

24th Voorburg Group Meeting

Oslo, Norway
September 14th to September 18th, 2009

Draft Sector Paper on:

ISIC 46 (rev 4) Wholesale trade and commission trade, except of motor vehicles and motorcycles

Vera Norrman, Statistics Sweden
Mary Beth Garneau, Statistics Canada

1.0 Introduction

Wholesalers, operating as both importers and exporters, provide a link between producers and buyers operating on the global markets. Availability of high quality statistics on wholesale trade is important for in-depth analysis of globalization. In many countries, wholesalers' contribution to value-added and employment is growing.

The Voorburg Group first studied the Wholesale Trade sector at its 23rd meeting in 2008. In total, seven mini papers were presented in Mexico covering turnover and output, trade margins and SPPIs for wholesale trade by representatives from Central Bureau of Statistics (Israel); INSEE (France); Statistics Canada; Statistics Sweden; and United States Bureau of Labor Statistics. In the presentations and the discussion that followed, it was evident that further discussion and input would be necessary before a sector paper on the industry could be finalized. In particular, further discussion on margins and quality adjustments is needed as well as clarification of the level of product detail required by the National Accounts.

Further to the work presented at the meeting in Mexico, authors of the mini-papers were asked to provide additional information on how well their current practices are working and whether or not the National Accounts are using the data collected through these practices.

To facilitate the discussion on this sector at the September 2009 meeting in Oslo, discussion points are included throughout this paper. The authors encourage you to use these points to prepare input and comments prior to the meeting.

2.0 Classification

2.1 Industry classification

ISIC Rev 4 defines wholesale as

“the resale (sale without transformation) of new and used goods to retailers, business-to-business trade, such as to industrial, commercial, institutional or professional users, or resale to other wholesalers, or involves acting as an agent or broker in buying goods for, or selling goods to, such persons or companies. The principal types of businesses included are merchant wholesalers, i.e. wholesalers who take title to the goods they sell, such as wholesale merchants or jobbers, industrial distributors, exporters, importers, and cooperative buying associations, sales branches and sales offices (but not retail stores) that are maintained by manufacturing or mining units apart from their plants or mines for the purpose of marketing their products and that do not merely take orders to be filled by direct shipments from the plants or mines. Also included are merchandise brokers, commission merchants and agents and assemblers, buyers and cooperative associations engaged in the marketing of farm products.”

For the most part, there is general agreement in the various industrial classifications used internationally to recognize the wholesaling process as an intermediate step in the distribution of merchandise. Wholesalers are organized to sell or arrange the purchase or sale of:

- (a) goods for resale (e.g. goods sold to other wholesalers or retailers),
- (b) capital or durable non consumer goods, and
- (c) raw and intermediate materials and supplies used in production.

There are some significant differences between the various industrial classifications of this industry. While the International Standard Industrial Classification uses a class of customer definition, the North American Industrial Classification System is based on method of selling (process). Another key difference is that ISIC, Rev. 4 combines wholesale and retail trade of motor vehicles and motorcycles into one combined division while the North American Industrial Classification System (NAICS) identifies separate wholesale trade and retail trade industries for motor vehicles, parts and accessories within each of the two trade sectors. International comparability between the United States, Canada and Mexico is limited to the 2-digit sector level of NAICS 41. Each of the three countries has its own unique industrial classification below the 2-digit wholesale sector.

The various international classifications distinguish wholesale merchants from wholesale on a fee or contract basis. In practice, the United States also identifies a third type of wholesale establishment, sales branches and offices of manufacturing operations, but includes this type of operation in the merchant industries classification of wholesale trade. Manufacturer's sales and branch offices are included in Wholesale Trade, even though their prices may be set by the manufacturing arm of the company. In most cases, title is held by the manufacturing arm of the company until the sale is complete. While the service performed more closely resembles that of Wholesale Trade Agents and Brokers, the US version of NAICS classifies the output of Manufacturer's sales and branch offices in Merchant Wholesaling. Even though the production function of some Manufacturer's offices that receive commission payments is somewhat different than that of merchant wholesalers, detailed National Accounts data would have been lost had these activities not been included together in the same industry.

The statistical classification of economic activities in the European Community, NACE is mandatory used by all of 27 member states of the European Union (EU) within the European Statistical System. NACE Rev.2 – based on ISIC Rev. 4 - is adopted and used since 2008 by the Member States, candidate Countries and EFTA Countries. Statistics produced on the basis of NACE are comparable at European level. Each member state has its own national version of NACE. Main concepts, definitions, methodological and classification guidelines and rules are assumed to be followed by all member states. There are both basic classification rules and rules for specific activities, among them for wholesale¹.

Statistical classification of economic activities NACE Rev. 2 was established as regulation (EC) no 1893/2006 of the European Parliament and of the Council since 20 December 2006.

¹Eurostat, NACE Rev.2, Chapter 3, Classification rules for activities and units

How do other countries identify and classify manufacturing sales branches? What information do national statistical agencies use to clarify the boundary between manufacturing sales branches and offices, and manufacturing establishments? Do any programs outside the USA compile turnover data for manufacturing sales branches and offices distinct from other wholesalers?

Wholesalers act as one of the intermediaries between the manufacturer and the final customer; they act as marketing intermediaries that neither produce nor consume the finished product, but instead sell to retailers, other merchants, and/or to industrial, institutional, and commercial users or other institutions that use the product mostly for resale. There are some situations whereby the sale of an item is to the final consumer especially if the product is used for business purposes in the physical construction of another product. In addition, wholesalers:

- store goods that neither manufacturers nor retailers can store until consumers require them;
- provide businesses a nearby source of goods made by many different manufacturers;
- provide manufacturers with a manageable number of customers; and
- allow manufacturers, businesses, institutions, and governments to devote minimal time and resources to transactions by taking on some sales and marketing functions.

For more detailed breakdown of the wholesale function see Appendix A.

Wholesalers may also perform installation services, equipment repair work, and warranty repair work for the manufacturer. These services are generally not bundled with the wholesaling function and, while occasionally performed by a wholesaler, are not part of the primary output of these firms.

Given the vast array of activities done by wholesalers and structural changes in the economy in response to globalization, it can be difficult to distinguish the boundaries between wholesalers and other industries. This is especially true when classifying establishments of large, multi-industry enterprises. For example, the ISIC definition of a wholesaler includes “sales branches and sales offices (but not retail stores) that are maintained by manufacturing or mining units apart from their plants or mines for the purpose of marketing their products and that do not merely take orders to be filled by direct shipments from the plants or mines.”

Drawing a line between the manufacturer and this wholesale activity can be difficult and is wholly dependent on the way an enterprise keeps its books. Some firms keep their books by product line rather than production function, blending manufacturing and wholesale activities into one entity. This makes it impossible to collect all the essential pieces of information from an industry-specific establishment-based survey.

Another boundary challenge stems from outsourcing, an activity that has expanded through globalization. In April 2007, the Technical Subgroup of the Expert Group on International Economic and Social Classifications considered three options for criteria from which to classify outsourced activity:

- a) ownership of the physical input materials by the principal,
- b) ownership of the concept (i.e. intellectual property product) related to the production process or the final good of the principal, or
- c) ownership of **both** the physical input material **and** the concept.

In the end, the Technical Subgroup recommended that the criterion for classifying the principal should be based solely on the ownership of the physical input materials by the principal.

Based on this recommendation, a principal that sub-contracts all of its manufacturing of products should be classified to manufacturing only if it owns the material inputs. Otherwise, it is likely classified to section G (Wholesale and retail trade; repair of motor vehicles and motorcycles). Of course the principal may carry out other activities such as design and research and development that may account for a higher portion of value added that would thus blur the boundary between wholesale trade and other service industries.

Do countries apply similar concepts to delineate the boundaries between wholesale and other sectors such as manufacturing, retail trade and transportation?

2.2 Product classification

In general, international product classifications delineate wholesale trade services by type of good, splitting out wholesale on a fee or contract basis. The various wholesale functions such as transportation, warehousing, bulk breaking or product support are bundled in the trade of a product. Appendix C contains the product structures of wholesale trade and commission trade, except of motor vehicles and motorcycles for the Central Product Classification 2.0 and 2008 version of the Statistical Classification of Products by Activity in the European Economic Community. The North American Product Classification (NAPCS) is still under development for wholesale trade. Since NAPCS is a mixture between the product-based and industry-based approach, the classification will likely include secondary activities such as repair and maintenance and installation services.

3.0 Industry Output

There is confusion in the use of the word turnover in the measure of wholesale trade statistics. What is turnover? Is it a measure of total sales or is it a margin? To reduce confusion, turnover in this paper refers to “turnover, sales, shipments, receipts for services and other revenues” as defined in 4.108-113 of the United Nations’ International Recommendations on Distributive Trade Statistics (IRDTS 2008)².

² <http://unstats.un.org/unsd/trade/M89%20EnglishForWeb.pdf>

This concept of turnover in wholesale trade is quite different from the output of the industry itself. Turnover corresponds to market sales of goods or services supplied in given a period while the output of the trade activity performed by a wholesaler is a trade margin. Both measures are important but for different purposes. The margin is critical for calculation of GDP while overall sales provide an indication of trade activity throughout the economy.

Regarding turnover, wholesale trade is by far the largest 2-digit-level industry in Sweden with over 1 100 billion SEK (2007), or almost one fifth of the total turnover. However, regarding production value, which within the wholesale trade can be seen as the trade margin, wholesale trade is "only" the third largest industry (NACE 45 and 74 is larger) with a share of approximately 6 percent of the total production value. There is no doubt, however, that all information that can be produced about wholesale trade is of major importance. Since the revision of the economic statistics in 2003 Statistics Sweden, and most importantly the National Accounts, now have annual statistics about turnover by product for the wholesale trade industry.

The IRDTS 2008 provides detailed guidelines on the collection of distributive trades data and definitions. This section does not intend to replace or to summarize those guidelines. Instead, it will provide an overview of what is required to measure the economic output of wholesale trade and will provide further clarity on some of the specific issues related to measuring that output.

From a national accounting perspective, the wholesale trade industry produces four main outputs.

Primary activities:

- net margins (of goods only)
- commissions (a provision of service)

Secondary activities

- goods production (at basic prices)
- services

The largest component of the output of the wholesale trade industry is defined in terms of margins on commodities traded (sales minus the cost of goods sold) and the commodities themselves are not considered as wholesaling output. In input–output tables, commodities are shown to flow from producers directly to consumers, leaving out such distributive channels as wholesale and retail trade, while users who purchase commodities are shown to buy trade margins separately. According to the European System of Accounts (ESA) 1995, “a trade margin is the difference between the actual or imputed price realized on a good purchased for resale and the price that would have to be paid by the distributor to replace the good at the time it is sold or otherwise disposed of.”

Statistics Sweden has conducted a survey regarding the trade margins in the respective parts of the trade industries, i.e. motor trade, wholesale trade and retail trade, as presented at last year’s meeting. The results of this survey have been sent to the National Accounts for analysis. It is still doubtful whether the results can be implemented in the present

system. A general revision of the National Accounts will be carried out in 2011 and this might be a good time to implement a new measure of trade margins so the work is still in progress.

For certain activities, the trader provides a resale operation on behalf of a third party; without becoming the owner of the merchandise, he simply earns a commission. This service is not assimilated into a trade margin but is treated as a provision of services.

In some cases, wholesalers may provide other secondary activities, such as installation services, equipment repair work, and warranty repair work for the manufacturer. That output is valued using the “basic price” which means excluding specific taxes charged after the manufacture of products (such as taxes on alcohol and tobacco) and includes subsidies on products received. These secondary activities are divided between goods production and services.

3.1 Indicators of trade activity

In addition to the detailed structural financial data required to calculate annual GDP, there are compelling reasons to measure wholesale sales and inventory changes on a sub-annual basis. Wholesalers reflect the distribution of goods throughout the entire economy including imports, exports and manufacturing sales branches. Monthly or quarterly data measure the performance of the wholesale trade sector and provide an important indicator of the health of a nation’s economy. In particular, sub-annual data are more timely indicators of economic turning points and can provide early measures of the economic impact of certain events such as border disruptions or strikes in railway or port services.

Below is a list of indicators in order of preference, according to the European System of Accounts (ESA):

1. The preferred indicator is an output indicator that measures deflated gross output (or turnover) for an activity. This requires an appropriate deflator to remove price alterations.
2. The use of volume indicators is also acceptable according to the ESA ordinance. This requires no deflation but will naturally miss changes in quality or changes in production. Volume measures are considered a B method because volume base margin calculations assume that margins remain constant and data have shown that not to be true.
3. Other kinds of indicators that measure input to an activity that is not approved except for certain industries where this is the only available short-term indicator. The most commonly used indicator of this type is employment.

3.2 Unit of observation

In North America, a large portion of the wholesale trade industry is comprised of wholesale establishments that are part of large multi-industry enterprises where the enterprise is not typically classified to wholesale trade. To make extensive use of the

data and to truly understand the activities and transactions of a wholesaler, the target unit of observation should be the establishment.

That being said, there are some difficult challenges in collecting wholesale trade data at an establishment level. Many firms operate manufacturing sales branches and offices as an extension of the manufacturing facility and not as a separate profit center. The entity may be able to report turnover but cost of goods sold can be a challenge. Transfer pricing is often an issue. Consider a company where the manufacturing plants are cost centres with sales flowing through a manufacturing sales branch or office. The goods are acquired from the manufacturing plant at cost and resold at market prices. The calculated margin would reflect the profit from the manufacturing activity plus a wholesale margin. The IRDTS (par. 4.101) recommends that,

“Transfers from other establishments of the same trade enterprise should be valued as though purchased. When this is not possible in practice, transfers might be valued at cost to the enterprise on delivery to the establishment, that is to say, original purchase price, delivery and similar charges, labour and material directly used and possibly overhead.”

How are other countries dealing with this issue? Are cost centres included in survey populations for industries such as manufacturing? Is an internal allocation made to attribute some profit to the manufacturing production units thus lowering the wholesale mark-up? If so, how is the allocation done?

Some countries, such as Canada and the United States, invest in collecting timely data covering merchant wholesalers with less frequent coverage of wholesale agents and brokers (wholesalers on a fee or contract basis). In many countries, the overall contribution of wholesale agents and brokers to wholesale trade turnover is very small. Size of firm and response burden are also factors to consider in allocating resources to measure the agent and broker population.

3.3 Inventories

Withdrawals from inventories should be valued at the purchasers' prices at which the inventories can be replaced at the time they are withdrawn rather than at the purchasers' prices that may have been paid for them when they were acquired. Measurement of inventories provide challenges since valuation practices differ from one enterprise to the next. The common methods used by units in their business accounting practices for reporting withdrawals from stocks are:

1. FIFO (first-in-first-out): the cost of items sold or consumed during the reference period is calculated as though they were sold or consumed in the order of their acquisition;
2. LIFO (last-in-first-out): the cost of items sold or consumed during the reference period is deemed to be that of the most recent acquisitions or production. This implies that withdrawals are valued approximately at current prices;

3. Average cost: the cost of an item is determined by applying a weighted average of the cost of all similar items available for sale over a period of time;
4. Specific item cost: a method of tracking inventory when the actual cost of each item can be identified separately. This method is usually used for large, easily traceable items, such as vehicles or furniture.

The measure of inventories should include all inventories owned by the enterprise and held by or under the control of the establishment regardless of where the inventories are in the world (held overseas, in transit abroad, at the establishment's own premises or elsewhere). Inventories held at ancillary units, in bonded stores or warehouses, on consignment, in transit and materials being manufactured, processed or assembled on commission by others should be included.

3.4 Data sources

Wholesale trade data are best gathered through surveys where data on products or on inventory valuation methods can be collected. Administrative data can be used to collect revenue, cost of goods sold and expense details for single industry enterprises. Wholesale establishments of multi-industry enterprises are generally not good candidates for administrative data since there is unlikely to be a one to one correspondence between the target establishment and the reporting legal entity.

Value-Added Tax (VAT) data are a good source of turnover (sales) information from wholesalers although not likely for establishments of multi-industry enterprises. Inventory data must be collected via a survey vehicle.

From 1997 Statistics Sweden uses administrative data from Swedish Tax Authority. In this way, Statistics Sweden gets information from all the enterprises in Sweden regarding main economical variables such as turnover, cost of trade goods and raw material, cost of personnel, financial incomes and costs, assets and debts etc. In order to get more detailed data, such as turnover by product, Statistics Sweden conducts an annual survey. In this survey, including about 2,000 wholesale trade enterprises, the total turnover is pre-printed and the respondents divide this turnover into different products.

3.5 Trade flows

In some countries, regional transfers and trade must be measured. For example, Canada produces I-O tables for each of its provinces and relies on inter-provincial trade flow data in the calculation of provincial equalization payments and for the provincial allocation of a blended VAT. In addition, international trade data indicate the port of entry of goods but not the intended destination which may be in another province. Naturally, the wholesaler is an appropriate source of this information. Canada collects origin and destination data by product from wholesalers. These data represent a large burden to respondents and are difficult to report. To balance out the burden, Canada has reduced its demand for commodity detail. Frequency of collection is another method to reduce the burden; however, due to the complexity of the data requested, Canada has found the

quality of data reported by respondents improved over time with annual collection versus less frequent collection.

It should be noted that there are some important differences between international trade and wholesale trade data. Most importantly, change in ownership and thus recognition of a sale often does not occur on the same day that the good crosses an international border. In addition, some domestic manufacturers export directly from the factory while other manufacturers have their exports flow through a wholesale operation.

4.0 Service Producer Price Index

4.1 Deflation by the SNA

Before determining what price data are required to deflate wholesale trade data, it is important to understand what and where the deflation is taking place in the System of National Accounts. For example, Canada has 4 different programs that deflate wholesale trade data, three of which take place in an integrated system of national accounts. First, sales data are deflated to determine the volume of wholesale trade sales in the economy. This is used as an economic indicator in its own right. In the absence of sub-annual estimates of wholesale gross margins, Canada deflates wholesale sales as a first step in its calculation of monthly GDP. A third program deflates wholesale trade margins for calculation of GDP in the Input-Output tables. Finally, a fourth program provides more timely estimates of annual GDP (by industry - provincial and territorial) than the provincial I-O-based GDP. The price data required for each program is different. In particular, the deflation of sales and Canada's calculation of monthly GDP require a price index for the final selling price. On the other hand, the wholesale GDP estimate used in the Input-Output accounts requires a price index for the margin price.

To calculate annual GDP estimates for the Input-Output accounts, the commodity output is deflated using a double deflation method. The real GDP is derived by taking the difference between the industry gross output and the industry intermediate inputs at constant prices.

In the absence of a direct price index, the price movement can be measured indirectly via a derived implicit price index. The implicit price index is calculated by taking the sum of the current dollar wholesale margins divided by the sum of the constant dollar wholesale margins.

For wholesale commodity output, an implicit price index is used to deflate the current dollar value of wholesale commodity output. The implicit price index (IPI) applied is the quotient of current dollars divided by constant dollars for total wholesale margins. The constant dollar wholesale margins for input and final demand commodities used in the calculation of the IPI are obtained by applying current dollars average margin ratio to the current dollar producer value of input and final demand commodities.

The appropriateness of the price index used to deflate wholesale margins is an important consideration. In the absence of a specific wholesale producer price index, some countries will use a combination of Industrial Product Price Indexes (IPPI) or Import Price Indexes as deflators of specific commodities. The IPPIs provide a price at the factory gate and do not include other acquisition costs incurred by the wholesaler such as transportation costs. This assumes that other acquisition costs move in tandem with prices at the factory gate which is unlikely to be the case. For example, a change in gas prices would likely affect transportation costs but may not affect the price at the factory gate. The wholesaler's cost to purchase imports may not be represented by an Import Price Index due to specific strategies used by wholesalers to insulate themselves from changes in exchange rates. For example, some wholesalers will hedge against the currency while others may negotiate contracts in the wholesaler's home currency. Finally, selling prices by the wholesaler may move differently than acquisition prices. For example, a wholesaler may set prices for a fixed period of time; similarly, customers may have contracts with a fixed price.

Ideally, countries should develop specific SPPI indices for wholesale trade. Such an approach must consider the two principal outputs of a wholesaler: a trade margin and a commission on sales. Margin prices are the most prevalent type of price for merchant wholesalers. Since most wholesale trade is dominated by merchant wholesalers, the dominant price for wholesale trade is a margin price. Gross margin is defined in the National Accounts as the selling price of a good less the cost of replacing the good sold. In addition, the margin price should reflect all rebates and allowances.

In those cases where the wholesaler does not take title to the goods, monetary value of commissions per unit received for a particular product or product line is the price for the services provided. The dollar value of commissions, based on a percent of sales, is the most prevalent type of price for wholesale agents and brokers.

Countries need to understand the data needs of their System of National Accounts in determining trade-offs among cost, detail, response burden and quality. For example, the Canadian Wholesale PPI, unlike that of the U.S., does not include a price index for commissions. Wholesale agents and brokers represent a small share of overall turnover in wholesale trade in Canada. Conversely, the Canadian index is calculated at a 5-digit NAICS while the US PPI is being expanded to the four-digit NAICS level, with additional five-digit detail possible for NAICS 4234.

The System of National Accounts in Sweden is using following procedure for the calculation of trade margins and Gross Value Added:

In the annual accounts calculations of trade margins for the product accounts are carried out in the Supply- and Use tables. There is a percentage margin for each product group. The margins are totalled in the system. Trade margins generated in branches other than NACE G are subtracted from the total and the residual is the output value for trade margins within the NACE G.

The percentage for the base year is used for extrapolating the value in constant prices for each product group. This means that the trade margin for each product is extrapolated in

line with the purchasers' price. Assuming the same trade margin implies that the quality of the goods or related services has not changed from one year to another.

If checks on the Supply- and Use tables reveal substantial discrepancies between the current and constant prices, this may indicate that something has changed from one year to another. The discrepancy may result from an increase or reduction in the trade margin because of competition or a change in the service offered. If there has been a change in the service offered there will be a change in the margin in constant prices too.

On quarterly basis Gross Value Added are based on Turnover statistics for current prices and Service production index for constant prices. The Service production index is derived through deflating the Turnover statistics on a detailed level, 57 industries. For NACE 45 weighted indices for products according to CPI and SPPI are used. For NACE 46 weighted PPI for domestic supply are used and for NACE 47 weighted indices for products according to CPI are used.

The method used by Swedish NA for the deflation of trade margins is classified as B-method by Eurostat.

The appropriate SPPI for trade margins are lacking in most countries in the world so even in Sweden. During 2007 the Prices unit of Statistics Sweden studied the subject in a prestudy; but due to the lack of resources the realization of the development was postponed and will start – if possible – next year.

How does the System of National Accounts deflate wholesale trade data in various countries? Do they include separate wholesale commodities in the I-O tables for wholesale margins and commissions? What level of product detail is required? Do other countries deflate wholesale sales as a current economic indicator?

4.2 Margin prices (Merchant wholesalers)

Given that the output of trade industries cannot be directly observed and quantified, a wholesale PPI measures the output of the services using margin prices. Margin prices are calculated from both the price paid by the trade entity for a good (or set of goods) and the price the entity charges its customers for the same good (or goods); they are, in effect, a residual calculation and may be considered value-added indexes.

The type of price collected in merchant wholesale is typically an unlagged average margin price. The gross margin is the difference between two different prices:

- a) Acquisition price from the supplier (replacement cost)
- b) Selling price to the next level buyer

The acquisition price represents the direct cost of the wholesaled goods and should exclude freight whenever possible. The price should include point-of-sale incentives (taken as discounts) that may be applied to the merchandise whenever possible.

It is recommended that wholesale PPI surveys collect margin prices in the following order of priority:

1. Average gross margin per unit for a comparable customer class and/or supplier class for all sales within a comparable product line.
2. Average gross margin per unit for all customers and/or suppliers for a comparable product line.
3. Average gross margin per unit for a particular customer class and/or supplier class for all sales of a particular product.
4. Average gross margin per unit for all customers and/or suppliers for all sales of a particular product.
5. Gross margin for a single specific product transaction.

Is there general agreement with the order of priority? Are there other acceptable measures?

4.3 Commission prices (wholesale on a fee or contract basis)

Wholesale agents and brokers and some manufacturer's sales and branch offices receive a commission fee for their service. The commission is the amount of money that the sales office (not an individual agent) receives for performing the service. In the United States, five percent of the per unit sales price is a typical sales office commission percentage, although this can vary. Since revenue figures are typically recorded in terms of sales dollars for this industry, the total dollar value of commissions is a result of multiplying total sales dollars by the average commission percentage.

The U.S. Wholesale PPI accepts five possible measure of dollar value of commission prices in the following order of priority:

1. Average dollar value of commission per unit for a comparable customer class for all sales within a comparable product line.
2. Average dollar value of commission per unit for all customers for a comparable product line.
3. Average dollar value of commission per unit for a particular customer class for all sales of a particular product.
4. Average dollar value of commission per unit for all customers for all sales of a particular product.
5. Dollar value of commission for a single specific product transaction.

Merchant wholesalers do not typically price their services based on a flat fee commission price. However, in the event that they do, a flat fee for a single specific transaction should be collected.

What are other countries doing to deflate commissions? Should all five measures be a recommended practice? Do other countries agree with the order of priority? Are there other acceptable measures?

4.4 Measurement issues

The unit of measure may vary within the Wholesale Trade industries. Although transactions are often based on large volumes, the most common unit of measure is on a per unit basis. The behavior of the long-term price relative can be a source of major concern when pricing wholesale trade, and this can occur for many reasons. One cause can be the setting of the base price – it is essential to avoid using a sale price (i.e. discounted price) as the base price when establishing a new series, rebasing an item that had been delinquent, or taking a non-comparable substitution. This subsection looks at measurement issues related to: sale prices; lags between the purchase and sale of a good; irregular transactions of particular goods; and the identification and eventual replacement of comparable products. Quality adjustments are covered in the next subsection.

Using the margin price of an individual product when a product is sold for less than it is purchased is problematic. Unlike Retail Trade, loss leaders are not very common in Wholesale Trade industries, but negative prices occur, albeit very rarely when products are sold at clearance. Clearance prices can be equal to or even less than the original cost of the product, thereby creating a negative price. This often happens when a new model of a product comes out after a certain amount of time, and the old model must be sold. For example, a computer may be discontinued after six to twelve months, as new models tend to be much more advanced in terms of technology and efficiency. Since it is difficult for respondents to value products on a replacement cost basis that are no longer manufactured and sold to them, clearance priced items sold by wholesalers have no economic consequence and are not collected in the U.S. PPI. Recordkeeping practices indicate that these products do not account for a large amount of company revenue and are often not carried forward in the accounting books of companies.

Even short-term sale prices can cause huge fluctuations in the period that the sale price is first encountered and again in the month that the price reverts to normal. Ideally, if the price is verified as accurate, then the item is deleted from index calculation that month and not used until the price reverts to a positive value.

Lags between the time a wholesaler purchases a good and the time he sells the good can cause further challenges in pricing wholesale margins. Selling prices should correspond to buying prices in order to reflect the actual gross margin. But in practice, selling can be delayed; companies can hold stocks, buy products and sell them after some time. Sometimes they can make a profit just from holding stocks. That is especially true for agricultural raw materials where the prices of goods rise over long periods of time (for example: wheat, corn, etc.). Sometimes wholesalers have long-term agreements in constant prices, when selling to institutional customers, manufacturers or chain stores. In these cases they buy big quantities of the product at the time of order, and supply them during the period of agreement at constant prices.

Another measurement challenge in pricing wholesale is that some goods may not be transacted on a regular basis. This situation often occurs with fashion or seasonal apparel merchandise such as swimming-suits. Wholesalers sell whatever is currently popular but may not repeat the transaction for a significant amount of time. When producing a

monthly or even quarterly price index, products and/or services must have been wholesaled in the reference period, or have close substitutes in order to be considered an acceptable item to be used in the index. Establishments that sell high fashion and seasonal apparel items generally sell products that are “comparable” over time. Referring back to the output definition for wholesale trade, it is important to note that it is the service performed (i.e. the efficient transfer of goods to another party), that the margin price measures and not a specific product. Similar products are considered comparable if marketed to the same target demographics, under the same set of conditions.

In some cases, it is difficult to define a specific comparable product line. The respondent must view a comparable product line as a grouping of goods, each of which could be substituted for another while, at the same time, being sold on the same per unit basis. Comparable product lines contain homogeneous groupings of products that, in the view of the respondent, are marketed under the same set of conditions to the same (target) demographic market. For example, the sale of a computer printer is not comparable to the sale of a computer monitor, nor is the sale of all computers a homogenous grouping. However, the sale of all “high” end computers could be considered a homogeneous grouping of products. When it is not possible to collect the average gross margin for a product line, individual item product margin may be collected as a fallback.

Further challenges occur when the product being priced is replaced. If the new product serves the same niche market – for example, a newer version of the same computer – then it is a comparable substitution and the price change is accepted. If it does not – for example, replacing a low-end portable T.V. with a large screen plasma High Definition T.V. (HDTV), then it is a non-comparable substitution. The new T.V. no longer services the same niche market with the same basic functionality. If possible, the quality difference in the two items would be used for quality adjusting the margin price difference; otherwise the item would be linked in with no change.

Are there measurement issues related to the import and export of goods? Margins may be affected by changes in exchange rates e.g. in the case of goods imported in a foreign currency and sold in a domestic currency. Companies make adjustments to significant changes in exchange rates. How are those adjustments reflected in the data collected to calculate margin prices?

4.5 Quality adjustment

Quality adjustment in wholesale trade is difficult because products are used to determine the margin price for the service. Quality adjustment is based on the service provided, not the products that are being measured. It is important to define the additional services that are given by the wholesale trade company, such as marketing and sales promotion, packaging and labeling, warehousing and others. Those services affect the selling price and the gross margin. It may be important to make a distinction between resale of imported goods and resale of domestic goods; in many countries there are more services required for imported goods, because of the distance from the customers.

There is a value associated with the output of trade services that are a result of these services provided to the consumer. However, it is inherently difficult to observe and directly measure this value. Therefore, it is difficult to define what would constitute a unit of output for this bundle of services other than in terms linked to the units of the physical commodities sold.

Theoretically, quality adjustments should be performed when marketing characteristics are changed. A change in marketing characteristics, such as the area of the selling space, or the distance from the nearest competition, may affect the margin prices of the products sold. However, unless a hedonic model is developed, it is difficult to quantify the amount of price change due to the changes in marketing. Alternatively, unless an analyst received information from the respondent that a price change was a direct result of the change in marketing, no quality adjustment for changes in marketing can be made.

An advantage of using average margin prices on a per unit basis is that discounting is readily captured in these prices and the need for respondent contact as the result of product substitution is diminished. Minor changes in product generally result in a direct comparison of margin prices for the product as long as the service provided for the product has not significantly changed. However, a lack of quality control is also introduced as a result of such a methodology for pricing. This creates an unknown degree of error in maintaining constant quality for transactions occurring in the Wholesale Trade industries. However, the advantages of the average pricing are believed to far outweigh the disadvantages, given the perceived degree of error associated with maintaining constant quality for transactions.

Price change is not shown for substitute products which have significant changes or those which are completely discontinued.

Marketing services most likely to change are installation, invoicing, computer services, conducting educational seminars and “missionary” work, whereby employees are sent on missions to prospective or existing customers to increase business. Some of these fees are charged for separately, and can therefore be given a separate chance of selection, and do not affect the sale of a product. If there are no separate fees for these services it becomes difficult to quantify changes when they occur.

4.6 Response issues

A wholesale PPI should not have any special or additional classifications that differ from a country’s turnover program. In Canada and Israel, the wholesale PPI sample is a sub-sample of the survey sample measuring wholesale turnover. This results in increased efficiency in sample review activities while also ensuring that industry level estimates of price change and turnover will be directly comparable. In this way, the price index is based on trade activity by firms classified to wholesale trade while excluding wholesale trade activity by establishments classified to other industries.

In the United States, most companies within Wholesale Trade industries maintain pricing records and make pricing decisions at a headquarters location. Therefore, information was collected at these locations rather than from an individual establishment location. Some problems collecting prices did occur in the case of manufacturers' sales and branch offices, depending on whether records were separable for the manufacturing arm of the company versus the wholesaling arm. In many cases, respondents considered the manufacturers' sales and branch offices merely an extension of the manufacturing facility and not a separate Profit Maximizing Center.

Where is the appropriate contact point within a company for this information in other countries?

In many countries, the contribution of agents and brokers to the wholesale industry may be small while the population itself may consist of a large number of small businesses. Countries may opt to measure prices of merchant wholesalers only for reasons of cost and response burden since the value added of agents and brokers may be very small.

Do you need to collect data for agents and brokers in addition to merchant wholesalers? Is there a different price trend between the two?

In United States PPI for wholesale attempts to price the service the wholesaler provides to the purchaser of the goods. The output of this wholesaling service is measured most accurately by the average gross margin per unit for a comparable product line. This average gross margin is defined as the difference between the price that a wholesaler pays for a product line and the price that would have to be paid by the wholesaler to replace that same product line at the time it is sold. Most respondents were able to provide this information.

When it was not possible to collect the average gross margin for a product line, individual item product margin was collected as a fallback.

The average price approach has been well received by respondents as they often have information in this format and also believe that this information is more likely indicative of the pricing of their firms. It is a particularly attractive approach in industries where product change is rapid or where there is seasonal change. These industries include wholesale distribution of apparel products and electronic products.

The Central Bureau of Statistics in Israel has also found that companies usually have data on revenues and quantities of specific types of products, or product groups, for a particular customer or customer group. There are some cases where acquisition prices are less available than selling prices, but measuring only selling prices requires making the assumption that selling and buying prices have similar behavior.

A cautionary note is made regarding average prices for homogeneous groupings of products. Anecdotal evidence suggests that the average price approach is a more accurate

measure of output in trade industries as compared to pricing a single item in a single transaction. However, while it is tempting to expand such an approach to larger product groupings, thus accounting for larger amounts of output, this approach needs to be tempered by the unknown degree of error introduced due to lack of homogeneity.

What response issues do countries face with respect to respondent burden, sensitivity of data on margins and the impact of various marketing strategies on margins? Are respondents reluctant to provide this detail? Does the level of product detail affect a firm's willingness to participate in the survey?

5.0 Summary and next steps

While there is general agreement among the various international industrial classifications on the wholesale process as an intermediate step in the distribution of merchandise, there are some important boundary issues and ambiguities in the application of those classifications. These issues are amplified by structural changes in the economy in response to globalization.

Product classifications delineate wholesale trade services by type of good and distinguish between merchants and wholesalers on a fee or contract basis. The specific functions of a wholesaler that are included in the trade of a good such as transportation, warehousing, bulk breaking, product support and marketing are not broken out; these functions are a challenge to those calculating margin price indexes who have to account for quality adjustments, as wholesalers add or remove these functions from their trade activities.

The primary output of the wholesale trade industry is margins on commodities traded. In addition, commissions received for wholesale activities done on behalf of a third party is a primary activity but accounts for a much smaller proportion of wholesale trade than the margins received by merchants.

In the absence of a wholesale PPI, some countries deflate wholesale trade margins using a combination of Industrial Producer Price Indexes and Import Price Indexes. Others may estimate output using volume indicators although the latter approach is not recommended.

Direct measurement of changes in wholesale trade margins through a wholesale PPI is the preferred method of deflation of the output of this industry. As a minimum, countries should try to deflate margins. Ideally, price indexes should also be calculated to deflate commissions.

The 24th Voorburg Group Meeting in Oslo will provide a second opportunity to discuss the issues raised in this paper. Along with what has already been compiled, the results of that discussion will form the basis of a sector paper to be tabled at the 25th Voorburg meeting in 2010.

Appendix A

Definitions

Types of wholesale trade firms

- 1) Merchant wholesalers, purchase goods in large quantities, take title to the goods, store them, and then sell them to retailers, manufacturers, other wholesalers, or other customers.
- 2) Sales branches and offices of manufacturing operations are local offices of manufacturers. They market their own products and coordinate distribution directly from the producer to the buyer.
- 3) Wholesale agents or brokers, coordinate the sale of goods from one party to another—usually from manufacturers without taking title to or handling goods in the process. Included in this category are auction companies and commission merchants.

Wholesale Function

The output of the industry can be a mixture of the following:

1. Creation of utility (or efficiency)
 - a) Time and place utility
make products available when and where customers are likely to find them
 - b) possession utility
allow their customers to take ownership of products as needed
 - c) information utility
provide details about the products that they sell
2. Channeling functions:
 - a) Selling and promoting
the wholesaler has more contacts and is more often trusted by the buyer than the distant manufacturer.
 - b) Buying and assortment building
wholesalers can select items and build assortments needed by their customers, thereby providing a “one stop shop” for a buyer.
 - c) Bulk breaking
wholesalers save their customers money by making large volume purchases and breaking these large lots into smaller quantities.
 - d) Warehousing
wholesalers hold inventory, thereby reducing the inventory costs and risks of suppliers and customers.
 - e) Transportation
wholesalers typically provide quicker delivery to buyers because they are closer to the buyers than the manufacturer.
 - f) Risk bearing
wholesalers absorb risk by taking title and bearing the cost of theft, damage, spoilage, and obsolescence.
 - g) Market Information

wholesalers give information to suppliers and customers about competition, new products, and price developments.

h) Management services and advice

wholesalers often help customers train their sales clerks, improve store layouts, and displays, and set up accounting and inventory control systems.

3. Secondary output

Wholesalers also may perform installation services, equipment repair work, as well as warranty repair work for the manufacturer. These services are generally not bundled with the wholesaling function.

Appendix B

Industry classification

ISIC Rev.4 code 46

G - Wholesale and retail trade; repair of motor vehicles and motorcycles

45 - Wholesale and retail trade and repair of motor vehicles and motorcycles

451 - Sale of motor vehicles

4510 - Sale of motor vehicles

452 - Maintenance and repair of motor vehicles

4520 - Maintenance and repair of motor vehicles

453 - Sale of motor vehicle parts and accessories

4530 - Sale of motor vehicle parts and accessories

454 - Sale, maintenance and repair of motorcycles and related parts and accessories

4540 - Sale, maintenance and repair of motorcycles and related parts and accessories

46 - Wholesale trade, except of motor vehicles and motorcycles

461 - Wholesale on a fee or contract basis

4610 - Wholesale on a fee or contract basis

462 - Wholesale of agricultural raw materials and live animals

4620 - Wholesale of agricultural raw materials and live animals

463 - Wholesale of food, beverages and tobacco

4630 - Wholesale of food, beverages and tobacco

464 - Wholesale of household goods

4641 - Wholesale of textiles, clothing and footwear

4649 - Wholesale of other household goods

465 - Wholesale of machinery, equipment and supplies

4651 - Wholesale of computers, computer peripheral equipment and software

4652 - Wholesale of electronic and telecommunications equipment and parts

4653 - Wholesale of agricultural machinery, equipment and supplies

4659 - Wholesale of other machinery and equipment

466 - Other specialized wholesale

4661 - Wholesale of solid, liquid and gaseous fuels and related products

4662 - Wholesale of metals and metal ores

4663 - Wholesale of construction materials, hardware, plumbing and heating equipment and supplies

4669 - Wholesale of waste and scrap and other products n.e.c.

469 - Non-specialized wholesale trade

4690 - Non-specialized wholesale trade

Appendix C

Product classifications

CPC 2.0 Product Structure

61 - Wholesale trade services

611 - Wholesale trade services, except on a fee or contract basis

6111 - Wholesale trade services, except on a fee or contract basis, of agricultural raw materials and live animals

- 61111 - Wholesale trade services, except on a fee or contract basis, of grains and oilseeds and oleaginous fruits, seeds and animal feed
- 61112 - Wholesale trade services, except on a fee or contract basis, of flowers and plants
- 61113 - Wholesale trade services, except on a fee or contract basis, of unmanufactured tobacco
- 61114 - Wholesale trade services, except on a fee or contract basis, of live animals, including pet animals
- 61115 - Wholesale trade services, except on a fee or contract basis, of hides, skins and leather
- 61119 - Wholesale trade services, except on a fee or contract basis, of agricultural raw materials n.e.c.

6112 - Wholesale trade services, except on a fee or contract basis, of food, beverages and tobacco

- 61121 - Wholesale trade services, except on a fee or contract basis, of fruit and vegetables
- 61122 - Wholesale trade services, except on a fee or contract basis, of dairy products, eggs and edible oils and fats
- 61123 - Wholesale trade services, except on a fee or contract basis, of meat, poultry and game
- 61124 - Wholesale trade services, except on a fee or contract basis, of fish and other seafood
- 61125 - Wholesale trade services, except on a fee or contract basis, of sugar confectionery and bakery products
- 61126 - Wholesale trade services, except on a fee or contract basis, of beverages
- 61127 - Wholesale trade services, except on a fee or contract basis, of coffee, tea and spices
- 61128 - Wholesale trade services, except on a fee or contract basis, of tobacco products
- 61129 - Wholesale trade services, except on a fee or contract basis, of food products n.e.c.

6113 - Wholesale trade services, except on a fee or contract basis, of textiles, clothing and footwear

- 61131 - Wholesale trade services, except on a fee or contract basis, of yarn and fabrics
- 61132 - Wholesale trade services, except on a fee or contract basis, of household linens, curtains, net curtains and diverse household articles of textile materials
- 61133 - Wholesale trade services, except on a fee or contract basis, of articles of clothing, articles of fur and clothing accessories
- 61134 - Wholesale trade services, except on a fee or contract basis, of footwear

6114 - Wholesale trade services, except on a fee or contract basis, of household appliances, articles and equipment

- 61141 - Wholesale trade services, except on a fee or contract basis, of household furniture
- 61142 - Wholesale trade services, except on a fee or contract basis, of radio and television equipment and recorded audio and video disks and tapes
- 61143 - Wholesale trade services, except on a fee or contract basis, of articles for lighting
- 61144 - Wholesale trade services, except on a fee or contract basis, of household appliances
- 61145 - Wholesale trade services, except on a fee or contract basis, of miscellaneous household utensils, cutlery, crockery, glassware, china and pottery
- 61146 - Wholesale trade services, except on a fee or contract basis, of wickerwork, cork goods, cooper's ware and other wooden ware

6115 - Wholesale trade services, except on a fee or contract basis, of miscellaneous consumer goods

- 61151 - Wholesale trade services, except on a fee or contract basis, of books, newspapers, magazines and stationery
- 61152 - Wholesale trade services, except on a fee or contract basis, of photographic, optical and precision equipment
- 61153 - Wholesale trade services, except on a fee or contract basis, of games and toys
- 61154 - Wholesale trade services, except on a fee or contract basis, of watches, clocks and jewellery
- 61155 - Wholesale trade services, except on a fee or contract basis, of sports goods (incl. bicycles)
- 61156 - Wholesale trade services, except on a fee or contract basis, of leather goods and travel accessories
- 61159 - Wholesale trade services, except on a fee or contract basis, of miscellaneous consumer goods n.e.c.

6116 - Wholesale trade services, except on a fee or contract basis, of construction materials and hardware

- 61161 - Wholesale trade services, except on a fee or contract basis, of construction materials and flat glass
- 61162 - Wholesale trade services, except on a fee or contract basis, of fittings, fixtures and ceramic sanitary fixtures

- 61163 - Wholesale trade services, except on a fee or contract basis, of wallpaper and floor coverings
- 61164 - Wholesale trade services, except on a fee or contract basis, of paints, varnishes and lacquers
- 61165 - Wholesale trade services, except on a fee or contract basis, of hardware and hand tools

6117 - Wholesale trade services, except on a fee or contract basis, of chemical and pharmaceutical products

- 61171 - Wholesale trade services, except on a fee or contract basis, of basic industrial chemicals and synthetic resins
- 61172 - Wholesale trade services, except on a fee or contract basis, of fertilizers and agrochemical products
- 61173 - Wholesale trade services, except on a fee or contract basis, of pharmaceutical products
- 61174 - Wholesale trade services, except on a fee or contract basis, of medical and orthopaedic goods
- 61175 - Wholesale trade services, except on a fee or contract basis, of perfumery articles, cosmetic articles and toilet soaps
- 61176 - Wholesale trade services, except on a fee or contract basis, of cleaning materials

6118 - Wholesale trade services, except on a fee or contract basis, of machinery, equipment and supplies

- 61181 - Wholesale trade services, except on a fee or contract basis, of motor vehicles, motorcycles, snowmobiles and related parts and accessories
- 61182 - Wholesale trade services, except on a fee or contract basis, of other transport equipment, except bicycles
- 61183 - Wholesale trade services, except on a fee or contract basis, of office machinery and equipment including office furniture
- 61184 - Wholesale trade services, except on a fee or contract basis, of computers and packaged software
- 61185 - Wholesale trade services, except on a fee or contract basis, of electronic and telecommunications equipment and parts
- 61186 - Wholesale trade services, except on a fee or contract basis, of agricultural lawn and garden machinery and equipment, including tractors
- 61187 - Wholesale trade services, except on a fee or contract basis, of mining, construction and civil engineering machinery and equipment
- 61188 - Wholesale trade services, except on a fee or contract basis, of other industry-specific machinery and equipment and related operating supplies
- 61189 - Wholesale trade services, except on a fee or contract basis, of other machinery and equipment n.e.c.

6119 - Wholesale trade services, except on a fee or contract basis, of other products

- 61191 - Wholesale trade services, except on a fee or contract basis, of solid, liquid and gaseous fuels and related products

- 61192 - Wholesale trade services, except on a fee or contract basis, of metal ores and metal in primary forms
- 61193 - Wholesale trade services, except on a fee or contract basis, of wood in the rough
- 61194 - Wholesale trade services, except on a fee or contract basis, of paper and paperboard
- 61195 - Wholesale trade services, except on a fee or contract basis, of waste and scrap and materials for recycling
- 61197 - Wholesale trade services, except on a fee or contract basis, of electricity
- 61198 - Wholesale trade services, except on a fee or contract basis, of water
- 61199 - Wholesale trade services, except on a fee or contract basis, of non-metallic minerals and other products n.e.c.

612 - Wholesale trade services on a fee or contract basis

6121 - Wholesale trade services on a fee or contract basis, of agricultural raw materials and live animals

- 61211 - Wholesale trade services on a fee or contract basis, of grains and oilseeds and oleaginous fruits, seeds and animal feed
- 61212 - Wholesale trade services on a fee or contract basis, of flowers and plants
- 61213 - Wholesale trade services on a fee or contract basis, of unmanufactured tobacco
- 61214 - Wholesale trade services on a fee or contract basis, of live animals, including pet animals
- 61215 - Wholesale trade services on a fee or contract basis, of hides, skins and leather
- 61219 - Wholesale trade services on a fee or contract basis, of agricultural raw materials n.e.c.

6122 - Wholesale trade services on a fee or contract basis, of food, beverages and tobacco

- 61221 - Wholesale trade services on a fee or contract basis, of fruit and vegetables
- 61222 - Wholesale trade services on a fee or contract basis, of dairy products, eggs and edible oils and fats
- 61223 - Wholesale trade services on a fee or contract basis, of meat, poultry and game
- 61224 - Wholesale trade services on a fee or contract basis, of fish and other seafood
- 61225 - Wholesale trade services on a fee or contract basis, of sugar confectionery and bakery products
- 61226 - Wholesale trade services on a fee or contract basis, of beverages
- 61227 - Wholesale trade services on a fee or contract basis, of coffee, tea and spices
- 61228 - Wholesale trade services on a fee or contract basis, of tobacco products
- 61229 - Wholesale trade services on a fee or contract basis, of food products n.e.c.

6123 - Wholesale trade services on a fee or contract basis, of textiles, clothing and footwear

- 61231 - Wholesale trade services on a fee or contract basis, of yarn and fabrics
- 61232 - Wholesale trade services on a fee or contract basis, of household linens, curtains, net curtains and diverse household articles
- 61233 - Wholesale trade services on a fee or contract basis, of articles of clothing, articles of fur and clothing accessories
- 61234 - Wholesale trade services on a fee or contract basis, of footwear

6124 - Wholesale trade services on a fee or contract basis, of household appliances, articles and equipment

- 61241 - Wholesale trade services on a fee or contract basis, of household furniture
- 61242 - Wholesale trade services on a fee or contract basis, of radio and television equipment and recorded audio and video disks and tapes
- 61243 - Wholesale trade services on a fee or contract basis, of articles for lighting
- 61244 - Wholesale trade services on a fee or contract basis, of household appliances
- 61245 - Wholesale trade services on a fee or contract basis, of miscellaneous household utensils, cutlery, crockery, glassware, china and pottery
- 61246 - Wholesale trade services on a fee or contract basis, of wickerwork, cork goods, cooper's ware and other wooden ware

6125 - Wholesale trade services on a fee or contract basis, of miscellaneous consumer goods

- 61251 - Wholesale trade services on a fee or contract basis, of books, newspapers, magazines and stationery
- 61252 - Wholesale trade services on a fee or contract basis, of photographic, optical and precision equipment
- 61253 - Wholesale trade services on a fee or contract basis, of games and toys
- 61254 - Wholesale trade services on a fee or contract basis, of watches, clocks and jewellery
- 61255 - Wholesale trade services on a fee or contract basis, of sports goods (incl. bicycles)
- 61256 - Wholesale trade services on a fee or contract basis, of leather goods and travel accessories
- 61259 - Wholesale trade services on a fee or contract basis, of miscellaneous consumer goods n.e.c.

6126 - Wholesale trade services on a fee or contract basis, of construction materials and hardware

- 61261 - Wholesale trade services on a fee or contract basis, of construction materials and flat glass
- 61262 - Wholesale trade services on a fee or contract basis, of fittings, fixtures and ceramic sanitary fixtures
- 61263 - Wholesale trade services on a fee or contract basis, of wallpaper and floor coverings
- 61264 - Wholesale trade services on a fee or contract basis, of paints, varnishes and lacquers
- 61265 - Wholesale trade services on a fee or contract basis, of hardware and hand tools

6127 - Wholesale trade services on a fee or contract basis, of chemical and pharmaceutical products

- 61271 - Wholesale trade services on a fee or contract basis, of basic industrial chemicals and synthetic resins
- 61272 - Wholesale trade services on a fee or contract basis, of fertilizers and agrochemical products
- 61273 - Wholesale trade services on a fee or contract basis, of pharmaceutical products
- 61274 - Wholesale trade services on a fee or contract basis, of medical and orthopaedic goods
- 61275 - Wholesale trade services on a fee or contract basis, of perfumery articles, cosmetic articles and toilet soaps
- 61276 - Wholesale trade services on a fee or contract basis, of cleaning materials

6128 - Wholesale trade services on a fee or contract basis, of machinery, equipment and supplies

- 61281 - Wholesale trade services on a fee or contract basis, of motor vehicles, motorcycles, snowmobiles and related parts and accessories
- 61282 - Wholesale trade services on a fee or contract basis, of other transport equipment, except bicycles
- 61283 - Wholesale trade services on a fee or contract basis, of office machinery and equipment including office furniture
- 61284 - Wholesale trade services on a fee or contract basis, of computers and packaged software
- 61285 - Wholesale trade services on a fee or contract basis, of electronic and telecommunications equipment and parts
- 61286 - Wholesale trade services on a fee or contract basis, of agricultural, lawn and garden machinery and equipment, including tractors
- 61287 - Wholesale trade services on a fee or contract basis, of mining, construction and civil engineering machinery and equipment
- 61288 - Wholesale trade services on a fee or contract basis, of other industry-specific machinery and equipment and related operating supplies
- 61289 - Wholesale trade services on a fee or contract basis, of other machinery and equipment n.e.c.

6129 - Wholesale trade services on a fee or contract basis, of other products

- 61291 - Wholesale trade services on a fee or contract basis, of solid, liquid and gaseous fuels and related products
- 61292 - Wholesale trade services on a fee or contract basis, of metal ores and metal in primary forms
- 61293 - Wholesale trade services on a fee or contract basis, of wood in the rough
- 61294 - Wholesale trade services on a fee or contract basis, of paper and paperboard

- 61295 - Wholesale trade services on a fee or contract basis, of waste and scrap and materials for recycling
- 61297 - Wholesale trade services on a fee or contract basis, of electricity
- 61298 - Wholesale trade services on a fee or contract basis, of water
- 61299 - Wholesale trade services on a fee or contract basis, of non-metallic minerals and other products n.e.c.

Classification of Products by Activity (CPA2008)

46 - Wholesale trade services, except of motor vehicles and motorcycles

46.1 - Wholesale trade services on a fee or contract basis

46.11 - Wholesale trade services on a fee or contract basis of agricultural raw materials, live animals, textile raw materials and semi-finished goods

- 46.11.1 - Wholesale trade services on a fee or contract basis of agricultural raw materials, live animals, textile raw materials and semi-finished goods
- 46.11.11 - Wholesale trade services on a fee or contract basis of live animals
- 46.11.12 - Wholesale trade services on a fee or contract basis of flowers and plants
- 46.11.19 - Wholesale trade services on a fee or contract basis of other agricultural raw materials, textile raw materials and semi-finished goods

46.12 - Wholesale trade services on a fee or contract basis of fuels, ores, metals and industrial chemicals

- 46.12.1 - Wholesale trade services on a fee or contract basis of fuels, ores, metals and industrial chemicals
- 46.12.11 - Wholesale trade services on a fee or contract basis of solid, liquid and gaseous fuels and related products
- 46.12.12 - Wholesale trade services on a fee or contract basis of metal ores and metal in primary forms
- 46.12.13 - Wholesale trade services on a fee or contract basis of industrial chemicals, fertilisers and agrochemical products

46.13 - Wholesale trade services on a fee or contract basis of timber and building materials

- 46.13.1 - Wholesale trade services on a fee or contract basis of timber and building materials
- 46.13.11 - Wholesale trade services on a fee or contract basis of timber and products of timber
- 46.13.12 - Wholesale trade services on a fee or contract basis of building materials

46.14 - Wholesale trade services on a fee or contract basis of machinery, industrial equipment, ships and aircraft

- 46.14.1 - Wholesale trade services on a fee or contract basis of machinery, industrial equipment, ships and aircraft
- 46.14.11 - Wholesale trade services on a fee or contract basis of computers, software, electronic and telecommunications equipment and other office equipment
- 46.14.12 - Wholesale trade services on a fee or contract basis of ships, aircraft and other transport equipment n.e.c.
- 46.14.19 - Wholesale trade services on a fee or contract basis of other machinery and industrial equipment n.e.c.

46.15 - Wholesale trade services on a fee or contract basis of furniture, household goods, hardware and ironmongery

- 46.15.1 - Wholesale trade services on a fee or contract basis of furniture, household goods, hardware and ironmongery
- 46.15.11 - Wholesale trade services on a fee or contract basis of furniture
- 46.15.12 - Wholesale trade services on a fee or contract basis of radio, television and video equipment
- 46.15.13 - Wholesale trade services on a fee or contract basis of hardware and hand tools
- 46.15.19 - Wholesale trade services on a fee or contract basis of cutlery and household goods n.e.c.

46.16 - Wholesale trade services on a fee or contract basis of textiles, clothing, fur, footwear and leather goods

- 46.16.1 - Wholesale trade services on a fee or contract basis of textiles, clothing, fur, footwear and leather goods
- 46.16.11 - Wholesale trade services on a fee or contract basis of textiles
- 46.16.12 - Wholesale trade services on a fee or contract basis of clothing, fur and footwear
- 46.16.13 - Wholesale trade services on a fee or contract basis of leather goods and travel accessories

46.17 - Wholesale trade services on a fee or contract basis of food, beverages and tobacco

- 46.17.1 - Wholesale trade services on a fee or contract basis of food, beverages and tobacco
- 46.17.11 - Wholesale trade services on a fee or contract basis of food
- 46.17.12 - Wholesale trade services on a fee or contract basis of beverages
- 46.17.13 - Wholesale trade services on a fee or contract basis of tobacco

46.18 - Wholesale trade services on a fee or contract basis of other particular products

- 46.18.1 - Wholesale trade services on a fee or contract basis of other particular products
- 46.18.11 - Wholesale trade services on a fee or contract basis of pharmaceutical and medical goods, perfumery and toilet articles and cleaning materials
- 46.18.12 - Wholesale trade services on a fee or contract basis of games and toys, sports goods, bicycles, books, newspapers, magazines and stationary, musical instruments, watches, clocks and jewellery, photographic and optical equipment
- 46.18.19 - Wholesale trade services on a fee or contract basis of other particular products n.e.c.

46.19 - Wholesale trade services on a fee or contract basis of a variety of goods

46.19.1 - Wholesale trade services on a fee or contract basis of a variety of goods

46.2 - Wholesale trade services of agricultural raw materials and live animals

46.21 - Wholesale trade services of grain, unmanufactured tobacco, seeds and animal feeds

46.21.1 - Wholesale trade services of grain, seeds and animal feeds

46.21.11 - Wholesale trade services of grain

46.21.12 - Wholesale trade services of seeds (other than oil seeds)

46.21.13 - Wholesale trade services of oil seeds and oleaginous fruits

46.21.14 - Wholesale trade services of animal feeds

46.21.19 - Wholesale trade services of other agricultural raw materials n.e.c.

46.21.2 - Wholesale trade services of unmanufactured tobacco

46.22 - Wholesale trade services of flowers and plants

46.23 - Wholesale trade services of live animals

46.24 - Wholesale trade services of hides, skins and leather

46.3 - Wholesale trade services of food, beverages and tobacco

46.31 - Wholesale trade services of fruit and vegetables

46.31.1 - Wholesale trade services of fruits and vegetables

46.31.11 - Wholesale trade services of fresh fruit and vegetables

46.31.12 - Wholesale trade services of processed fruit and vegetables

46.32 - Wholesale trade services of meat and meat products

46.32.1 - Wholesale trade services of meat and meat products

46.32.11 - Wholesale trade services of meat (including poultry)

46.32.12 - Wholesale trade services of meat products (including poultry products)

46.33 - Wholesale trade services of dairy products, eggs and edible oils and fats

46.33.1 - Wholesale trade services of dairy products, eggs and edible oils and fats

46.33.11 - Wholesale trade services of dairy products

46.33.12 - Wholesale trade services of eggs

46.33.13 - Wholesale trade services of edible oils and fats

46.34 - Wholesale trade services of beverages

46.34.1 - Wholesale trade services of beverages

46.34.11 - Wholesale trade services of juices, mineral waters, soft drinks and other non-alcoholic beverages

46.34.12 - Wholesale trade services of alcoholic beverages

46.35 - Wholesale trade services of tobacco products

46.36 - Wholesale trade services of sugar and chocolate and sugar confectionery

- 46.36.1 - Wholesale trade services of sugar, chocolate and sugar confectionery
- 46.36.11 - Wholesale trade services of sugar
- 46.36.12 - Wholesale trade services of bakery products
- 46.36.13 - Wholesale trade services of chocolate and sugar confectionery

46.37 - Wholesale trade services of coffee, tea, cocoa and spices

46.38 - Wholesale trade services of other food, including fish, crustaceans and molluscs

- 46.38.1 - Wholesale trade services of fish, crustaceans and molluscs
- 46.38.2 - Wholesale trade services of other food products
- 46.38.21 - Wholesale trade services of homogenised food preparations and dietetic food
- 46.38.29 - Wholesale trade services of other food products n.e.c.

46.39 - Non-specialised wholesale trade services of food, beverages and tobacco

- 46.39.1 - Wholesale trade services of food, beverages and tobacco, non-specialised
- 46.39.11 - Wholesale trade services of frozen food, non-specialised
- 46.39.12 - Wholesale trade services of food, not frozen, beverages and tobacco, non-specialised

46.4 - Wholesale trade services of household goods

- 46.41 - Wholesale trade services of textiles
- 46.41.1 - Wholesale trade services of textiles
- 46.41.11 - Wholesale trade services of yarn
- 46.41.12 - Wholesale trade services of fabrics
- 46.41.13 - Wholesale trade services of household linens, curtains and diverse household articles of textile materials
- 46.41.14 - Wholesale trade services of haberdashery

46.42 - Wholesale trade services of clothing and footwear

- 46.42.1 - Wholesale trade services of clothing and footwear
- 46.42.11 - Wholesale trade services of clothing
- 46.42.12 - Wholesale trade services of footwear

46.43 - Wholesale trade services of electrical household appliances

- 46.43.1 - Wholesale trade services of electrical household appliances
- 46.43.11 - Wholesale trade services of electrical household appliances, except radio, television and photographic goods
- 46.43.12 - Wholesale trade services of radio, television, video and DVD equipment
- 46.43.13 - Wholesale trade services of records, audio and video tapes, CDs and DVDs (except blank tapes)
- 46.43.14 - Wholesale trade services of photographic and optical goods

46.44 - Wholesale trade services of china and glassware and cleaning materials

- 46.44.1 - Wholesale trade services of china and glassware and cleaning materials
- 46.44.11 - Wholesale trade services of glassware, china and pottery
- 46.44.12 - Wholesale trade services of cleaning materials

46.45 - Wholesale trade services of perfume and cosmetics

46.46 - Wholesale trade services of pharmaceutical goods

- 46.46.1 - Wholesale trade services of pharmaceutical goods
- 46.46.11 - Wholesale trade services of basic pharmaceutical products and pharmaceutical preparations
- 46.46.12 - Wholesale trade services of surgical, medical and orthopaedic instruments and devices

46.47 - Wholesale trade services of furniture, carpets and lighting equipment

- 46.47.1 - Wholesale trade services of furniture, carpets and lighting equipment
- 46.47.11 - Wholesale trade services of household furniture
- 46.47.12 - Wholesale trade services of lighting equipment
- 46.47.13 - Wholesale trade services of carpets and rugs

46.48 - Wholesale trade services of watches and jewellery

46.49 - Wholesale trade services of other household goods

- 46.49.1 - Wholesale trade services of cutlery and domestic metal ware, wickerwork, cork goods and other household articles n.e.c.
- 46.49.11 - Wholesale trade services of cutlery and domestic metal ware
- 46.49.12 - Wholesale trade services of wickerwork, cork goods, cooper's ware and other wooden ware
- 46.49.19 - Wholesale trade services of household articles and equipment n.e.c.

46.49.2 - Wholesale trade services of books, magazines and stationery

- 46.49.21 - Wholesale trade services of books
- 46.49.22 - Wholesale trade services of magazines and newspapers
- 46.49.23 - Wholesale trade services of stationery

46.49.3 - Wholesale trade services of other consumer goods

- 46.49.31 - Wholesale trade services of musical instruments
- 46.49.32 - Wholesale trade services of games and toys
- 46.49.33 - Wholesale trade services of sports goods (incl. bicycles)
- 46.49.34 - Wholesale trade services of leather goods and travel accessories
- 46.49.35 - Wholesale trade services of stamps and coins
- 46.49.36 - Wholesale trade services of souvenirs and arts
- 46.49.39 - Wholesale trade services of other consumer goods n.e.c.

46.5 - Wholesale trade services of information and communication equipment

46.51 - Wholesale trade services of computers, computer peripheral equipment and software

46.52 - Wholesale trade services of electronic and telecommunications equipment and parts

46.52.1 - Wholesale trade services of electronic and telecommunications equipment and parts

46.52.11 - Wholesale trade services of telecommunications equipment and parts

46.52.12 - Wholesale trade services of electronic equipment and parts

46.52.13 - Wholesale trade services of blank audio and video tapes and diskettes, magnetic and optical disks CDs and DVDs

46.6 - Wholesale trade services of other machinery, equipment and supplies

46.61 - Wholesale trade services of agricultural machinery, equipment and supplies

46.61.1 - Wholesale trade services of agricultural machinery, equipment and supplies

46.61.11 - Wholesale trade services of agricultural and forestry machinery, equipment and supplies, including tractors

46.61.12 - Wholesale trade services of lawn and garden machinery, equipment and supplies

46.62 - Wholesale trade services of machine tools

46.62.1 - Wholesale trade services of machine tools

46.62.11 - Wholesale trade services of machine tools for working wood

46.62.12 - Wholesale trade services of machine tools for working metal

46.62.19 - Wholesale trade services of machine tools for working other materials

46.63 - Wholesale trade services of mining, construction and civil engineering machinery

46.64 - Wholesale trade services of machinery for the textile industry and of sewing and knitting machines

46.65 - Wholesale trade services of office furniture

46.66 - Wholesale trade services of other office machinery and equipment

46.69 - Wholesale trade services of other machinery and equipment

46.69.1 - Wholesale trade services of other machinery and equipment

46.69.11 - Wholesale trade services of transport equipment other than motor vehicles, motorcycles and bicycles

46.69.12 - Wholesale trade services of machinery and equipment related supplies

46.69.13 - Wholesale trade services of lifting and handling equipment

46.69.14 - Wholesale trade services of machinery for the food, beverages and tobacco industry

- 46.69.15 - Wholesale trade services of professional electrical machinery, apparatus and materials
- 46.69.16 - Wholesale trade services of weapons and ammunitions
- 46.69.19 - Wholesale trade services of other general and special-purpose machinery, apparatus and equipment

46.7 - Other specialized wholesale trade services

- 46.71 - Wholesale trade services of solid, liquid and gaseous fuels and related products
 - 46.71.1 - Wholesale trade services of solid, liquid and gaseous fuels and related products
 - 46.71.11 - Wholesale trade services of solid fuels
 - 46.71.12 - Wholesale trade services of motor spirit, including aviation spirit
 - 46.71.13 - Wholesale trade services of other liquid and gaseous fuels and related products

46.72 - Wholesale trade services of metals and metal ores

- 46.72.1 - Wholesale trade services of metals and metal ores
 - 46.72.11 - Wholesale trade services of iron ores
 - 46.72.12 - Wholesale trade services of non-iron ores
 - 46.72.13 - Wholesale trade services of iron and steel in primary forms
 - 46.72.14 - Wholesale trade services of non-iron metals in primary forms

46.73 - Wholesale trade services of wood, construction materials and sanitary equipment

- 46.73.1 - Wholesale trade services of wood, construction materials and sanitary equipment
 - 46.73.11 - Wholesale trade services of wood in the rough
 - 46.73.12 - Wholesale trade services of products of primary processing of wood
 - 46.73.13 - Wholesale trade services of sanitary equipment
 - 46.73.14 - Wholesale trade services of paints, varnishes and lacquers
 - 46.73.15 - Wholesale trade services of flat glass
 - 46.73.16 - Wholesale trade services of other construction materials
 - 46.73.17 - Wholesale trade services of wallpaper
 - 46.73.18 - Wholesale trade services of floor coverings (except carpets)

46.74 - Wholesale trade services of hardware, plumbing and heating equipment and supplies

- 46.74.1 - Wholesale trade services of hardware, plumbing and heating equipment and supplies
 - 46.74.11 - Wholesale trade services of hardware
 - 46.74.12 - Wholesale trade services of plumbing and heating equipment and supplies
 - 46.74.13 - Wholesale trade services of hand tools

46.75 - Wholesale trade services of chemical products

- 46.75.1 - Wholesale trade services of chemical products

46.75.11 - Wholesale trade services of fertilizers and agro-chemical products

46.75.12 - Wholesale trade services of industrial chemicals

46.76 - Wholesale trade services of other intermediate products

46.76.1 - Wholesale trade services of other intermediate products

46.76.11 - Wholesale trade services of paper and paperboard

46.76.12 - Wholesale trade services of textile fibers

46.76.13 - Wholesale trade services of plastics and rubber in primary forms

46.76.19 - Wholesale trade services of intermediate products, other than agricultural,
n.e.c.

46.77 - Wholesale trade services of waste and scrap

46.9 - Non-specialized wholesale trade services

Appendix D

Bibliography

Åhman, J. (2008): Trade Margins – An example from the Wholesale Trade Industry in Sweden. Paper for the Voorburg Group meeting 2008. Statistics Sweden.

Barzyk, F. (2008): SPPI for Wholesale Services in Canada. Paper for the Voorburg Group meeting 2008. Statistics Canada.

Becker, Ralf and Havinga, Ivo (2007): Treatment of Outsourcing in the International Standard Industrial Classification (ISIC), Rev. 4. Note prepared for the OECD Structural Business Statistics Expert Meeting – Paris, 10-11 May 2007.

Camus, B. (2008): Mini Presentation on Turnover/Output in France - Session on Wholesale Trade. Paper for the Voorburg Group meeting 2008. INSEE, France.

European Communities (2001): Handbook on price and volume measures in national accounts. ISBN 92-894-2000-6. Cat. No. KS-41-01-543-EN-N.

Eurostat (2008): NACE Rev. 2, Statistical Classification of Economic Activities in the European Community, ISBN 978-92-79-04741-1. Cat. No. KS-RA-07-015-EN-N.

Färnstrand, J. (2008): Turnover in the Wholesale Trade Industry in Sweden. Paper for the Voorburg Group meeting 2008. Statistics Sweden.

Garneau, M.B. (2008): Mini Presentation on Turnover/Output - Wholesale Trade in Canada. Paper for the Voorburg Group meeting 2008. Statistics Canada.

Gorko, J.J. (2008): Producer Price Indexes for the U.S. Wholesale Trade Industries NAICS Sector 42. Paper for the Voorburg Group meeting 2008. US Bureau of Labor Statistics.

Lennartsson, D. (2008): Index of Service Production (ISP) – An extract. Paper for the Voorburg Group meeting 2008. Statistics Sweden.

United Nations Statistics Division (2009): International Recommendations for Distributive Trade Statistics 2008. Statistical papers Series M No. 89.

Vizner, R. (2008): Developing SPPI for Wholesale Trade in Israel. Paper for the Voorburg Group meeting 2008. Central Bureau of Statistics, Israel.