exports by industry sections – OECD.

ISIC item	Value in million USD	% of total
A : Agriculture, hunting and forestry	4372.86	0.17%
B : Fishing	4372.86	0.17%
C : Mining and quarrying	4372.86	0.17%
D : Manufacturing	34606.37	1.37%
E : Electricity, gas and water supply	5689.86	0.23%
F : Construction	50703.40	2.01%
G : Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	125359.99	4.97%
H : Hotels and restaurants	266233.79	10.57%
I : Transport, storage and communications	853911.99	33.89%
J : Financial intermediation	316824.57	12.57%
K : Real estate, renting and business activities	558183.46	22.15%
L : Public administration and defence; compulsory social security	48198.89	1.91%
M : Education	57709.27	2.29%
N : Health and social work	2641.26	0.10%
O : Other community, social and personal service activities	152172.13	6.04%
P : Activities of private households as employers and undifferentiated production activities of private households	1286.18	0.05%
Q : Extraterritorial organizations and bodies	25551.98	1.01%
EBOPS Total services not allocated	7761.28	0.31%
Total Services	2519953.00	100.00%

Figure 5. OECD exports of services by ISIC rev 3.1

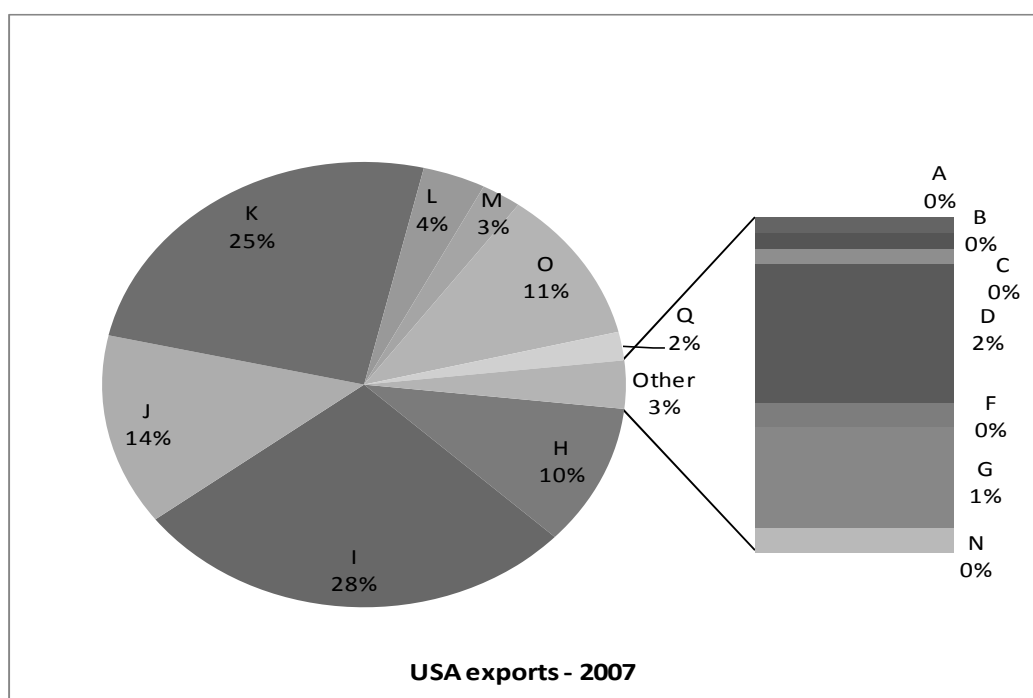


47. In the case of the OECD, most (34%) of the exports of services are produced by Industry I (Transport Storage and Communication), followed by Industry K (22%) (Real estate, renting and business activities), Industry J (Financial intermediation) (13%) and Industry H (Hotels and restaurants) (11%).

Table 14. Conceptual correspondence of services exports by industry sections – US.

ISIC item	Value in million USD	% of total
A : Agriculture, hunting and forestry	797.55	0.16%
B : Fishing	797.55	0.16%
C : Mining and quarrying	797.55	0.16%
D : Manufacturing	7161.52	1.45%
F : Construction	1170.00	0.24%
G : Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	5267.73	1.07%
H : Hotels and restaurants	50592.00	10.26%
I : Transport, storage and communications	136370.19	27.65%
J : Financial intermediation	68553.00	13.90%
K : Real estate, renting and business activities	123859.59	25.12%
L : Public administration and defence; compulsory social security	19257.50	3.90%
M : Education	12108.57	2.46%
N : Health and social work	1153.00	0.23%
O : Other community, social and personal service activities	55032.84	11.16%
Q : Extraterritorial organizations and bodies	10238.50	2.08%
Total Services	493157.09	100.00%

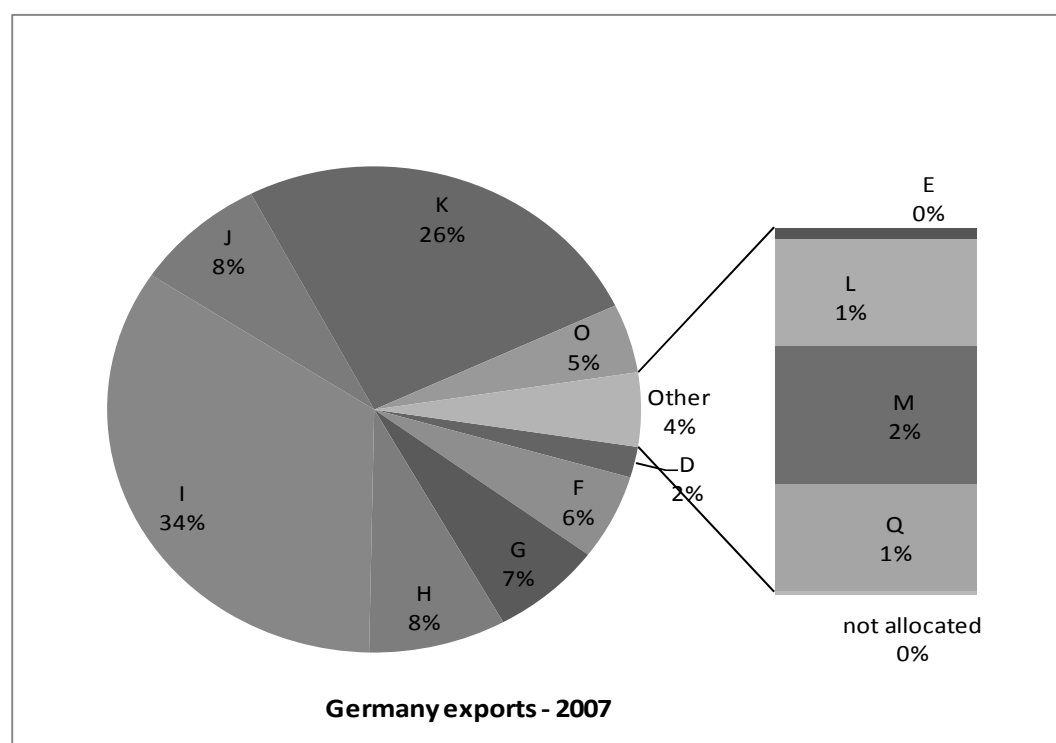
Figure 6. US services exports by ISIC rev 3.1



48. In the case of the US, most (28%) of the exports of services are produced by Industry I, (Transport Storage and Communication), followed by Industry K (25%) (Real estate, renting and business activities), Industry J (Financial intermediation) (14%) and Industry H (Hotels and restaurants) (10%).

Table 15. Conceptual correspondence of services exports by industry sections – Germany

ISIC item	Value in million USD	% of total
A : Agriculture, hunting and forestry		
B : Fishing		
C : Mining and quarrying		
D : Manufacturing	4472.11	2.07%
E : Electricity, gas and water supply	354.48	0.16%
F : Construction	12301.50	5.68%
G : Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	14654.30	6.77%
H : Hotels and restaurants	17990.40	8.31%
I : Transport, storage and communications	73707.29	34.04%
J : Financial intermediation	17433.99	8.05%
K : Real estate, renting and business activities	55299.68	25.54%
L : Public administration and defence; compulsory social security	3151.35	1.46%
M : Education	4039.83	1.87%
N : Health and social work		
O : Other community, social and personal service activities	9944.25	4.59%
P : Activities of private households as employers and undifferentiated production activities of private households		
Q : Extraterritorial organizations and bodies	3151.35	1.46%
EBOPS Total services not allocated	1.48	0.00%
Total Services	216502.00	100.00%

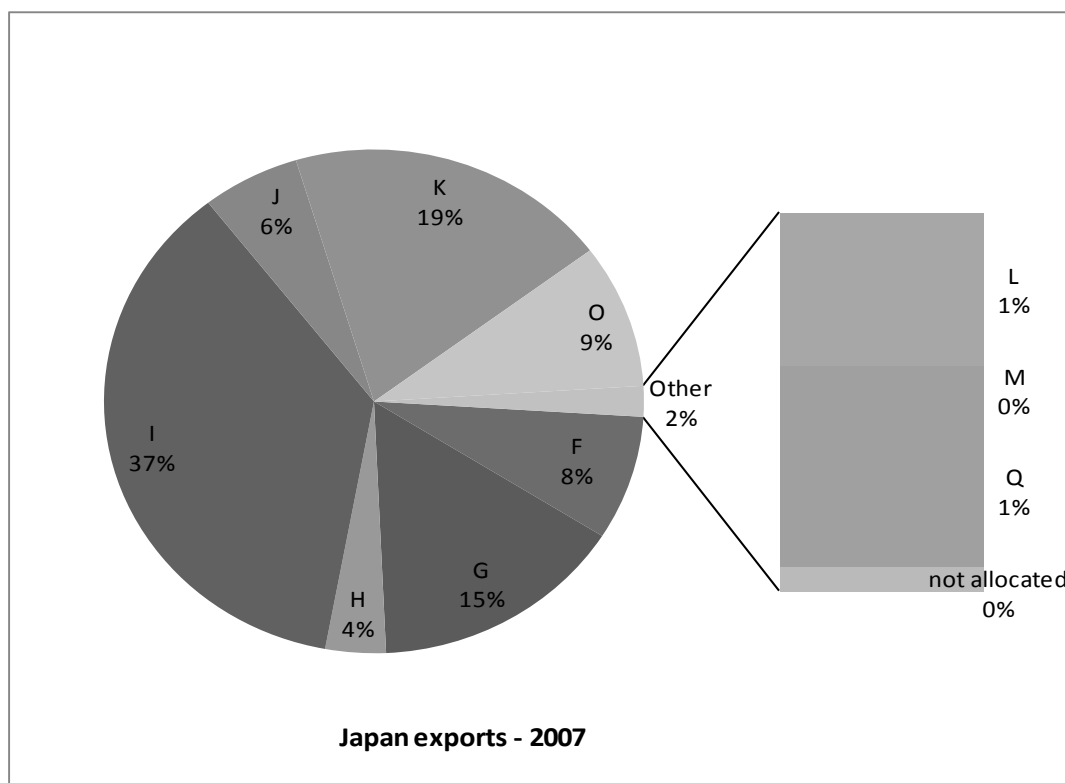
Figure 7. Germany exports of services by ISIC rev. 3.1

49. In the case of Germany, most (34%) of the exports of services are again produced by Industry I, (Transport Storage and Communication), followed by Industry K (Real estate, renting and business activities with 26% of total share, Industry J (Financial intermediation) and Industry H (Hotels and restaurants) both with 8% of total share.

Table 16. Conceptual correspondence of services exports by industry sections – Japan.

ISIC item	Value in million USD	% of total
A : Agriculture, hunting and forestry		
B : Fishing		
C : Mining and quarrying		
D : Manufacturing		
E : Electricity, gas and water supply		
F : Construction	10315.60	7.99%
G : Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	19756.40	15.31%
H : Hotels and restaurants	4666.51	3.62%
I : Transport, storage and communications	47174.61	36.56%
J : Financial intermediation	7560.68	5.86%
K : Real estate, renting and business activities	25082.12	19.44%
L : Public administration and defence; compulsory social security	1028.84	0.80%
M : Education	322.42	0.25%
N : Health and social work		
O : Other community, social and personal service activities	11934.32	9.25%
P : Activities of private households as employers and undifferentiated production activities of private households		
Q : Extraterritorial organizations and bodies	1028.84	0.80%
EBOPS Total services not allocated	155.65	0.12%
Total Services	129026.00	100.00%

Figure 8. Japan exports of services by ISIC rev. 3.1



50. Ultimately, in the case of Japan, most (37%) of the exports of services are produced by Industry I, (Transport Storage and Communication), followed by Industry K (19%) (Real estate, renting and business activities), Industry G (15%) (Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods) and Industry O (9%), (Other community, Social and personal service activities).

D. Merging the goods and the service correspondences to obtain trade by product and industry.

D.1 At the total level

51. From figures 9 to 12 below, it can be drawn that in 2007 for the total OECD, services industry exports represented 25% of the total industry exports, (including estimated distribution services). 33% of USA's total industry exports were services industry exports reflecting the US strong position in the service industry. Germany and Japan, more specialised in merchandise exports, only had respectively 15 and 17 % of their total exports covered by the services industries. These figures match quite well with the ratios from the balance of payments figures for the same year.

Figure 9. OECD total exports by main activity (2007)

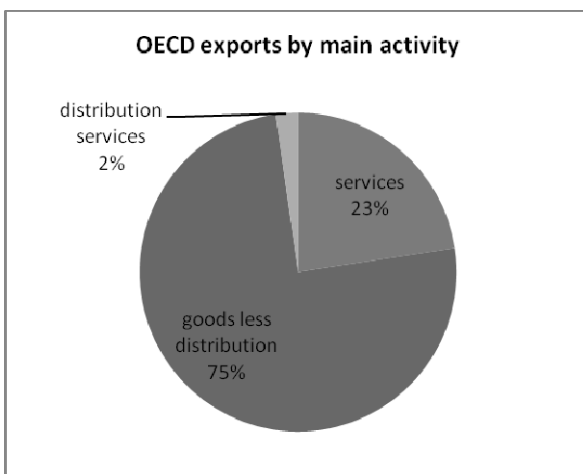


Figure 10. US total exports by main activity (2007)

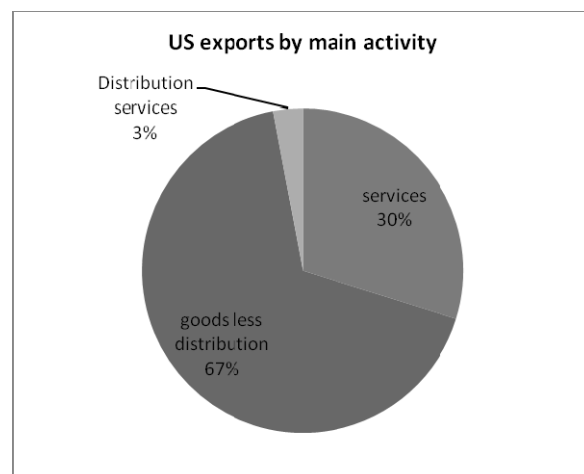


Figure 11. Germany total exports by main activity (2007)

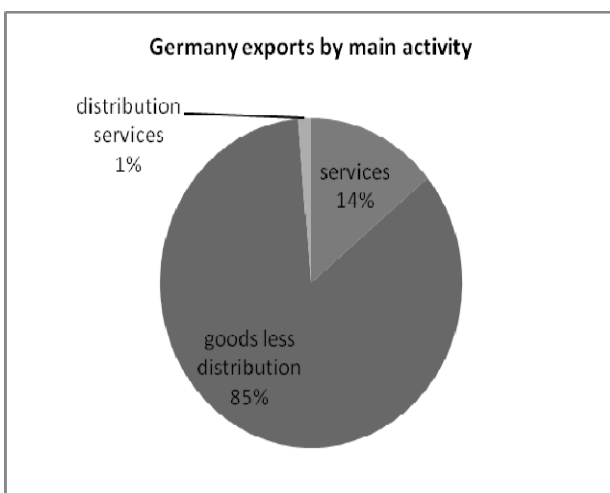
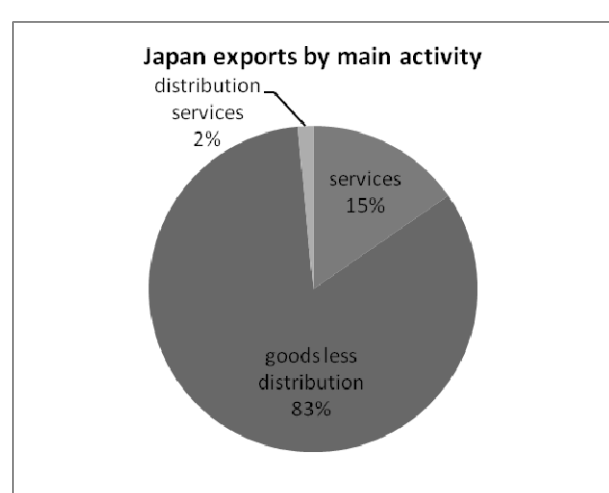


Figure 12. Japan total exports by main activity (2007)



D.2 Total exports by industry

52. In value (figures 13 to 16), for 2007, the largest exporting industry sector for the OECD total, USA, Germany and Japan was, as expected, by far the manufacturing industry D (from 60 to 80% of the

total), followed by the service oriented industries: transport, storage and communication industry I (representing 8%, 8%, 5% and 6% of the total trade of each respective country) and the real estate, renting and business activity K (representing 5%, 8%, 4% and 3% of the total trade of each respective country) .

Figure 13. OECD total exports by ISIC rev 3.1 sections (2007)

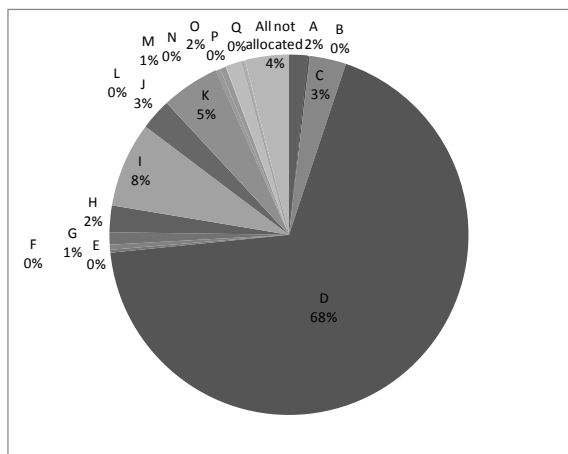


Figure 14. USA total exports by ISIC rev 3.1 sections (2007)

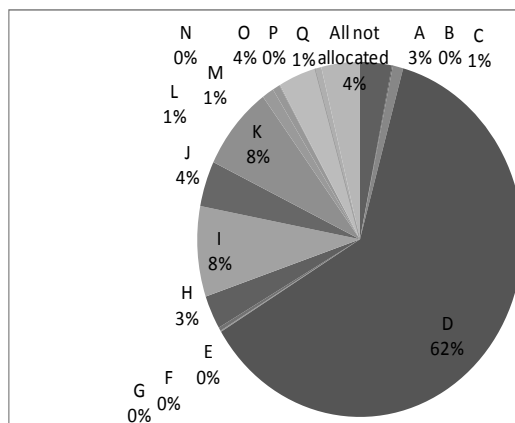


Figure 15. Germany Total exports by ISIC rev 3.1 sections (2007)

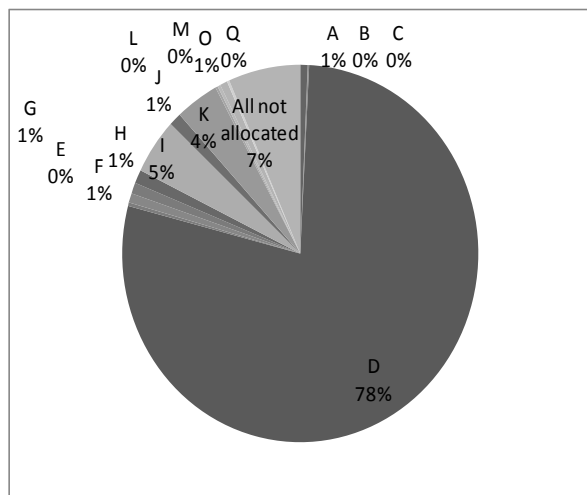
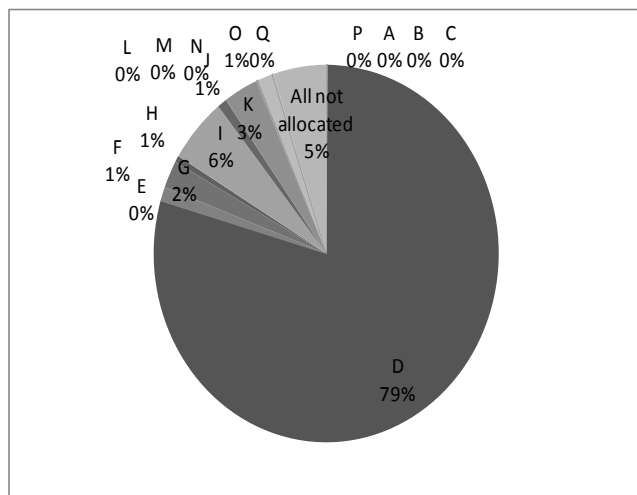


Figure 16. Japan total exports by ISIC rev 3.1 sections (2007)



D.3 Exports of goods and services by industry

53. The tables and figures 17 to 20 below present exports of trade in goods and services distributed by industry at the section level.

54. Looking at the figures, usually an industry at the section level produces, in value, a vast majority of, either goods (sections A, B, C, D, E), either services (sections F, G, H, I, J, K, L, M, O, N, P, Q). Sections K (Real estate, renting and business activities) and O (Other community, social and personal service activities) contrast with the other –also- goods producing industries as services would represent the bulk of the products produced.

55. For industry K, the bulk of the value is covered by services, for instance for OECD total, services represent 99.8% of the produced products and about 96.2% of the total when HS 852439 is attributed to industry section K instead of industry section D.

56. Regarding industry section O, for OECD total, services (excluding distribution services) would cover 88% of the products produced.

57. The two figures following the *trade in goods and services by industry* tables would highlight the size of distribution services, of interest for GATS negotiators, as estimated by the present note and the impact of allocating HS 852439, of possible interest for national accounts, either to ISIC section D or ISIC section K.

58. Allocating HS 852439 to industry K would increase the relative share of the goods produced by this industry by about 3%. For Germany, the share of goods produced would increase by about 8%.

59. Distribution services would represent from 2 to 4 percent of the products produced by the industries in sections A, B, C, D and E.

Table 17. OECD trade in goods and services by Industry

ISIC items	Services exports	Goods less distribution	Distribution services	Total
A : Agriculture, hunting and forestry	4372.9	178556.0	5363.2	188292.1
B : Fishing	4372.9	12521.2	376.1	17270.2
C : Mining and quarrying	4372.9	351806.1	10567.0	366746.0
D : Manufacturing	34606.4	7385301.6	221828.7	7641736.7
E : Electricity, gas and water supply	5689.9	22295.1	669.7	28654.6
F : Construction	50703.4			50703.4
G : Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	125360.0			125360.0
H : Hotels and restaurants	266233.8			266233.8
I : Transport, storage and communications	853912.0			853912.0
J : Financial intermediation	316824.6			316824.6
K : Real estate, renting and business activities	558183.5	1336.0	40.1	559559.6
L : Public administration and defence; compulsory social security	48198.9			48198.9
M : Education	57709.3			57709.3
N : Health and social work	2641.3			2641.3
O : Other community, social and personal service activities	152172.1	19365.8	581.7	172119.6
P : Activities of private households as employers and undifferentiated production activities of private households	1286.2			1286.2
Q : Extraterritorial organizations and bodies	25552.0			25552.0
All not allocated	7761.3	418451.8	12568.8	438782.0
Grand total	2519953.0	8389633.7	251995.3	11161582.0

In million US dollars- data for 2007

HS 852439 represents 20951.9 million USD *i.e.* 0.28% of the exports of the OECD manufacturing industry. This amount can also be assigned to industry section K as shown below in figure 17b.

Figure 17a and 17b. OECD trade in goods and services by ISIC rev. 3.1

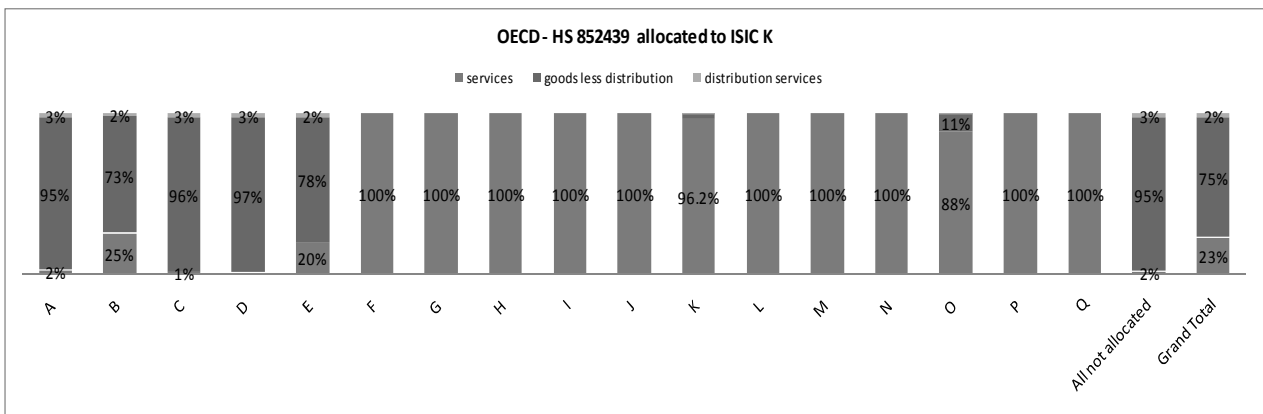
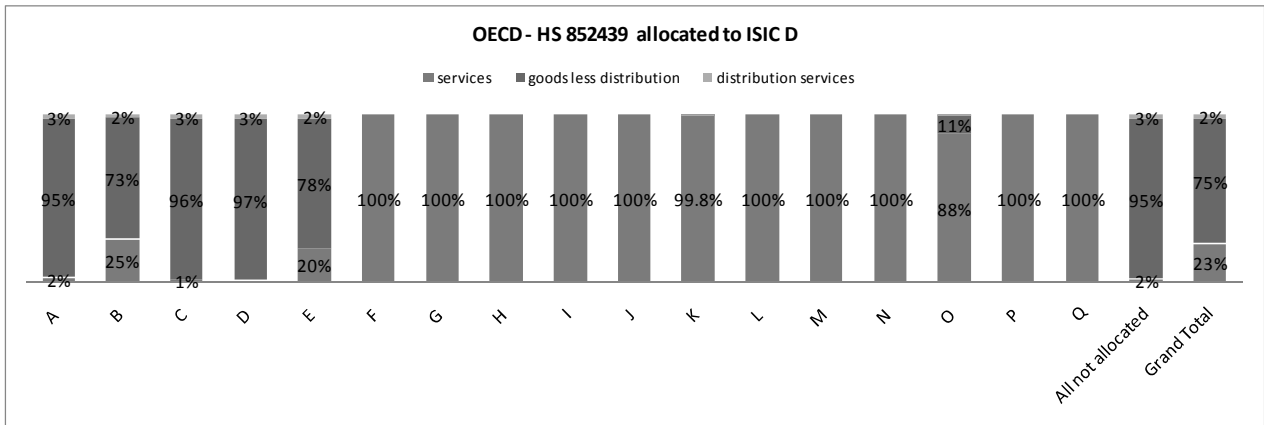


Table 18. US trade in goods and services by industry.

ISIC item	Services exports	Goods less distribution	Distribution services	total
A : Agriculture, hunting and forestry	797.6	49377.8	2187.6	52362.9
B : Fishing	797.6	814.6	36.1	1648.2
C : Mining and quarrying	797.6	15597.4	691.0	17086.0
D : Manufacturing	7161.5	978961.9	43371.7	1029495.1
E : Electricity, gas and water supply		953.4	42.2	995.7
F : Construction	1170.0			1170.0
G : Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	5267.7			5267.7
H : Hotels and restaurants	50592.0			50592.0
I : Transport, storage and communications	136370.2			136370.2
J : Financial intermediation	68553.0			68553.0
K : Real estate, renting and business activities	123859.6	142.0	6.3	124007.9
L : Public administration and defence; compulsory social security	19257.5			19257.5
M : Education	12108.6			12108.6
N : Health and social work	1153.0			1153.0
O : Other community, social and personal service activities	55032.8	6770.4	300.0	62103.2
P : Activities of private households as employers and undifferentiated production activities of private households				0.0
Q : Extraterritorial organizations and bodies	10238.5			10238.5
All not allocated	0.0	60510.1	2680.8	63191.0
Grand total	493157.0	1113127.6	49315.7	1655600.4

In millions of US dollars, data for year 2007.

HS 852439 (Discs for laser reading systems) represents 3280.3 million USD *i.e.* 0.32% of the exports of the US manufacturing industry. This amount can also be assigned to industry K as shown below in figure 18b.

Figures 18a and 18b. USA trade in goods and services by ISIC rev. 3.1 for

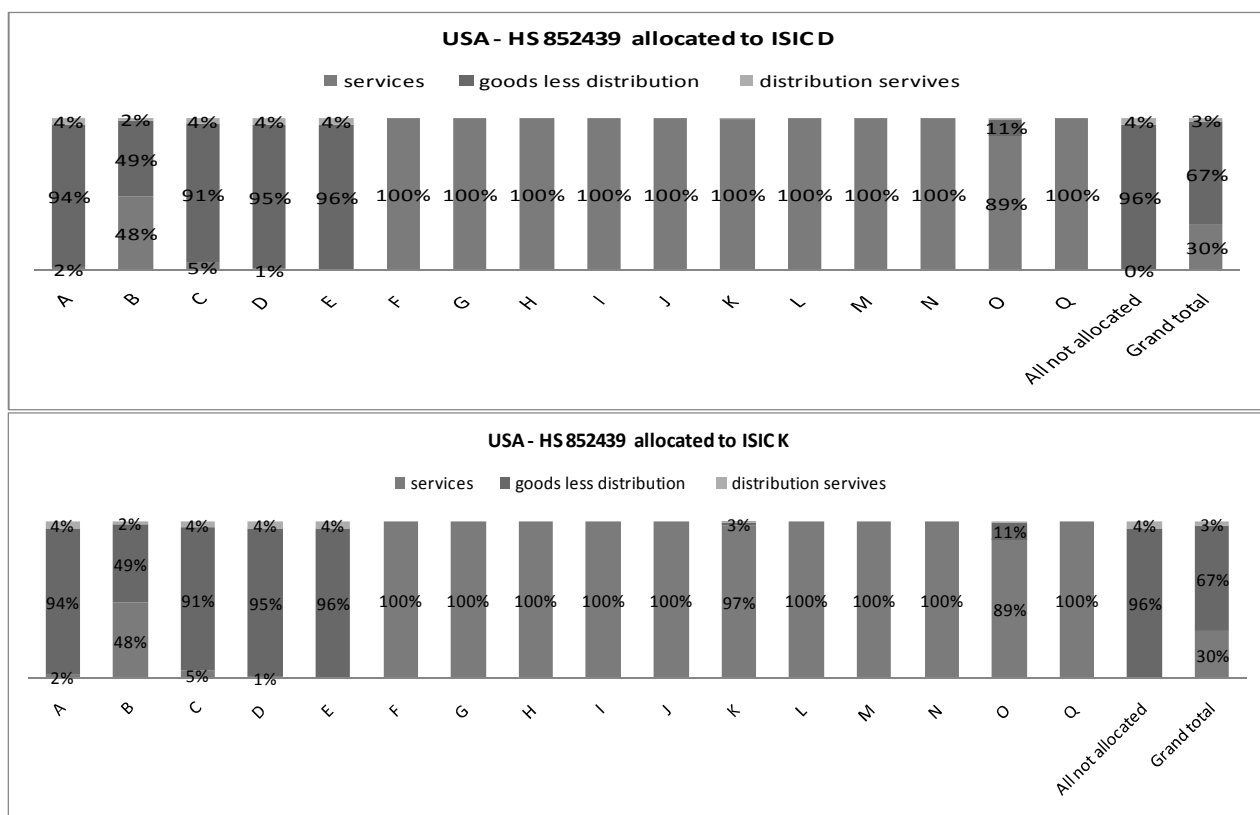


Table 19. Germany trade in goods and services by Industry

ISIC items	Services exports	Goods less distribution	Distribution services	Total
A : Agriculture, hunting and forestry		10058.0	166.6	10224.5
B : Fishing		316.2	5.2	321.5
C : Mining and quarrying		2036.8	33.7	2070.5
D : Manufacturing	4472.1	1190415.3	19716.1	1214603.5
E : Electricity, gas and water supply	354.5	4004.4	66.3	4425.3
F : Construction	12301.5	0.0		12301.5
G : Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	14654.3	0.0		14654.3
H : Hotels and restaurants	17990.4	0.0		17990.4
I : Transport, storage and communications	73707.3	0.0		73707.3
J : Financial intermediation	17434.0	0.0		17434.0
K : Real estate, renting and business activities	55299.7	344.9	5.7	55650.3
L : Public administration and defence; compulsory social security	3151.3	0.0		3151.3
M : Education	4039.8	0.0		4039.8
N : Health and social work		0.0		0.0
O : Other community, social and personal service activities	9944.2	638.7	10.6	10593.5
P : Activities of private households as employers and undifferentiated production activities of private households		0.0		0.0
Q : Extraterritorial organizations and bodies	3151.3	0.0		3151.3
All not allocated	1.5	99376.9	1645.9	101024.3
Grand total	216502.0	1307191.2	21650.2	1545343.4

In million US dollars- data for 2007

HS 852439 represents 5305.047 million USD *i.e.* 0.44% of the exports of Germany’s manufacturing industry. This amount can also be assigned to industry K as shown below in figure 19b.

Figure 19a and 19b. Germany trade in goods and services by ISIC rev. 3.1

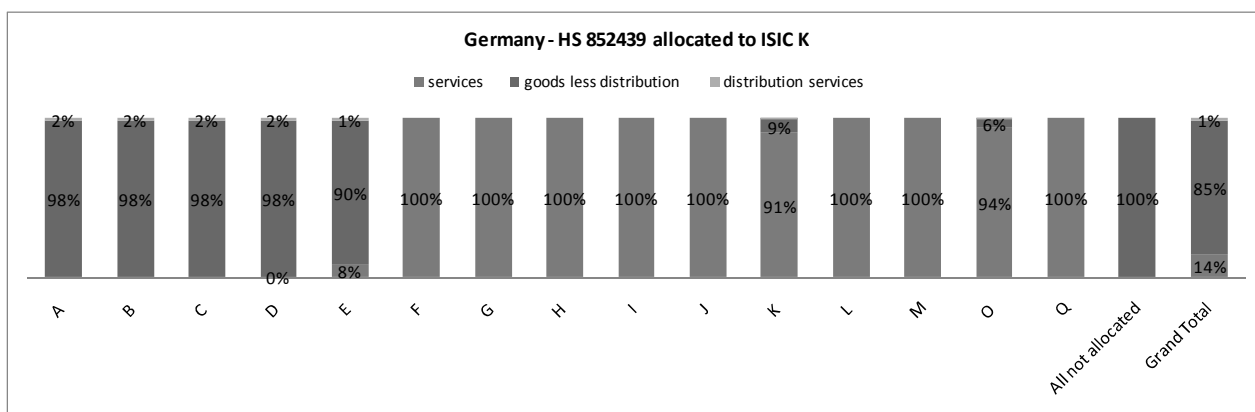
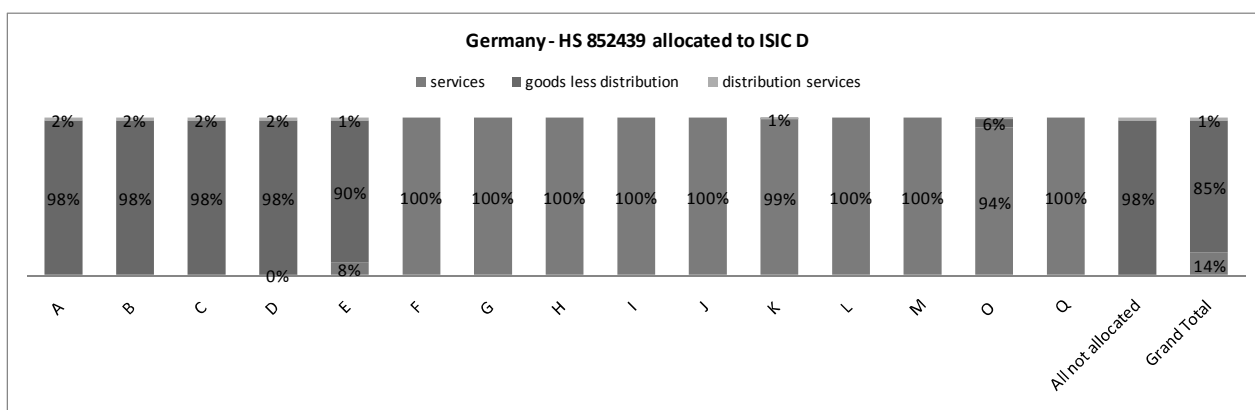


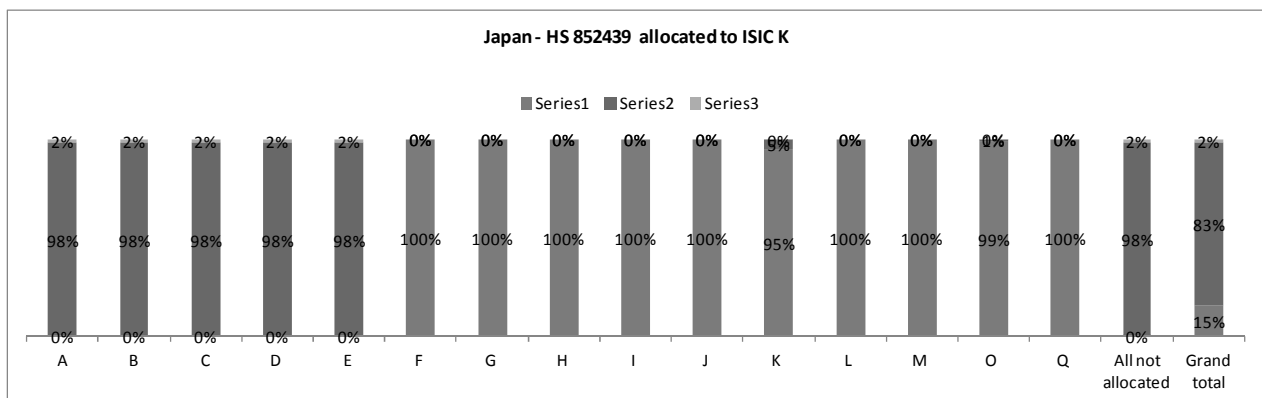
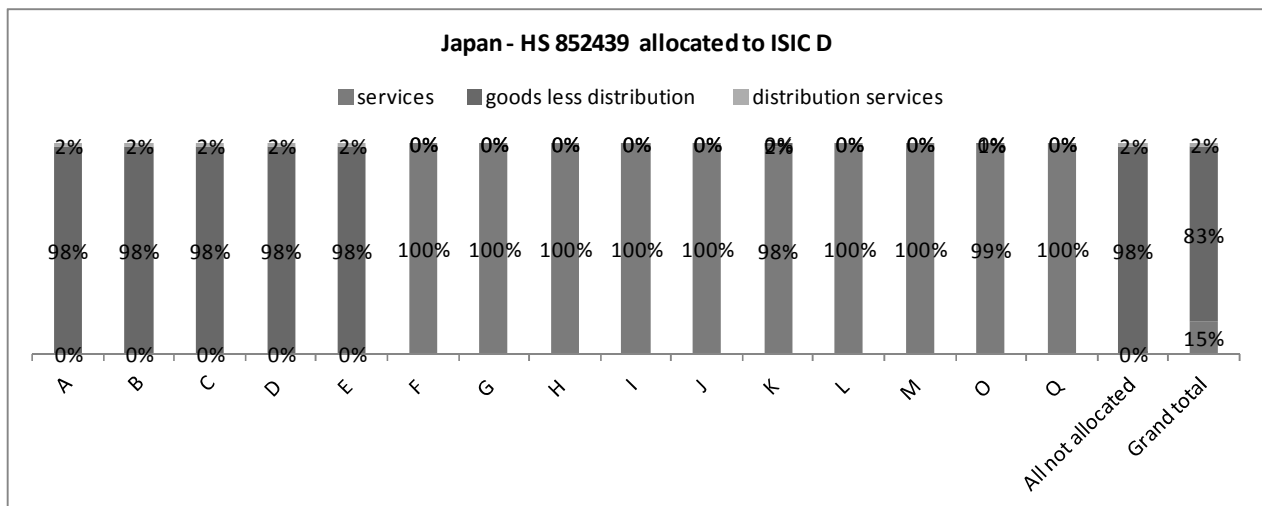
Table 20. Japan trade in goods and services by Industry

ISIC item	Services exports	Goods less distribution	Distribution services	Total
A : Agriculture, hunting and forestry		400.7	7.4	415.4
B : Fishing		353.2	6.5	366.2
C : Mining and quarrying		224.0	4.1	232.3
D : Manufacturing		657252.0	12090.1	681432.1
E : Electricity, gas and water supply		0.6	0.0	0.7
F : Construction	10315.6			10315.6
G : Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	19756.4			19756.4
H : Hotels and restaurants	4666.5			4666.5
I : Transport, storage and communications	47174.6			47174.6
J : Financial intermediation	7560.7			7560.7
K : Real estate, renting and business activities	25082.1	499.2	9.2	25599.7
L : Public administration and defence; compulsory social security	1028.8			1028.8
M : Education	322.4			322.4
N : Health and social work				0.0
O : Other community, social and personal service activities	11934.3	124.9	2.3	12063.8
P : Activities of private households as employers and undifferentiated production activities of private households				
Q : Extraterritorial organizations and bodies	1028.8			1028.8
HS Not allocated	155.7	34954.2	643.0	36395.8
not specified		7615.5	140.1	7895.7
All not allocated	155.7	42597.0	755.8	44264.3
Grand total	129026.0	701424.4	12902.60	856255.6

In millions of US dollars, data for year 2007.

HS 852439 represents 819.124 millions USD *i.e.* 0.08% of the exports of Japan’s manufacturing industry. This amount can also be assigned to industry section K as shown below in figure 20b.

Figure 20a and 20b. Japan trade in goods and services by ISIC rev. 3.1



Conclusion and next steps.

60. As this tentative alternative presentation is performed on data available for current classifications, some of the main challenges of the implementation of the revised nomenclatures (and in particular goods for processing moving from goods to services in BPM6 as “manufacturing services provided on inputs owned by others”) are not dealt with. However as the data available for trade in services are still data collected following EBOPS 2002, it seems a useful first step to build on these existing data in order to get a sense of how challenging the construction of a trade by product classification is going to be.

61. The next step is to extend this investigation to import flows²⁴ and also to present the prominent manufacturing section at the division level. The results of the present conceptual estimates could also be compared with actual industry surveys even if results are likely to be very different.

Questions to delegates

1. Do you have any experience in estimating distribution services in merchandise trade, if yes what methodology did you use?
2. How should perpetual Licences to use software-non customized- provided on disk be treated. Is HS 852439 (Discs for laser reading systems) a good proxy?
3. How could estimates for manufacturing services be calculated in future?

²⁴

The import flows will *a priori* be treated the same way as exports as the present experiment is mainly conceptual (not based on actual surveys) and will necessarily generate different results compared to those that could be drawn from actual surveys. Regarding import flows, the only foreseen difference in treatment would be the need to convert the incoming merchandise flows from CIF to FOB, when the FOB import values are not directly available. A pro rata adjustment (remove 10%?) could be applied at a first stage.

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Annex I: Correspondence EBOPS 2002-ISIC 3.1.

EBOPS	Description	ISIC	Description
205	1. Transportation	60 61 62 63*	Land transport; transport via pipelines Water transport Air transport Supporting and auxiliary transport activities; activities of travel agencies
206	1.1 Sea transportation [207-208]	6110	Sea and coastal water transport
210	1.2 Air transport [211-212]	6210 6220	Scheduled air transport Non-scheduled air transport [- space]
214	1.3 Other transport [215-217]		
218	1.4 Space transport	6220	Non-scheduled air transport
219	1.5 Rail transportation [220-221]	6010	Transport via railways
223	1.6 Road transportation [224-225]	602	Other land transport
227	1.7 Inland water transportation [228-229]	6120	Inland water transport
231	1.8 Pipeline transport and electricity transmission	4010 6030	Production, transmission and distribution of electricity Transport via pipelines
232	1.9 Other supporting and auxiliary transport services	6301 6302 6303 6309	Cargo handling Storage and warehousing Other supporting transport activities Activities of other transport agencies [63-6304]
209	1.1.3 Sea transport-other		
213	1.2.3 Air transport-other		
222	1.5.3 Rail transport-other		
226	1.6.3 Road transport-other		
230	1.7.3 Inland waterway transport-other		
236	2. Travel [237-243]	55 6304	Hotels and restaurants Activities of travel agencies and tour operators; tourist assistance activities n.e.c.
957	Expenditure on accommodation and food and beverage services	55	Hotels and restaurants
245	3. Communication services	64*	Post and telecommunications
246	3.1 Postal and courier services	6410	Post and courier activities
247	3.2 Telecommunication services	6420	Telecommunications
249	4. Construction services [250-251]	4520 4550	Building of complete constructions or parts thereof; civil engineering Renting of construction or demolition equipment with operator [45- 451, 453, 454]
253	5. Insurance services	66 6720	Insurance and pension funding, except compulsory social security Activities auxiliary to insurance and pension funding
254	5.1 Life insurance and pension funding	6601	Life insurance [- reinsurance]

STD/TBS/WPTGS(2010)14

		6602	Pension funding
255	5.2 freight insurance	6603	Non-life insurance [- reinsurance]

Correspondence EBOPS and ISIC

EBOPS	Description	ISIC	Description
256	5.3 other direct insurance	6603	Non-life insurance [- reinsurance]
257	5.4 Reinsurance	6601 6603	Life insurance [reinsurance] Non-life insurance [reinsurance]
258	5.5 Auxiliary services	6720	Activities auxiliary to insurance and pension funding
260	6. Financial services	65 671	Financial intermediation, except insurance and pension funding Activities auxiliary to financial intermediation, except insurance and pension funding
262	7. Computer and information services		
263	7.1 Computer services	7210 7229 7230 7250 8090	Hardware consultancy Other software consultancy and supply Data processing Maintenance and repair of office, accounting and computing machinery [72-7221,724,729] Other education
264	7.2 Information services		
889	7.2.1 News agency	9220	News agency activities
890	7.2.2 Other information		
266	8. Royalties and license fees [891-892]	7221 9211 9213 9214	Software publishing Motion picture and video production and distribution Radio and television activities Dramatic arts, music and other arts activities [921-9212,9219]
268	9. Other business services		
269	9.1 Merchating and other trade related services [270-271]	50 51 52	Sale, Maintenance and repair of motor vehicle and motorcycles, retail sale of automotive fuel. Wholesale trade and commission trade, except of motor vehicles and motorcycles Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods
272	9.2 Operational leasing services	71	Renting of machinery and equipment without operator and of personal and household goods
273	9.3 Miscellaneous business, professional, and technical services		
274	9.3.1 Legal, accounting, management consulting, and public relations		
275	9.3.1.1 Legal services	7411 7414	Legal activities Business and management consultancy activities [741-7412,7413]

Correspondence EBOPS and ISIC

EBOPS	Description	ISIC	Description
276	9.3.1.2 Accounting, auditing, book-keeping and tax consulting services	7412	Accounting, bookkeeping and auditing activities; tax consultancy
277	9.3.1.3 Business and management consultancy and public relations services	7414	Business and management consultancy activities
278	9.3.2 Advertising, market research, and public opinion polling	2211 2212 2219 7230 7240 7413 7430 7499 9213 9249	Publishing of books, brochures and other publications Publishing of newspapers, journals and periodicals Other publishing [221-2213] Data processing Database activities and online distribution of electronic content Market research and public opinion polling Advertising Other business activities n.e.c. Radio and television activities Other recreational activities
279	9.3.3 Research and development	73	Research and development
280	9.3.4 Architectural, engineering, and other technical services	742	Architectural, engineering and other technical activities
281	9.3.5 Agricultural, mining and on-site processing services		
282	9.3.5.1 Waste treatment and depollution	37 9000	Recycling Sewage and refuse disposal, sanitation and similar activities
283	9.3.5.2 Other/ Agricultural, mining and on-site processing services	0140 0150 0200 0500 112 10-33	Agricultural and animal husbandry service activities, except veterinary activities Hunting, trapping and game propagation including related service activities Forestry, logging and related service activities Fishing, aquaculture and service activities incidental to fishing Services activities incidental to oil and gas extraction excluding surveying Mining and quarrying, and Manufacture of food products and beverages; of tobacco products; of textiles; of wearing apparel; dressing and dyeing of fur; Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear; of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials; of paper and paper products; Publishing, printing and reproduction of recorded media; of coke, refined petroleum products and nuclear fuel; of chemicals and chemical products; of rubber and plastics products; of other non-metallic mineral products; and of basic metals; of fabricated metal products, except machinery and equipment; of machinery and equipment n.e.c.; of office, accounting and computing machinery; of electrical machinery and apparatus n.e.c.; of radio, television and communication equipment and apparatus; and of medical, precision and optical instruments, watches and clocks

		35-36	Manufacture of other transport equipment; and of furniture; manufacturing n.e.c. <i>[D-34, 37]</i>
		8520	Veterinary activities

Correspondence EBOPS and ISIC

EBOPS	Description	ISIC	Description
284	9.3.6 Other/Miscellaneous business, professional, and technical services	22 28-33 40-41 5260 6304 70 7421 749 90	Publishing, printing and reproduction of recorded media Manufacture of fabricated metal products, except machinery and equipment; of machinery and equipment n.e.c.; of office, accounting and computing machinery; of electrical machinery and apparatus n.e.c.; of radio, television and communication equipment and apparatus; and of medical, precision and optical instruments, watches and clocks Electricity, gas, steam and hot water supply; and Collection, purification and distribution of water Repair of personal and household goods Activities of travel agencies and tour operators; tourist assistance activities n.e.c. Real estate activities Architectural and engineering activities and related technical consultancy Business activities n.e.c. [74-741, 7422, 743] Sewage and refuse disposal, sanitation and similar activities
285	9.3.7 Services between affiliated enterprises n.i.e.	7414	Business and management consultancy activities
287	10. Personal, cultural and recreational services		
288	10.1 Audiovisual and related services	7130 921	Renting of personal and household goods n.e.c. Motion picture, radio, television and other entertainment activities
289	10.2 Other personal, cultural and recreational services		
895	10.2.1 Education services	80	Education
896	10.2.2 Health services	851	Human health activities
897	10.2.3 Other/Other personal, cultural and recreational services	5520 80 85 910 9214 9219 923 924 930 9600	Restaurants, bars and canteens Education Health and Social work Activities of membership organizations n.e.c. Dramatic arts, music and other arts activities Other entertainment activities n.e.c. Library, archives, museums and other cultural activities Sporting and other recreational activities [92-some 921, 922] Other service activities Undifferentiated goods-producing activities of private households for own use
291	11. Government services, n.i.e. [292-294]	75 9900	Public administration and defence; compulsory social security Extraterritorial organizations and bodies
292	11.1 Embassies and consulates	7521	Foreign affairs
293	11.2 Military units and agencies	7522	Defence activities

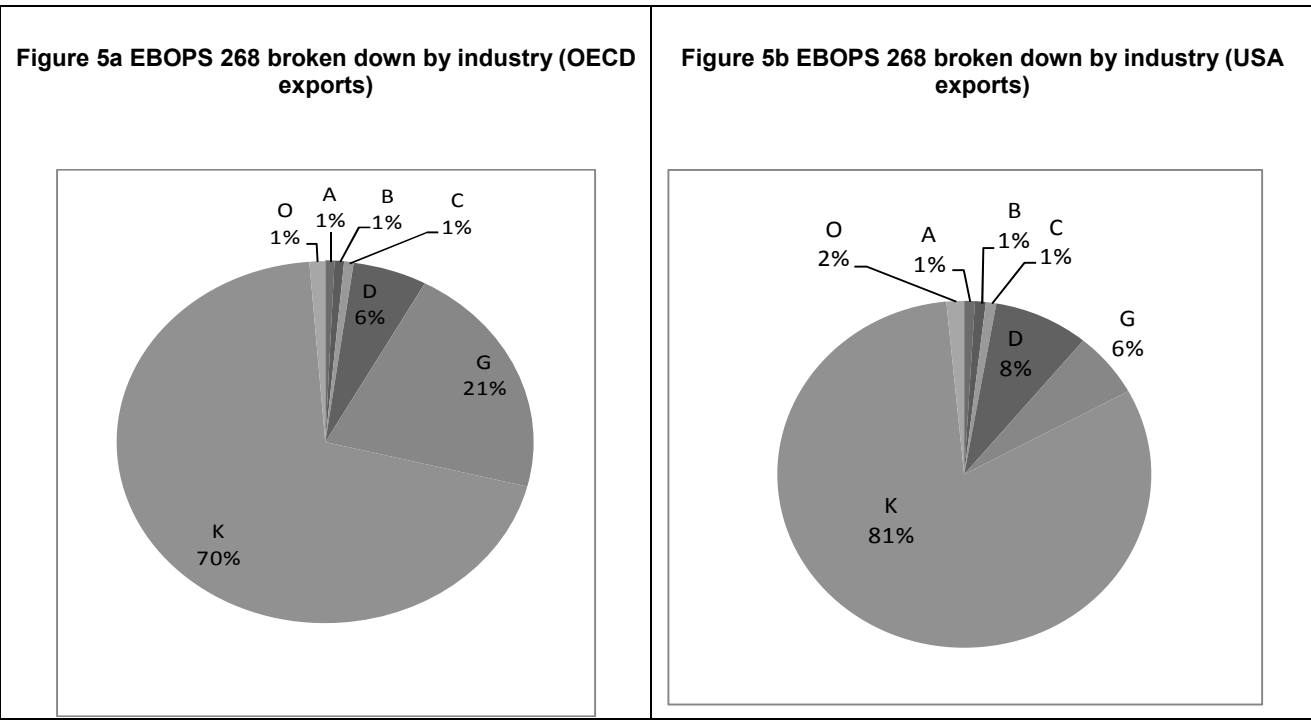
294	11.3 Other	75	Public administration and defence; compulsory social security
		80	Education
		85	Health and social work

An asterisk () indicates that more than one that EBOPS code corresponds to that economic activity.*

ANNEX II : BREAKING DOWN ITEM 268 BY INDUSTRY FOR TOTAL OECD AND THE USA

62. Figure 5 illustrates for the total OECD and the USA that respectively 70% of OECD exports and 81% of US exports of EBOPS 268 (Other business services) is allocated to ISIC category K (Real estate, renting business activities)²⁵. 6% of OECD and 8% of US exports of other business services are allocated to industry D (Manufacturing). 21% of OECD and 6% of US exports of other business services – represented by merchanting and other trade related services- are allocated to industry G (Wholesales and retail trade, etc). The remaining exports are allocated to ISIC categories A (Agriculture, hunting and forestry),B (Fishing), and C (Mining and quarrying).

63. Figure 6 presents a further breakdown on industry K into EBOPS items (not only other business services). It illustrates that respectively 16% of the OECD and 33% of the US industry K are covered by EBOPS item 266 (Royalties and License fees). 7% of OECD and 4% of US industry K are covered by EBOPS item 262 (Computer and information services). 12% of OECD and 26% of US category K are covered by EBOPS item 274 (Legal, accounting, management consulting, and public relations). 8% of the OECD and 12% of the US Industry K are covered by item 279 (Research and development). 6% of the OECD and 9% of the US Industry K are covered by item 272 (Operational leasing services), etc.



²⁵ Figure 6 below presents a further breakdown of ISIC category K into EBOPS items.

Figure 6.a Industry K broken down by EBOPS (OECD exports)

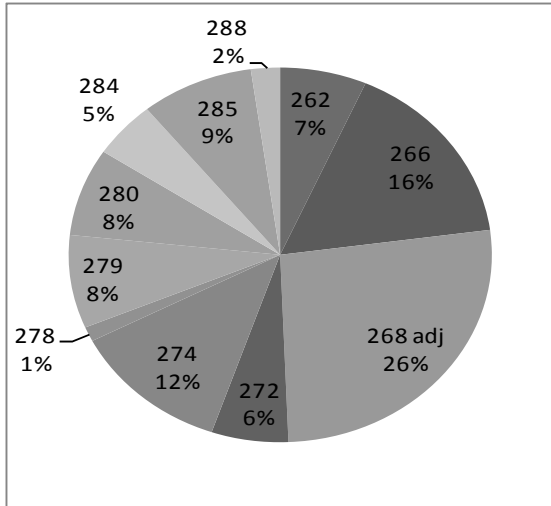


Figure 6.b Industry K broken down by EBOP (USA exports)

