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AN ALTERNATIVE PRESENTATION OF TRADE BY PRODUCT AND INDUSTRY. CHECKING RESULTS AGAINST SURVEY DATA

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This paper is for discussion and is the follow up to the work presented by OECD at the WPTGS 2010 (STD/TBS/WPTGS(2010)14) on Integrated trade in goods and trade in services list by product and activity.

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### AN ALTERNATIVE PRESENTATION OF TRADE BY PRODUCT AND INDUSTRY.

#### CHECKING RESULTS AGAINST SURVEY DATA<sup>1</sup>

#### **OECD Statistics Directorate**

#### Bettina Wistrom, Alena Brin

#### 1. Introduction

- 1. At the 2010 Working Party on Goods and Services (WPTGS), was presented a note<sup>2</sup> providing an estimated example on how to combine conceptually exports of goods and services in one Industry presentation<sup>3</sup> using the Central Product Classification (CPC) as a link as far as possible. The example was based on actual export data for year 2007 only, using the links of principal products to industries, all the allocation assumptions being made explicit.
- 2. This undertaking is described as a presentation of trade by product and industry because, in the domain of trade, there is no existing structure that presents detailed trade in goods and services (*i.e.* trade by products) together in the same unified framework which is here the Industry (ISIC rev, 3.1) classification.
- 3. Currently all the detailed trade in goods corresponding to physical movements of goods across the border recorded by the customs is presented following the Harmonized Commodity Description and Coding System (HS) of tariff nomenclature (about 5000 items at 6 digit level) and all the detailed trade in services is presented following the Extended Balance of Payments Services Classification (about 85 items in EBOPS 2002) within the Balance of Payments framework. It must be underlined that the two systems have a different conceptual basis and they cannot be combined without further adjustments.
- 4. An integrated trade by product and industry 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

This note owes a lot to the support of Almut Steger and Simon Lohner from the German Bundesbank who provided microdata information on service export by industry for Germany and to Blandine Serve for her useful advices.

Wistrom Bettina "Trade by product and industry: an estimated example with actual data", STD/TBS/WPTGS(2010)14. http://www.oecd.org/officialdocuments/displaydocumentpdf?cote=STD/TBS/WPTGS(2010)14&doclanguag e=en

The word "presentation" is used on purpose here as there is no intention to introduce a new classification.

statistics. It could advance the cause<sup>4</sup> 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 and would permit eventually to look at value added. <sup>5</sup>

- 5. The example presented at the 2010 WPTGS was built on trade in goods and services extracted from OECD trade databases: International Trade by Commodity Statistics (ITCS) and International Trade in Services Statistics (TIS) and shown by industry using data for 2007 and current classifications currently in use (in particular EBOPS 2002).
- 6. The conceptual correspondence was prepared, at a relatively modest level of disaggregation *i.e.* at the ISIC section level and with partner world only. The correspondence was established on the merchandise side, between ISIC rev. 3.1 and HS 2002 using CPC 1.1 as an intermediary link, via existing UNSD correspondence tables<sup>6</sup>. On the service side the correlation table used is an elaboration<sup>7</sup> of the ICFA<sup>8</sup> EBOPS 2002 correspondence table as presented in the annex 4 of the Manual on Statistics of International Trade in Services 2002<sup>9</sup> (MSITS 2002), using CPC 1.1<sup>10</sup> as a link as far as possible.
- 7. The present note compares the results of the conceptual correspondence on the service side with survey data obtained by Germany, Austria and Canada and extends the experiment on the export side by presenting the Trade in goods and services by industry with (the very large) manufacturing sector broken down at the division level (previously data were presented at section level).

#### 2. Main improvements and limits to results.

The trade by product by industry series have been computed using a SAS program and are prepared for data ranging from 2002 to the latest period for OECD countries and BRICS<sup>11</sup>. The methodology for preparing the correspondences is broadly the same as described in detail in last year's note. There is however an elaboration in that both in the goods and the service correspondences, when there is a multiple correspondence of the HS 2002 item or the EBOPS 2002 item to several ISIC rev. 3.1 sections, the export

<sup>4</sup> See Bill Cave's note [STD/SES/WPTGS(2008)16] which explores the framework and advocates the needs for a trade by product classification. This cause is also advocated in the shared vision paper which is jointly being drafted by international organisations.

This cause is now also advocated in the shared vision for the future: International Trade Information Systems in 2020 paper which has been jointly drafted by International Organisations.

Refer to the UNSD correspondence tables under: http://unstats.un.org/unsd/cr/registry/regot.asp

Hong Eun Pyo, Wistrom Bettina, Guo Jiemin (OECD), An alternative presentation of trade by product. (2009) which draws on Becker, Ralf, "Revision on the CPC and relationship to the EBOPS", Seventeenth Meeting of the IMF Committee on Balance of Payments Statistics, (Pretoria, October 26–29, 2004.)

<sup>8</sup> ICFA stands for ISIC Categories for Foreign Affiliates.

Manual on Statistics of International Trade in Services, Commission of European Communities, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, United Nations Conference on Trade and Development, and World Trade Organization; Geneva, Luxembourg, New York, Paris, Washington, D.C.; 2002.

Becker, Ralf, "Revision on the CPC and relationship to the EBOPS", Seventeenth Meeting of the IMF Committee on Balance of Payments Statistics, (Pretoria, October 26–29, 2004.)

The source of commodity trade for BRICS country is COMTRADE. Indonesia is not covered in this study as the Commodity trade data is submitted to UNSD in HS 96. The Source of Trade in services data is the IMF.

value of the product is split equally across the ISIC rev. 3.1 sections as was the case only for services previously.<sup>12</sup>

- 8. This means, taking the example of France for year 2007 as shown in table 1 that three quarters of the Total value of exports of HS item 852439 "Discs for laser reading systems" (707 million USD) is allocated to Section D Manufacturing (ISIC D22 publishing of recorded media) and the remainder (235 million USD) goes to ISIC section K real estate, renting and business activities (more precisely to ISIC 7221 software publishing).
- 9. Another example is the total value of HS item 030110 "Live ornamental fish" (8.2 million USD) goes in totality to ISIC section B, as this value is split into two divisions that are anyway part of B (Fishing 0501 and aquaculture 0502)

Table I: Splitting HS 2002 commodity values - through CPC 1.1 - across ISIC rev 3.1 sections

			Trade value in	CPC					Value alocated by ISIC
Country	Year	HS02 code	million US dollars	code	ISIC section	isic31Division	ISIC Code	COUNT	divisions
FRA	2007	8524.39	943452501.1	47520	D: Ma nufacturing	D22	2230	4	235863125
FRA	2007	8524.39	943452501.1	47520	D: Ma nufa cturing	D22	2213	4	235863125
FRA	2007	8524.39	943452501.1	47520	D: Ma nufacturing	D22	2211	4	235863125
FRA	2007	8524.39	943452501.1	47520	K: Real estate, renting and business activities	K	7221	4	235863125
FRA	2007	0301.10	8282635.33	04110	B: Fishing	05	0501	2	4141317.7
FRA	2007	0301.10	8282635.33	04110	B: Fishing	05	0502	2	4141317.7

Notes: HS 2002 code: 852439 stands for Discs for laser reading systems.

CPC code: 47520 stands Records, tapes and other recorded media for sound or other similarly recorded phenomena (except cinematographic film and cards with magnetic stripe); packaged computer software"".

HS 2002 code 030110 stands for live ornamental fish

CPC code: 04110 stands for "live fish" ISIC code: 0501 stands for: Fishing ISIC code: 0502 stands for: Aquaculture

- 10. The conceptual "alternative presentation" is performed on data available for current classifications (in particular EBOPS 2002), so 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 under the item "manufacturing services provided on inputs owned by others") are not dealt with. Moreover, there is no attempt to estimate neither the service element possibly included under merchandise trade in CD roms (in transactions of non customized software, provided on disks with a perpetual license to use) nor the size of distribution services included in merchandise trade.
- 11. The reason for not covering these issues are that it was noted by delegates of the WPTGS 2010 that most of the license to use software under consideration are now mostly sold via internet (not via

Some supplementary adjustments are performed on EBOPS items 205, 236, 289 and 268 as explained in Wistrom Bettina "Trade by product and industry: an estimated example with actual data", STD/TBS/WPTGS(2010)14, p.19 and 20. See also annex 1 which indicates these adjustments. The SAS program is available upon request.

physical media like CD roms)<sup>13</sup> and in the case of distribution services, to the knowledge of the authors only the US BEA has provided some broad gross estimates of distribution services embedded in Merchandise<sup>14</sup>. So estimations of distribution services embedded in Merchandise trade will be introduced as a next step in this project if other OECD country experience can be gathered on this important matter.

- 12. As the data available for trade in services are still collected following EBOPS 2002 and will be at least until 2014 for most countries, it seems a useful first step to build on these existing data in order to make some progress in understanding the main issues related to the construction of a trade by product and industry classification even if some further adjustments to the data will be needed.
- 13. As, at last year's Working Party it was not thought by delegates that this experiment could be extended to import data. The link between industry and import of products is too loose as a specific industry is likely to import any type of product.
- 14. There is also a better match between the merchandise trade (customs based) and the service trade (from balance of payments frameworks) on the export side as no CIF-FOB adjustment needs to be performed.
- 15. Merchandise Trade by Industry is already widely available (an example is the OECD STAN bilateral trade database which presents trade in goods by industry following ISIC rev. 3<sup>15</sup>) and causes less problems than service trade by industry as the issue of secondary production is less problematic.
- 16. In the case of Service trade by industry, secondary production is a real issue, in particular because the manufacturing sector might be a large exporter of services (like management fees or Research and development) as secondary activity. It is also the source industry of the manufacturing services that are separately identified in EBOPS 2010 but not covered in the present study.
- 17. Also, in the future, identifying the share of manufacturing services or distribution services exported by the manufacturing industry will require very strong assumptions as those cannot be separately identified when performing a mechanical correspondence between EBOPS 2002and ISIC rev 3.1, taking CPC 1.1 as an intermediary link as far as possible.

## 3. Comparing the results of the conceptual correspondence with results based on microdata or survey results.

18. The comparisons presented below aim at checking if the results derived from the conceptual correspondence are at least broadly consistent with microdata or enterprises survey results from Germany, Austria and Canada. It should be noted that these countries are compiling service trade information at a relatively detailed level of EBOPS including for business services.

The note "Trade by product and industry: an estimated example with actual data", STD/TBS/WPTGS(2010)14, Wistrom Bettina discusses shortly these "two cross cutting issues" and attempts to make broad estimates of both distribution services (based on the estimates built by the BEA) and transactions of non customized software, provided on disks with a perpetual license to use (as a proxy of HS 2002 item 852439: Discs for laser reading systems.

Borga, Maria, Improved Measures of U.S. International Services: the Cases of Insurance, Wholesale and Retail Trade, and Financial Services, U.S. Bureau of Economic Analysis, (2006).

The OECD STAN Bilateral Trade Database for industrial analysis (BTD) belongs to the STAN Family datasets and is designed to provide analysts and researchers with information on trade in goods broken down by reporter, partner country (or geographical/economic area) and economic activity. http://www.oecd.org/document/62/0,3746,en 2649 34445 40696318 1 1 1 1,00.html

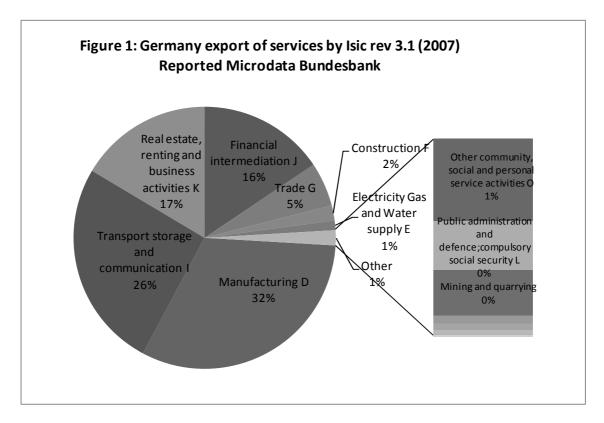
#### A. Comparing conceptual correspondence and microdata results for Germany on 2007 data.

- 19. Comparing microdata available from the Bundesbank<sup>16</sup> on trade in services (excluding travel) by industry (see figure 1) shows that there are inevitably differences between the service allocation by industry obtained through this conceptual correspondence and survey data. In particular there are very few services data allocated to the manufacturing industry through the standard correspondence. As illustrated in the correspondence in annex 1, are allocated to the manufacturing industry,
  - Half the value of item 278: Advertising, market research, and public opinion polling which is allocated to ISIC 22 *Publishing*, *printing and reproduction of recorded media*.
  - The value of item 282 waste treatment and depollution which is allocated to ISIC D 37 *Recycling*.
  - Half of the value of EBOPS item 284 Other business services which is split between ISIC 22
    Publishing, printing and reproduction of recorded media and ISIC 28 Manufacture of fabricated
    metal products, except machinery and equipment<sup>17</sup>
- 20. Because of its large manufacturing sector, Germany is an interesting point of reference to check how large exports of services by this specific industry can be.
- 21. Referring to Germany's exports of services by industry as recorded by confidential Microdata information available to the Bundesbank (reference year 2007), it can be noted that about one third (32%) of the total exports of services stem from the *manufacturing* industry. The second largest exporting industry sector is Sector I *Transport, storage and communications* (26% of total exports of services), followed by industry K *Real estate, renting and business activities* (17% of total exports of services), Industry J *Financial intermediation* (16%), Industry G *Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods* (5%); Industry F *Construction* (2%)

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These data are not publicly available so no data in current value are presented.

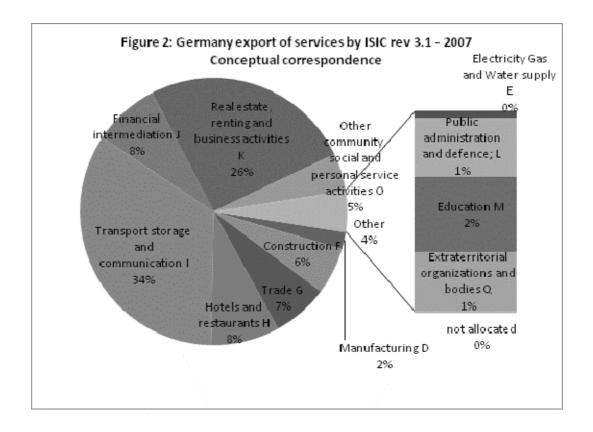
Austria, Canada and Germany are providing information on this service trade that can stem from the manufacturing industry with the exception of Germany that does not provide information on the value of item 282 waste treatment and depollution



- 22. Comparing with figure 2 showing Trade in services by industry for Germany obtained via the conceptual correspondence, it is obviously striking that only 2% of total exports of services are generated by the *manufacturing* industry. The reason for this is that, as noted above, in the extended EBOPS 2002-ISIC 3.1<sup>18</sup> correspondence<sup>19</sup>, there are only a few EBOPS categories corresponding to the *Manufacturing* industry namely, D22 *Publishing, printing and reproduction of recorded media*; D28 *Manufacture of fabricated metal products, except machinery and equipment*, and D37 *recycling* and in the case of Germany moreover there is no statistics available for EBOPS item 282 waste treatment and depollution which corresponds to ISIC D37 recycling.
- 23. It seems however that for other industries, there is a broad correspondence between the relative size of the shares obtained through the conceptual link and the survey data as the second largest exporting industry sector is also Sector I *Transport, storage and communications* (34% of total exports of services), followed by industry K *Real estate, renting and business activities* (26% of total exports of services), Industry J *Financial intermediation* (8%), Industry G *Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods* (7%); Industry F *Construction* (6%)

This extended correspondence has been drafted by Hong, Eun-Pyo, Guo Jiemin and Wistrom Bettina and is presented as annex 1 of Trade by product and industry: An estimated example with actual data, STD/TBS/WPTGS(2010)14, Bettina Wistrom.

Which is based on correspondences between ISIC Categories for Foreign Affiliates (ICFA) and the Extended Balance of Payments Services Classification (EBOPS) as published in annex 4 of the 2002 Manual of Statistics on international trade in service



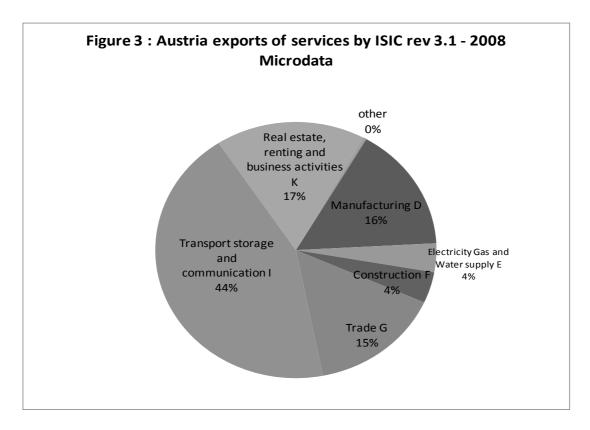
#### B. Comparing the conceptual correspondence and microdata results for Austria on 2008 data.

- 24. In 2009 the Oesterreichische Nationalbank (OeNB) started publishing new data and analysis on cross-border trade in services, including Total trade in services by industry<sup>20</sup>. Data in figure 3 are presented following ISIC rev 3.1 but have been converted from ÖNACE 2008 which corresponds to ISIC rev. 4. The comparison with the conceptual results below is made on year 2008.
- 25. It is noted in the metadata made available from the OeNB that the collection of data on cross-border trade in services is restricted to companies with a company register number covered by the 2008 structural business statistics excluding section I (Accommodation and food service activities)<sup>21</sup> and section K (financial and insurance activities)<sup>22</sup>.
- 26. Using the broad correspondence between ISIC rev 3.1 and ISIC rev.4 as presented in annex 2, Austrian trade in services by industry data were converted in ISIC 3.1 to be compared to trade in services by industry as generated by the conceptual correspondence

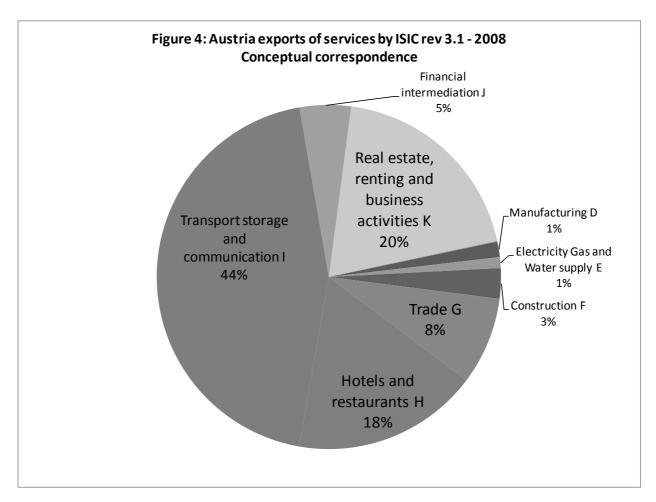
Walter Patricia, Oesterisched Nationalbank (OeNB), http://www.oenb.at/isaweb/report.do?lang=EN&report=9.1.40.

This corresponds to section H (Hotels and restaurants) in ISIC rev 3.1.

This corresponds to section J (Financial intermediation) in ISIC rev 3.1.



27. In the case of Austria, looking at information extracted from microdata, about 16 % of the exports of services stem from the *Manufacturing* Industry. This share is less important than what it observed in the case of Germany (where it amounts to 33% of the total) and can be explained to the larger size of the Manufacturing sector in Germany. Otherwise Section I *Transport Storage and communication* and section K, *real estate, renting and business activities* are the two largest service exporting industries with respectively 44 and 17 per cent of the total exports of services. In the absence of the section H *hotels and restaurants* which is not covered by Microdata information, the sector G Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods (i.e the *trade*) sector is the third largest service exporting industry (15 %) followed by construction (4 %).



As can be seen in figure 4, with the exception of the share of *manufacturing* industry (only 1% of total exports of services), the results generated from the conceptual correspondence are fairly similar to those extracted from microdata with Section I *Transport, Storage and Communication* and section K, *real estate, renting and business activities* holding the largest shares (respectively 44% and 20% of the total), the fourth largest sector being Sector G wholesale and retail trade sector; repair of motor vehicles, motorcycles and personal and household goods (15% for results based of microdata, 8% for results based on the conceptual correspondence). The *Hotel and restaurants* (H) sectors and *financial intermediation* sector (J) are not covered by microdata information but appear to generate respectively 18% and 5% of total exports of services through the conceptual correspondence.

#### C. Comparing Conceptual correspondence and microdata results for Canada – Year 2008.

29. Statistics Canada provides in its CANSIM<sup>23</sup> database, annual international transactions in commercial services (all services excluding travel, transportation and government services), by North

Statistics Canada. Table 376-0062 - International transactions in services, commercial services, by North American Industry Classification System (NAICS), annual (dollars), CANSIM (database).

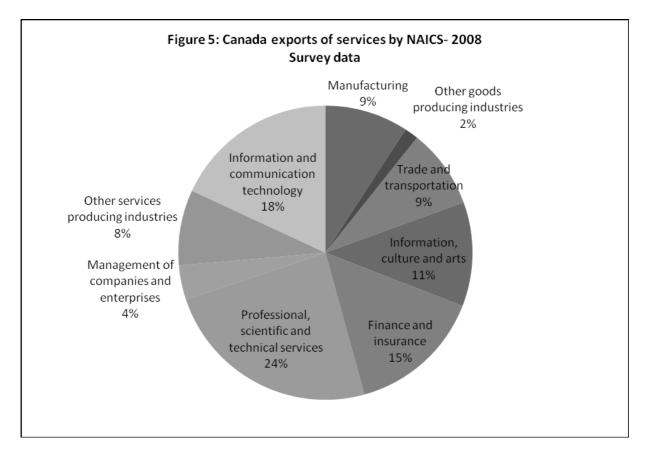
American Industry Classification System (NAICS 2007).<sup>24</sup> At a very aggregate level broad brush comparisons of NAICS and ISIC rev 3.1 are possible.<sup>25</sup>

- 30. According to survey results (figure 5) in Canada, Manufacturing (NAICS 61) and other goods producing industries<sup>26</sup> are the source of 11% of total exports of commercial services. In contrast, according to the conceptual correspondence, only 3 % of services stem from the Manufacturing industry (figure 6).
- 31. Figure 5 shows that, professional scientific and technical services (NAICS 54) is the largest industry exporting service in the case of Canada (24% of total exports of services). If Management of Companies and Enterprises (NAICS 55) (4%) is added to this total, the total exports of services obtained (28%) through surveys seem to match rather well those from the conceptual correspondence in figure 6 as ISIC item K "Real estate, renting and business activities" is also the largest industry exporting services (30%).

See the NAICS documentation on StatCAN: http://www.statcan.gc.ca/subjects-sujets/standard-norme/naics-scian/2007/list-liste-eng.htmhttp://www.statcan.gc.ca/subjects-sujets/standard-norme/naics-scian/2007/introduction-eng.htm#a10

<sup>&</sup>quot;In developing NAICS, the statistical agencies of the three North American countries agreed that, in the original development of NAICS, they would strive to create industries that, at least, did not cross the two-digit boundaries of ISIC Revision 3. The NAICS 2002 revisions were performed to meet those same objectives; and the NAICS 2007 revisions were also made using a similar approach - although in this case it was the ISIC Revision 4 that was providing the framework. NAICS, like ISIC, was principally designed to provide a classification for grouping establishments based on the kind of activity in which they are primarily engaged. Whereas the main criteria employed in delineating the divisions, groups and classes of ISIC are: (a) the character of the goods and services produced; (b) the uses to which the goods and services are put; and (c) the inputs, the process and technology of production, it is the third criterion of ISIC that corresponds to the conceptual basis of NAICS. This makes it unique among industrial classifications in that it is based on a single criterion." http://www.statcan.gc.ca/subjects-sujets/standard-norme/naics-scian/2007/introduction-eng.htm#a10

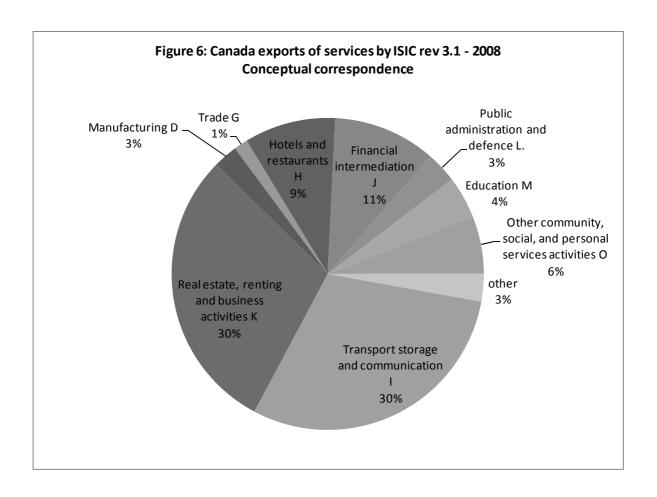
This corresponds in NAICS to division 11:Agriculture, Forestry, Fishing and Hunting, 21: Mining, Quarrying, and Oil and Gas Extraction; 22 Utilities; 23 Construction.



- 32. According to figure 5, the second largest service exporting industry is information and communication technology<sup>27</sup> which export 18% of the total and is a mix of different NAICS industries. If NAICS trade and transportation (9%)<sup>28</sup> is added, this amounts to a total of 27% of total exports of services, these industries can broadly be matched with the sum of ISIC rev 3.1 industry I: Transport, storage and communication and Industry G wholesale and retail trade etc that amount together to 31 % of the total.
- 33. A last match between the two frameworks can be done between item 52 of NAICS Finance and Insurance (15%) and item J Financial intermediation of ISIC rev. 3.1 (8% of total services exports)

This combines the North American Industry Classification System (NAICS) codes 333310, 334110, 334210, 334220, 334310, 334410, 334511, 334512, 335920, 417310, 417320, 417910, 511210, 517110, 517210, 517310, 517410, 517510, 517910, 518111, 518112, 518210.

This corresponds in NAICS to division 41: wholesale trade; 44-45: Retail trade; 48 and 49: transportation and warehousing.



#### 4. Trade in goods and services by industry

34. The results of the conceptual correspondence have been loaded on OECD. Stat<sup>29</sup> on a private view that can be looked at by delegates. It displays the conceptual presentation of exports of goods and services by ISIC rev 3.1 industry sections (with the exception of the Manufacturing industry which is split by sections) in Millions of US Dollars from 2002 up to the latest available year. Exports of goods and services are also available separately by industry section. A screenshot of OECD STAT is presented below.

Under International trade and Balance of payments, Exports of goods and services by industry. http://dotstat.oecd.org/Index.aspx?datasetcode=TRD\_BY\_IND



- 35. Annex III provides a graphic representation of trade in goods and services for a selection of countries namely Austria, Canada, Germany, Japan, USA. The scale related to the manufacturing industry is the right one and the one relating to all other industries is the left one. It must be noted that results on the goods side broadly match the Merchandise trade by industry as presented in the OECD STAN database with Partner world.
- 36. As could be expected in general, because of the weight of Freights transportation services in ISIC item I "transport storage and communication", the exports of this industry are strongly correlated to the exports of the manufacturing industry ISIC section D, because this service is highly dependent of the volume of commodity trade.

#### 5. Conclusions and next steps,

37. First comparisons between the trade in services by industry allocation that results from the conceptual allocation and trade in services by industry stemming from survey data do not seem to be too discouraging, with the exception of manufacturing services.

The next step would be to extend these comparisons to other countries that also produce survey based trade in services by industry and start estimating distribution services if countries have started some work on this issue.

#### 6. Questions to delegates:

- Other countries producing survey based trade in services by industry?
- Any estimation available of distribution services embedded in commodity exports?
- Further suggestions on adjustments to be made to get a better match between Merchandise trade and Balance of payment services statistics on the exports side?
- Can this presentation of goods and services go live on OECD.stat for delegates to examine and comment?

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ANNEX I: EXTENDED EBOPS 2002 –ISIC REV 3.1 CORRESPONDENCE (BASED ON THE EBOPS 2002- ICFA CORRESPONDENCE AS PRESENTED IN ANNEX 4 OF THE MANUAL ON STATISTICS OF INTERNATIONAL TRADE IN SERVICES.

ISIC ways 2.4	STATISTICS OF IT				
ISIC rev 3.1	ISIC description	HS 2002	CPC rev 1.1	EBOPS 2002	EBOPS descrition
Α	Agriculture, hunting and forestry	HS	СРС	283*	Other/ Agricultural, mining and on-site processing services -
В	Fishing	HS	CPC	283*	Other/ Agricultural, mining and on-site processing services-
С	Mining and quarrying	HS	СРС	283*	Other/ Agricultural, mining and on-site processing services
D	Manufacturing	HS	CPC		
D15	Manufacture of food products and beverages	HS	CPC		
D16	Manufacture of tobacco products	HS	CPC		
D17	Manufacture of textiles	HS	CPC		
D18	Manufacture of wearing apparel; dressing and dyeing of fur	HS	CPC		
D19	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear	HS	СРС		
D20	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	HS	СРС		
D21	Manufacture of paper and paper products	HS	CPC		
D22	Publishing, printing and reproduction of recorded media	HS	СРС	284*, 278*	Other business services -Advertising, market research, and public opinion polling
D23	Manufacture of coke, refined petroleum products and nuclear fuel	HS	CPC		
D24	Manufacture of chemicals and chemical products	HS	CPC		
D25	Manufacture of rubber and plastics products	HS	CPC		
D26	Manufacture of other non-metallic mineral products	HS	CPC		
D27	Manufacture of basic metals	HS	CPC		
D28	Manufacture of fabricated metal products, except machinery and equipment	HS	СРС	284*	Other business services
D29	Manufacture of machinery and equipment n.e.c.	HS	CPC		
D30	Manufacture of office, accounting and computing machinery	HS	CPC		
D31	Manufacture of electrical machinery and apparatus n.e.c.	HS	CPC		

ISIC rev 3.1	ISIC description	HS 2002	CPC rev 1.1	EBOPS 2002	EBOPS descrition
	Manufacture of radio, television and				
D32	communication equipment and apparatus	HS	CPC		
D33	Manufacture of medical, precision and optical instruments, watches and clocks	HS	CPC		
D34	Manufacture of motor vehicles, trailers and semi-trailers	HS	СРС		
D35	Manufacture of other transport equipment	HS	CPC		
D36	Manufacture of furniture; manufacturing n.e.c.	HS	CPC		
D37	Recycling	No HS	CPC	282*	Waste treatment and depollution
E	Electricity, gas and water supply	HS	СРС	231	Pipeline transport and electricity distribution
F	Construction		CPC	249	Construction services
G	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods		СРС	269	Merchanting and other trade related services (only for sale and retail sales)
н	Hotels and restaurants		CPC	957, 236 <sup>adj</sup> *	Expenditure on accommodation and food and beverage services & part of travel
ı	Transport, storage and communications		CPC		Part of Transport, Travel, Communication services
160	Land transport; transport via pipelines		CPC	205 <sup>adj</sup>	Transport
l61	Water transport		CPC	205 <sup>adj</sup>	Transport
162	Air transport		CPC	205 <sup>adj</sup>	Transport
163	Supporting and auxiliary transport activities; activities of travel agencies		CPC	205 <sup>adj</sup> , 236 <sup>adj</sup> *	Transport, travel
164	Post and telecommunications		CPC	245	Communication services
J	Financial intermediation		CPC		Financial services, insurance services part of royalties and license fees
J65	Financial intermediation, except insurance and pension funding		CPC	260	Financial services
J66	Insurance and pension funding, except compulsory social security		CPC	253	Insurance services
К	Real estate, renting and business activities	HS	СРС		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		CPC	284*	Other business services
K71	Renting of machinery and equipment without operator and of personal and household goods		СРС	272, 288*	Operational leasing services; Audiovisual and related services
K72	Computer and related activities		CPC	262*, 266*	Computer & information services- Royalties and license fees
K73	Research and development		CPC	279	Research and development
K74	Other business activities		CPC	274,278*,28 0, 284*,285,26 8 <sup>adj</sup>	Legal, accounting, management consulting and public relation services; Advertising, market research, and public opinion polling; Architectural, engineering and other technical services; Other business services; Services between related enterprises; Other business services not elsewhere allocated (268 adj)

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ISIC rev 3.1	ISIC description	HS 2002	CPC rev 1.1	EBOPS 2002	EBOPS descrition
L	Public administration and defence; compulsory social security		СРС	291*, 241*, 242*	Government services, n.i.e., Health services, Education services
M	Education		CPC	895, 242*	Education services PCR, education related expenditure (travel)
M8090	Other education		CPC	262*	Computer & information services
N	Health and social work		CPC	896, 241*	Health services PCR, health related expenditure (travel)
0	Other community, social and personal service activities	HS	CPC	897*	Other/Other personal, cultural and recreational services
090	Sewage and refuse disposal, sanitation and similar activities		CPC	282*	Waste treatment and depollution
091	Activities of membership organizations		CPC	289 <sup>adj</sup>	Other personal, cultural and recreational services
092	Recreational, cultural and sporting activities		СРС	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		CPC	897*	Other/Other personal, cultural and recreational services
Q	Extraterritorial organizations and bodies		CPC	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.

# ANNEX II BROAD CORRESPONDENCE BETWEEN SECTIONS OF NACE REV. 1.1/ISIC REV. 3.1 AND NACE REV. 2/ISIC REV.4<sup>30</sup>

ISIC Rev. 3.1 – NACE Rev. 1.1			ISIC Rev.4 – NACE Rev. 2		
Section	Description	Section	Description		
Α	Agriculture, Hunting and Forestry	Α	Agriculture, Forestry and Fishing		
В	Fishing				
С	Mining and quarrying	В	Mining and quarrying		
D	Manufacturing	С	Manufacturing		
E	Electricity, gas and water supply	D E	Electricity, gas, steam and air conditioning supply Water supply, sewerage, waste management and remediation activities		
F	Construction	F	Construction		
G H	Wholesale and retail trade: repair of motor vehicles, motorcycles and personal and household goods Hotels and restaurants	G	Wholesale and retail trade; repair of motor vehicles and motorcycles  Accommodation and food service activities		
	Transport, storage and communications	H	Transportation and storage		
•	Transport, storage and communications	J	Information and communication		
J	Financial intermediation	K	Financial and insurance activities		
K	Real estate, renting and business activities	L	Real estate activities		
		М	Professional, scientific and technical activities		
		N	Administrative and support service activities		
	Public Administration and defense; compulsory social security	0	Dublic administration and defence: compulsory assist acquity		
M	Education	P	Public administration and defence; compulsory social security  Education		
	Health and social work	Q	Human health and social work activities		
0	Other community, social and personal services activities	R S	Arts, entertainment and recreation Other service activities		
P Q	Activities of private households as employers and undifferentiated production activities of private households  Extraterritorial organizations and bodies	T	Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use Activities of extraterritorial organizations and bodies		

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<sup>30</sup> http://circa.europa.eu/irc/dsis/nacecpacon/info/data/en/2007%20introduction.htm

#### ANNEX 3 TRADE IN GOODS AND SERVICES BY INDUSTRY.

