
Session 2:

RAILWAY TRANSPORT



Session outline

- Group discussion
- Presentation
 - Industry overview
 - Industry and products classification
 - Sample selection
 - Data collection
 - Pricing methods
 - Index calculation
 - Quality changes adjustment
 - Weighting
 - UK experience
- Peer discussion

Group discussion: Rail freight

- What do you know about this industry?
- How important is this industry in your country?
- Is there any specific national characteristics to this industry (e.g. specific regulation, market conditions etc)?
- What do you think are the main drivers of prices in this industry?

Industry overview

- Railway transport comprises both passenger and freight transport
- Different regimes of national control/regulation of railways. In the UK, national railways were privatised between 1994 and 1997
- Small number of service providers – in some countries one or two dominant players
- Relatively limited competition compared to other sectors
- Logistic companies may provide bundled packages with intermodal transport and/or additional storage/warehousing services
- Transport is either via intermodal (container) freight or trainload freight (coal, metals, oil, construction materials, vehicles)

UK rail freight industry

- Currently 6-7 freight operating companies licenses to transport goods by rail
- Historically, UK rail key to the transport of coal
- In 1994, opening of the Channel Tunnel allowed direct transport of goods by rail between the UK and the rest of Europe for the first time
- UK rail freight industry contributed £395 millions to the UK economy in 2017
- The rail freight industry in 2017 contributed around 0.03% to the total UK economy and around 0.5% to the GVA of the Transportation industry

UK rail infrastructure

Infrastructure

In 2016-17 in Great Britain¹⁷:



2,560
stations



15,811 km
of route



34% of
electrified route



The average age of
rolling stock was
21 years



29% less carbon
emissions per
passenger KM than
in 2005-06

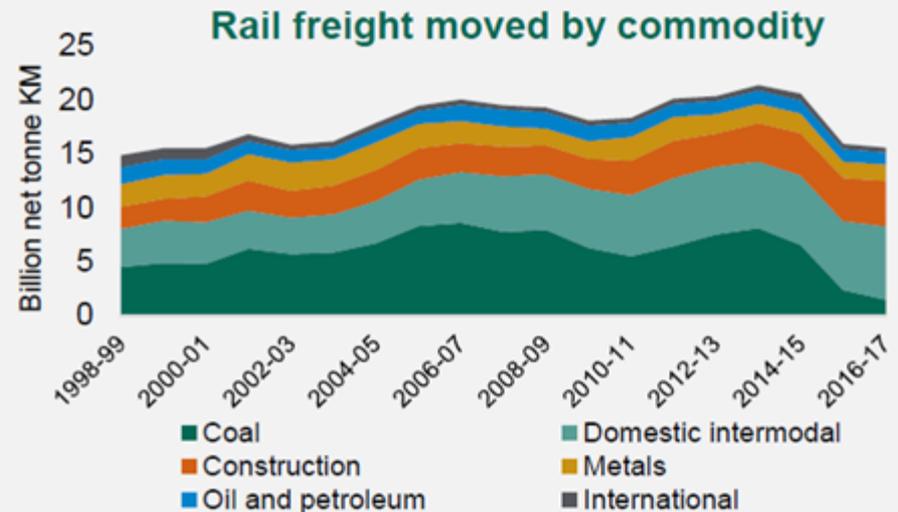
Uk rail freight

Rail Freight

Rail freight makes up 9% of freight moved domestically, with the majority carried on roads.

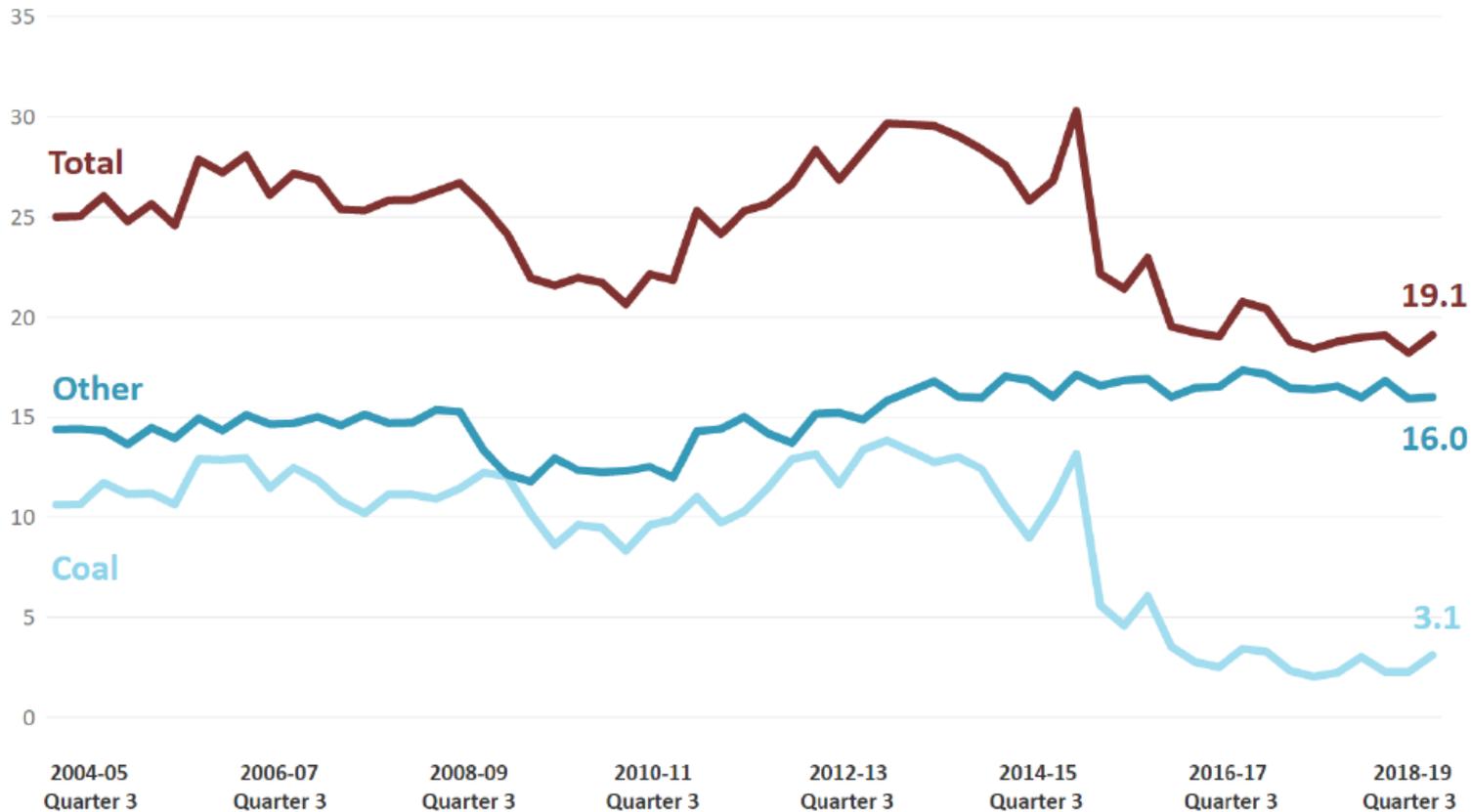
Rail freight moved has fallen sharply. This was driven by a drop of 82% in coal freight over 3 years, as a gradual move towards renewable sources of energy has caused the closure of some coal power stations.

Commodities such as 'domestic intermodal' and construction have increased over many years¹⁸.



UK rail freight

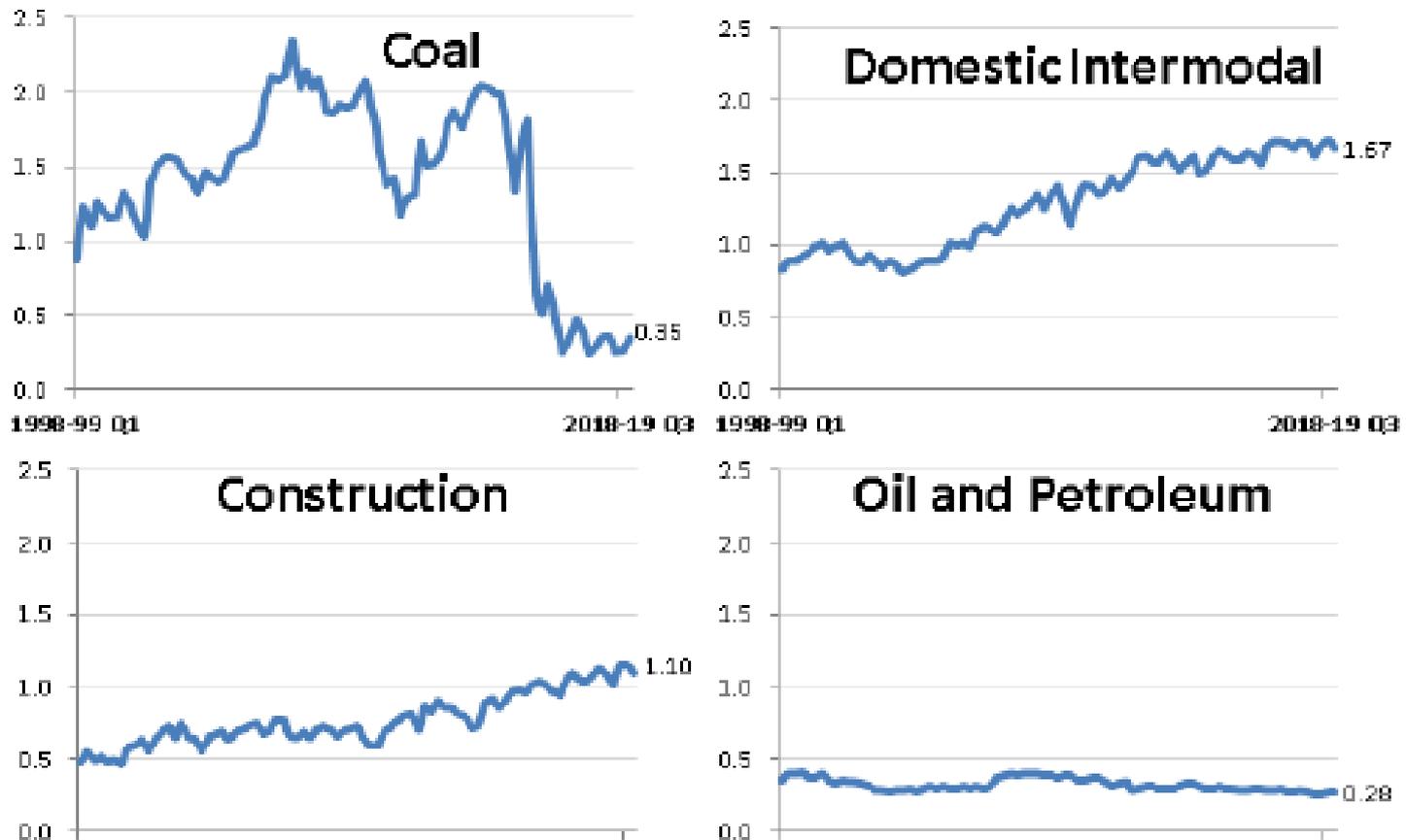
Figure 2.01: Freight lifted (million tonnes), Great Britain, 2004-05 Q1 to 2018-19 Q3 ([Table 13.6](#))



Source: Office Of Rail and Road, Freight Rail Usage 2018-19 Q3 Statistical Release

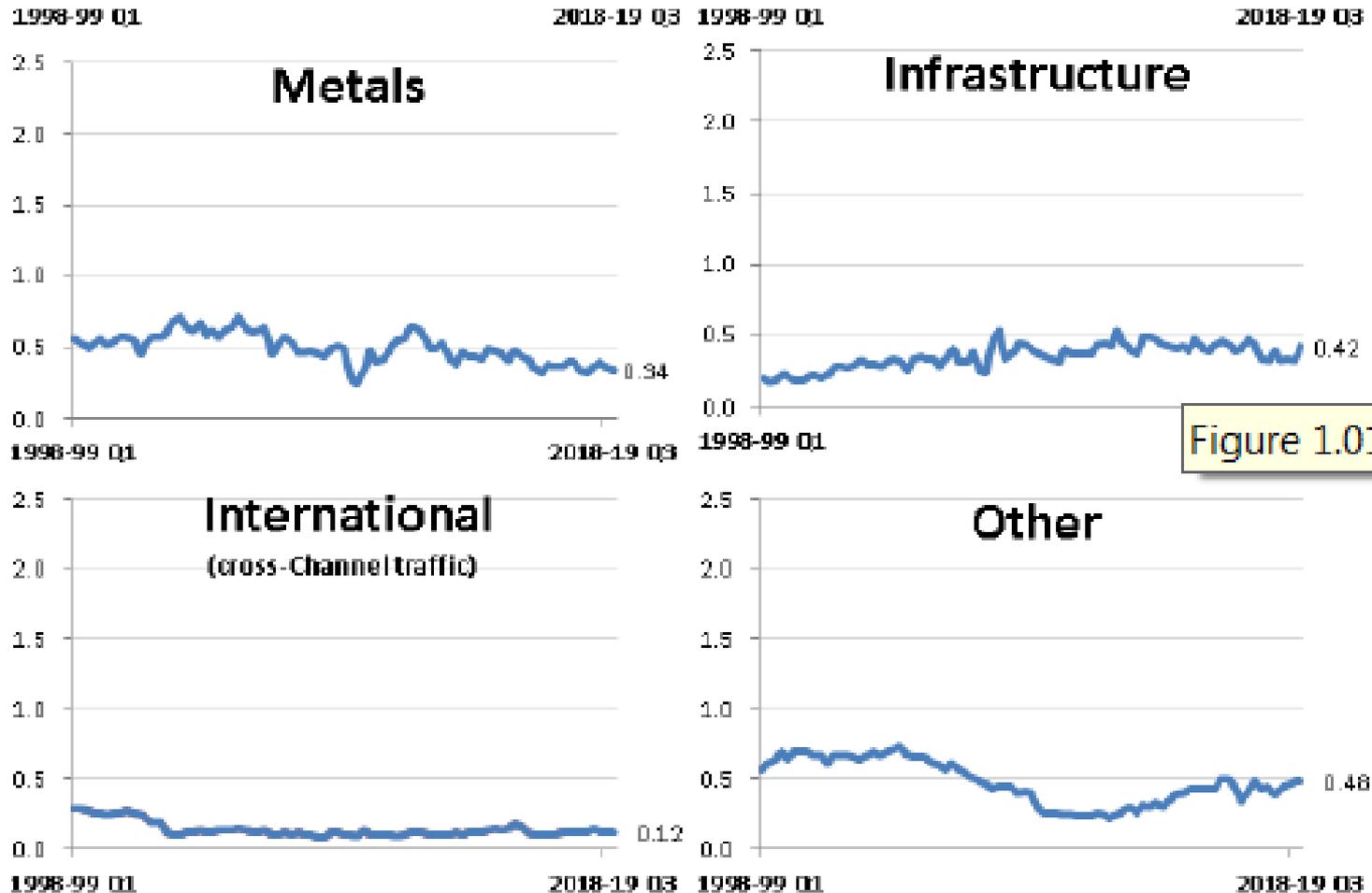
Rail freight moved by type of commodity/1

Figure 1.01: The volume of rail freight moved (billion net tonne km), Great Britain, 1998-99 Q1 to 2018-19 Q3 ([Table 13.7](#))



Source: Office Of Rail and Road, Freight Rail Usage 2018-19 Q3 Statistical Release

Rail freight moved by type of commodity/2



DB Cargo UK



DB Cargo UK



Construction & Waste

DB Cargo UK is the leading provider of rail freight services to the UK construction industry, offering fast, reliable, safe rail services for aggregates and building materials.



Metals Sector

DB Cargo UK has the resources and expertise to offer flexible, reliable and, efficient rail freight services for metal manufacturers across the UK and Europe.



Coal and Biomass

DB Cargo UK offers reliable, cost-effective, payload optimised rail freight services for coal and biomass deliveries to the UK's major power stations.



Automotive

DB Cargo UK offers unrivalled expertise and resources for transporting finished vehicles, automotive products and parts across the UK.



Chemicals

DB Cargo UK is the leading provider of rail haulage services for the chemicals industry, specifically the petroleum sector.



Trainload

Reliable, versatile trainload services for major goods consignments.



Rail Infrastructure

We offer a suite of services to the UK rail industry to support infrastructure maintenance and renewals, rail projects and specialist services for Network Rail.



Consumer Goods

We provide individually tailored rail freight and logistics services for the consumer goods industry, helping to reduce time-to-market and total spend while increasing productivity and efficiency.



Passenger Transport

DB Cargo UK provides a one-stop shop for passenger rail services, including drivers, locomotives, coaches and support teams. The company operates prestigious passenger services including the British Pullman and the Royal Train.

Industry classification

ISIC Rev.4							
H	Transportation and storage						
49	Land transport and transport via pipelines						
49.1	Transport via railways						
ISIC Rev.4		NACE Rev.2		2007 NAICS		ANZSIC	
4911	Passenger rail transport, interurban	49.1	Passenger rail transport, interurban	482111	Line-haul railroads	4720	Rail Passenger transport
4912	Freight rail transport	49.2	Freight rail transport			4710	Rail freight transport
				482112	Short line railroads		

Product classification

ISIC Rev. 4						
H	Transportation and storage					
49	Land transport and transport via pipelines					
491	Transport via railways					
ISIC Rev. 4		CPC Ver.2		CPA 2008		
4912	<i>Freight rail transport</i>	65121	Railway transport services of freight by refrigerator cars	49.20.11	Railway transport services of freight by refrigerator cars	
					49.20.12	Railway transport services of freight by tanker cars, petroleum products
		65122	Railway transport services of freight by tanker cars	49.20.13	Railway transport services of freight by tanker cars, bulk liquids and gases	
		65123	Railway transport services of intermodal containers	49.20.14	Railway transport services of intermodal containers	
		65124	Railway transport services of letters and parcels	49.20.15	Railway transport services of letters and parcels	
		65125	Railway transport services of dry bulk goods	49.20.16	Railway transport services of dry bulk goods	
		65126	Railway transport services of live animals			
65129	Other railway transport services of freight	49.20.19	Other railway transport services of freight			

Key classification considerations

- Industry or product classification?
- Type of goods transported
- National or international transport
- National characteristics and level of regulation within the industry

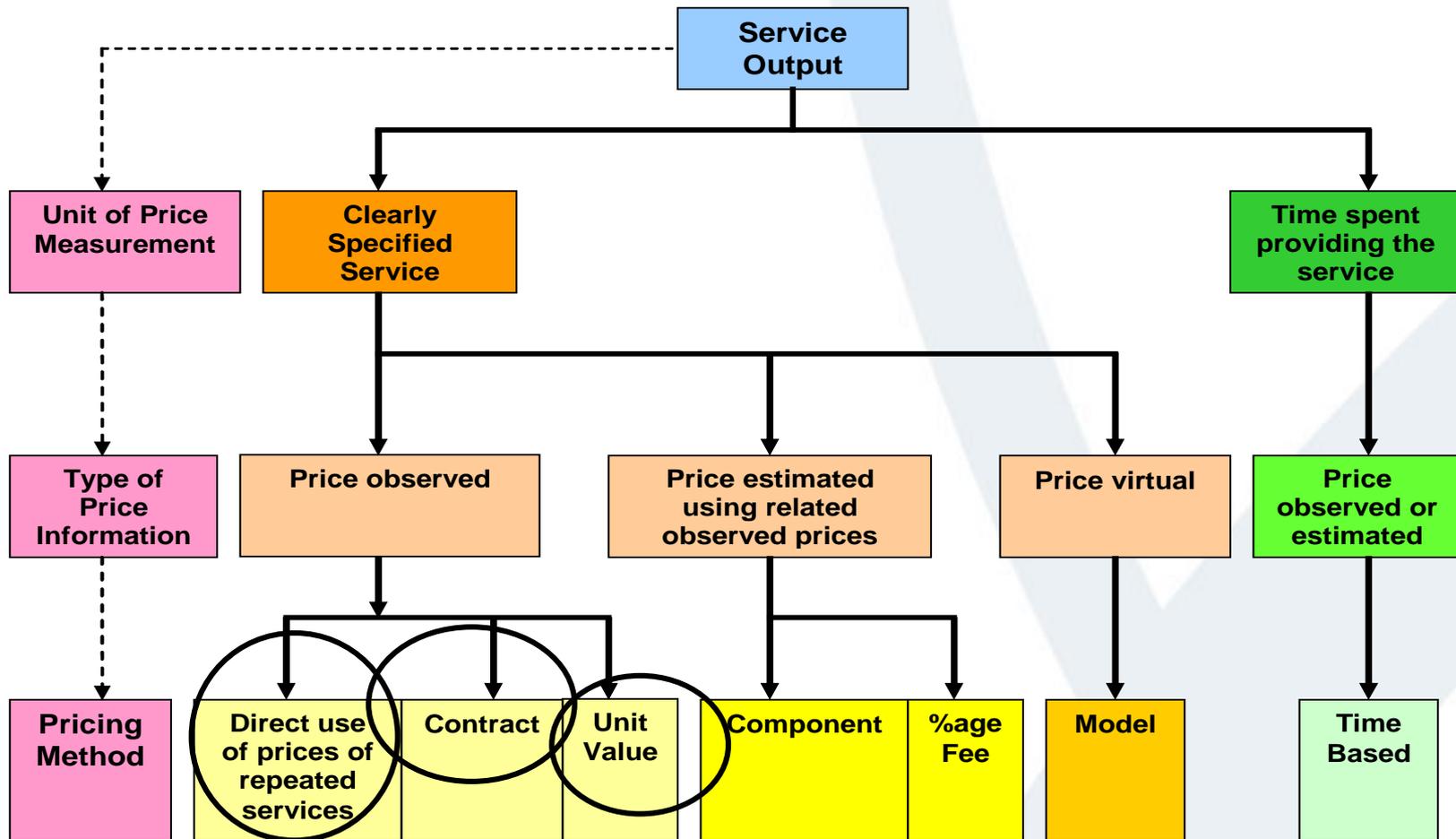
UK classification

- Commercial rail freight split into 2 indices: domestic and international
- Domestic is split into:
 - Container
 - Mail
 - Petroleum chemicals and nuclear
 - Coal and other minerals
 - Metals
 - Aggregate/construction
 - Rail infrastructure and engineering
 - Other
- International captures the freight transport via the Channel Tunnel and is not split any further
- Moving to CPA 2.1. classification

Price determinants

- Similar to other transport modes
 - Type and weight of cargo
 - Journey distance
 - Type of vehicle
 - Routing information (distribution/joint cargo)
 - Delivery time
 - Inclusion/exclusion of packing, loading and unloading services
 - Domestic or export
 - Fuel prices
 - Other special conditions

Pricing methods: rail freight



Contract pricing

- Price for repeated delivery of same (or very similar) service
- Respondents provide price for same service as set out in long-term contracts

Pros:

- Real transaction price
- Captured discounts
- Least compliance cost
- Basic price can be identified

Cons:

- Under-representation of one-off/spot market

Direct use of prices of repeated services

- Same service is re-priced in each survey period
- Where possible, real transaction prices should be used.
- List prices can be used in place of real transaction prices

Pros:

- Clear and published pricing mechanism
- Limited respondent burden
- Allow to capture regular transport not subject to a specific contract

Cons:

- If list prices used, not a real transaction price – discounts not known

Unit value pricing

- Value and quantity/volume data is used to derive a price
- Requires output to be split in homogenous subset to ensure changes in product mix do not impact on price movements
- For rail-freight, for example, turnover/revenue and tonne-kilometres by carriage group can be used to derive a price

Pros:

- Relatively easy to derive, if value and quantities are available
- Low respondent burden

Cons

- Changes in product-mix difficult to control for

Scope of survey

- Rail passenger transport users are both households and businesses
- Choice of:
 - B2all SPPI
 - B2B SPPI to be integrated with CPI
 - Use CPI only – adequate if no differences between private and business users
- Rail freight transport is predominantly a B2B activity, and as such it requires a dedicated SPPI survey

Sample design

- Depends on national circumstances and level of (de)-regulation of the sector
- Non-random sampling adequate when sector has a relatively high degree of national regulation and/or has a small number of operators with large market shares
- Representative services to be selected based on conversation with companies
- Where product-level data is available, probabilistic sample can be employed to select representative services
- Disclosure concerns due to limited number of operators

Service specification

- Type of service
 - Carload versus intermodal
- Type of Equipment
 - Box car
 - Container
 - Flat car
 - Gondola
 - Hopper
 - Refrigerated car
 - Tank car
 - Trailer
- Service specification
 - Commodity
 - Shipment weight and dimension
 - Origin and destination
 - Route

Examples of service specifications

- Service 1
 - Transport of limestone from quarry to factory
 - 300 miles
 - Price per trainload
- Service 2
 - Carriage of 20 foot container from Cardiff to Newport
 - Excluding onward road delivery

Quality adjustments

- Prices can be impacted by advances in technology and logistics, which need to be dealt with
- Surcharges often quite volatile over time, impacting on prices

Type of quality adjustment methods

Type of quality adjustment methods:

- Overlapping method

A price for the new service/contract is provided for both the current and previous period. This allows the new service or contract to be linked on the old one

- Comparable replacement/direct price comparison

The new service is considered perfectly comparable to the old service and as such any difference in price between the current and previous period is a genuine price movement

- Linkage to show no change

The new service is not comparable to the old service. The difference in price between the current and previous period is attributed completely to the difference in the quality of the two services. It assumes the old service would have had the same price in the current and previous period if it had been available

Data validation

- As for other industries, based on unexpected price changes
- Aims at detecting non-genuine price changes
 - Data collection errors
 - Changes in quality
- Validation gates applied on period-on-period growth
 - e.g. validation failures where quarter-on-quarter prices change over a certain threshold (e.g. 7.5%; 15%)
- Validation gates should take into account industry-specific price characteristics:
 - Volatility/price variability
 - Seasonality
- Fuel (diesel/electricity) costs determinant in price movements in the transport industry
- Licence costs and infrastructure surcharges

Weights

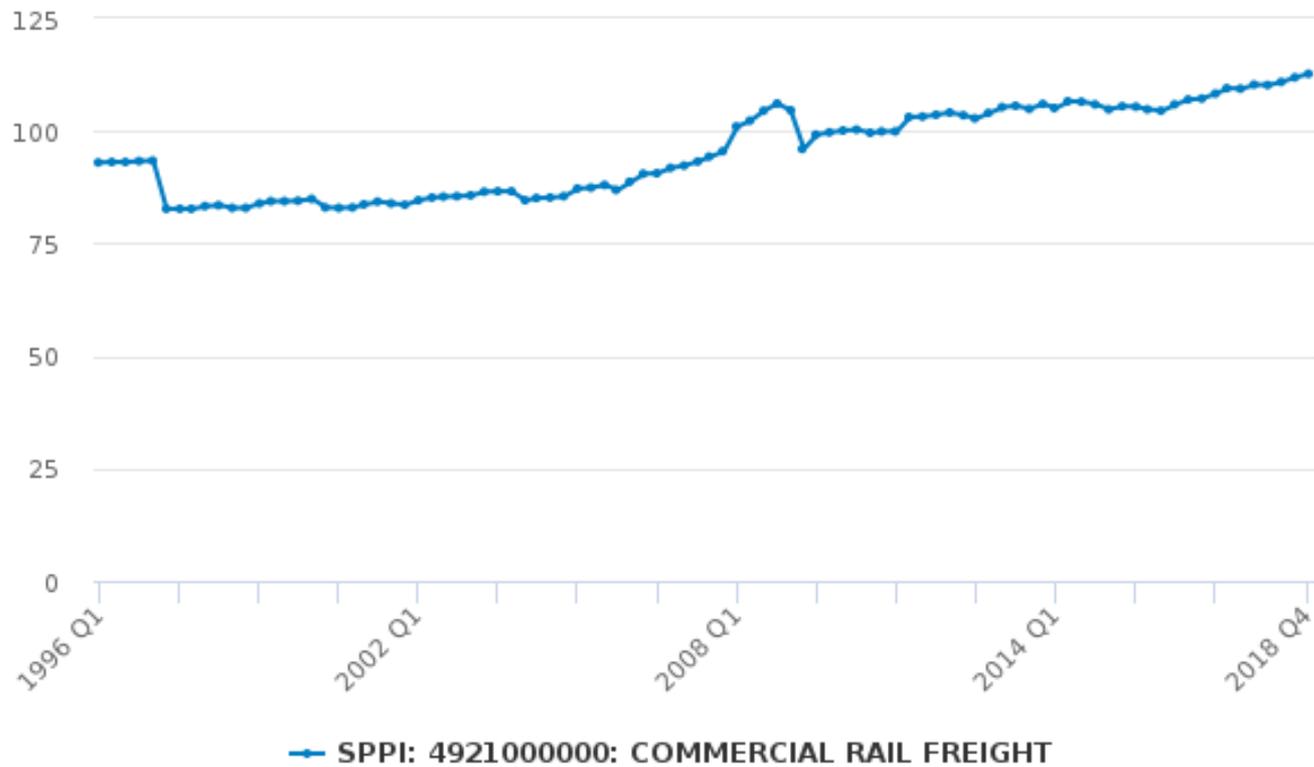
- Sampling weights
- Index to index weights/Turnover weights
 - Product weights
 - Industry weights

Weights

- Different sources of data depending on availability
 - Annual structural surveys
 - Annual sectoral surveys
 - Annual surveys of transport services
 - Dedicated surveys of service products
 - Transportation statistics providing volume data (i.e. tonne km)

UK SPPI

SPPI: 4921000000: COMMERCIAL RAIL FREIGHT



Source:

Group discussion

- Do you currently have an SPPI available for this sector?
- Any specific strengths/issues with existing SPPI?
- Any challenges in developing a new SPPI for this sector if not available?

Some aspects to consider:

- Any specific characteristic of the national industry/regulation etc
- Survey versus alternative data sources
- Sampling frame availability, advantages and limitations
- Sources of turnover data (industry/product)
- Specific user needs in terms of outputs