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Mini Presentation on Turnover/Output for Water
Transportation in Spain

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1. Definition of the service being collected

In the Statistical Classification of Economic Activities in the European Community (NACE rev.2), the water transport services comprise sea and coastal and inland water transport services. In both types of navigation, the services of passenger water transport and freight water transport are separated; this is new in the last revision of the European classification and it is common to all the types of transport.

The classification is structured as follows:

50 Water transport

50.1 Sea and coastal passenger water transport

50.10 Sea and coastal passenger water transport

50.2 Sea and coastal freight water transport

50.20 Sea and coastal freight water transport

50.3 Inland passenger water transport

50.30 Inland passenger water transport

50.4 Inland freight water transport

50.40 Inland freight water transport

The product classification has been developed mainly to collect the transport by type of ship used and kind of product transported in freight transport. At the highest level of the classification, the following types of transport are recognized.

Sea and coastal and inland passenger water transport services

By ferries

On cruise ships

Rental services of sea and coastal (and inland) water vessels for passenger with operator

Sightseeing and excursion boat services only for inland transport services

Sea and coastal and inland freight water transport services

Of frozen and refrigerated goods by refrigerator vessels

Of crude oil by tankers

Of other bulk liquids and gases by tankers

Of intermodal containers by container ships

Of dry bulk good

Rental services for freight with operator

Towing and pushing services

2. Unit of measure

Services are charged in Euros which is therefore the unit of measurement. Turnover comprises the total invoiced by the observation unit during the reference period by services supplied to third parties. VAT is excluded and other similar deductible taxes directly linked to turnover as

well as all duties and taxes on the goods or services invoiced by the unit. This mainly deals with services of transport of goods and passengers provided to third parties.

3. Surveys of turnover for the water transport industry

Two surveys collect information on turnover for the water transport services, one annual and one monthly. These surveys are carried out by INE (Spanish Statistical Institute) and they are described in the following subsections. Besides, for the water transport industry INE produces other type of statistical information on the following:

Structural business statistics (SBS) which collects information in order to fulfill the European Regulation 295/2008. It collects information on revenues and expenses, fixed assets and capital expenditures and other variables belonging to the accounting of the enterprises.

Short-term statistics (STS) whose main objectives are the European Regulations 1165/1998 and 1158/2005. So the three variables studied are the turnover mentioned previously, number of persons employed and service producer price. The two first are collected monthly. A quarterly index is compiled for service producer price with series starting in the first quarter of 2007. It covers services offered to enterprises, this is, it only includes price of freight transport services.

Consumer price index (CPI) covers services offered to private households (passenger transport services).

National accounts that cover information on output, intermediate consumption, value added employees remuneration, wages and salaries, social contributions and so on belonging to water transport services.

Wage statistics that give figures of annual and quarterly total cost and total wage cost and its components by economic activity.

Employment statistics (Labour Force Survey). Quarterly series of number of persons employed by economic activity from point of view of the households are offered in these statistics from the first quarter of 2000 in the new NACE Rev.2. The statistical unit is the household (unlike statistical unit of STS and SBS that it is the enterprise).

The statistical infrastructure to measure the outputs of water transport services is shared between Puertos del Estado (Spanish authority in water transport issues) and INE (Spanish Statistical Institute). INE has delegated the information collection in those organisms which have the information due to they practise regulatory activities or because of other reasons.

Puertos del Estado supplies information on passenger and freight transport carried out by vessels make stop at a Spanish ports to fulfill the Directive 95/64 of the European Council of December 8 of 1995. Besides, this Institution is also in charge of carrying out statistics on the register of merchant ships by port, type of navigation and period, statistics about overall port traffic, maritime goods traffic by port and type of navigation and maritime passenger traffic. It is

responsible of reports on port trade (or traffic) of ships, merchandises and passengers and economic information of the Spanish ports, investments included.

In the following subsections the surveys of INE where the variable turnover is included are analyzed.

Annual Survey of Water transport

Until year 2000 INE carried out an annual rotary survey on Services Sector, so only some activities were studied every year. Water transport industry was studied in the years 1991 (although only passengers), 1998 and 1999. From year 2000 all the activities belonging to market services are investigated in the *Annual Survey of Services* every year.

The information collected by the *Annual Survey of Services* serves two broad objectives. The first is to measure the financial performance and economic contribution of the different services subsectors. To meet this objective the survey collects information on revenues and expenses, fixed assets and capital expenditures by type. The second broad objective is to measure proper characteristics of every subsector. In this case, information on the turnover breakdown according to activities performed and the breakdown of fuel purchases is collected. Also, results of company fleet structure by age and the detail of the grants received are offered. The *Annual Survey of Services* also has the objective of fulfilling European Regulation n° 295/2008.

The statistical unit is the enterprise but the establishments are analysis units as well. The frame targeted by the survey is elaborated and maintained by INE from administrative sources.

This survey is a census of all enterprises with main activity water transport. The *Annual Survey of Services* uses different methods to collect data: the information is collected through an on-line data collection system and postal for paper questionnaires.

Responding to this survey is mandatory under *the Statistics Act*. The survey questionnaires are available on-line or mailed in early February following the end of the reference year.

Results from this survey corresponding to year 2007 were released on June 10, 2009 by INE. In the following link the results can be consulted. For general questions:

<http://www.ine.es/jaxi/menu.do?type=pcaxis&path=%2Ft37/e01&file=inebase&L=0>

For specific the particular characteristics:

<http://www.ine.es/jaxi/menu.do?L=1&type=pcaxis&path=%2Ft37/e01/p01&file=inebase>

High level summary statistics are reproduced in section 4 – **Market conditions and constraints**.

Monthly Survey of Water Transport

The annual survey of water transport is complemented by a monthly survey that collects a subset of key variables of the annual survey from a sample of enterprises. The data collected include

revenues (or turnover) and number of persons employed. This survey was implemented in January 2002 in order to fulfill European Regulation 1165/98. All the activities included in the Regulation are studied in a only operation. For the activity of water transport we survey to a sample of 110 enterprises. The businesses with 200 or more employees are included exhaustively and those with less employees but with establishments in different regions of Spain. This is necessary to publish regional figures. For the rest (the smallest enterprises are included as well), a random sampling is carried out and they remain in the sample for 4 or 5 years. The entities targeted by the monthly survey account for about 83% of the industry's revenues.

The survey is a mail-out / mail back survey. The respondents can fill out the questionnaire by internet (around 25% of the respondents answer it by this via). Responding to this survey is mandatory under *the Statistics Act*.

Results from this survey are released around 45 days after the reference month by INE. In the following link the results can be consulted:

<http://www.ine.es/jaxi/menu.do?type=pcaxis&path=%2Ft37/p183&file=inebase&L=0>

4. Market conditions and constraints

Spanish water transport services totalled 1994,9 millions of euros in 2007, growing at an average rate of 19,5% over the last three years (see table 1). Inland water transport services are irrelevant in Spain. According Structural Business Statistics data of 2007, the turnover of inland transport services represents 1,7% of the total turnover of water transport services. In terms of production this percentage is even lower.

Passenger services represent around 30% of the total water transport services and freight transport, el remainder 70% according to SBS data. If we take into account the figures from National Accounts (2005) of intermediate demand (freight transport) and final consumption of the households (passenger transport) these percentages are similar, the percentage of freight transport is a little bit higher, near 75%. In this table it can be seen that freight transport grew at an average rate of 10% over the last three years while the passenger transport increased at an rate around 34% in this period.

Table 1: Turnover by type of service (million Euros)	2005	2006	2007
Passenger water transport	660,9	835,2	889,3
Freight water transport	1007,9	1027,5	1105,6
Total water transport services	1668,9	1862,6	1994,9

Source: Structural Business Statistics 2005, 2006 and 2007. INE

Table 1: Turnover by type of service

Table 2 provides market share of water transport in the non-financial services and in other aggregations in terms of turnover. Water transport represents 3,2% of freight and passenger transport. If total transport is considered, this is freight and passenger transport, warehousing, support services for transportation and postal and courier services this percentage decreases to

1,9%. Finally, the water transport only generates the 0,4% of the total turnover of the non-financial services according to the figures from SBS 2007.

Table 2: Turnover (million Euros)	2007
Non-financial services	517.909,0
Transport	102.677,9
Freight and passenger transport	62.047,5
Water transport	1.994,9
Source: Structural Business Statistics 2007. INE	

Table 2: Turnover

Table 3 shows the contribution of water transport value added in the economy. This contribution has been very stable along the years 2000 to 2005 and it represents 0,12% on valued added of total economy.

Table 3: Share of water transport in the economy	Value added (VA) of water transport	Value added (VA) of total economy	% of water transport VA on economy VA
Year			
2000	739	570560	0,13
2001	718	618252	0,12
2002	776	661517	0,12
2003	818	706932	0,12
2004	879	756669	0,12
2005	981	813776	0,12
Source: National Accounts. INE (million euros)			

Table 3: Share of water transport in the economy

The table 4 presents the evolution of turnover from year 2000 until 2007 from SBS. During the three consecutive years the annual growth was higher than 10% (from 2004 to 2006).

Table 4: Water transport services	Turnover	Rate (%)
Year		
2000	1.197	
2001	1.255	4,8
2002	1.260	0,4
2003	1.337	6,1
2004	1.499	12,1
2005	1.669	11,3
2006	1.863	11,6
2007	1.995	7,1
Source: Structural Business Statistics. INE (million euros)		

Table 4: Water transport services

In the table 5 the distribution of the variables turnover, number of persons employed and number of enterprises according to the number of persons employed is presented. This information has

been obtained from SBS 2007 where water transport is studied exhaustively. The smallest enterprises (with less than 20 number of persons employed) represent almost the 80% of the population but they only invoice 10% of the total turnover. 11 enterprises have 99 or more persons employed that invoice the half of the total turnover and employ to more than 60% of the total. The conclusion in that water transport is dominated by big enterprises.

Table 5: distribution of the variables according to number of persons employed						
	Total	less than 2	from 2 to 5	from 5 to 20	from 20 to 99	more than 99
Nº enterprises	263	51	70	83	48	11
Turnover	1.994.887	8.355	98.869	117.963	758.150	1.011.550
Nº of persons employed	7.860	59	206	804	1.737	5.054

Source: SBS 2007. Units of turnover: thousand euros

Table 5: Distribution of the variables according to number of people employed

Graph 1: distribution of the variables according to number of persons employed

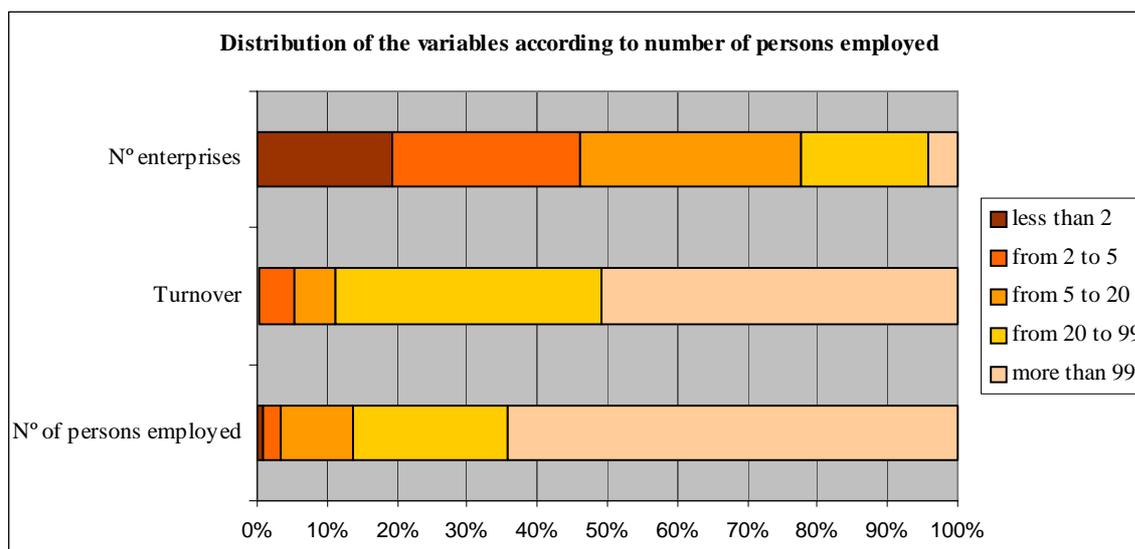


Table 6: distribution of the variables according to turnover						
	Total	less than 100	from 100 to 499	from 500 to 4999	from 5.000 to 20.000	more than 20.000
Nº enterprises	263	64	80	83	18	18
Turnover	1.994.887	2.685	21.096	157.534	182.216	1.631.355
Nº of persons employed	7.860	113	379	1.549	562	5.258

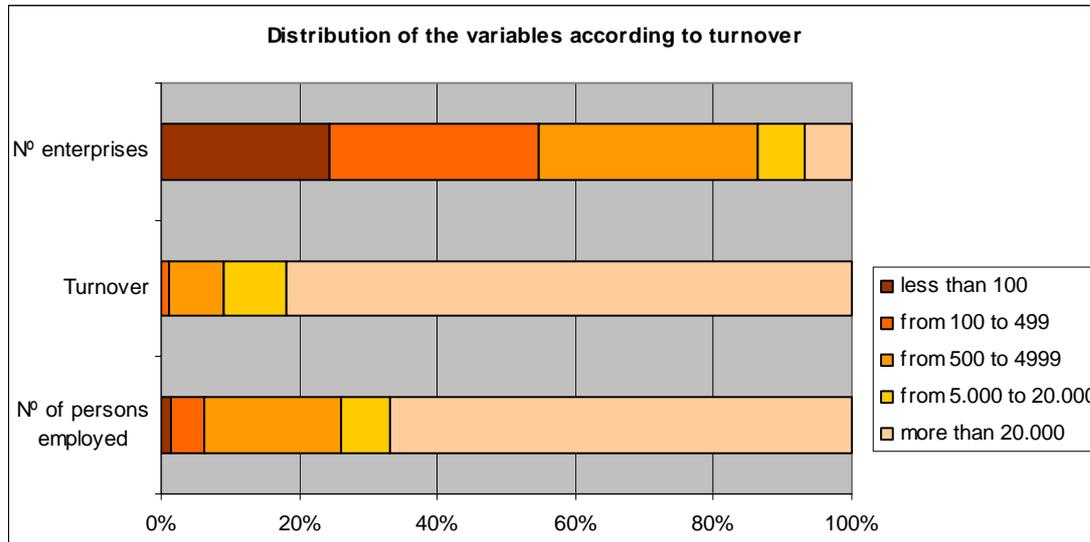
Source: SBS 2007. Units of turnover: thousand euros

Table 6: Distribution of the variables according to turnover

The previous conclusion is confirmed to show the distribution of the variables according to the turnover. This is provided by the next table 6. The 18 enterprises with highest turnover invoice

more than 80% of the total turnover and they employ to near 70% of the total employed personnel. Water transport in Spain is a very concentrated sector.

Graph 2: distribution of the variables according to turnover



5. Standard classification structure and product detail/levels.

Output

As mentioned earlier, the two main surveys that collect turnover data for water transport services are the *Annual Survey of Services* and the *Monthly Survey of Services*.

The information collected by the *Annual Survey of Services* serves two broad objectives. The first is to measure the financial performance and economic contribution of the different services subsectors. The second broad objective is to measure proper characteristics of every subsector.

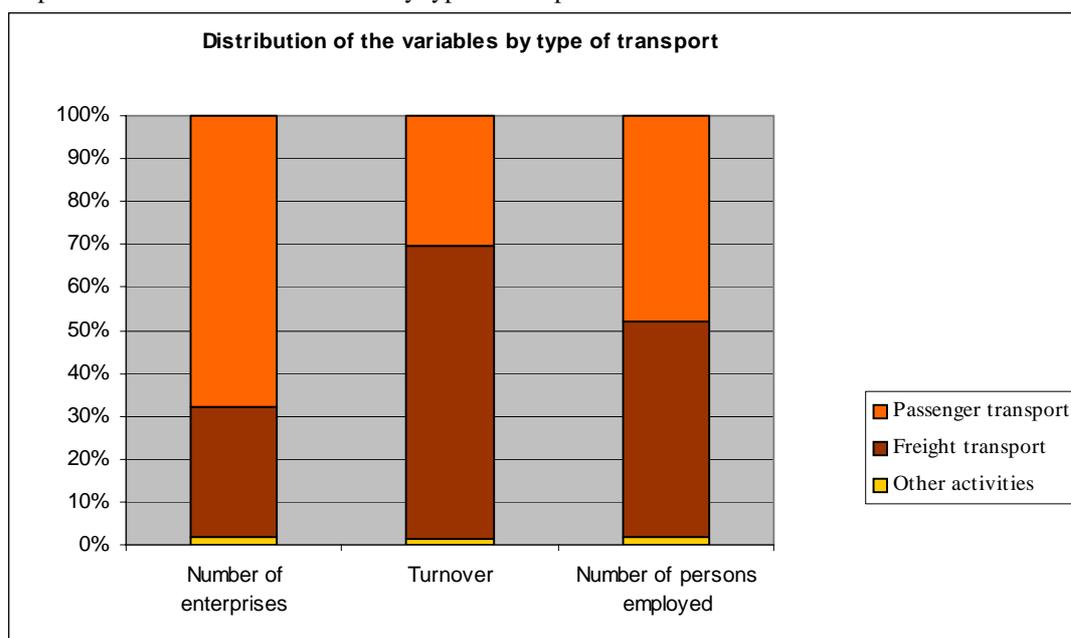
5.1.1 Main variables

In addition to the turnover variable, the annual survey collects information on expenses, fixed assets and capital expenditures by type, this is, all the variables included in the European Regulation (nº 295/2008). Besides, complementary information is required. This complementary information can change year to year but all the years questions on the belonging of the enterprise to a group are included.

Standard classification structure and product detail/levels

The main standard classifications in use are NACE and CPA. The collection of data on product turnover is carried out at a less detailed level than the CPA. In the following bar graph the distribution of the turnover, number of enterprises and number of persons employed by product is showed. Three products are considered: passenger transport, freight transport and other activities related with maritime transport. Almost 70% of the enterprises carry out passenger transport but almost this figure (70%) is the percentage of turnover obtained in freight transport. Each activity employs to the same percentage. Other activities related with maritime transport represents a very small percentage.

Graph 3: distribution of the variables by type of transport



6. Evaluation of standard definition and market conditions

The services of passenger and freight have been separated in the last revision of the European classification in water transport (and in all the types of transport). This has been an very relevant improvement. The product classification has been developed mainly to collect the transport by type of ship used and kind of product transported in freight transport. But the way of management of the ship distinguishing between tramp and scheduled transport has not been into account and however it is important. Other important thing to classify the products in sea and coastal freight water transport is the type of route: coastal shipping and transoceanic. Neither the type of route appears in the product classification.

There are two ways of management of the ships: tramp and scheduled transport. Tramp way is characterized by non-scheduled transport, this is, they carry out non-repeated services. The ships carry full load and the load is homogeneous (raw materials or with little manufacturing). The ships are specialized in bulk order specific load (bulk carriers, oil tankers, chemical carriers,...). The more common load is liquid bulk order (oil, chemical products,...) and solid bulk order (coal, minerals, grain,...). The market where they work is transparent. The freight and the

conditions are negotiated in each case. The freight are very unpredictable; they depend on the supply and the demand.

Scheduled transport has scheduled routes following a fixed time schedule, loading and unloading at fixed stops. The ship carries load from different and numerous loaders. The kind of goods is heterogeneous (manufactured goods, ...). The most common load is break bulk, refrigerated goods, vehicles,... The ships are special (roll on and roll off, container carriers,..). The market is usually a cartel and the conditions and the freight are public and stable.

As a conclusion, in order to define the services the distinction between tramp and scheduled transport is important in sea and coastal freight water transport. And it is also relevant to distinguish the type of route (coastal shipping and transoceanic) in both ways of management of the ships.

7. National accounts concepts and measurement issues for the area related to GDP measurement

Water transport services contribute about 0,17 per cent to the GDP of Spain, according National Accounts, 2005.

The annual national accounts are based on several different inputs produced by INE, such as the structural business statistics, accounting statistics for general government and enterprises, statistics for wages and earnings, external trade statistics, household consumer surveys and labour statistics. Some parts of the national accounts are constructed more or less directly from other statistics, while other parts are based on calculations and estimates.

Output in the national accounts is valued at basic prices in the case of market production and production for own final use. Basic prices mean that corresponding taxes on products are deducted and subsidies on products are added to output recorded at producers' prices.

By large the output from the water transport industry follows turnover from the structural business statistics. Only a few adjustments are normally made to adapt the figures to the information from Balance of Payments. Because of that, some years the deviations between output and turnover have been important. Output increased with 50,1 per cent from 2000 to 2005, according to table 7. This growth is higher than the growth of turnover obtained from the SBS in the same period of time (see table 4), near 40%.

Table 7: Water transport services	Output (basic value)	Rate (%)	Intermediate consumption	Rate (%)	Value added (basic value)	Rate (%)
2000	1.938		1.199		739	
2001	2.024	4,4	1.306	8,9	718	-2,8
2002	2.279	12,6	1.503	15,1	776	8,1
2003	2.399	5,3	1.581	5,2	818	5,4
2004	2.610	8,8	1.731	9,5	879	7,5
2005	2.910	11,5	1.929	11,4	981	11,6
Source: National Accounts. INE (million euros)						

Table 7: Water transport services

8. Turnover/output data method(s) and criteria for choosing various output methods.

Structural business statistics (SBS)

The primary source of turnover data is the annual SBS. The source of data of SBS is a census survey. Data from administrative registers are only used for the lack of answer. The enterprises are asked to break down turnover by activity performed (passengers, merchandises and other activities), see graph 3. This information is published.

Short-term Statistics (STS)

The monthly short-term statistics in Other Services use a survey to collect a sub-set of key variables of the annual statistic from a sample of enterprises. The data collected include revenues (or turnover) and number of persons employed. This survey was implemented in order to fulfill European Regulation 1165/98. All the activities included in the Regulation are studied in a only operation. The STS survey does not allow a detailed breakdown of turnover figures. The main purpose is to serve as an indicator of the aggregate water transport cycle. The turnover index has been produced and published since January 2000. Table 8 presents index values from January of 2008 to April 2009.

Table 8 2005=100	Turnover index water transport
January 2008	99,4
February 2008	98,2
March 2008	114,5
April 2008	117,9
May 2008	116,0
June 2008	142,3
July 2008	181,9
August 2008	159,3
September 2008	127,6
October 2008	114,7
November 2008	103,1
December 2008	98,9
January 2009	91,4
February 2009	91,2
March 2009	98,4
April 2009	113,8
Source: STS (INE)	

Table 8: Turnover index water transport

For the activity of water transport we survey to a sample of 110 enterprises. The businesses with 200 or more employees are included exhaustively and those with less employees but with establishments in different regions of Spain. For the rest (the smallest enterprises are included as well), a random sampling is carried out and they remain in the sample for 4 or 5 years.

The table 9 compares the growth rates of annual turnover derived from the structural business statistics to those collected from the short-term statistics in the period from 2004 to 2006. There are some differences between the two statistics. Both evolutions are positive in this period. The SBS data give higher growths than the STS data. The causes of these differences between the SBS and the STS can be due to the different treatment of changes in the business population.

Despite of the differences between the two statistics they both serve a purpose: SBS gives a measure of the level of economic activity in the industry and the aim of STS is to indicate the short-term economic developments.

Table 9: Annual growth rates of turnover	STS (%)	SBS (%)
2004	8,8	12,1
2005	7,4	11,3
2006	9,3	11,6
2007	5,5	7,1

Table 9: Annual growth rates of turnover

STS data of turnover can be considered as a good indicator of the economic activity but its evolution is produced by changes in the real activity and in the prices. Therefore, it is very important to have indicators of the evolution of the prices in order to correct the nominal variable

and to know the real variation of this activity. In the case of the transport this is very important since the prices of the services in this sector are influenced by the prices of the fuel. For some activities it is not easy to have suitable deflators; in the case of the water transport two deflators are available: CPI and more recently, SPPI that in the next Section are treated.

9. Evaluation of comparability of turnover/output data with price indexes

The service producer price index (SPPI) for water transport was published for the first time in June 2007 by INE. The time series starts in the first quarter of 2007 (with base year 2006) and it only includes price of water freight transport.

Harmonized consumer price index (CPI) for water transport includes the fare of the boat tickets for passengers and it is a monthly index.

In the table 10 both prices, CPI and SPPI, and its evolution are presented. Both evolutions are not similar and this is not surprising since these prices are formed in very different markets.

Table 10: water transport prices	CPI	Quarterly growth rate (%)	Annual growth rate (%)	SPPI	Quarterly growth rate (%)	Annual growth rate (%)
I Quarter 2007	103,3			101		
II Quarter 2007	103,2	0,0		102,8	1,8	
III Quarter 2007	103,9	0,6		102,3	-0,5	
IV Quarter 2007	107,1	3,2		103,4	1,1	
I Quarter 2008	112,6	5,1	9,0	102,4	-1,0	1,4
II Quarter 2008	118,5	5,3	14,8	101,3	-1,1	-1,5
III Quarter 2008	126,3	6,6	21,6	103,6	2,3	1,3
IV Quarter 2008	124,3	-1,6	16,0	101,4	-2,1	-1,9
I Quarter 2009	120,3	-3,2	6,9	97,4	-3,9	-4,9

Source: INE. 2006=100

Table 10: Water transport prices

With both indexes a weighted index can be constructed. According to National Accounts 2005, the 74,8% of the water transport services are demanded by other enterprises and the 25,2%, by the households. These percentages have been used to construct the weights of the index used to deflate the turnover.

Table 11: water transport	Nominal Turnover Index	Annual growth rate (%)	Price Index	Annual growth rate (%)	Real Turnover Index	Annual growth rate (%)
I Quarter 2007	93,9		101,5		92,5	
II Quarter 2007	108,4		102,9		105,3	
III Quarter 2007	124,5		102,7		121,2	
IV Quarter 2007	95,3		104,3		91,3	
I Quarter 2008	95,2	1,3	104,9	3,3	90,7	-1,9
II Quarter 2008	114,8	5,9	105,7	2,7	108,6	3,1
III Quarter 2008	143,0	14,9	109,4	6,4	130,7	7,9
IV Quarter 2008	96,6	1,4	107,2	2,7	90,1	-1,3
I Quarter 2009	85,7	-10,0	103,2	-1,7	83,0	-8,5

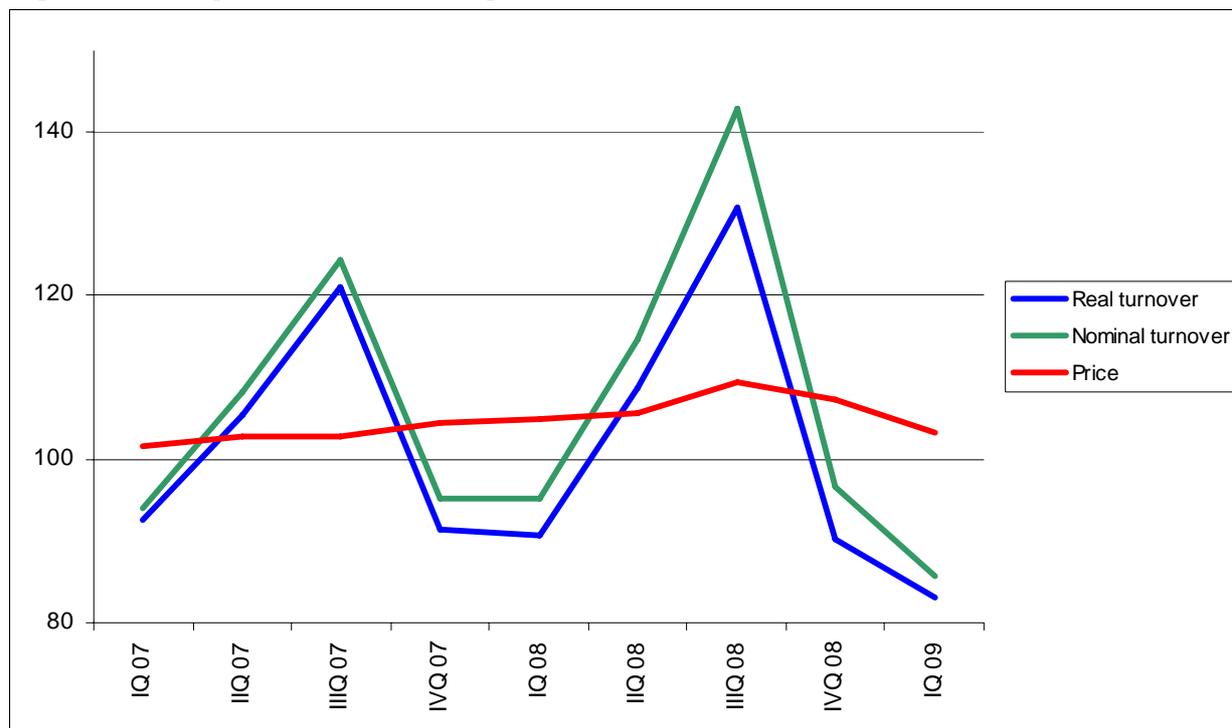
Source: INE. 2006=100

Table 11: Index of turnover from STS

In the table 11, the index of turnover from STS is showed. This turnover is valued at current prices. The price of water transport services used to deflate the turnover at current prices is presented in the next column. This price has been calculated as weighted sum of CPI and SPPI for water transport (both showed in table 10). In the final column, the deflated turnover or real turnover can be seen. For the three indicators the annual growth rates are calculated. The annual evolution of the real activity of water transport services do not follow a trend although it is negative in the last quarters.

The same information than is collected in the table 11 is showed in the graph 4. Data of turnover of water transport at current prices, at constant prices and the price used to deflate are presented. The time series start in the first quarter of 2007 because only from this date the data of SPPI are available. Even though the time series are short, the marked seasonal pattern can be observed (high values in summer and low values in winter).

Graph 4: water transport turnover indexes and price index



10. Summary

Even though Spain has a lot of kilometers of coast, sea and coastal water transport services are not very important in the economy. Besides Spain has just navigable rivers. Therefore the contribution of water transport services in the PIB is low (0,16%), compared with other sectors. For example, activities belonging a Spanish services sector as real estate, accommodation or food services contribute (every one) to Spanish PIB with near 4%.

Other conclusion of this study is that water transportation in Spain is a very concentrated sector. The 18 enterprises with highest turnover invoice more than 80% of the total turnover and they employ to near 70% of the total employed personnel.

11. References

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