



Article

Maritime Transport in the Spanish Economy in the Decades of Consolidation of Democracy (1975–1995)

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Abstract: This research analyzes the traffic of goods through the ports managed by the Port Authorities of the Spanish port system from the beginning of democracy in Spain to the end of the 21st century; a period that shows the effects on maritime transport as a result of the political changes that have taken place and the new regulations that have been applied, highlighting the 1992 Port Law, which would facilitate the transition from the port as an integrated center for international trade to the port as a logistics platform. We have used primary sources from the Spanish State Port's archives and have consulted statistical yearbooks, commercial reports and the yearbooks of the National Statistics Institute (INE). This research allows us, through the data of the traffic of goods by presentation and the GVA at market prices, to quantify the transformation of the group of state-owned ports and their impact on the Spanish economy. Until now, speculation has focused on the share of freight traffic and its value at this time of transition in the Spanish economy, as well as the actual contribution it made to inflation in the period under study.

Keywords: economic history; port management; Spanish port system; shipping traffic



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1. Introduction

Maritime transport has undergone essential modifications since the 1973 oil crisis; a particularly significant change in the developed world that accelerated the subsequent globalization process.

The process of excellent port transformation in Spain began at the end of the 19th century when legislation was updated and new laws were passed that considered new ways of proceeding, tending towards a more modernized regulation of port management (Alemany Llovera 1991; Sáenz Ridruejo 1994).

Specifically, at the legislative level, we should mention the process that culminated in Spain between 1877 and 1880, substantially modifying port management through the regulations that governed the authority and the protection of the different ports. On 13 April 1877, the *General Law of Public Works* was published, with all the implications that this would bring within the framework of the policy of the Ministry of Public Works (Cuellar Villar 2002). The interest of this regulation can be seen in the works of Rosado Pacheco (1988) and Frax Rosales (1996). The ports of commerce of general interest and first order would be designated: Alicante, Barcelona, Bilbao, Cadiz, Cartagena, Ferrol, Malaga, Palma, Santander, Seville, Tarragona, Valencia and Vigo; while those of Almeria, Aviles, Ceuta, Coruña, Gijon, Huelva, Pasajes, San Sebastian and Santa Cruz de Tenerife would be of second order, as stated in the Madrid Gazette (8 May 1880, art. 16).

The Law of 1880 would favor the progressive decentralization of the ports and a greater participation of the Chambers of Commerce, Industry and Navigation (Suarez Bosa 2000; Ruiz-Romero de la Cruz 2004). The Law of 1928 would be a basic regulation for the organization and regime of the Board of Works of 1928. This legislation has marked the fundamental guidelines of the Spanish Port Administration (Martínez Catena 1972, p. 35); a management model that would not undergo structural changes until the 1960s, advancing

the port boards' greater autonomy and enhancing the competitiveness of state-owned ports (Castillo-Hidalgo and Valdaliso Gago 2016, pp. 59–60).

Nowadays, ports have become necessary poles of economic activity, collaborating significantly with the economic development and welfare of society (Diaz Hernández and Ramírez 2020) and contributing to agglomeration economies, in the understanding that they are focal points of attraction, selection and development of industrial activity (Castillo Manzano and López-Valpuesta 2012; Ducruet et al. 2018).

The time frame of the research that has been carried out is limited to the last decades of the 20th century, coinciding with the beginning of democracy in Spain and opening a stage where the differences that still separate Spain from the advanced western nations at the beginning of the 21st century can be glimpsed (Prados de la Escosura 2003, p. 250). In economic history, maritime transport has been analyzed between the 1970s and the end of the 20th century, which was a period of substantial economic and political changes in the port sector.

During this period, the new democratic administrations and the nascent State of Autonomies began, affecting the statistical system of the European community, which meant, at that time, the rupture of numerous data series (Carreras and Sambola 2006, p. 45). This is another reason that justifies the chronology of analysis. It is a time marked by the entry of Spain into the European Community, where issues concerning the protection of traffics and flag reservations and other elements related to fiscal and labor costs would be legislated (Valdaliso 2001).

Throughout a good part of the 20th century, the state-owned port system was constituted by the Board of Works. In the context of the analyzed chronology, several significant regulatory changes took place, which resulted in the new denomination of Port Authorities. The 7/1980 Law (3 March 1980) would set out the rules to be followed to protect the Spanish maritime coasts. The Port Law of 1992 (24 November 1992), where “the establishment of guidelines and management objectives” is made explicit, acted on the Port Authorities, exercising their responsibilities over the whole port system and developing holding functions precisely on these Port Authorities (Ruiz-Romero de la Cruz 2004). In the European context, it is worth mentioning the critical memorandum published under the title “Towards a common maritime transport policy” in 1985, as reflected by González-Laxe (2020), seeking greater competitiveness as described by Martín Bofarull (2002, pp. 123–30).

The advent of containerization consolidates a conception of the port as a hub of exchange that imposes increasing attention on the conditions of efficiency of the service offered to users (Musso et al. 2012). It is a chapter of great relevance for the Spanish economy that has required investments with which to face the challenge of modernity (Diaz Hernández and Budría (2008)).

In any case, the economic impact studies carried out using various methodologies are an excellent instrument for observing the benefits provided by the existence of a port. Although this is controversial as a tool for planning (Castillo Manzano and López-Valpuesta 2012), it can be illustrative as an instrument for analyzing the contribution to the gross value added to the economy in Spain.

The objective of this study is to observe the volume of goods according to their nature. From there, it has been possible to analyze the study of the gross value added (GVA) at market prices of maritime transport. In this way, we intend to know the weight of this activity in the Spanish economy and its contribution to inflation during the 30 years covered by the study. It is important to take into account the interest raised by the legislative changes collected opportunely in Appendix A; a regulation that culminates with Law 27/92 and the birth of the Port Authorities, favoring the process of management autonomy and decision making (Castillo Manzano et al. 2000; Castillo Manzano 2010).

The research structure follows the following sections: The introduction contains a summary of the interest of ports in commercial traffic in Spain, the most significant regulatory changes, the justification of the interest of the study and the proposed chronology. Section 2 deals with the literature review, especially in the Spanish case. Section 3 analyzes

the movement of goods in maritime transport according to their nature between 1975 and 1995. In Sections 4 and 5, the essential nucleus of the work is reached, where the incidence of the gross value added of maritime transport in the Spanish economy between 1980 and 1995 is observed. Finally, the main conclusions are discussed.

2. State of the Art: The Spanish Case

In recent decades, different options have been analyzed to study the impact of ports in the context where they are developed, both at the international level as well as focusing on the casuistry of the Spanish Port System. The size of the port and its traffic structure determine the effects it generates in terms of employment, added value and productivity.

The first studies to measure the impact on ports were carried out in the 1970s in the United States; see the study on the port of Baltimore by [Hille and Suelflow \(1975\)](#). Later, in 1979, the work of the U.S. Maritime Administration was published, which developed a methodological basis that could be used in other ports and applied in different European and Canadian ports as well as in North American ones.

In the last decades of the 20th century and at the beginning of the 21st century, studies dealing with the contribution of ports to the Spanish economy ([Coto Millán and Budría 1995](#); [Castillo Manzano et al. 2004](#)) have been of interest. It was a time when there was an abundance of papers on ports that focused on their capacity to generate wealth in the environment. The work of [De la Peña Zarzuelo et al. \(2021\)](#), pp. 17–54) is of great interest for the knowledge of the subject at a general level.

State of the art is provided where some landmark works are recognized in terms of impacts, related to the objective of this research on gross value added, considering it a form of “positive impact”.

A. In Spain, the precedents on this subject can be found in the works of [Fraga and Seijas \(1992\)](#) for the port of El Ferrol; [De Rús et al. \(1994\)](#) for the port of Las Palmas; of [Villaverde and Coto-Millán \(1995, 1996a, 1996b\)](#) for the port of Santander; of [Lebón Fernández et al. \(1999\)](#) for the port of Seville. They all measure the economic impact of the port in question on the surrounding economy; however, the first two measure the direct effects, while the latter also considers the induced effects.

The case of Huelva, analyzed in [García del Hoyo et al. \(1999\)](#) and [Martínez Budría et al. \(1999\)](#), that deals with the economic impact of the ports of Santa Cruz de Tenerife on the province, should also be mentioned.

Other studies that have marked the socioeconomic environment already in the 21st century have been: the port of Algeciras, [Castillo Manzano \(2001\)](#); (in the framework of regional development) the port of Santander, [Coto Millán et al. \(2001\)](#) and [Coto-Millán et al. \(2008\)](#); the Autonomous Community of Ceuta, [Castillo Manzano et al. \(2000\)](#) and [López Valpuesta and Manzano \(2001\)](#) for Seville; [Rey Juliá \(2002\)](#), which evaluates the economic impact of the port of the Bay of Cadiz; in the case of Aviles, Gijon [Villaverde et al. \(2004\)](#).

B. However, we highlight the studies carried out for Santander and Seville at the level of consulting firms ([TEMA 1994](#)), which are an adaptation of the existing methodology to evaluate the impact of the port activity on the economy. Work carried out at the request of the public entity [Puertos del Estado \(1996\)](#), which is, in essence, an adaptation of the one already published in 1979 by the aforementioned U.S. Maritime Administration ([US Maritime Administration 1979](#)); its most significant contribution is how it adapts the basic model to the Spanish reality. The consultant would work on evaluating the impacts of the activity of the ports of Galicia on the economy of the region and on evaluating the impacts of the activity of the ports of Galicia on the national economy.

Other consultancy studies of great interest in the framework of the Spanish port system are those carried out for Barcelona and Tarragona ([Consultrans and Centro de Estudios Económicos Tomillo 1998](#)), or [KPMG Consulting \(2000\)](#) that studied the case of Bilbao;

moreover, those that were carried out for Barcelona and Alicante by the [Centro de Estudios Económicos Tomillo \(2009a, 2009b\)](#).

- C. More recently, they have been analyzed in terms of impact: for Ferrol, [De la Peña Zarzuelo et al. \(2018\)](#); for Coruña, [Doldán-García et al. \(2011\)](#); for Cartagena, [Artal-Tur et al. \(2016\)](#); for Santander, [Mateo-Mantecón et al. \(2012\)](#); for the ports of Gandía, Sagunto and Valencia, see [Martí et al. \(2009\)](#).

3. Sources Used, Methodology and Research Limitations

The research required a series of adjustments for the current data processing. The first part of the research has shown an analysis of the traffic of goods according to their types. Classification is according to a stratification of products that present a certain homogeneity in the time object of analysis. The information corresponds to a period of 20 years, so it has been necessary to adjust the information for 1975, 1980, 1985 and 1990 to homogenize the series, taking as a reference the nine groups included in the 1995 annual report (see Table 1).

Table 1. Cargo groupings according to their types in state-owned ports in Spain.

Years	1975	1980	1985	1990	1995
Groupings					
Energy	1, 2, 3, 4, 5, 6, 7, 12, 34	1, 2, 3, 5, 7,	1, 2, 3, 5, 7,	1, 2, 3, 4, 6, 7, 35, 12A	1, 2, 3, 4, 6, 7, 35, 12
Siderurgy	8, 11, 13	8, 11, 12, 13	8, 11, 12, 13	8, 11, 12B, 13	8, 11, 13
Metallurgical	9, 10	9, 10	9, 10	9, 10, 36	9, 10, 36
Fertilizers	14, 15, 16	14, 15, 16	14, 15, 16	14, 15, 16	14, 15, 16,
Chemical Products		17	17	17	17
Construction Materials	18, 19, 20	18, 19, 20	18, 19, 20	5, 18, 20	5, 18, 20
Agricultural, Livestock and Food	21, 22, 23, 24, 25, 26, 27, 28, 29, 30	21, 22, 23, 24, 25, 26, 27, 28, 29, 30	21, 22, 23, 24, 25, 26, 27, 28, 29, 30	21, 22, 23, 24, 27, 28, 29, 30, 33, 37	21, 22, 23, 24, 27, 28, 29, 30, 33, 37
Other Goods	31, 32, 33, 34	31, 32, 33, 34	31, 32, 33, 34	19, 25, 26, 31, 34	19, 25, 26, 31, 34
Special Transports				32, 38, 39, 40	32, 38, 39, 40

Source: Own elaboration with data from Spanish state port yearbooks. The data have been grouped based on the 1995 yearbook.

The following groups were considered: energy, siderurgy, metallurgical, fertilizers, chemical products, construction materials, agricultural, livestock and food, other goods and special transports. This grouping does not prevent certain mismatches in the groups that, although not specifically in their delimitation, are essential in their quantitative nature—as is the case with those referring to “Other Goods” and “Special Transports”—which entails a limitation to be taken into account.

Likewise, an adjustment process has been carried out on the data for the years mentioned above in order to homogenize the treatment of the information so that each of the nine product groups (Appendix B) used would have content that could be homologated to make comparisons between the selected periods. The most notable differences appear in the energy group, whose composition includes the classification “Other Liquids” that will be included in the group of other goods. In the 1980, 1985 and 1990 groupings, coals are included in the iron and steel group, while asphalt is included from 1980 onwards in the construction materials group. Chemical products have been included since 1980. The group

of other goods also undergoes significant modifications, redefined in 1990 when a new group called special transport was included, where some of the products that previously appeared in it were included.

The second part of the research has been nourished by the data collected in the yearbooks of the National Statistics Institute (INE) to recognize the gross value added of the “Maritime Transport” activity. For this purpose, the national accounts data collected through the INE have been used, taking the gross added values by branches of activity determining. After the corresponding methodological adaptations, it is determined how much the maritime transport branch contributes to the gross value added and what variation rate it has experienced in recent years, noting how the prices of the sector have varied from one year to another within the period considered, and its contribution (as a result of the aforementioned variation rate) to the consumer price index.

Thus, the gross value added at market prices for the maritime transport branch of activity (Table 2) between 1980 and 1995 has been collected in the first place. However, in the construction of the latter, the following points should be clarified:

1. On the one hand, we find the change of denomination that occurs in the input–output tables, starting in 1986. This is due to the change in the level of disaggregation of the tables, starting in 1986, when code R.56 is used, which implies a greater specification than code R.44, which is used in the tables based on 1980. In short, we have gone from a breakdown of 44 sectors to 56, allowing for more model information specifications.
2. On the other hand, it has been necessary to verify the correspondence between the R.56 classification of the input–output table with the 1974 national classification of economic activities (and even to verify that this has not been modified as far as maritime transport is concerned due to the changes it underwent in 1993) and with the NACE-CLIO (classification of activities for the input–output table followed within the European Union).

Table 2. Maritime traffic. Volume of goods by types (millions of tons).

	Years				
	1975	1980	1985	1990	1995
Groups					
Energy	9.45×10^7	1.12×10^8	1.12×10^8	1.21×10^8	1.21×10^8
Siderurgy	23,850,518	27,758,124	29,259,446	25,648,783	22,421,537
Metallurgical	6,878,845	8,665,482	10,320,105	9,883,692	7,422,152
Fertilizers	5,189,411	5,242,261	4,989,551	6,234,835	6,337,738
Chemical Products	No data	2,595,642	4,900,585	8,107,665	11,998,003
Construction Materials	9,789,592	17,640,723	14,850,574	20,997,110	20,542,047
Agricultural, Livestock and Food	12,936,054	17,100,632	18,043,843	24,144,917	42,702,421
Other Merchandise	8,420,530	13,214,121	12,602,965	11,171,820	17,788,284
Special Transport	1,364,664	2,784,121	3,970,177	15,940,171	27,508,688
Totals	1.63×10^8	2.07×10^8	2.11×10^8	2.43×10^8	2.78×10^8

Source: Own elaboration based on the annual reports of Ente Público Puertos del Estado. In 1975, the group of chemical products was not specified. Likewise, in 1975 and 1980, the group of special transports only included automobiles and their parts and not cargo vehicles, containers or transit containers.

It has been possible to verify how there is correspondence in what is included in both tables (we indeed detected a discrepancy between table R.44 and NACE-CLIO, since maritime transport in the former includes inland river navigation, while, in the classification of the latter, this transport is included in inland transport), that is, the denomination of the

tables based on 1980 as opposed to those based on 1986. In both cases, there is concordance with codes 731, 732 and 733 of the National Classification of Economic Activities.

For this purpose, the rate of variation of the entire branch of activity reflecting maritime transport—which is also shown in Table 2—had to be calculated beforehand. For the years 1980 to 1985, the original data had to be corrected by applying the rate mentioned above of variation. The rate has been obtained by subtracting the unit from the quotient between the gross value added of the branch in year n for the same concept in year $n-1$ ($(GVAn/GVAn-1) - 1$).

Once we obtained the variation rate (VR), we applied it to the gross added values, both in real pesetas (constant) and in nominal pesetas (current), of the maritime transport branch. Then, we obtained the gross added value for each year by dividing its value in year $n+1$ by one plus the referred variation rate in year $n + 1$; thus, for year n , we will have: $(GVAn = GVAn + 1 / 1 + VRn + 1)$; all of which determines gross value added for the maritime sector in the chronology of the analysis.

4. Maritime Transport: Goods by Types

The interest of Spanish ports lies in their locations as crossroads of maritime routes and the critical role they play in the economic growth of Spain by acting as the main entry and exit routes for merchandise trade (Díaz Hernández and Ramírez 2020, p. 116).

From the observation of Table 2, some appreciations can be extracted, for example, to highlight in the first place how among the nine groups considered we can separate them into three differentiated blocks. A first block is constituted by the sectors that we can consider essential, which would be the energy, iron and steel, metallurgical and even fertilizers (Figure 1), which have gone from representing in 1974 more than 80% of the total maritime transport to representing at the end of the 20th century around 56% of the mentioned traffic.

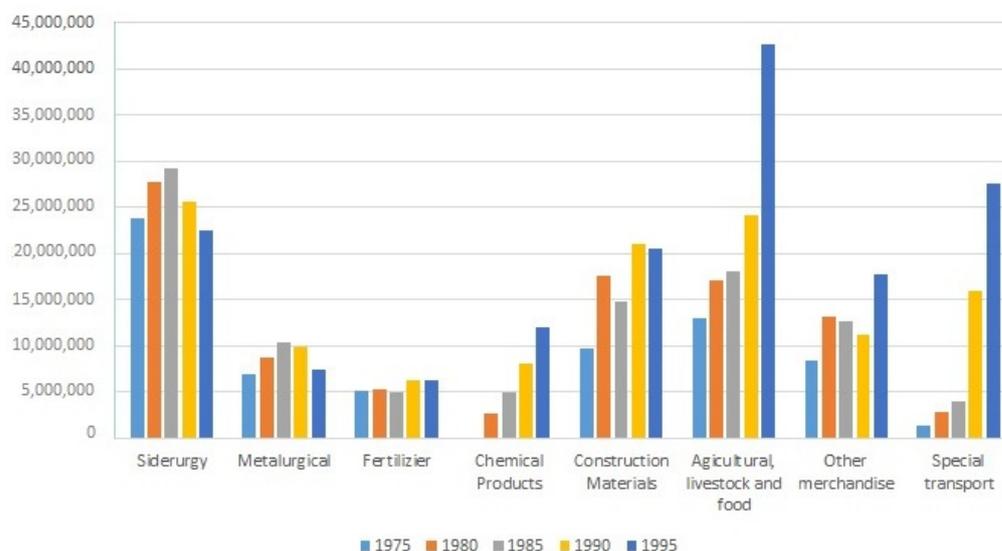


Figure 1. Evolution of the volume of goods according to their nature, excluding energy group (metric tons). Source: own elaboration based on the annual reports of Ente Público Puertos del Estado, using data from Table 2.

A second block is formed by the chemical, construction materials and agricultural, livestock and food sectors, which have been gaining specific weight in maritime transport; they went from about 12% in 1974 to around 27% in 1995. This value represents a doubling of their importance in the period analyzed.

The third block is made up of the two remaining groups: other goods and special transports. Here, it is more challenging to assess, since for the first two years analyzed, especially as far as special transport is concerned, the information is not homogeneous,

hence their low significance in terms of their specific weight in the total. Nevertheless, apart from the transfer from the other goods group to the special transport group, it is significant that they exceed 16% of the total, with a significant upward trend.

Finally, as shown in Table 3, the percentage weight of each group of goods concerning total goods transported each year has been calculated.

Table 3. Percentage of goods by group and year.

	Years				
	1975	1980	1985	1990	1995
Groups					
Energy	57.997	54.106	53.096	49.794	43.525
Siderurgy	14.640	13.410	13.871	10.555	8.083
Metallurgical	4.222	4.186	4.893	4.067	2.675
Fertilizers	3.185	2.532	2.365	2.566	2.284
Chemical Products		1.254	2.365	3.374	4.325
Construction Materials	6.009	8.529	6.999	8.741	7.406
Agricultural, Livestock and Food	7.940	8.261	8.554	10.051	15.394
Other Merchandise	5.169	6.384	5.975	4.597	6.399
Special Transport	0.838	1.345	1.882	6.560	9.895
Totals	100	100	100	100	100

Source: own elaboration based on data in Table 2.

We can observe in Table 3 that the percentage decrease in the iron and steel and metallurgical groups is particularly significant, with particular emphasis on the latter, which in short shows the change that has taken place in the productive sector in our country in recent years.

It is also worth noting that there has been a significant increase in the chemical and agricultural, livestock and food sectors. This last group reflects a constant evolution over time, unlike the chemical group, which, as part of a situation that did not exist in 1975, has grown more spectacularly until the present. It is essential to highlight the stagnation in the construction materials group and the significant increase in the 1990s of the other goods and special transport groups, which can be considered significant for this period.

5. The Gross Value Added of Maritime Transport in the Spanish Economy

The elaboration of the gross value added series in Table 4 is due to the issues applied in the methodology described below.

Table 5 (for the same period of time considered) shows the gross value added data for the total activity—also in real and nominal pesetas—obtaining as before the respective rates of variation in real and nominal pesetas for the total gross value added, in order to determine in the same way the period of time between 1980 and 1985 as a consequence of the change of base that takes place in the input–output tables of the Spanish economy in 1986.

Table 4. Gross value added at market prices and variation rates in the maritime transport in Spain (1980–1994).

Year	Gross Added Value (Millions of Ptas ***)		Rate of Change (Percent per 1)	
	Real = Kte *	Current = nom **	Real = Kte	Current = nom
1994	68.176	82.210	0.1262	0.2061
1993	60.538	73.135	−0.0453	0.0596
1992	63.412	69.021	0.0418	0.0817
1991	60.867	63.810	0.0590	−0.0081
1990	57.476	64.328	−0.1664	−0.1950
1989	68.949	79.909	−0.0206	0.0124
1988	70.399	78.929	−0.0315	0.0378
1987	72.690	76.057	−0.0197	0.0257
1986	74.154	74.154	−0.0469	−0.1156
1985	77.807	83.848	−0.0080	0.0209
1984	78.431	82.134	−0.0392	0.0057
1983	80.893	81.665	−0.0315	0.1352
1982	77.930	71.684	−0.0366	0.0694
1981	80.891	67.034	−0.0030	0.1294
1980	81.138	59.352		

* Kte—constant. ** nom—nominal. Source: own elaboration based on data from the national accounts tables for the years indicated. *** one euro is equivalent to 166.386 spanish pesetas.

Table 5. Gross value added at market prices and rate of change. Total branches of activity.

Year	Gross Added Value (Millions of Ptas.)		Rate of Change (Percent per 1)	
	Real = Kte *	Current = nom **	Real = Kte	Current = nom
1994	38,229,848	60,924,642	0.0230	0.0598
1993	37,370,313	57,488,714	−0.0088	0.0408
1992	37,701,134	55,233,623	0.0065	0.0721
1991	37,458,924	51,520,116	0.0218	0.0961
1990	36,658,195	47,003,587	0.0384	0.1181
1989	35,303,649	42,038,532	0.0460	0.1200
1988	33,750,800	37,533,690	0.0497	0.1094
1987	32,151,593	33,831,103	0.0532	0.1082
1986	30,527,043	30,527,043	0.0316	0.1524
1985	29,590,832	26,490,434	0.0242	0.1094
1984	28,891,383	23,878,836	0.0173	0.1311
1983	28,399,959	21,111,140	0.0189	1.1352
1982	27,873,412	18,596,268	0.0109	0.1496
1981	27,572,063	16,176,610	−0.0110	0.1174
1980	27,601,731	14,477,391		

* Kte—constant. ** nom—nominal. Source: own elaboration based on the data collected in the national accounting tables for the years indicated.

Having obtained the two corrected series of gross value added, both for the specific branch of activity and for the economy, it is necessary to determine the specific weight that the former has in the total amount of our economic activity. To achieve this, the gross

value added of the branch for each year has been divided by the total gross value added corresponding to the year in question (VAB_{branch}/VAB_{total}).

The result determines in percentage terms the contribution of the maritime transport branch to the total activity of the Spanish economy.

Finally, we have tried to measure the contribution of the branch in question to inflation in our country. To achieve this, we first need to obtain the deflator of the branch, dividing the current pesetas by the real pesetas in both cases of the respective gross value added for the maritime transport branch. Once this value has been obtained, as shown in Table 6, the price variation rate has been calculated; dividing the value of the deflator of year n by the same concept of year $n-1$ and subtracting the unit ($(D_n/D_{n-1}) - 1$). The result thus obtained indicates the price variation rate of one year concerning the previous year in the branch of activity under consideration. The exact process has been carried out with the total gross value added, and the deflator and rate of variation of the Spanish economy is obtained; this process is also shown in Table 6.

Table 6. Deflator and price variation rates for maritime transportation in state ports of Spain.

Years	Maritime Transportation Branch		Total Branches of Activity	
	Deflator	Rate	Deflator	Rate
1994	129.3857	0.0710	159.3641	3.5940
1993	120.8084	0.1099	153.8352	5.0042
1992	108.8453	0.0383	146.5039	6.5191
1991	104.8351	−0.0633	137.5376	7.2659
1990	111.9215	−0.0343	128.2212	7.6792
1989	115.8958	0.0037	119.0770	7.0757
1988	112.1166	0.0715	111.2083	5.6875
1987	104.6320	0.0463	105.2237	5.2237
1986	100.0000	−0.0721	100.0000	11.7038
1985	107.7645	0.0291	89.5224	8.3146
1984	104.7206	0.0385	82.6504	11.1862
1983	100.8424	0.0963	74.3351	11.4188
1982	91.9852	0.1100	66.7169	13.7149
1981	82.8697	0.1329	58.6703	11.8573
1980	73.1488		52.4150	

Source: own elaboration based on the data in Tables 4 and 5.

With the product between the values obtained as the specific weight of the branch of activity for each year concerning the total activity of the Spanish economy—values that are the quotient between the gross value added of the branch of activity and the total gross value added—and the rate of variation of prices of the maritime transport branch of activity obtained from the deflator, we can specify the contribution for each year of those considered that the branch analyzed has had to the consumer price index of this country.

To achieve this, we have multiplied the rate of price variation between the reference year—the one we want to obtain—and the previous one, by the specific weight obtained for the sector in question in the previous year; that is, the contribution to inflation that maritime traffic makes to inflation in year n will be: $A_{in} = TV_{n/n-1} \times PE_{n-1}$.

A_{in} is the contribution to inflation in year n ; $TV_{n/n-1}$ is the rate of change of prices in the sector in year n concerning year $n - 1$; PE_{n-1} is the specific weight of the sector in the total gross value added of year $n - 1$, as shown in Table 7.

Table 7. Specific weight of maritime transport: contribution to inflation.

Year	Specific Weight of the Branch in the Total		MTA. Inflation	
	Real = Kte	Current = nom	Real = Kte	Current = nom
1994	0.1783	1.1448	0.0710	0.0090
1993	0.1620	0.1272	0.1099	0.0137
1992	0.1682	0.1250	0.0383	0.0047
1991	0.1625	0.1239	−0.0633	−0.0087
1990	0.1568	1.1369	−0.0343	−0.0065
1989	0.1953	0.1901	0.0337	0.0071
1988	0.2086	0.2103	0.0715	0.0161
1987	0.2261	0.2248	0.0463	0.0113
1986	0.2429	0.2429	−0.0721	−0.0228
1985	0.2629	0.3165	0.0291	0.0100
1984	0.2715	0.3440	0.0385	0.0149
1983	0.2852	0.3868	0.0963	0.0371
1982	0.2796	0.3855	0.1100	0.0456
1981	0.2934	0.4144	0.1329	0.0456
1980	0.2940	0.4100		0.0545

Source: own elaboration based on the data in Tables 4–6. MTA. Inflation: contribution of the maritime transportation branch to the country's inflation.

Having made the methodological clarifications on how the process of obtaining the data contained in Tables 4–7 has been carried out, we will proceed to make the appreciations derived from them.

Inflation Contribution

Thus, in the first place, concerning the gross value added of the maritime transport branch of activity contained in Table 4, we should highlight that, while in current pesetas, this is positive except for the year 1986 and the period 1990/91; in constant or accurate pesetas, there is a predominance of a negative variation. There are some specific exceptions, such as years 1991–1992 and the last year of those considered.

From this information, we can infer that, in real terms, the growth of the maritime transport branch in the Spanish economy has generally been lower than the growth of prices in this country. This means that an apparent positive variation rate in current pesetas is a distorted reflection of reality.

When this whole process of analysis has been carried out for the total gross value added, shown in Table 5, a significant change for the comments made for the maritime transport branch can be seen when the respective variation rates are obtained. It is worth noting that the rate of variation in current pesetas is positive throughout the period under analysis and that only in 1993 does this rate of variation show a negative value in real pesetas, showing the reflection of the Spanish economy as a whole during this period.

Table 6 shows, by obtaining the corresponding deflator (both for the maritime transport branch and for the economy as a whole), the respective rates of price variation of one year for the previous one.

In the specific case of the maritime transport branch, it reflects its variation, while in the case of the variation rate—obtained from the deflator of the Spanish economy—of the total gross value added, the consumer price index for the national economy as a whole is included.

Table 7 shows the specific weight of the maritime transport branch in the Spanish economy. It can be seen that, especially from 1986 onwards, the weight of the branch is

greater in constant pesetas than in current pesetas, which indicates a greater importance of the maritime transport branch in real terms than in nominal terms. However, it should also be noted that if this was not the case prior to 1986, it is not only because there has been a change in the trend but also because, as we have already stated, the data prior to 1986 have a lower level of disaggregation (44 sectors) compared with the 56 that are contemplated from that date; all of this has an impact on the result achieved.

Table 7 has been completed with the inclusion of the product between the rate of variation of prices of the branch in current pesetas and its specific weight in the total of the economy, showing how the maritime transport branch contributes to the consumer price index of the country. As seen in the last column of the table and Figure 2, this is, we would say, almost insignificant in percentage terms. It is worth noting that the years in which this contribution has been negative—1986 and 1991–1992—are the same years in which the rate of variation of the maritime transport branch has had negative values.

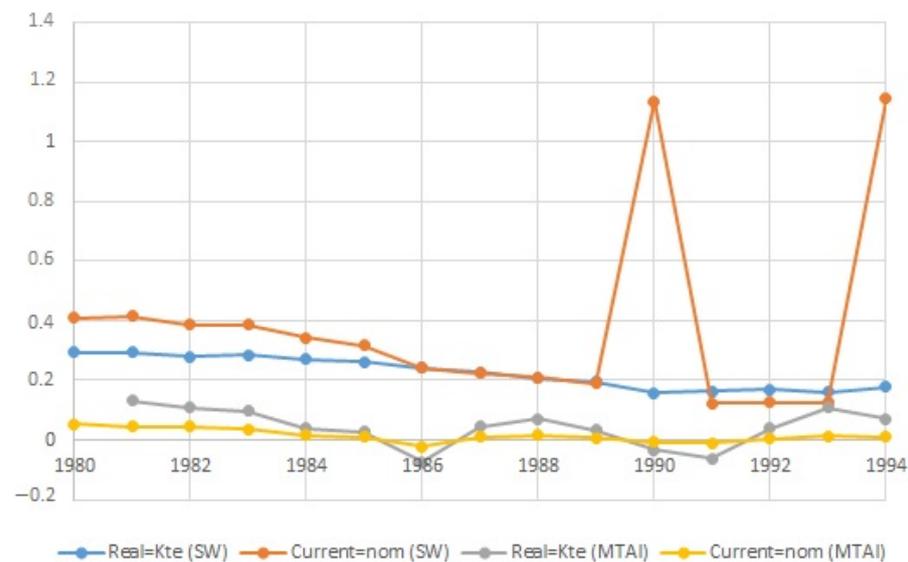


Figure 2. Specific weight of maritime transport: contribution to inflation. Source: own elaboration based on the data in Table 7.

6. Conclusions

Port life has been evolving. The port as an economic space has given rise to multiple investigations that have described in greater or lesser detail aspects of the activity within the port enclosures. One of the critical sectors in which to observe the economic dynamism in the nascent Spanish democracy is the port sector, whose contribution has been the object of study for decades.

The importance of energy products for Spanish ports can be observed in the period under study. Although their importance decreases throughout the series, Spain's energy dependence is marked in the traffic of this type of product, especially to ports where there are refineries. This drop in the weight of this group of goods is even more critical if we consider the drop in oil prices experienced throughout the 1980s.

Spanish ports reflect the difficult transition of the Spanish economy—where the state had control over extensive productive sectors—to a model integrated into the international economy and the strong recession suffered between 1979 and 1982. The loss of importance of the iron and steel sector from the 1990s can be seen in the port traffic, with Spanish ports suffering a decline in this type of traffic associated with iron and steel production and the demand for shipbuilding. The reorganization of these industrial sectors was one of the commitments acquired by the entry of Spain into the European Economic Community (today EU), since they were dragging huge losses and lack of competitiveness that were largely supported by the public sector. On the other hand, the agricultural sector and the production of foodstuffs is experiencing a takeoff, because agricultural products take

advantage of the port infrastructures to reach the European markets that benefit from the integration in the single market.

As for the gross value added, a series of conclusions can be drawn that are directly related to the economic moment the Spanish economy was going through.

1. In absolute values and real money (pesetas), maritime transport experienced a gradual decline until the nineties, when it would recover due to the adjustments introduced in the eighties and which would be consolidated at the end of this decade.
2. Its one-year variation rate concerning the previous year, which has traditionally been negative, in the decade of the nineties (except 1993) also experienced a logical increase with positive values.
3. Although the specific weight of maritime transport of goods is relatively modest in the Spanish economy, there was a slight increase in the nineties, after the decline experienced until 1990 when this branch of the economy reached its lowest values.
4. The beginning of the eighties experienced a deep inflationary context (both national and international). However, the contribution of maritime transport to the country's inflation—in line with what has already been stated—reached very little relevance, as can be inferred from the data obtained.

Finally, within a context of crisis and adaptation of the economic structures to which Spain was forced after its incorporation into the European common market, there was an evident governmental interest in legislation to introduce competition between Port Authorities. In this way, an attempt was made to enhance the quality of the service provided by the intervening administrations, favoring the participation of private initiatives in investments and the provision of services. This modernized eagerness will be reflected in the 1992 Port Law and its modernization in the 1997 Law. Both regulations made it possible to strengthen the role of ports as elements of continuity in the intermodal chain and as logistics platforms. Thus, a chapter in the economic history of ports was closed and a new stage of modernization and convergence in the concept of Spanish maritime transport was opened.

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Appendix A

Table A1. Legislative Regulations.

29 March 1979	Order	Service Area Management Plans
16 November 1979	Royal Decree 2766/1979	Establishes provincial delegations of the Ministry of Public Works and Urban Development
10 March 1980	Law 7/1980	Protection of Spanish maritime coasts
18 April 1980	Royal Decree 821/1980	Deconcentration of functions in the Peripheral Services and operation of the provincial delegations of the Ministry of Public Works and Town Planning
23 May 1980	Royal Decree 1088/1980	Regulation of 28/1969 Law (4/24/1969) of Coasts

Table A1. *Cont.*

7 November 1980	Royal Decree 1432/1980	Regulations to guarantee the operation of port services
26 September 1980	Royal Decree 2486/1980	Regulation of 55/1969 Law (04/26/1969) of Marinas
10 March 1980	Royal Decree 13/1980	Modification of 27/1968 Law (06/20/1968) of Port Boards and the Statute of Autonomy
10 October 1980	Royal Decree 2183/1980	Suppression and restructuring of central state administration bodies
21 October 1980	Royal Decree 2534/1980	Reestructuración de la Inspección General del Ministerio de Obras Públicas y Urbanismo
21 October 1980	Royal Decree 2581/1980	Transfer of functions and services of the State in matters of territorial and coastal planning and town planning to the General Council of the Basque Country
12 December 1980	Royal Decree 2876/1980	Transfer of State functions and services in the field of ports to the Catalanian Government
6 March 1981	Royal Decree 571/1981	Modification of the organizational structure of the port boards
6 March 1981	Royal Decree 572/1981	Modifies the composition of the Administrative Commission of Groups of Ports
24 July 1981	Royal Decree 1801/1981	Legal regime of the State Administration. Reform of the Peripheral Administration
13 November 1981	Royal Decree 2860/1981	Board of Ports. The autonomous organization of the board of the Port of San Esteban de Pravia is suppressed
18 December 1981	Royal Decree 3301/1981	Transfer of functions and services from the State in matters of coastal management and discharges into the sea to the Catalanian Government
29 December 1981	Royal Decree 3317/1981	The provincial delegations of the Ministry of Public Works and Town Planning will be called Provincial Directorates of Public Works and Town Planning
5 April 1982	Law 4/1982	Creates the Ports Commission of Catalonia
14 May 1982	Royal Decree 989/1982	Classification of Ports of General Interest
14 May 1982	Royal Decree 2380/1982	Transfer of functions and services of the State in port matters to the General Council of the Basque Country
24 July 1982	Royal Decree 2623/1982	Transfer of functions and services from the State in port matters to the Regional Council of Cantabria
24 July 1982	Royal Decree 3060/1982	Transfer of functions and services from the State in the area of land use planning and urban development to the Regional Council of Cantabria
24 July 1982	Royal Decree 3082/1982	Transfer of State functions and services regarding ports to the Principality of Asturias
24 July 1982	Royal Decree 3214/1982	Transfer of State functions and services related to ports to the Autonomous Community of Galicia
12 August 1982	Royal Decree 2925/1982	Transfer of State port functions and services to the Autonomous Community of the Region of Murcia
16 August 1983	Law 10/1983	Organization of the Central State Administration
25 August 1983	Royal Decree 3137/1983	Transfer of State functions and services related to ports to the Autonomous Community of Andalusia
25 August 1983	Royal Decree 2803/1983	Transfer of functions and services of the State in the area of territorial planning and environment to the Autonomous Community of Andalusia

Table A1. *Cont.*

5 October 1983	Royal Decree 2821/1983	Transfer of functions and services of the State in matters of coastal management and discharges to the sea to the Valencian Community
9 November 1983	Royal Decree 3510/1983	Transfer of functions and services from the State in matters of coastal management and discharges into the sea to the Principality of Asturias
16 November 1983	Royal Decree 3392/1983	Transfer of functions and services from the State in matters of coastal management and discharges into the sea to the Principality of Asturias
28 December 1983	Royal Decree 3330/1983	Powers of the Provincial Directors of the Ministry of Public Works and Urban Development
29 February 1984	Royal Decree 959/1984	Transfer of functions and services from the State in matters of coastal management and discharges into the sea to the Autonomous Community of the Canary Islands
28 March 1984	Royal Decree 898/1984	Powers of the Provincial Directors of the Ministry of Public Works and Urban Development
28 March 1984	Royal Decree 884/1984	Transfer of functions and services from the State in matters of coastal management and dumping to the Autonomous Community of the Region of Murcia
20 September 1984	Resolution	Delegation of powers to Port Directors
20 February 1985	Royal Decree 450/1985	Transfer of functions and services from the State in port matters to the Autonomous Community of the Balearic Islands
20 February 1985	Royal Decree 356/1985	Transfer of functions and services from the State in matters of coastal management and discharges into the sea to the Autonomous Community of the Balearic Islands
17 April 1985	Royal Decree 659/1985	Transfer of functions and services of the State in the field of coastal management and discharges into the sea to the Autonomous Community of Galicia
12 June 1985	Treaty	Accession of the Kingdom of Spain to the European Economic Community and the European Atomic Energy Community
01 July 1985	Law 18/1985	Modification of 1/1966 Law, (01/28/1966), on the financial regime of ports
03 July 1985	Royal Decree 1654/1985	Structure of the Ministry of Public Works and Urbanism
20 September 1985	Instrument	Accession of the Kingdom of Spain to the European Economic Community and the European Atomic Energy Community
9 October 1985	Royal Decree 2680/1985	Suppresses the provincial directorates of the Ministry of Public Works and Urban Development
23 October 1985	Royal Decree 2250/1985	Transfer of functions and services from the State in port matters to the Autonomous Community of the Canary Islands
27 December 1985	Royal Decree 2546/1985	Economic financial policy of the port system dependent on the State Administration
1 January 1986	Treaty	Instrument of Accession to the Treaty establishing the Economic Community for Coal and Steel
7 February 1986	Order	New organization of the provincial and regional services of the Ministry of Public Works and Urbanism
23 May 1986	Royal Decree, Law 2/1986	Public stevedoring and unstowage service

Table A1. *Cont.*

28 June 1986	Royal Decree, Law 1302/1986	Environmental impact assessment
23 January 1987	Royal Decree 89/1987	Modifies the organizational structure of the Ministry of Public Works and Urbanism
13 March 1987	Royal Decree 371/1987	Regulates the Royal Decree Law 2/86, dated 23/05/1986, on the public stevedoring and unstowage service
15 April 1987	Order	Establishes the basis for managing the public stevedoring and unstowage service
30 September 1988	Royal Decree 1131/1988	Regulation of the Royal Decree Law 1302/86, (06/28/1986), of environment and environmental impact
28 July 1988	Law 22/1988	Coastal Law
9 December 1988	Royal Decree 1476/1988	Guarantees the provision of essential services in strike situations in the area of competence of the Ministry of Public Works and Urban Development
1 January 1989	Royal Decree 1471/1989	General regulations for the development of the 2/1988 Law, (07/28/1988), Coastal Law
2 August 1991	Royal Decree 1316/1991	Restructuring of the State Secretariat for Water and Environmental Policies, under the Ministry of Public Works and Transport
24 November 1992	Law 27/1992	Law of State Ports and Merchant Navy
23 December 1992	Royal Decree 1590/1992	Creates the Port Authorities
12 May 1993	Royal Decree 685/1993	Legal assistance to Public Entities, State Ports and Port Authorities
21 January 1994	Royal Decree 58/1994	Provision of essential port services
28 April 1994	Order	Assignment of coastal lighting and maritime signaling installations to the Port Authorities
14 July 1995	Royal Decree 1246/1995	Constitution and creation of the Maritime Captaincies
2 August 1995	Order	General conditions for the granting of concessions in the service area of ports of general interest
27 December 1995	Order	Plan for the use of the port areas of the port and estuary of Ferrol
27 February 1996	Order	Structure and operation of the Lighthouse Commission
1 March 1996	Royal Decree 392/1996	Recording in the special registry of ships and shipping companies, cabotage traffic
1 March 1996	Royal Decree 393/1996	Port pilotage, general regulations
14 June 1996	Order	Inscription in the registry of private educational foundations of the "Fundación Portuaria" of Madrid
21 June 1996	Royal Decree 1535/1996	Separation of the administration, management and operation of the ports of Gijón-Musel and Avilés in the Public Administration of Gijón and Avilés
2 July 1997	Royal Decree 161/1997	Regulations of the General Deposit Fund
26 December 1997	Law 62/1997	New Law of State Ports and the Merchant Navy
15 January 1998	Order	Military pilotage regulations
11 May 1998	Order	Amendments to the Articles of Incorporation of the Vigo Free Trade Zone Consortium
30 July 1998	Order	Regime of tariffs for port services rendered by Port Authorities
16 October 1998	Royal Decree 2221/1998	Registration in the special registry of ships and shipping companies, cabotage traffic

Table A1. *Cont.*

30 November 1998	Resolution	Operation of the Free Trade Zone of Gran Canaria
16 December 1998	Order	Regime of tariffs for port services rendered by the Port Authorities
30 December 1998	Law 48/1998	Procurement procedures in the water, energy, transport and telecommunications sector
21 January 1999	Order	Modification of the category of the Avilés Maritime Captaincy
2 February 1999	Order	Fees for services rendered by the Sociedad Estatal de Salvamento y Seguridad Marítima (State Society for Rescue and Maritime Safety)
9 April 1999	Royal Decree 4/1999	Urgent measures to repair the damage caused by the torrential rains and the storm of January 1999 in the Autonomous Community of the Canary Islands

Source: [Ruiz-Romero de la Cruz \(2004\)](#).

Appendix B

Table A2. Product Groupings by Types.

Groupings	
Energy group	
1	Crude oil
2	Fuel oil
3	Diesel oil
4	Petrol
6	Other petroleum products
7	Oil energy gases
35	Natural gas
12A (12)	Coal and oil coke
12B (12)	Siderurgical use coal
Siderurgy group	
8	Iron ore
11	Scraps
13	Siderurgical products
Metallurgical group	
9	Pyrites and burnt pyrites
10	Other minerals and metallic residues
36	Other metallurgical products
Fertilizers group	
14	Phosphates
15	Potash
16	Natural and artificial fertilizers
Chemical products group	
17	Chemical products

Table A2. Cont.

Groupings	
Construction materials group	
5	Asphalt
18	Cement and clinker
20	Construction materials
Agricultural, livestock and food group	
21	Grains and their flours
22	Beans and soya flour
23	Fruits and vegetables
24	Wine, drinks and alcohol
25	Tinned food
28	Tobacco, cocoa and coffee
29	Oils and greases
30	Other food stuffs
33	Frozen fish
37	Horse food and forage
Other merchandise group	
19	Wood and cork
25	Salt
26	Paper and pulp
31	Machinery and parts
34	Other goods
Special transport group	
32	Cars and parts
38	Vehicle tariffs and charge rates
39	Containers
40	Merchandise in transit containers

References

- Alemany Llovera, Joan. 1991. *Los Puertos Españoles en el Siglo XIX*; Madrid: Ministerio de Obras Públicas y Transportes.
- Artal-Tur, Andrés, José Miguel Navarro-Azorín, and José María Ramos-Parreño. 2016. Estimating the economic impact of a port through regional input–output tables: Case study of the Port of Cartagena (Spain). *Maritime Economics & Logistics* 18: 371–90.
- Carreras, Albert, and X. Tafunell Sambola. 2006. *Estadísticas Históricas de España, Siglos XIX–XX*. Madrid: Fundación BBVA/BBVA Foundation.
- Castillo Manzano, Jose I. 2001. *El Puerto Bahía de Algeciras, el Motor Económico del Sur*. Madrid: Ministry of Public Works and Bahía de Algeciras' Port Authority.
- Castillo Manzano, Jose I. 2010. El sistema portuario español: Buscando un nuevo rumbo. *Economistas* 28: 290–95.
- Castillo Manzano, Jose I., and L. López-Valpuesta. 2012. Los estudios de impacto económico portuarios. ¿El mejor instrumento de relaciones públicas o el heraldo de la sobreinversión? *Papeles de Economía Española* 131: 200–8.
- Castillo Manzano, Jose I., L. López Valpuesta, and M. Castro Nuño. 2000. *El Puerto de Ceuta. Una Pieza Clave en la Economía de la Ciudad Autónoma*. Madrid: Editorial Civitas.
- Castillo Manzano, Jose I., P. Coto-Millán, M. A. Pesquera, and L. López-Valpuesta. 2004. Comparative Analysis of Port Economic Impact Studies in the Spanish Port System (1992–2000). In *Essays on Microeconomics and Industrial Organisation*. Heidelberg: Physica, pp. 297–316. [CrossRef]
- Castillo-Hidalgo, Daniel, and Jesús M. Valdaliso Gago. 2016. *Puertos y regiones marítimas en España en perspectiva histórica: Movimiento comercial y transformaciones económicas (c. 1880–2009)*. Mazarrón: Universidad Popular de Mazarrón.
- Centro de Estudios Económicos Tomillo. 2009a. *Impacto Económico del Port de Barcelona. Año 2006*. Mimeo. Madrid: Puertos del Estado.

- Centro de Estudios Económicos Tomillo. 2009b. *Impacto Económico del Puerto de Alicante. Año 2007*. Mimeo. Madrid: Puertos del Estado.
- Consultrans and Centro de Estudios Económicos Tomillo. 1998. *Análisis de Impacto Económico de los Puertos de Barcelona y Tarragona*. Madrid: Puertos del Estado.
- Coto Millán, P., and E. Martínez Budría. 1995. Características generales y contribución a la economía española del sector portuario. *Boletín ICE Económico*, 43–50.
- Coto Millán, P., J. L. Gallego Gómez, and J. Villaverde Castro. 2001. *Crecimiento Portuario y Desarrollo Regional. Una Aplicación al Puerto de Santander*. Santander: Santander's Port Authority.
- Coto-Millán, P., J. Villaverde Castro, and I. Mateo-Mantecón. 2008. *Impacto Económico del Puerto de Santander en la Ciudad en Cantabria y en otras Regiones Españolas*. Santander: Autoridad Portuaria de Santander.
- Cuellar Villar, D. 2002. Política de obras públicas y políticas liberales. El Ministerio de Fomento (1851–1874). *Transportes, Servicios y Telecomunicaciones* 2: 43–69.
- De la Peña Zarzuelo, Ignacio, López-Bermúdez Bermúdez, and María Jesús Freire Seoane. 2018. Impacto económico do porto de Ferrol–San Cibrao: Harmonización de resultados ao ano de referencia 2016 e comparación cos portos estatais. *Revista Galega de Economía* 27: 33–48. [CrossRef]
- De la Peña Zarzuelo, Ignacio, María Jesús Freire Seoane, and B. López Bermúdez. 2021. Estudios de impacto económico en infraestructuras del transporte: El caso portuario. *Revista de Métodos Cuantitativos para la Economía y la Empresa* 31: 17–54. [CrossRef]
- De Rús, G., C. Román, and L. Trujillo. 1994. *Actividad Económica y Estructura de Costes del Puerto de La Luz y de Las Palmas*. Madrid: Editorial Civitas.
- Díaz Hernández, J. J., and E. Martínez Budría. 2008. La inversión pública en los puertos españoles. *Papeles de Economía Española* 118: 148–56.
- Díaz Hernández, J. J., and J. I. Estran Ramírez. 2020. Patrón de especialización productiva y Valor Añadido en el sistema portuario español. *Revista de Estudios Regionales* 3: 113–39.
- Doldán-García, X. R., Michael L. Chas-Amil, and J. Touza. 2011. Estimating the economic impacts of maritime port development: The case of A Coruña, Spain. *Ocean & Coastal Management* 54: 668–77.
- Ducruet, César, Sylvain Cuyala, and Ali El Hosni. 2018. Maritime networks as systems of cities: The long-term interdependencies between global shipping flows and urban development (1890–2010). *Journal of Transport Geography* 66: 340–55. [CrossRef]
- Fraga, G., and J. A. Seijas. 1992. *El Puerto de Ferrol y su Influencia en la Economía de la Comarca*. El Ferrol: Editorial Junta del Puerto y Ría de Ferrol.
- Frax Rosales, E. 1996. Las leyes de bases de obras públicas en el siglo XIX. *Revista de Estudios Políticos* 93: 513–28.
- García del Hoyo, J. J., D. González Galán, F. García Ordaz, and M. De Paz Báñez. 1999. *Estimación de los Efectos Económicos Derivados de la Actividad del Puerto de Huelva*. Huelva: Huelva's Port Authority, El Monte Foundation, University of Huelva.
- González-Laxe, Fernando. 2020. La Política Portuaria Europea: Los nuevos desafíos de la gobernanza. *Revista Galega de Economía* 29: 1–17. [CrossRef]
- Hille, S. J., and J. E. Suelflow. 1975. *The Economic Impact of the Port of Baltimore on Maryland*. Washington, DC: Division of Transport Business and Public Policy, University of Maryland.
- KPMG Consulting. 2000. El Impacto Económico del Puerto de Bilbao. *Puertos* 82: 4–8.
- Lebón Fernández, C., J. I. Castillo Manzano, and L. López Valpuesta. 1999. *El Impacto Económico del Puerto de Sevilla Sobre la Economía Andaluza*. Madrid: Editorial Civitas.
- López Valpuesta, L., and J. I. Castillo Manzano. 2001. *Análisis de la Actividad Económica del Puerto de Sevilla y su Influencia Provincial*. Sevilla: Publishing Department of the University of Seville.
- Martí, Luisa L., R. Puertas, and J. I. Fernández. 2009. *Metodología para el Análisis de Impacto Portuario: Aplicación a los Puertos de Gandía, Sagunto y Valencia*. Valencia: Fundación Valenciaport.
- Martin Bofarull, M. 2002. El Sistema Portuario Español: Regulación, Entorno Competitivo y Resultados. Una Aplicación del Análisis Envolverte de Datos. Doctoral dissertation, Universitat Rovira i Virgili, Tarragona, Spain.
- Martínez Budría, E., P. Gutiérrez Hernández, L. J. López Martín, and F. Martín Álvarez. 1999. El impacto económico de los puertos de Santa Cruz de Tenerife sobre la provincia. *Hacienda Pública Española* 148: 175–85.
- Martínez Catena, M. 1972. *Temas Portuarios*. Madrid: Archivo Puertos del Estado. Dirección General de Puertos y Señales Marítimas.
- Mateo-Mantecón, I., P. Coto-Millán, J. Villaverde-Castro, and M. Á. Pesquera-González. 2012. Economic impact of a port on the hinterland: Application to Santander's port. *International Journal of Shipping and Transport Logistics* 4: 235–49. [CrossRef]
- Musso, E., F. Parola, and C. Ferrari. 2012. Modelos de gestión portuaria. *Papeles de Economía Española* 131: 116–27.
- Prados de la Escosura, L. 2003. *El Progreso Económico de España (1850–2000)*. Madrid: Editorial Fundación BBVA, number 201136.
- Puertos del Estado. 1996. *Anuario Estadístico 1995*. Available online: <https://www.puertos.es/es-es/estadisticas/RestoEstad%C3%ADsticas/anuariosestadisticos/Anuarios/1995.pdf> (accessed on 20 September 2022).
- Rey Juliá, J. M. 2002. Evaluación del impacto económico del Puerto de la Bahía de Cádiz. *Puertos* 100: 19–22.
- Rosado Pacheco, S. 1988. La Ley General de Obras Públicas de 13 de abril de 1877 (Una reflexión sobre el concepto de obra pública). *Anuario Facultad. Derecho Universidad de Extremadura* 6: 211.

- Ruiz-Romero de la Cruz, Elena M. 2004. *Historia de la Navegación Comercial Española. Tráfico de los puertos de Titularidad Estatal desde la antigüedad a la conclusión del siglo XX*. Ente Público Puertos del Estado. Available online: <http://hdl.handle.net/10630/13615> (accessed on 17 September 2022).
- Sáenz Ridruejo, F. 1994. Evolución de los puertos españoles durante el siglo XIX. In *CEHOPU, Puertos Españoles en la Historia*; Madrid: Ministerio de Obras Públicas, Transportes y Medio Ambiente.
- Suarez Bosa, M. 2000. El tráfico de mercancías por el puerto de La Luz y de Las Palmas. In *XIII Coloquio de Historia Canario-Americana; VIII Congreso Internacional de Historia de America: (AEA; 1998)*. Las Palmas de Gran Canaria: Cabildo Insular de Gran Canaria, pp. 2175–91.
- TEMA. 1994. *Elaboración de una Metodología para la Evaluación de Impacto de la Actividad Portuaria sobre la Economía*. Madrid: Consultora TEMA.
- US Maritime Administration. 1979. *Port Economic Impact Kit*; Washington, DC: Office of Port and Intermodal Development.
- Valdaliso, J. M. 2001. Entre el mercado y el Estado: La marina mercante y el transporte marítimo en España en los siglos XIX y XX. *Transportes, Servicios y Telecomunicaciones* 1: 55–79.
- Villaverde, J., and P. Coto-Millán. 1995. *El Impacto Económico del Puerto de Santander en la Economía Cántabra*. Santander: Autoridad Portuaria de Santander.
- Villaverde, J., and P. Coto-Millán. 1996a. *Análisis de Impacto Económico Portuario: Una Aplicación al Puerto de Santander*. Santander: Santander's Port Authority.
- Villaverde, J., and P. Coto-Millán. 1996b. *Impacto Económico Portuario: Metodologías para su Análisis y Aplicación al Puerto de Santander*. Santander: Autoridad Portuaria de Santander.
- Villaverde, J., P. Coto-Millán, R. Aza, J. Baños, and F. J. Canal. 2004. Impacto de los puertos de Avilés y Gijón en la economía asturiana. *Comunidades Autónomas, Principado de Asturias. Papeles de Economía Española* 20: 207–19.