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Division Prices  
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Minipresentation

**PRODUCER PRICE INDEX FOR  
WATER TRANSPORTATION  
IN GERMANY**

Version of 25 August 2009

## 1. Definition of the sector

According to NACE rev.2 50 water transport includes the transport of passengers or freight over water, whether scheduled or not. Also included are the operation of towing or pushing boats, excursion, cruise or sightseeing boats, ferries, water taxis etc.

Water transport comprises

- maritime transport (continental and intercontinental) ,
- coastal (domestic) transport and
- inland water transport via rivers, lakes and other inland waterways.

## 2. Market conditions and constraints

### a. Size of the industry

Good infrastructure for water transports and especially maritime transports is important for Germany because of its large international and intercontinental trade activity.

The market structure for water transport activities according to the German service statistics is as follows:

30.4 Bill. EUR turnover in 2007, thereof..

- 28.6 Bill. EUR for sea and coastal water transport and
- 1.8 Bill. EUR for inland water transport.

These figures refer to water transports as a primary economic activity. They exclude water transports on own account (e.g. oil industry).

For Germany the share of freight transport in coastal and sea transport is approximately 97 % in terms of turnover. The transport of passengers, operation of excursions, cruise or sightseeing accounts for only 3 % of total turnover in coastal and sea transport.

Freight transport can be distinguished in liner shipment, tramp shipping and roll-on, roll-of transports by ferries. The shares in terms of turnover for Germany are approximately as follows<sup>1</sup>:

- 60-65 % for liner shipment,
- 25-30 % for tramp shipping,
- <10 % for roll-on, roll-of ferries (mainly Baltic Sea).

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<sup>1</sup> According to various calculations based on transport statistics, price and branch information.

b. Special conditions or restrictions

Sea freight transport: The role of international sea conferences and the global economic crisis

Till 17 October 2008 prices for sea freight transports in liner shipments were fixed by international price cartels called SEA CONFERENCES<sup>2</sup>. These cartels were forbidden from 18 October 2008 onwards by international acts (e.g. EU, USA). Till 17 October 2008 prices for sea freight transports were uniform for all shipment companies joining these sea conferences. Since 18 October 2008 companies have to calculate their prices independently from each other.

The present global economic crisis has led to a significant reduction of international trade activity. In consequence the volume of sea freight transports was significantly reduced and prices for transportation drastically decreased in the past months.

Companies reacted in reducing or stopping liner shipment transports and in reorganising their business structure, some firms got bankrupt.

As most companies have considerable overcapacities future changes in the organisation of liner shipment are to be expected. This might also affect the continuity of the price observation.

### 3. The SPPI for sea and coastal water transport in Germany

Since the end of the 1970 s the Federal Statistical Office of Germany, Destatis, has computed monthly price indices of sea freight transport. For inland water transport due to its lower economic importance no official price indices are calculated<sup>3</sup>.

The conceptual basis of price indices for sea freight transport has not undergone fundamental changes.

In 2003 the calculation of a separate price index for tramp shipping was abandoned. Main reasons for this decision were the low quality of data<sup>4</sup> and the work load for the survey.

In 2006 the scope of the indices was extended as a consequence of the EU regulation on short term statistics (STS). This regulation foresees, among others, the provision of an SPPI for sea and water transport. The SPPI should be based on the year 2006=100 and be produced on a quarterly basis.

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<sup>2</sup> E.g. EMERA=Europe Middle East Rate Agreement, FEFC= Far Eastern Freight Conference<sup>3</sup>, TACA= Trans Atlantic Conference Agreement and others.

<sup>3</sup> For the river Rhine there exist price indices compiled by a private firm ([www. Pjk-international.com](http://www.Pjk-international.com)). These indices are distributed on a commercial basis (daily price quotations for the spot market). They are not documented publicly and due to copyright restrictions not described in the present paper.

<sup>4</sup> It is difficult to define representative transports which are comparable over time as there are no regular transports with identical specifications. Also, in Germany the number of price price quotations for contract prices varied strongly over time.

In Germany from 2006 onwards price observations were extended to

- roll-on, roll-off transports by ferries,
- Passenger transport.

On the other hand the data collection was simplified in such a way that the survey was only conducted each quarter but monthly data were asked. The collection of monthly data takes account of the large volatility of price data (including surcharges and changes of currency exchange rates) during the year.

#### 4. Sample design

##### a) liner shipment

Typically a small number of dominant suppliers realise almost all turnover. This means:

- Inclusion of dominant suppliers in the stratum with full coverage,
- Stratified sampling for all other units,
- Decisive criterion for selection: the reporting unit regularly performs representative maritime transports that are suitable for rate monitoring,
- Rotation of sample for small companies,
- Inclusion of domestic companies with transports under foreign flags.

Currently 20 units (shipping companies, ship brokers, agencies) report freight rates by questionnaire for a representative selection of traffic relations and important goods.

##### b) Roll-on, roll-off ferries

Currently 12 reporting units are in the price observation. Main data sources are the Internet and information by telephone.

##### c) passenger transport

Information is taken from the consumer price index (minus VAT).

##### d) excluded: tramp shipping

For tramp shipping it is difficult to define representative transports over time. One possibility would be to ask companies for model prices (What would it cost if...) but this kind of survey is burdensome for companies.

Another way of survey was chosen by Destatis till 2003. For calculating an SPPI for tramp shipping. Destatis used detailed information from the trade press on water transports of tramp shipping by origin and destination, spot prices etc. The quality of data was unsatisfactory as the number of price quotations varied strongly over time and the comparability of data was not assured. Therefore in 2004 this kind of survey was stopped.

## 5. Main pricing method

### a) liner shipment

The main pricing method is contract pricing for scheduled transports.

### b) roll-on, roll-off ferries,

### c) passenger transport

Main pricing method for both transports is the direct use of prices for repeated services (tariffs). Also some freight rates are used.

## 6. Collection of information for the SPPI

### a) liner shipment

Statistical services in consultation with companies choose a number of transport services which are representative for the business activity and which are conducted regularly in the same way. Information on the main transport activities comes from transport statistics or from commercial sources (e.g. press).

Companies supply

- basic rates,
- currency adjustment factors,
- surcharges (e.g. surcharges for bunker oil and port charges),
- price reductions (e.g. dumping rebates) are deducted.

Services are specified as detailed as possible. Major parameters are:

- Origin and destination of the transport,
- Weight or volume for non-containerised cargo,
- Size of cargo,
- Type of container (general, dangerous, refrigerated),
- Need for services (load, unloading, and storage).

Compared to the types of packaging and loading types of goods are only relevant on a secondary level (except bulk goods) .

Freight rates are calculated for each type of good with regard to a specific traffic relation on a pier to pier basis. For multimodal house/house transport via sea only the proportional freight rates for mere maritime transport is reported. Freight rates are collected in the original currency and converted into EURO.

b) roll-on, roll-off ferries

c) passenger transport

Price quotations are based on a precise description of the service.

## **7. Calculation procedures**

The index computation is based on a Laspeyres concept. The present computation is based on the year 2006.

For deriving the weights a multiple stage calculation is performed:

- Use of data from statistics of maritime transport on quantities of goods transhipped in German sea ports as part of liner trades,
- Data are to be grouped by major traffic relations and product groups (in tons),
- Annual average freight rates (referring to container rates) are to be recalculated to obtain freight rates per ton
- Information is needed on the specific weight, the dimensions of the products transports and on the carrying capacity and the dimensions of the different types of container.

For the index computation of liner shipment a total of 120 traffic relations with German harbours as origin or destination was selected. The computation comprises 400 representative price quotations for different relations and goods (including information on surcharges etc).

## **8. Quality issues**

Precise specification of transport services is necessary and must be kept over time. Surcharges are very volatile and have a considerable influence on the variations of the total price over time. Price quotations need to be updated regularly from “old” to new and similar transports. This may cause difficulties In the present economic situation when companies reduce liner shipment.

## **9. Results**

The index breakdown is divided into homeward-bound and outward-bound trades. In combination with this breakdown a regional breakdown of the results for the four traffic relations of Europe, Africa, America and Asia/Australia is available

Results for the SPPI on TC are given in the table below.

**Extract from publication in [www. destatis.de](http://www.destatis.de)**

**„Preise und Preisindizes für Verkehr - Fachserie 17 Reihe 9.2“ Mai 2009**

### Sea and coastal water transport

Producer price index

2006 = 100

Year (average) Quarter	coastal water transport	Freight transport	Freight transport					
			Liner trades	Continental and intercontinental liner trades				
				Homeward bound liner trades	Outward bound liner trades	Europe		
						total	Homeward bound liner trades	Outward bound liner trades
2006	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
2007	94,4	94,4	93,7	108,6	81,4	98,0	99,0	97,0
2008	92,2	92,0	90,0	106,0	76,8	99,7	102,9	96,5
2007 1 quarter	88,6	88,5	87,5	97,1	79,5	96,6	97,4	95,7
2007 2 quarter	90,3	90,2	89,2	102,3	78,5	96,6	97,7	95,4
2007 3 quarter	98,4	98,4	98,0	117,8	81,6	98,9	99,6	98,3
2007 4 quarter	100,3	100,4	100,0	117,2	85,8	100,0	101,5	98,4
2008 1 quarter	96,3	96,2	95,0	113,2	79,9	100,1	102,6	97,4
2008 2 quarter	91,2	91,0	88,9	106,3	74,6	98,6	102,2	94,9
2008 3 quarter	95,6	95,3	93,1	107,9	80,8	100,7	104,1	97,2
2008 4 quarter	85,8	85,5	83,1	96,6	71,9	99,6	102,7	96,3
2009 1 quarter	64,0	63,2	59,5	63,9	55,8	88,2	93,4	82,7

**Sea and coastal water transport**  
 Producer price index  
 2006 = 100

Freight transport										Transport of passengers
intercontinental liner trades									Roll on-Roll-of	
Africa			America			Asia / Australia				
total	Homeward bound liner trades	Outward bound liner trades	total	Homeward bound liner trades	Outward bound liner trades	total	Homeward bound liner trades	Outward Bound liner trades		
100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
89,1	96,2	87,1	76,2	90,6	71,3	111,0	120,4	92,3	101,4	97,6
95,9	104,2	93,6	66,4	112,4	50,9	109,9	104,7	120,3	111,4	104,0
89,7	95,2	88,1	74,5	85,5	70,8	96,6	101,9	86,2	98,6	95,2
87,3	96,2	84,7	74,3	86,7	70,1	101,8	110,8	84,2	100,2	97,2
88,7	96,0	86,7	78,0	93,3	72,9	120,4	136,2	89,0	102,3	102,6
90,6	97,4	88,7	78,0	97,0	71,6	125,1	132,8	109,9	104,3	95,2
91,5	100,5	89,0	71,7	105,8	60,2	118,1	121,2	112,0	108,6	99,4
91,5	99,9	89,1	65,4	109,4	50,6	109,1	106,9	113,6	111,0	103,9
99,5	109,4	96,7	69,1	123,9	50,6	114,4	102,8	137,3	116,7	111,8
101,2	106,9	99,6	59,4	110,5	42,2	98,0	88,0	118,0	109,4	100,7
81,3	90,2	78,8	42,3	84,5	28,2	60,4	42,4	96,1	99,1	107,4