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SESSION 2: MINI PRESENTATIONS ON PRODUCER PRICE INDICES

CHALLENGES IN THE DEVELOPMENT OF A PRICE INDEX FOR SEA FREIGHT SERVICES

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THE DEVELOPMENT OF A PRICE INDEX FOR UK SEA FREIGHT SERVICES

SIC 61.10/2

INTRODUCTION

1. This paper provides a brief background to the sea freight industry, outlines the development of a Corporate Services Price Index (CSPI) and highlights some of the difficulties and challenges. It also raises some issues that have been identified for its future improvement. The index, which was established in 1996 and is one of the oldest in the present series, is published quarterly by the ONS as an “experimental” statistic.

THE INDUSTRY

Background and nature

2. Because of the UK's dependence on the sea, efficient shipping is vital to the country's economic well-being. About 20% of total freight volume, 95% of external trade by weight (77% by value) and 7% of domestic freight tonnage moves by water. To maintain the competitiveness of both exporters and importers it is essential that shipping markets are open and offer freight rates that are reasonable and not unnecessarily expensive. A significant element of seaborne freight is carried by roll-on roll-off ferries (albeit normally loaded aboard on road-going vehicles), but that is treated as a separate activity for the purposes of CSPI and is therefore excluded from consideration in this paper. Freight transport on inland waterways is also excluded as it is classified to a different activity.

3. The post-World War 2 period has seen a dramatic decline in the UK's position as an important maritime nation. In 1950, the UK fleet accounted for 6% of all merchant vessels, but 50 years later that proportion had declined to significantly less than 2%. In the 10 years between 1991 and 2001 alone the number of UK-owned cargo vessels over 500 tons gross weight fell by 20% from 573 to 458. The reasons for the decline are complex and include, amongst others:

- growth of developing and newly industrialised economies has reduced the western industrialised nations' share of the world market;
- changing geographical patterns of the world's seaborne trade have shifted the focus of growth towards different trading routes;
- growing low-cost competition, sometimes in the form of sub-standard and/or subsidised shipping;
- higher operating costs (including more stringent certification and safety standards, higher standards of training/qualifications for officers and crew members, more expensive labour etc.) – that has resulted in flagging-out and replacement of British crews;
- the opening of the Channel Tunnel which offered an economic alternative for door-to-door freight deliveries by road to mainland Europe.

4. This decline was exacerbated in the late 1990s by the loss of many traditional trade routes and cargoes with the severe economic downturn in the Far East and other traditional trading partners.

5. Despite its decline in size, the UK shipping industry continues to be one of the more efficient operators, carrying more than 4% of global trade, and has not been slow in embracing technical and productivity advances within the industry, including:

- the use of very much larger and faster vessels;
- new techniques (notably containerisation which has expanded rapidly since the 1960s);
- rationalisation and modernisation of ports to facilitate more efficient cargo handling and faster turnaround time.

6. The Government too has taken a positive role by addressing key issues that will help to promote what is seen as the most environmentally friendly and sustainable form of freight transport. As part of its overall transport strategy, it wants to see more road freight traffic transferred to coastal shipping (as much as 3.5% by weight overall). It has played its part in helping the industry to improve its competitiveness by: reducing the constraints of the regulatory regime; ensuring fairer international competition through movement towards standardised operating, safety and crew skills/training requirements (via the International Maritime Organisation); investment incentives; improved taxation measures.

7. Many of these incentives are for the longer term, however, and will take some time to have any significant impact on the prevailing trading conditions for the domestic shipping industry, but there are already signs of improvement for the industry in some areas. With the relaxation of regulations, for example, some UK companies are re-flagging vessels which is a positive sign of encouragement of more shipping activity and maritime employment.

8. If the UK industry takes maximum advantage of these opportunities it should be better placed to take full advantage of the projected expansion in world trade over the next 10 years. The World Bank estimates 4% annual global expansion in seaborne trade which means a virtual doubling of 1998 volumes by 2010 - despite recent severe economic problems in Asia which slowed world trade generally. The UK has been historically strong in "cross trades" (many UK-owned vessels never trade out of a UK port) and has the potential to share in this projected growth. The relatively high quality of UK shipping puts it into a particularly strong position as international action to raise shipping standards places increasing pressure on sub-standard operators.

Structure and outputs

9. The sea and coastal freight industry is classified to 61.10/2 in the UK's Standard Industrial Classification of Economic Activities 1992 (SIC) and is described as follows:

61.10/2 Freight sea and coastal water transport

This sub-class includes:

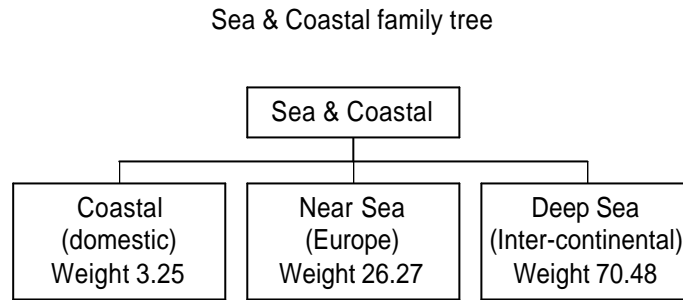
- *transport of freight over water, whether scheduled or not*
- *transport by towing or pushing of barges, oil-rigs, etc.**
- *rental of ships and boats with crew for transport of freight**

(These activities are not included in the coverage of the CSPI as they are not considered to be economically significant in the UK.)*

At the consultation stage of the development of the index, it was suggested that some sea freight activities may be conducted by businesses classified as sea freight forwarders under SIC 63.40. However, it was not easy to identify and isolate the specific activity or enterprises on the UK's Business Register as that classification encompassed a wide range of different activities undertaken by other transport agencies.

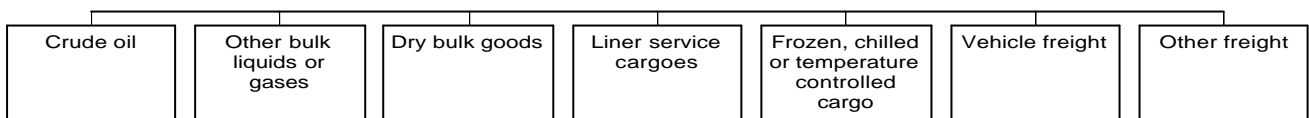
10. During the development stage in 1995, attention was therefore confined to 61.10/2, and consultation with professional bodies such as the Chamber of Shipping, major shipping lines and conferences (loose associations of shipping lines serving common broad geographical areas) and other interested parties resulted in the creation of a basic industry structure (or "family tree"), shown in Figure 1:

Fig.1



11. For each branch of the family tree, it was proposed that common categories of service products would be created based on cargo types, which are closely, but not exclusively, related to types of vessel. These categories were as follows:

Fig.2



(“Liner service” is an industry term for vessels operating to regular schedules between advertised ports of loading and discharging.)

The industry agreed that a structure based on this level of categorisation would be viable for the purpose of constructing a price index and that relevant and robust data should be available on a regular basis.

12. The categories adopted by CSPI closely approximate to both the UN's Central Product Classification (CPC) and the EC's Classification of Products by Activity (CPA) as shown below (but with the added dimension of destination/distance via the breakdown between coastal, near sea and deep sea traffic):

CPA - 65.12: Coastal and transoceanic water transport services of freight

65.121 – Refrigerated

65.122 – Bulk liquid

65.123 – Containerised

65.124 – Other

CPC – 61.10.2: Sea and coastal water freight transportation services

61.10.21 – Frozen and refrigerated goods

61.10.22 – Crude oil

61.10.23 – Other bulk liquids or gases

61.10.24 – Containerised freight

61.10.25 – Mail

61.10.26 – Dry bulk goods

61.10.27 – Other freight

SAMPLING AND RECRUITMENT

13. In late 1995, the ONS' Inter-Departmental Business Register (IDBR) listed around 893 enterprises classified to SIC 61.10/2 generating turnover of about £2 billion. 85% of these employed fewer than 10 people. In accordance with the preferred approach at the time, stratification of the sample for recruitment to the inquiry was based on annual turnover, using random sampling where necessary. Three strata were employed: (a) up to £10 million (5% sampling fraction); (b) £10-50 million (50%); (c) £50 million+ (100%).

14. The application of this sampling methodology resulted in 70 enterprises being selected and all were sent initial recruitment forms. The forms sought information on:

- annual turnover for the business for 1995, categorised by activity as shown at Figs, 1 and 2 above; and,
- prices for cargoes/journeys in relevant categories that were considered to be typical and representative for each business, and was repeated on a regular basis.

15. The initial response to this recruitment exercise was disappointing and not as comprehensive as expected with just 20 enterprises supplying viable price quotations. It soon became apparent that the quality of returned prices data was insufficient in terms of volume and distribution between the various service products for each of the three primary categories to sustain the proposed structure, i.e. to obtain fixed weights for each sub-category and sufficient quotes within each of them. Attempts to boost the sample size were largely unsuccessful. However, the turnover data that was returned allowed the weights to be calculated for the three primary categories and they are shown at Fig.1 above.

PRICING METHODOLOGY

16. Although the initial number of price quotations supplied was lower than expected, they covered a reasonable range of the activities outlined at Fig.2, though there was a predominance of quotes for containerised cargo even at that early stage. The prices quoted were for actual contracts or tariff rates charged to UK businesses for scheduled services on particular trade routes. In addition to the standard criteria of representativeness and repeatability, data contributors were asked to provide prices for real contracts and to take account of all discounts in the prices supplied. Some examples of specifications supplied are shown at Annex A.

17. Between first publication of the index in the middle of 1996 and the beginning of 2003, activity in the UK industry has deteriorated to such a degree - through a combination of companies ceasing to trade, business being lost to overseas competitors and the loss of traditional trade routes - that just 11 of the original data suppliers remain, providing quarterly price quotations for a very modest 20 transactions.

18. Attempts to find sustainable substitutes for lost price quotations have not been productive as the UK industry continues to shrink, both in terms of the number of enterprises engaged in the industry and the overall level of activity. The degree of deterioration of the inquiry sample (in terms of providing regular prices for a representative cross-section of all types of cargoes and services), coupled with a dramatic reduction in prices on some routes simply to remain competitive and retain the business, is graphically illustrated in the radical downward trend of the index between 1996 and the present time, compared to the CSPI Top Level Index (see Annex B). During 2000 and early 2001 there was a slight recovery as trading conditions showed small signs of improvement, but that was relatively short-lived and has not been fully sustained.

ISSUES AND CHALLENGES FOR THE FUTURE

19. The most immediate challenge is to strengthen the quality of the current index and address its weaknesses by improving the quality of the sample, both in terms of number of data suppliers and the volume, scope and quality of the product specifications. It would be the preferred option to return to the index structure at the lower level shown at Fig.2, supported by robust and reliable price quotations in appropriate numbers; but the results from a turnover survey conducted in 2001 in advance of rebasing the CSPI series on 2000=100 did not provide enough evidence to sustain such a change.

20. That also may not be achievable without placing undue burden on the industry itself, or realistic given that the sea and coastal freight industry has such a low weight in the service sector overall. If that is the case, we may need to re-examine the industry structure and make it more representative of the industry in its current state.

21. A more recent recruitment exercise in 2002 (linked to the CSPI rebasing project) has gone some way to strengthening the quality of the sample as 6 new enterprises have been added, providing an additional 11 price quotations for inclusion when the rebased series is introduced later this year. The scope of the coverage in terms of cargo types, however, has not been significantly improved and further work is needed to specifically target, if necessary, enterprises engaged in the missing or poorly represented categories. In order to do that we need to work more closely with external industry experts, such as the UK's Chamber of Shipping, the Baltic Exchange and the Department of Transport. These bodies collate very useful data on volumes, cargoes and destinations which would supplement the CSPI research.

22. There are also good published sources of data and sites on the Internet relating to the global sea freight market which may be useful, not as a primary data source but as a means of benchmarking and evaluating the quality of our data.

23. In common with most other service industries, we also need to understand more about the quality of our current price specifications, addressing issues such as:

- are the prices we collect representative of the true cost of shipments - our data may be biased by the "favoured customer" element where advantageous freight rates and discounts are quoted because of regular, repeat business on a specific route;
- should we seek top and bottom rates charged for the same type of cargo (by tonnage), port of destination etc. to determine whether (and where) our returned prices fall in that bracket;
- do we know enough about the quoted rates for containerised cargoes – do they represent door-to-door costs or simply the sea freight element, for example.

24. Pricing methodology also needs to be reviewed. One of the reasons for the decline in the original sample was the loss of contracts for specific cargoes to the same port of destination on a regular (quarterly), repeating basis. We may need to consider whether a range of rates based on cargo type, tonnage and distance/port of destination is a sound and acceptable alternative in some cases.

25. All of the above key issues (and any others that may come to light) will form an integral part of the major quality assurance review which is scheduled for the sea and coastal freight industry CSPI.

ANNEX A

Examples of product specifications supplied by contributors

- Transportation of 6000 tons of clean petroleum products from Immingham to Thames.
- Transportation of general cargo from Belfast to Dagenham (price per tonne).
- Transportation of 10,000 tons of clean petroleum products from Rotterdam to Thames.
- Transport of a 20 foot container, Bristol to Waterford.
- Transport of a 40 foot container, Bristol to Bilbao.
- Transport of a 20 foot container, Teesport to Rotterdam.
- Transport of a 40 foot container, Greenock to Bilbao.
- Transportation of general cargo from Erith to St. Malo (price per ton).
- Transport of 20 foot container, Liverpool to Gothenburg.
- Transport of 40 tonnes of steel, Liverpool to Baltimore.
- Transportation of malt in containers from Southampton to Japan.
- Liner service cargoes – transportation of chemicals in 20 foot containers from Southampton to Hong Kong.
- Vehicle freight –Transportation of 2 cars in a 40 foot container from Felixstowe to Port Kelang (Malaysia).
- Transportation of a 20 foot, general purpose container from Tilbury to South Africa.
- Transportation of a 40 foot, general purpose container from Liverpool to Australia.

ANNEX B

Table 1

**CORPORATE SERVICES PRICE INDEX (1995=100)
SEA AND COASTAL FREIGHT**

	Sea and coastal water freight	Experimental top-level C SPI incl rent
SIC(92)	61.10/2	
1995 weights		
Net sector (inc. rent)	0.57	100.00
1996 Q3	97.2	101.9
Q 4	96.3	103.3
1997 Q1	95.2	104.5
Q 2	95.4	105.3
Q 3	95.7	105.9
Q 4	95.5	106.3
1998 Q1	93.7	107.3
Q 2	88.4	108.3
Q 3	88.1	108.8
Q 4	84.0	109.3
1999 Q1	81.8	110.4
Q 2	81.2	111.3
Q 3	77.1	112.2
Q 4	78.0	113.1
2000 Q1	79.6	113.9
Q 2	81.9	115.6
Q 3	83.1	116.9
Q 4	83.8	118.3
2001 Q1	85.8	120.0
Q 2	87.3	121.4
Q 3	85.2	122.3
Q 4	81.2	123.0
2002 Q1	79.5	123.4
Q 2	75.5	124.3
Q 3	76.5	124.8
Q 4	77.0	125.5
2003 Q1	78.4	126.4

**Percentage change on same
quarter in previous year**

1997 Q3	-1.6	3.9
Q 4	-0.8	2.9
1998 Q1	-1.5	2.7
Q 2	-7.3	2.8
Q 3	-7.9	2.7
Q 4	-12.0	2.9
1999 Q1	-12.7	2.9
Q 2	-8.1	2.7
Q 3	-12.5	3.1
Q 4	-7.2	3.5
2000 Q1	-2.7	3.2
Q 2	0.8	3.9
Q 3	7.7	4.2
Q 4	7.4	4.5
2001 Q1	7.8	5.4
Q 2	6.6	5.1
Q 3	2.5	4.7
Q 4	-3.1	4.0
2002 Q1	-7.4	2.8
Q 2	-13.5	2.4
Q 3	-10.2	2.1
Q 4	-5.3	2.0
2003 Q1	-1.4	2.5

ANNEX B (cont.)

Fig.3

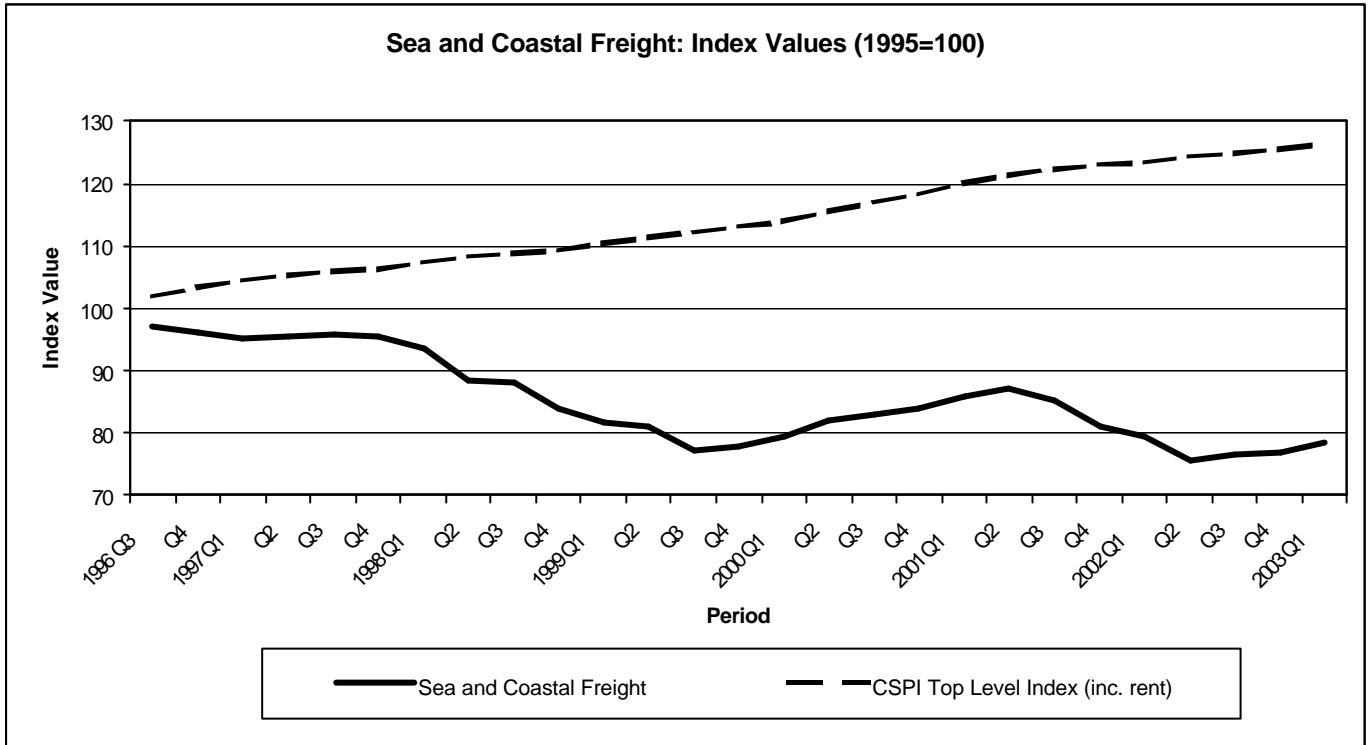


Fig.4

