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NACE 52.1 – Warehousing and Storage

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Introduction

The United Kingdom (UK) Office for National Statistics (ONS) currently publishes a Services Producer Price Index (SPPI) for warehousing and storage activities (NACE /SIC2007 ¹group 52.1). This price index has only recently been developed in the UK, with experimental data being published for the first time in June 2012. The index is currently classified by ONS as experimental², in that ONS are proactively seeking user feedback on the methods and results being published to try and improve the index. This paper discusses the development of the price index in the UK. Please note that the UK does not cover in full the whole division for warehousing and support activities (NACE division 52) and therefore this paper will focus only on the group 52.1.

1. Definition of the service being priced

As mentioned above, this paper will focus on the services classified to the warehousing and storage industry (SIC2007 group 52.1), which is a component of the larger transport and storage industry (SIC 2007 section H). The primary output of this industry in the UK is the warehousing and storage of commercial and industrial goods, machinery and equipment. Establishments classified in this industry primarily offer storage services, however there is a growing trend for such establishments to offer complete logistical solutions or bundled services. For example, the storage and warehousing service forms a component part of an end-to-end service which could include any of the following services:

- Logistics management
- Collection/delivery of goods
- Receiving, handling and despatch services
- Storage services
- Picking service
- Security services

It is likely that a 'bundled' storage service will include any combination of the above services and obtaining a price for the specific 'storage' component only may prove to be a challenge.

Given the type of service offered in this industry has close connections with the freight transport industries, it is expected that a number of establishments classified outside of the industry will also provide storage significant services. For example, the larger freight companies in the UK are likely to have their own storage and warehousing facilities.

2. Pricing unit of measure

Predominantly, the services provided by warehousing and storage companies are clearly specified services as opposed to unique and one off. However, there are a number of factors to consider regarding the derivation of a price for a service in this industry. As noted above, there is a growing trend for a storage company to provide an end-to-end service. Where this is the case, it can be

¹ <http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/standard-industrial-classification/index.html>

² <http://www.ons.gov.uk/ons/guide-method/method-quality/general-methodology/guide-to-experimental-statistics/index.html>

difficult to separately identify and strip out the storage components and a more pragmatic approach to the collection of price data is recommended.

The basic unit of measure for this industry in the UK is the price per period of time for the storage of a specified quantity of a commodity. For example, this could be the daily storage rate per pallet of a commodity or the weekly storage of grain in a 40ft container/silo. There are a number of price determining characteristics that need to be assessed during the development of a price specification in this industry to ensure a price is measured to constant quality.

Price determining characteristics which typically need to be accounted for (and fixed) in a storage service include:

- The commodity being stored (such as liquid, gas, dangerous material etc.)
- The unit of a commodity being stored (per tonne, pallet, silo etc.)
- The duration of the storage (per hour, day, week etc.)
- Any specific requirements for storage (such as temperature control)
- Any additional services such as receiving, handling, despatch or picking

Discounting in the storage industry is also an important factor to consider when developing a price index, particularly for the long-term storage of large amounts of goods. Given the conceptual requirement of a SPPI is to measure the transaction price, it is important that any discounts are reflected in the price measured for the SPPI.

A further consideration when collecting price data in this industry is the prominence of non-market transactions. A number of the large retailers/manufacturers in the UK have set up their own warehousing and storage facilities, which provide these services to their parent companies at non-market prices. Where possible, these transactions should not be included in the development of a SPPI as they do not adequately reflect the market inflationary pressures.

3. Market conditions and constraints

According to the UK Inter-Departmental Business Register (IDBR)³, and using 2012 as a reference year, there were 3,156 businesses classified to the 'warehousing and storage services' industry (NACE 52.1).

The industry is dominated in terms of number of enterprises by the smaller firms who employ less than 50 people. These enterprises make up approximately 90% of the industry. However, in terms of the relative share of turnover, these enterprises only account for 13% of the market. The UK market is dominated by the larger enterprises, with those firms employing more than 300 people accounting for 64% of the UK market. Table 1 below summarises the breakdown of the UK industry. In this table, the turnover represents total turnover generated by those enterprises classified to NACE 52.1 (so this may include turnover generated from services outside the warehousing and storage industry).

Table 1: Summary of UK businesses classified as warehousing and storage service providers

³ <http://www.ons.gov.uk/ons/about-ons/who-we-are/services/unpublished-data/business-data/idbr/index.html>

Employment band	Number of enterprises	Percentage of enterprises	Turnover (£000's)	Market share
0 to 9	2204	69.8	972,041	3.4
10 to 49	627	19.9	2,584,739	9.1
50 to 99	133	4.2	1,429,711	5.1
100 to 299	125	4.0	5,097,800	18.0
300+	67	2.1	18,188,262	64.3
	3156	100.0	28,272,553	100

Source: UK Interdepartmental Business Register, 2012

4. Standard Classification Structure

In developing a price index, the UK traditionally use the 2007 Standard Industrial Classification (SIC2007, which aligns with NACE rev.2) and the 2008 Classifications of Products by Activity⁴ (2008 CPA) as a basis for the development of a suitable classification structure. Both SIC2007 and 2008 CPA are aligned at the class level and above, with 2008 CPA providing additional detail at the category level.

The SIC2007 structure is as follows:

Section	Division	Group	Class	Sub-Class
H: Transportation and Storage	52	Warehousing and support activities for transportation		
		52.1 Warehousing and storage		
			52.10 Warehousing and storage	
				52.10/1 Operation of warehousing and storage facilities for water transport activities of division 50
				52.10/2 Operation of warehousing and storage facilities for air transport activities of division 51
				52.10/3 Operation of warehousing and storage facilities for land transport activities of division 49

According to the 2008 CPA the structure is as follows:

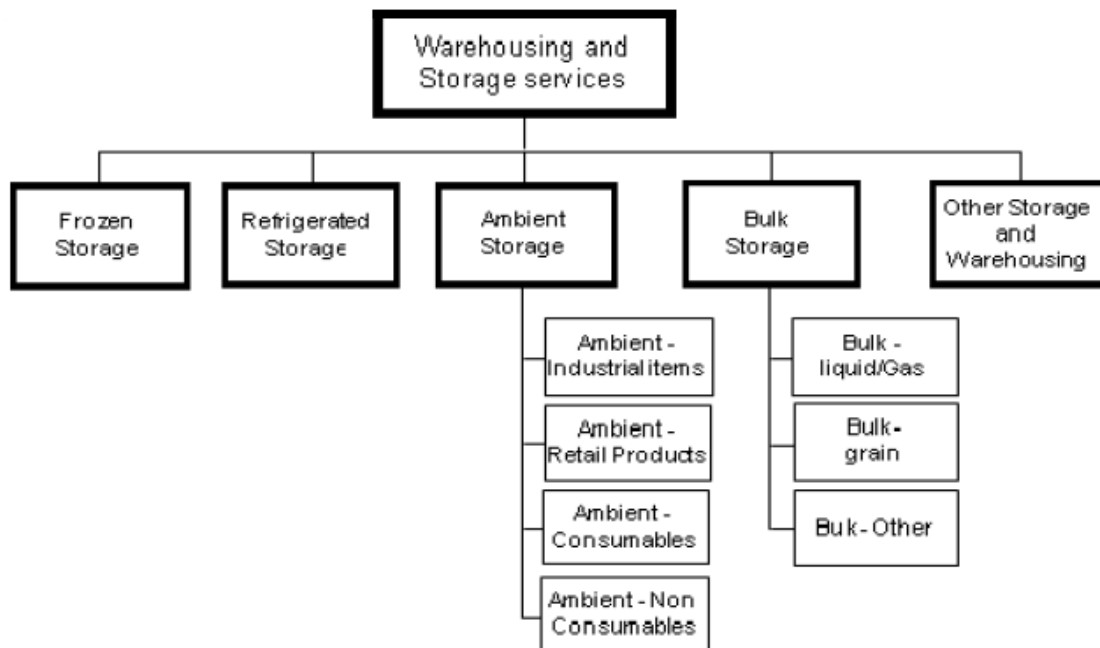
Section	Division	Group	Class	Category	Sub category
H: Transportation and Storage Services	52	Warehousing and support services for transportation			
		52.1 Warehousing and storage services			
			52.10 Warehousing and storage services		
				52.10.1 Warehousing and storage services	
					52.10.11 Refrigerated storage services
					This subcategory includes: storage and warehousing services for frozen or refrigerated goods
					This subcategory excludes: freezing of food on a fee or contract basis
					52.10.12 Bulk liquid or gas storage services
					This subcategory includes: bulk storage and warehousing services for liquids and gases
					52.10.13 Grain storage services
					This subcategory includes: storage services of grains, operation services of grain silos

In the absence of a detailed and harmonised classification system for the collection and publication of service statistics (similar to that of PRODCOM⁵ for the production sector), finer levels of disaggregation's (known as aggregation structures, or 'family trees') are developed by the UK in consultation with the industry. This allows, where applicable, for the further disaggregation of services into more homogeneous groups. In the case of warehousing and storage services in the UK, further development of the aggregation structure was required following discussions with industry

⁴ http://epp.eurostat.ec.europa.eu/portal/page/portal/cpa_2008/introduction

⁵ <http://www.ons.gov.uk/ons/rel/prodcom/prodcom-provisional-results/2012/sty-prod-2012.html>

representatives to provide additional detail in certain areas. The final classification structure used in the current UK SPPI (correct as at 2013) is as follows:



5. Evaluation of standard vs. Definition and market conditions

As detailed in section 4 above, the UK have chosen to add further detail to the standard industrial classifications (namely SIC 2007 and 2008 CPA) to ensure the final industry structure reflects the UK market. This additional level of detail is carried out in consultation with the industry. To ensure an adequate source of turnover is available at this level of detail, the UK also collect turnover estimates at the lowest level of the industry aggregation structure.

6. National Accounts concepts

Given the current experimental nature of the UK warehousing and storage SPPI, the index is not currently used for deflation purposes in the National Accounts. An alternative deflator is currently used whilst further quality assurance of the new SPPI takes place.

7. Pricing methodology

In the development of the SPPI for storage and warehousing services, the UK carried out extensive research with industry experts to better understand the pricing mechanisms used within the industry. Whilst there are a number of price determining characteristics (see section 2) which need to be accounted for and fixed in the derivation of a suitable price specification, the feedback from the industry was that the majority of businesses would be able to provide accurate price data for repeated transactions.

With this in mind, the pricing method used for the UK storage and warehousing SPPI is the direct use of prices of repeated services. However, given the importance of ensuring that the collection of prices is to a constant quality, detailed product specifications were collected in the initial 'recruitment' phase of price collection to ensure that enough information was provided to fix the price determining characteristics for each service provided. Figure 1 below is an example of the guidance provided for respondents who receive an initial UK SPPI questionnaire for this industry:

Figure 1: example of UK SPPI instructions:

Section A: Examples of services provided and prices charged

Guidance notes: Questions 1-10

Each question in section A has two parts; part a and part b.

Part a)

We are looking to measure the prices that businesses charge for their services and how these may vary over time. Please describe a typical service that you provided to a customer at some point between 1st January and 31st March 2011. Future questionnaires we send you will refer to this description and ask for an update of the price you charge. This needs to be as detailed as possible, so that we can distinguish price changes from changes to description or quality of service. Your description should contain:

- Unit of sale (e.g. price per pallet)
- Duration of service (e.g. stored for 2 weeks)
- Payment terms (e.g. payment within 30 days)
- Customer type or reference (e.g. price to all UK customers, or customer ref 5895). This is to help you to identify the customer in future SPPI questionnaires; it is not used by ONS
- Any periodic charges, levied under a continuing contract
- Any other important details, such as whether Receipt, Handling and Dispatch charges were included

Include:

- Services you expect to continue providing in the future
- Services provided by your company in the UK to other UK businesses (outside your own group of companies) or government customers
- Services that are representative of your business

Exclude:

- Services provided to members of the public or the self-employed
- Overseas customers (exported)
- Motor vehicle storage
- Self-storage facility services
- Rental services of vacant space

Part b)

Please provide the amount of money your company received for the service you described in Part a. The figure should be after any discounts and exclusive of VAT.

In addition to the detailed guidance above, respondents are also provided with an example specification to help them understand the level of detail required. Figure 2 is an example taken from the UK questionnaire:

Figure 2: Example specification for respondents:

Example

1 (a) Please describe one example of a frozen storage service you provided to a customer at some point between the 1st January and 31st March 2011.
If this is not relevant to your business, please leave the box blank.

The price below is for the storage of frozen chicken breasts for customer reference AS123 at our London site. The price includes the unloading of 10 pallets, the storage of 10 pallets in a frozen environment for a calendar week, and the dispatch of 10 pallets.

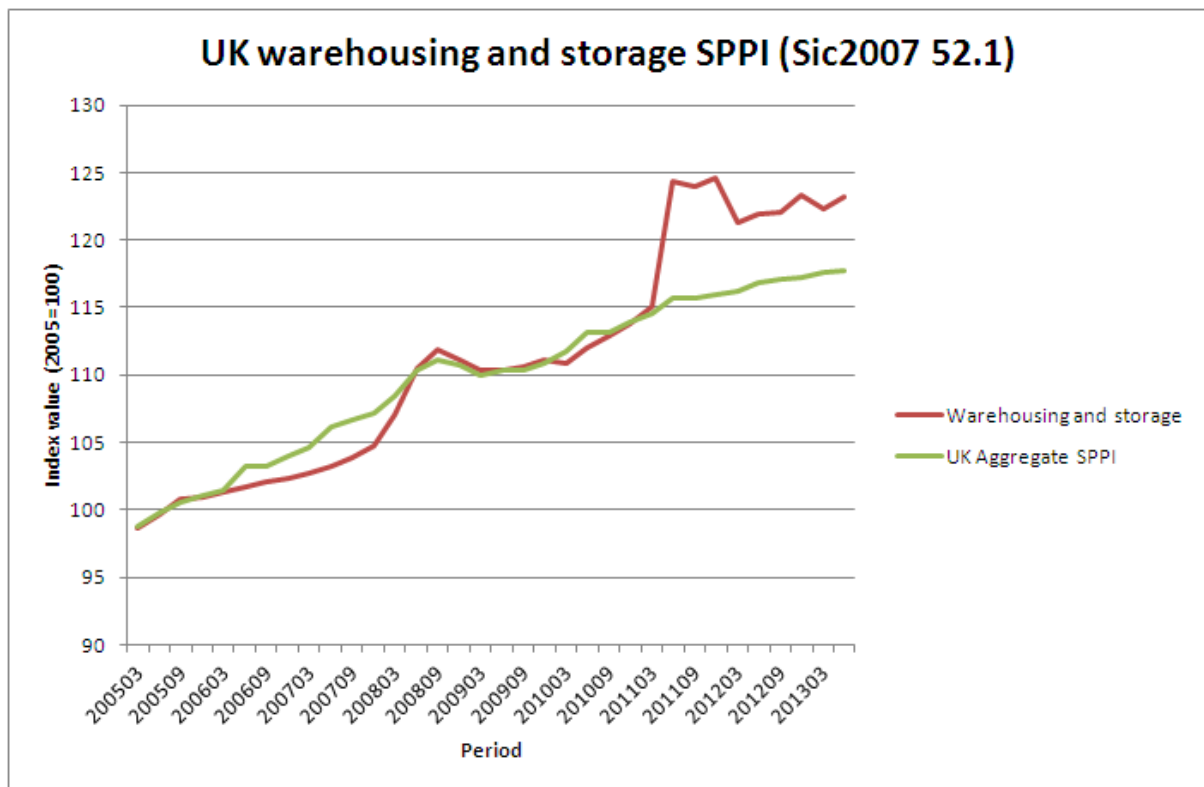
(b) What price did you receive for the service you described above? £ .

Once a new price specification has been provided by the respondent (please note that a respondent is asked to provide price specifications for each service in the aggregation structure which is representative of their business), the data will be quality assured to make sure it meets the needs of the SPPI. At the desk interrogation ensures that the price determining characteristics are clear in the price specification and to ensure the price reflects the precise requirements of the SPPI (business to business price, UK customer etc.). It is important at this stage to identify if any supplementary services are included in the specification. These supplementary services could relate to any logistical aspect of the service that falls beyond the warehousing and storage service, and could include such services as picking or any specific security requirements. Where these are identified as included in the service specification, an attempt is made to obtain a price for a specification that doesn't include the additional services. However, there is a need to be pragmatic in the collection of this data and recognise the burden placed on respondents in providing the data. Where the respondent indicates difficulty in removing the supplementary service, the UK accepts its inclusion in the specification. The onward collection of price data must then ensure the same supplementary services are included each period to keep the quality of the service constant.

Once the initial price specification has been approved, this exact specification is re-priced each period by the respondent. The service specification is sent via questionnaire to the respondent asking for an updated price. It is important to note that the previous price is not given to the respondent. This ensures the respondent considers in full the service specification before arriving at the updated price. Once the price has been updated, it is returned to the UK data collection team who validate the new period price. The price is validated with reference to the previous period – any price movement of +/- 7.5% requires confirmation from the respondent. This is usually confirmed via a telephone call, where the data collection team ensure that the price change is genuine, due to inflationary pressure and that the item specification is relevant. If the price change has been caused due to a change in quality, then adjustments are made to account for this (see section 8).

Figure 3 shows the index value history for the UK warehousing and storage SPPI. Also included for reference is the UK aggregate SPPI (note this aggregate does not have full coverage of the service sector).

Figure 3: Index value history for the UK warehousing and storage SPPI



8. Quality adjustment

Where a change in quality has been identified, usually due to the original service specification no longer being offered, a number of potential solutions are available to adjust the price (if required). This is usually carried out following discussion with the respondent.

The UK office typically applies three types of specification change to ensure each service is priced at constant quality:

- The change in price is entirely due to the change in specification/quality. In this example the 'new specification' price relative is given the same value as the corresponding price relative for the preceding month (so no price change is shown in the index, but the specification of product has changed).
- The notional price change is due partly to a change in specification and partly to a genuine price change. In this case, the respondent will need to be contacted to discuss/identify the 'genuine price change' and the price relative is adjusted to remove the effect of the change in specification/quality.
- There is no fundamental change in the quality of product being sold; implying that the whole of the notional price change is a genuine price increase. The quoted price is used to calculate the price relative without any adjustment.

9. Evaluation of comparability with turnover/output measures

Detailed turnover data is collected in the UK via the Annual Business Survey ⁶(ABS). The ABS is an annual survey of UK businesses covering the production, construction, distribution and service industries, which represents about two thirds of the UK economy, by Gross Value Added (GVA). Essentially, the comparability between the ABS and SPPI is good, given that the same classification system (SIC 2007) and sampling frame (IDBR) is used for both surveys (at class level and above). However, the ABS does not collect any further detail on the proportion of turnover from business to business transactions, which is conceptually required for the SPPI.

Therefore, the UK carries out a separate turnover survey every five years to collect business to business turnover for the service sector. The Services Turnover Survey (STS) is used to collect the detailed turnover required to both calculate SPPI item weights, and to rebase the SPPI every five years. The STS was last carried out in 2011 (in respect of 2010 turnover), with the STS results ⁷being published for the first time in 2012.

10. Summary

- The UK has recently developed and published a SPPI for the storage and warehousing industry. This SPPI does not cover in full the warehousing and support activities industry. However, the UK has also recently developed a price index for cargo handling services (SIC 2007 class 52.24) and has begun publication of this industry as an experimental SPPI.
- During the development of the SPPI, the UK had to further refine the industry classifications (based on SIC2007 and 2008 CPA) to better reflect the level of services offered in the UK.
- The UK SPPI uses a pricing method based on the collected of prices of repeated services. This requires the collection of a detailed service specification to ensure the price determining characteristics are fixed each period.
- The UK collects a dedicated source of turnover for this industry (specifically business to business turnover) to calculate SPPI weights and to rebase the SPPI.
- The UK is quality assuring the methods and data for the warehousing and storage SPPI to further improve the quality and coverage of the index of the next few years.

⁶ <http://www.ons.gov.uk/ons/guide-method/method-quality/quality/quality-information/business-statistics/quality-and-methodology-information-for-annual-business-survey--abs-.pdf>

⁷ <http://www.ons.gov.uk/ons/rel/ppi2/services-producer-price-indices/results-of-the-2010-services-turnover-survey-/index.html>