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Political coordination costs in the Spanish port devolution process: A note

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ABSTRACT

Spain's port system was subjected to significant legislative reforms during the 1990s. Spanish Law 62/97 allowed regional governments to manage commercial ports, whereas the central government continued to control the main organisation in charge of the Spanish port system – the Spanish National Ports and Harbours Authority (SNPHA). This paper analyses the evolution of maritime traffic to measure the possible costs of political coordination between the SNPHA and the port authorities controlled by various political parties that rule regional governments. The findings point to coordination costs having a limited effect on the evolution of maritime traffic.

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1. Introduction

As highlighted in [1], many of the major changes in port governance over the past two decades have resulted from devolution programs. These port devolution programs involve the full range of government efforts designed to reform port governance [2] and to apply private sector principles to government operations [3]. This is why in recent years the advantages of port devolution processes have been one of the most dynamic areas addressed in port and maritime policy studies [2].

Studies have addressed several port devolution experiences in the European Mediterranean (see [4] for Italy; [5] for France; [6] for Greece; and [7] [8] and [9] for Spain.) Spain is one of the most analysed cases both from a descriptive point of view [7] and in analyses of the effects on port system performance ([8] and [9]). Because these Mediterranean port systems are those in which a central government has most intervened traditionally, the number of reforms to which the ports have been subjected since the 1990s should come as no surprise. Spain, specifically, has seen repeated maritime port reforms, with Laws 27/92 and 62/97 enacted in the 1990s and 48/03 in the current decade.

Following [10,3], governments have devolved responsibility for ports from the public to the private sector, including privatisation, or have transferred the authority functions to another tier of government (decentralisation). Decentralisation was the target of Spanish Law 62/97, which increased the participation of regional governments in port operation and management. Under this law, regional governments can name members of a port authority governing board, including its president. Thus, the transfer of authority from the central to the regional governments was complete (however, in France, there has been only a partial transfer of authority from the central government to the regional governments [5]). Nevertheless, Law 62/97 was no more than a partial modification of the previous law (Law 27/92). Indeed, Law 27/92 shifted the Spanish port institutional model from a service-type system to the current "landlord" system [9].[1]

This paper focuses on one aspect of the Spanish port system devolution process: namely, the potential existence of costs ascribable to political coordination. Law 62/97 had led to a dual management system in which the Spanish National Ports and Harbours Authority (SNPHA), politically controlled by the central government, co-existed with individual ports managed by the various regional governments. During the 1990s, some regional governments in Spain were controlled by political parties different from parties controlling the central government.

Coordination costs, if there were any, could have taken different forms. In the most extreme case, the SNPHA might even have favoured public investment and labour hiring in ports of a similar political colour whilst, at the same time, handicapping political opponents. The hypothesis of this study is that all of these costs and problems, if relevant from the point of view of transport economics should have affected trends in port traffic. Thus, there should have been a significant improvement in ports governed by the same political party as the SNPHA, and/or a decline in those ports with different political leanings.

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[1] See [1] on differences between the four port administration models (service port, tool port, landlord port, and private service port).

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The paper is organised as follows: Section 2 describes the data and the method used to analyse any possible political coordination costs, Section 3 presents our empirical results, and Section 4 discusses the results and the conclusions that are drawn.

2. Method

We will try to detect evidence of a structural break in politically grouped port traffic series around 1998. The overall sample ranges from 1966 to 2003. First, we group individual ports according to the political party responsible for appointing the president of the port authority on January, 1, 1998, the date on which Spanish Law 62/97 came into force and transferred port control to regional governments. PP (Popular Party) ports are located in a region controlled by the political party that also controls the central government – 15 of the 28 port authorities in the Spanish port system. PSOE (Socialist Party) ports are in a region controlled by the main opposition party – 7 port authorities. PNAT refers to ports in a region controlled by a regional/nationalist party (the Canary Islands, Catalonia and the Basque Country) – 6 port authorities.

Second, following [9,11], we use an unobserved components model to compute trend-cycle components of the relevant dependent and independent time series variables (see Table 1):

$$\begin{aligned} y_t &= \mu_t + \varepsilon_t, \quad \varepsilon_t \ Niid \ \left(0, \sigma_\varepsilon^2\right) \\ \mu_{t+1} &= \mu_t + \beta_t + \eta_t, \quad \eta_t \ Niid \ \left(0, \sigma_\eta^2\right) \\ \beta_{t+1} &= \beta_t + \zeta_t, \quad \zeta_t \ Niid \ \left(0, \sigma_\zeta^2\right) \end{aligned} \tag{1}$$

where $y_t = \ln(Y_t)$ stands for the original time series, $\mu_t$is the trend-cycle component, and $\beta_t$is the slope. The $\beta_t s$ will be used as our dependent variables in the subsequent analysis, as a smooth representation of the percentage growth rate of the original series.[2]

Third, to perform the structural break hypothesis we estimate transfer function models, in the tradition of [12], although we extend the latter approach to account for the endogenous-break testing ideas of [13]. The estimated model for the cross-section of ports is:

$$\begin{cases} \beta_{i,t} = \gamma_{i,0} + \gamma_{i,1}\beta_t^{\log(\mathrm{GDP})} + \gamma_{i,2}\beta_t^{\log(\mathrm{WMT})} + \gamma_{i,3} \ \xi_t^{1993-1997} \\ \qquad + \gamma_{i,4} \ \xi_t^{1998-2003} + \ u_{i,t} \\ u_{i,t} = \rho_{i,1} \ u_{i,t-1} + \rho_{i,2} \ u_{i,t-2} + v_{i,t}, \quad v_{i,t} \ iid \ N(0,1) \end{cases} \tag{2}$$

where: i = PP, PSOE, or PNAT. Table 1 presents the dependent and independent variables of model (2) and their descriptive statistics. All of the slopes ($\beta_t s$) of the dependent variables have been multiplied by 100 to make it easier to interpret the slopes and the effects of the variables that measure the changes in the laws ($\xi_t^{1993-1997}$ and $\xi_t^{1998-2003}$). By way of example, if the maximum value of $\beta_{PP,t}$ is 10.191, this means that during the period under analysis, 1966–2003, the maximum rate at which the trend for port traffic grew at the ports in a PP-controlled region was 10.2%.

With $\beta_t^{\log(\mathrm{WMT})}$ we try to proxy all exogenous *shocks* and processes affecting maritime transport and port management over the past 40 years (from models of port management to international containerisation). We have also included an error term with a second order autoregressive structure, as well as a constant term ($\gamma_{i,0}$) in order to capture the effects of additional variables not directly included in the specification.

In addition, the dummy variable included to measure the effects of Spanish Law 62/97, $\xi_t^{1998-2003}$, will be the variable on which we will base our assessment of whether any political coordination costs might exist. For dummy variables $\xi_t^{1993-1997}$and $\xi_t^{1998-2003}$ we used a *ramp* specification for Law 27/92 (local deterministic trend for the period 1993–1997) and a *step* formulation (level shift) for Law 62/97 (local constant for 1998–2003). These formulations produced the best fit when estimating model (2). From an economic standpoint, the *ramp* formulation is consistent with the logic that states that port authorities required a certain period of time to reach their maximum yield in the new legislative framework.[3]

3. Results

The estimation of model (2) led to the following results (robust standard deviations are shown in brackets, see [14]):

$$\begin{cases} \widehat{\beta}_{\mathrm{PP},t} = \underset{(0.732)}{1.012} + \underset{(0.056)}{0.028}\,\beta_t^{\log(\mathrm{GDP})} + \underset{(0.189)}{0.318}\,\beta_t^{\log(\mathrm{WMT})} \\ \qquad + \underset{(0.188)}{0.548} \ \xi_t^{1993-1997} + \underset{(0.203)}{0.667} \ \xi_t^{1998-2003} + u_{\mathrm{PP},t} \\ u_{\mathrm{PP},t} = \underset{(0.145)}{1.396} \ u_{\mathrm{PP},t-1} - \underset{(0.129)}{0.518} \ u_{\mathrm{PP},t-2} + \widehat{v}_{\mathrm{PP},t} \\ \widehat{\beta}_{\mathrm{PSOE},t} = \underset{(0.639)}{2.007} + \underset{(0.056)}{0.028}\,\beta_t^{\log(\mathrm{GDP})} + \underset{(0.241)}{0.762}\,\beta_t^{\log(\mathrm{WMT})} \\ \qquad - \underset{(0.191)}{0.003} \ \xi_t^{1993-1997} - \underset{(0.169)}{0.123} \ \xi_t^{1998-2003} + u_{\mathrm{PSOE},t} \\ u_{\mathrm{PSOE},t} = \underset{(0.128)}{0.755} \ u_{\mathrm{PSOE},t-1} - \underset{(0.106)}{0.116} \ u_{\mathrm{PSOE},t-2} + \widehat{v}_{\mathrm{PSOE},t} \\ \widehat{\beta}_{\mathrm{PNAT},t} = \underset{(0.811)}{2.507} + \underset{(0.056)}{0.028}\,\beta_t^{\log(\mathrm{GDP})} + \underset{(0.069)}{0.064}\,\beta_t^{\log(\mathrm{WMT})} \\ \qquad + \underset{(0.148)}{0.096} \ \xi_t^{1993-1997} + \underset{(0.164)}{0.113} \ \xi_t^{1998-2003} + u_{\mathrm{PNAT},t} \\ u_{\mathrm{PNAT},t} = \underset{(0.084)}{1.841} \ u_{\mathrm{PNAT},t-1} - \underset{(0.081)}{0.867} \ u_{\mathrm{PNAT},t-2} + \widehat{v}_{\mathrm{PNAT},t} \end{cases} \tag{3}$$

$R^2 = 0.97$; $DW = 1.61$. Model (3) incorporates the hypothesis that the effect of GDP is the same for the three groups of ports ($\mathrm{H}_0 : \gamma_{\mathrm{PP},1} = \gamma_{\mathrm{PSOE},1} = \gamma_{\mathrm{PNAT},1}$), as indicated by a Wald test (p-value 0.517).

Finally, we tested to see whether the effects of Law 62/97 on the port traffic for the various port groups differed from the effects of Law 27/92 (see results in Table 2).

4. Discussion

The results presented in the previous section (see Model 3 and Table 2) show that, broadly speaking, ports reacted to Law 62/97 in the same fashion as they did to Law 27/92. Ports in the PP group, in particular, had already taken advantage of the self-management potential provided by Law 27/92 and seem to have subsequently followed a similar pattern to take advantage of Law 62/97. Model

[2] This transformation was done because the processes for compiling statistics used in Spain in the 1960s and 1970s were not of the same quality as current processes. This pre-filtering of the port traffic series was used so that the estimation procedure would not mistakenly consider spurious temporary effects to be permanent.

[3] To prove that the dummy variables that we link to the dates when changes in the law took place (1993 and 1998) are indeed related to the legal reforms enacted on those dates, we endogenise the breaks by shifting them in time. In this way, we control for the fact that the changes are not related to other events that happened before or after the laws were enacted. We systematically shifted the years that they came into effect both forward and backward in time as far as 1983. In other words, model (2) has been re-estimated for all pairs of years from 1983 to 1988 to 1998–2003. The pair that was chosen maximised the R2 goodness-of-fit statistic and minimised the information criteria of Akaike and Schwartz. The results are available from the authors upon request.

Table 1
Dependent and independent variables and their descriptive statistics.

Name	Explanation	No. obs.	Mean	Max.	Min.	Median	Stand. dev.
a) Dependent variables.							
a.1. Total traffic at PP ports ($\beta_{PP,t}$).	The slope of the trend-cycle component of the total traffic logarithm of ports located in a region controlled by the PP on 1st January, 1998.	38	3.620	10.191	0.446	2.918	2.661
a.2. Total traffic at PSOE ports ($\beta_{PSOE,t}$).	The slope of the trend-cycle component of the total traffic logarithm of ports located in a region controlled by the PSOE on 1st January, 1998.	38	5.869	24.542	1.060	3.790	5.469
a.3. Total traffic at PNAT ports ($\beta_{PNAT,t}$).	The slope of the trend-cycle component of the total traffic logarithm of ports located in a region controlled by a regional/nationalist party on 1st January, 1998.	38	3.097	6.120	0.958	3.157	1.629
b) Independent variables.							
b.1. Spanish GDP ($\beta_t^{\log(GDP)}$).	The slope of the trend-cycle component of the Spanish GDP logarithm.	38	0.032	0.070	0.003	0.028	0.018
b.2. World maritime traffic ($\beta_t^{\log(WMT)}$).	The slope of the trend-cycle component of the world maritime traffic logarithm (taken from UNCTAD statistics).	38	0.032	0.082	−0.007	0.029	0.022
b.3. Law 27/92 ($\xi_t^{1993-1997}$).	Ramp dummy variable included to control for the effects of Spanish Law 27/92. From 1993 = 1 to 1997 = 5, 0 otherwise	38	0.395	5	0	0	1.152
b.4. Law 62/97 ($\xi_t^{1998-2003}$).	Step dummy variable included to measure the effects of Spanish Law 62/97. This is the variable on which we will base our assessment of whether any coordination costs exist. From 1998 to 2003 always = 5, 0 otherwise.	38	0.789	5	0	0	1.848

Table 2
Wald test of similarity of effects of Law 27/92 and Law 62/97.

Null hypothesis (H_0)	χ^2 Test statistic	*p*-value	Result
$\gamma_{PP,3} = \gamma_{PP,4}$	3.089	0.078	Weak rejection of null hypothesis at 10% level
$\gamma_{PSOE,3} = \gamma_{PSOE,4}$	0.628	0.428	Null hypothesis not rejected
$\gamma_{PNAT,3} = \gamma_{PNAT,4}$	0.630	0.427	Null hypothesis not rejected

(3) shows a slight positive effect of the coefficient linked to Law 62/97, 0.667, compared with 0.548 for Law 27/92. This difference is statistically significant, although only weakly so, at the 10% level (see Table 2). Nevertheless, these results do not allow the conclusion to be drawn that ports under the PP present a better trend in traffic evolution after Law 62/97 than after the previous legal reform. What is more, bearing in mind that the dummy variable that represents Law 27/92 is a *ramp* type, whereas the Law 62/97 dummy variable is a *step* type, what is certain is that after Law 62/97 the port traffic growth rate quickly stabilised in the PP port group, with a slowdown in the growth that had begun after Law 27/92. With a *step* value of 5 and a coefficient of 0.667 for Law 62/97, we can conclude that the Spanish port devolution process on its own produced a 3.3% average traffic growth rate in this category of ports during the post-Law 62/97 period.

The other ports, including those managed by the nationalist parties and the PSOE, do not show evidence of any statistically significant effect of either of the two legal changes enacted in the 1990s. Nevertheless, even though it is not statistically significant, the Law 62/97 coefficient for the PSOE group of ports is negative and it is higher than the Law 27/92 coefficient. However, the Wald test (see Table 2) shows that these differences are not statistically significant. The Law 62/97 coefficient for the PNAT category has a positive sign, but this is also in line with the Law 27/92 coefficient and neither of the two is significantly different from zero.

The fact that ports governed by nationalist parties gained no advantage at all post-Law 62/97 is especially relevant as it was precisely these parties that promoted the Law. In fact, Law 62/97 is one of the tradeoffs negotiated by these parties in exchange for giving earlier support for the PP leader, José María Aznar, who became the Spanish premier in 1996.[4]

The results also show a major significant link between the evolution of traffic in Spanish ports, specifically those under the control of the PP and the PSOE in 1998, and the evolution of international maritime transport ($\beta_t^{\log(WMT)}$). It should therefore come as no surprise that these years saw the consolidation of the large Spanish container transhipment ports, such as Algeciras Bay, Barcelona and Valencia. These three ports currently figure in the list of the World's Top 50 Container Ports, and Spain is the European country with the highest number of ports in the list. The Spanish port system's major link to the international scenario helps to explain the weak link of Spanish ports to the domestic economy ($\beta_t^{\log(GDP)}$). It could therefore be said that the port devolution process has helped to internationalise the port system of Spain, a country considered to be the western gateway to the Mediterranean.

To summarise, our empirical evidence indicates that the transfer of political control over ports to regional authorities has had no effect, either positive or negative, on the evolution of maritime traffic in the Spanish port system. All the Spanish ports displayed similar behaviour in response to Law 62/97, which first

[4] This support was essential because the PP did not have an absolute majority in parliament.

implemented decentralisation, as they did in response to Law 27/92. Similarly, it is not possible to conclude that there was any possible advantage for these ports resulting from the political leanings of their management on January 1, 1998, when the central government was under the mandate of the PP. This does not mean that we provide evidence to reject the hypothesis that the SNPHA could have favoured ports presided over by chief executives with the same political leanings. Our results show only that, if these effects existed, they have not been relevant for the evolution of traffic at the Spanish ports in the period under consideration.

Therefore, apart from the good inherent in self-management for Spanish ports, there is no empirical evidence to support the idea that political decentralisation has entailed any advantage or disadvantage for the Spanish port system. Consequently, we could talk of an empirically *innocuous* measure whose suitability or extrapolation to legal reforms in other sectors of the economy (such as public airport management, for example) would depend more on preferences for government intervention than on arguments offered by transport economics and management.

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