Pork-Barrel Politics in Semi-Democracies: The Spanish "Parliamentary Roads," 1880–1914

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This article analyzes the effects of parliamentary representation on road infrastructure expenditure during the Spanish Restoration. Using a panel data set of Spanish provinces in 1880–1914, we find that the allocation of administrative resources among provinces depended both on the delegation characteristics (such as the share of MPs with party leadership positions, and their degree of electoral independence), and the regime's global search for stability. These results point to the importance of electoral dynamics within semi-democratic political systems, and offer an example of the influence of government tactics on infrastructure allocation.

In 1874, after six years of political instability and civil strife, Spain returned to a parliamentary monarchy headed by the Bourbon dynasty. During the subsequent Restoration regime, two political parties (conservatives and liberals) formed a duopoly and alternated in power peacefully. At each turn the incumbent party ceded power to an interim government by the other party, who organized the election. The incoming government first planned a preliminary distribution of the chamber seats, which always involved its victory. Then, the appointed candidates had to negotiate the electoral results with local elites in their districts. At the local level, the national agreement was implemented through extensive vote buying, coercion and mass fraud, and by promising individual favors and indivisible benefits to

the electorate. Over time, however, the Restoration regime unraveled in the face of increasing competition from third parties. It progressively weakened until it broke down and was replaced by Primo de Rivera's military dictatorship in 1923.

During the Restoration period, roads were one of the most important collective benefits that a candidate could use to gain his district's support. Given the low density of the Spanish railway network and the lack of waterways, roads were an essential component of the country's transport system, and the only way to connect a large share of the national territory with the domestic and international markets. The national government was indeed the main source of funds for building and improving roads, and local elites used their parliamentary representatives to lobby the government for more roads in their territories. In fact, and partially due to the importance of pork barrel in road expenditure distribution, the Spanish road network structure seems to have been badly laid out.[1] This might help to explain why, despite their indispensability, investment in the Spanish large transport networks during the late nineteenth and early twentieth centuries does not appear to have had a positive effect on the country's economic growth.[2]

The absence of constraints on investment decisions encouraged pork barrel in road construction. Before 1914 the Parliament decided on each individual road project instead of any national road system. And it approved such projects at a frenetic pace, authorizing more than 1,000 new road projects between 1877 and 1911. These represented more than 40,000 km: more than all the roads built by the state in the whole nineteenth century.[3] Not surprisingly, in 1912 construction had not even begun on 43 percent of the approved road mileage.[4] Thus, the very abundance of approved projects gave the executive considerable leeway, because the ministry had to decide what roads would be built.

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[1] Actually, this was often recognized by the Spanish governments. For instance, the Royal Decree of 17 September 1886 clearly stated that some of the recently built roads were completely redundant: "Hay dos, tres y a veces cuatro carreteras sirviendo superabundantemente los mismos intereses públicos y otras recorriendo desiertas comarcas, con tan elevado coste de construcción (que sería) bastante para dilatarla en terrenos más fértiles y poblados."

[2] Herranz-Loncán, "Infrastructure Investment."

[3] The 1877 Road Plan favored, with its ambiguity, the further inclusion in it of a large number of additional roads, and it was only repealed in 1911. The process of parliamentary approval of new roads reached its zenith in the parliamentary year of 1895/96, when 313 new projects were passed. Many of those roads, known at the time as "parliamentary roads," would not be built during the period. For a more detailed discussion on "parliamentary roads," see, for instance, Cuéllar Villar, *Transportes*, or Alzola y Minondo, *Historia*.

[4] This surplus of approved but not yet built road mileage could be found through the whole period under study and in all provinces, although it varied substantially among them, ranging from 19 to 65 percent of the total approved road mileage in each province in 1912.

The executive could and often did allocate expenditure for political purposes, like satisfying individual MPs' demands and private interests. As a result, while it was easy for an MP to have a given road project approved by Parliament, it was considerably harder to get the Public Works Administration to pay for the work. Thus, influence both within the legislature and with the administration mattered.

This article analyzes what roads the executive agreed to fund. More specifically, we study the influence of pork barrel on the actual distribution of road construction expenses among the Spanish territories. This is the first and most important step in studying the extent of road expenditure misallocation for political reasons in Restoration Spain. In this way, this article contributes to explaining why, contrary to expectations, the growth impact of transport infrastructure investment was very low in Spain during the period.[5]

Our analysis, however, has to surmount the fact that the Spanish Restoration does not fit well with most of the pork-barrel literature, which was developed for democracies with competitive elections. In such cases, the usual partisan models indicate that an incumbent government may target two groups of districts: either governments channel public funds to the more closely disputed political jurisdictions (that is, they target "swing" voters);[6] or they do so to their safe seats (i.e., to their "core" voters).[7] These models, however, fail to describe a regime like Restoration Spain, where the two main parties of the regime (usually called the "dynastic" parties) had agreed to alternate in power. Therefore, the party in power could not use the distribution of public funds to attract swing voters in the next election, since it had acceded to hand over power to the other dynastic party. In other words, the role of pork barrel is difficult to understand under a system in which the party in power, who decides on the allocation of spending, has agreed to be defeated in the next election.

Nevertheless, this peculiarity of the Spanish political system did not eliminate the incentives for governments to use pork-barrel policies. On the one hand, despite electoral results being centrally planned, Madrid's limited capacity to intervene in society implied that elections outcomes had to be negotiated with the local elites, who demanded compensations

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[5] In Herranz-Loncán, "Infrastructure Investment," the application of cointegration and VAR techniques to the Spanish case indicates that returns to investment in large nationwide networks were not significantly different from zero between 1850 and 1935. This is interpreted as evidence that non-efficiency criteria were very relevant in the allocation of resources during the period.

[6] See Lindbeck and Weibull, "Balanced Budget Redistribution"; or Dixit and Londregan, "Determinants."

[7] See, for instance, Cox and McCubbins, "Electoral Politics."

(such as public funds) for their districts' electoral support. On the other hand, the two-party system may be seen as a duopoly regime, in which opposition districts were actually those which did not respect the alternation system, and voted for either the dynastic party that was going to lose the election or for a third political force. Restoration Spain provides therefore an interesting case of a political system in which a dominating duopoly used pork-barrel strategies to persuade the electorate to change the sign of their votes in every electoral call.

In this setting, two kinds of political economy models may be relevant to analyze pork-barrel in Restoration Spain. One can see the Spanish Restoration as a semi-democratic regime ruled by a duopoly that furthered its political goals by using the geographical allocation of public resources. More specifically, governments showered resources on those districts that were loyal to the alternation system, and starved the rebellious ones. This would be similar to a typical semi-democratic system,[8] although one in which the hegemonic political force was not a single party but a duopoly. On the other hand, given the importance of local elites, nonpartisan motivations may also offer a partial description of the political process. In nonpartisan models, the distribution of public funds reflects the influence and ability of individual MPs, who compete for administrative resources to reinforce their links with their electorates. Indeed, bringing home the pork increased MPs' reputation with local elites.[9]

In this regard, our results confirm that the allocation of public funds for roads among provinces in Restoration Spain was affected both by the regime's global strategy and aims, and by individual MPs' relative influence. Regarding the former, we observe that, in the early years of the Restoration, those provinces whose districts did not accept the two-party alternation system and, specially, those where more districts elected third-party candidates, received relatively less road expenditures. This pattern reflects the regime's search for stability: it tried to provide incentives for local elites to comply with the system. Yet individual MPs also mattered because a province received more resources when more of its MPs had leadership positions and when more of its MPs held secure seats.

Over time, however, the ability or willingness of the party in power to punish deviation seems to have declined. Starting in the last decade of the nineteenth century, provinces that elected candidates from third parties began to receive an increasing share of resources. The

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[8] See, for instance, Diaz-Cayeros et al., "Tragic Brilliance"; or Hsieh et al., "Price."
[9] Levitt and Snyder, "Political Parties"; Levitt and Poterba, "Congressional Distributive Politics"; and Milligan and Smart, "Regional Grants."

timing coincides with the weakening of the Restoration and the gradual modernization of the country. Development, in particular, undermined the political consensus that had underpinned the peaceful alternation system. The change in political strategy is consistent with the predictions of models in which weak semi-democratic or nondemocratic regimes tend to give concessions to the opposition.[10] In the case of the Spanish Restoration, this meant choosing a policy of appeasement of those districts that did not support the rotation of parties in power.

Our analysis is the first to use nineteenth-century electoral data coming from a semi-democratic country to investigate the effect of political factors on the allocation of public funds among territories.[11] To do so, we have built a new geographical database on both electoral outcomes and road expenditures for the Spanish Restoration. In the next sections, we use those data to analyze the influence of both MPs' individual characteristics and the regime's global strategy on the actual geographical distribution of road expenditure.

THE POLITICAL SYSTEM OF THE SPANISH RESTORATION

In 1874 the Bourbon dynasty returned to the Spanish throne, after a six-year period in which the country was convulsed by violent political conflict. From the start, political leaders who supported the return of the monarchy sought to create institutional stability by building consensus among a large proportion of the liberal elite. This represented a crucial change in relation to Isabel II's reign (1833–1868), when power was monopolized by certain factions, and a growing share of liberals decided that violence and military uprisings were the only available means to gain power. Indeed political violence led to the collapse of Isabel II's regime in 1868 and to six years of instability. The 1874 Restoration attempted to reform the pre-1868 parliamentary monarchy in order to make it more stable and peaceful without engaging in deeper political and social reforms. From this point of view, the regime was a success, as it was more durable than previous parliamentary experiences.[12]

In order to avoid conflict and enhance political stability, the Restoration's conservative founders did not seek to reestablish their former political monopoly. They decided instead to collude with the

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[10] Ellman and Wantchekon, "Electoral Competition"; Robinson and Torvik, "Real Swing Voter's Curse"; and Gandhi and Przeworski, "Cooperation."

[11] Other historical analyses on this topic, although focusing on twentieth-century U.S. data, are, for instance, Wright, "Political Economy"; Wallis, "Political Economy"; or Wallis and Weingast, "Equilibrium Impotence."

[12] The historiography on the origins and character of the Spanish Restoration political system is very large; see a useful synthesis in Varela Ortega, *Poder*.

moderate liberal opposition. This was the origin of the so-called *turno pacífico* (peaceful turn) system, based on a cartel agreement between the two hegemonic parties (conservatives and liberals) which lasted for almost half a century. During that period, those two dynastic parties formed a duopoly that alternated in government with the collaboration of the Crown, who put its constitutional role at the service of the stability of the system. The arrangement was willingly accepted by a large portion of the Spanish social elite, who shared the objective of political stability without social or political reform.[13] Moreover, the pact kept both the antiliberal sectors of the Catholic right and groups of leftist republicans and revolutionaries out of the government.[14]

In practice, the *turno pacífico* system operated as follows: each parliamentary election was preceded by the king's appointment of a new prime minister (*Presidente del Consejo*), usually from the dynastic party that was not in the current government. Then, with a new government in office, the Parliament was dissolved. Elections were organized under a system of mostly simple majority uninominal districts (except for a few, mainly urban, plurinominal constituencies).[15] Before the election took place, the new government planned its results in the so-called *encasillado*, which identified who was the officially sanctioned candidate for each district. As might be expected, the *encasillado* always involved the overall electoral victory of the new ministry.[16]

However, in spite of the electoral results being planned in Madrid, the center did not control the voting process, due to its limited capacity to intervene at the local level. Indeed, at the time, the province constituted "the most important level of political and social life in Spain."[17] Elections were actually overseen at the district level by the local public authorities, under the influence of the local elites (*caciques*). These local actors controlled the electoral outcomes through a variety of means, such as vote buying, coercion and mass fraud, but also by promising individual favors or indivisible benefits to the electorate. Favors and benefits were to be obtained from the

[13] Cabrera and del Rey, *Poder*, p. 20; and Dardé, *Aceptación*, p. 292.

[14] Moreno Luzón, "Political Clientelism," p. 426; and Dardé, *Aceptación*, p. 234.

[15] Plurinominal districts were, however, gerrymandered to neutralize, as far as possible, the relatively more independent urban electorate (Dardé et al., "Conclusiones," p. 561; and Dardé, *Aceptación*, pp. 199 and 228).

[16] Although the Spanish Parliament (*Cortes*) had a bicameral structure throughout the Restoration period, our analysis is restricted to the lower chamber (*Congreso de los Diputados*) since the members of the upper chamber (*Senado*) either held their position in their own right, or were appointed by the king or a restricted electoral college that included the provincial administrations (*Diputaciones*) and a limited number of electors designated by the local councils and the wealthiest taxpayers.

[17] Moreno Luzón, "Political Clientelism," p. 435; see also Cabrera and del Rey, *Poder*, p. 76.

administration thanks to the influence of the elected candidate. Individual favors included exemption from military service, personal interventions in the judicial system, job offers, etc., whereas the most usual indivisible favors were roads, railways, dams, or public buildings (schools, markets, etc.), as well as a preferential treatment in the distribution of the tax burden among districts.[18] As a result, after each election public funds were channeled by MPs to their districts and used by the *caciques* to maintain the loyalty of their clients.[19] Restoration Spain was therefore a typical semi-democratic country in which candidates built their credibility by exploiting preexisting patron-client networks.[20]

Therefore, throughout the Restoration, winning elections required candidates to negotiate support at the local level. They could do so as representatives of the two-party duopoly. Since most local elites did not have a clear party identification, they might be willing to adapt to the duopoly alternation system and give their support to a different party and candidate in each election, if this would grant them more resources. However, some individual candidates, independently from their party of affiliation, proved especially capable in obtaining administrative benefits in Madrid. In this case, local elites preferred having stable links with these effective MPs and to ignore the turn. Those candidates would then be repeatedly elected by their districts, regardless of the party in power, and would become *candidatos propios*, who were said to "own" an electoral district. Actually, some of them belonged to the same regional social elites they represented. These candidates' relative independence from the duopoly's global strategy was reinforced by the lack of a centralized structure in the dynastic parties, which were, especially at the beginning of the period, little more than weak aggregations of cliques and personal factions.[21] As a consequence, some historians have described the Spanish central administration as "a political market where local sectors negotiated competitively" through their MPs.[22]

To sum up, during the Restoration the government could not impose electoral results. Instead, it had to buy the support of the local elites to the official candidates and, in districts where alternative candidates had strong local links, the pressure of the governments of the

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[18] Comín, *Hacienda*, pp. 505–07 and 674; and Martorell Linares, *Santo temor*, pp. 276–81.
[19] Moreno Luzón, "Political Clientelism," p. 426.
[20] Keefer and Vlaicu, "Democracy."
[21] Dardé et al., "Conclusiones," pp. 564–67.
[22] Moreno Luzón, "Political Clientelism," p. 434; see also Dardé et al., "Conclusiones," pp. 602–03; and Comín, *Hacienda*, p. 504.

duopoly to impose the turn might be ineffective.[23] This, together with the regime's general objective of securing consensus, helps to explain that there was always a significant representation of nongovernmental parties in the Parliament. To begin with, the dynastic party that was not in office always had a large number of MPs, which amounted, on average, to one-quarter of the Congress throughout the Restoration. Moreover, the Parliament included an initially small but growing number of MPs belonging to some right and left-wing minority parties. These were mainly composed by several republican groups, followed by various regionalists and traditionalists parties and also (by the end of the period) a few members of the socialist party. By the early 1920s these outsiders accounted for about 20 percent of the chamber.

Despite this parliamentary diversity, the *turno pacífico* was quite successful in achieving institutional stability. Relative to the chronic political turmoil (frequent military uprisings, revolutionary attempts, and regime changes) of the previous decades, the Restoration system operated without interruptions for half a century. However, the regime faced increasing challenges as time went by, which hindered the long-term continuity of the turn system and finally provoked its complete breakdown and the establishment of a military dictatorship, under the auspices of the Crown, in 1923.

The crisis of the Restoration became apparent starting in the 1890s, although its triggers had been in place since the establishment of the regime. Those triggers were both external and internal to the political system.[24] From the point of view of the internal operation of the regime, local powers progressively gained influence to the detriment of central power, and local elites established therefore more stable links with those candidates (*propios*) who had proved efficient in obtaining benefits for their districts.

Several reasons explain a strengthening of ties between candidates and local elites. To begin, the passage of time itself proved to the local powers that the cartel between the conservative and the liberal party would endure, and that their cooperation was not necessary to avoid a breakdown of the two parties' agreement. As the cartel consolidated, the local elites' need to follow the two-party alternation system was probably perceived as less stringent. The passage of time also reinforced the local clientelistic networks, in which the candidates exerted the role of intermediaries with the central administration. In that context, the establishment of permanent links between the districts and certain

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[23] See, for instance, Moreno Luzón, "Pleito," p. 72; and Dardé, *Aceptación*, p. 166.
[24] Comín, *Hacienda*, pp. 494–95.

candidates favored the regular operation of these clientelistic networks.[25] Finally, given the two main parties' lack of a centralized structure and the gradual crisis of the regime, the candidates increasingly tended to "look for security in a guaranteed local power base."[26] As a consequence, the *propios* MPs, which did not adapt to the *encasillado*, became an intrinsic part of the Restoration institutional system.

Nevertheless, the main challenges to the political system of the Restoration came from outside the dynastic parties. As has been indicated, the regime required the liberal elites to agree to share power in return for political stability. However, since the last years of the nineteenth century, the liberal consensus could no longer guarantee stability, for several reasons. On the one hand, the Restoration institutional setting, which was largely based on the capacity of influence of the rural powers, did not adapt to the slow modernization of the country and the urban sectors' increasing presence in the Spanish economy and society. This led a growing share of the urban elites to feel unsatisfied with the governments of the cartel and seek out other representatives.[27] At the same time, the labor movement had grown enough for the system to face both a new set of demands of economic and social reform and renewed revolutionary threats. Finally, the monarchy's legitimacy eroded slowly because of an omnipresent corruption and, more sharply, after its defeat in the Spanish American War of 1898. As a consequence, after 1900 the minority parties, which promoted reforms based on ideological arguments, gained influence in a number of Spanish towns, where elections became increasingly competitive.

Electoral competition was also bolstered by the establishment of universal male suffrage in 1890.[28] This constitutional change was one of the most visible concessions made by the Restoration regime to the progressive liberal elites. The universal male suffrage was a key component of the political program of the Liberal Party, and a necessary condition for both its integration in the regime as a government force and the acceptance of the Constitution by the moderate ranks of the pre-1874 revolutionaries.[29] However, this measure actually undermined the dynastic parties. Indeed extensive fraud and vote-buying could only

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[25] Moreno Luzón, "Political Clientelism," p. 435; and Dardé et al. "Conclusiones."

[26] Moreno Luzón, "Political Clientelism," p. 435; see also Martorell Linares, *Santo temor*, p. 277; or Dardé et al., "Conclusiones," pp. 601–02.

[27] Cabrera and del Rey, *Poder*, pp. 90–99.

[28] Moreno Luzón, "Political Clientelism"; and Comín, *Hacienda*.

[29] Dardé, *Aceptación*, pp. 205–07. This process would be consistent with the idea that the extension of the franchise may be seen as a strategic decision by the political elite to prevent widespread social unrest and revolution, in Acemoglu and Robinson, "Why Did the West?"
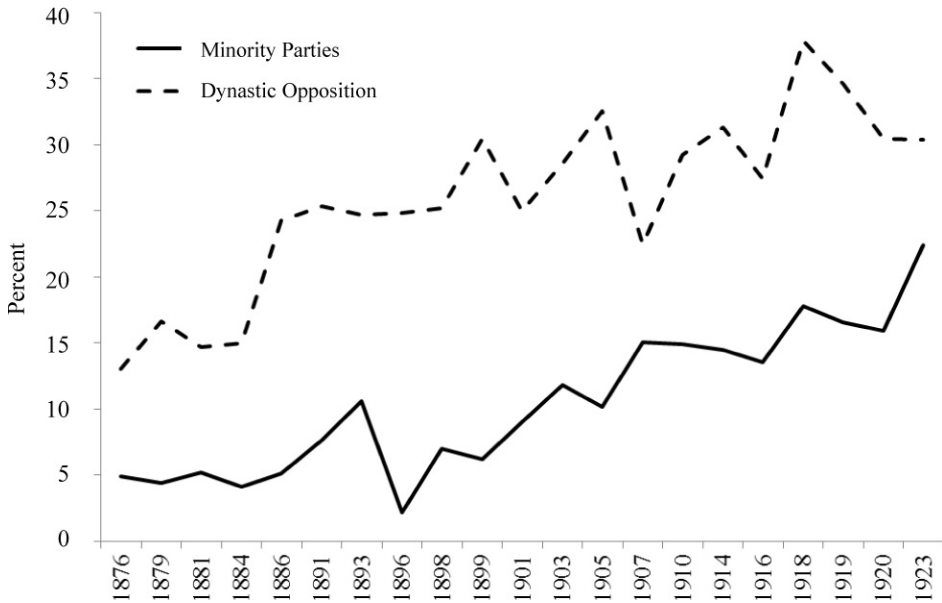
FIGURE 1
DYNASTIC OPPOSITION AND MINORITY PARTIES' MPs AS SHARE OF TOTAL

Sources: Varela Ortega, *Poder*; Sánchez de los Santos, *Las Cortes españolas: 1907* and *Las Cortes españolas: 1910*; *El año político* (1895–1910); *El Imparcial* (1876); *El Liberal* (1881–1910); *La Correspondencia de España* (1879–1905); *La Época* (1879–1905); *ABC* (1905); and data provided by Javier Moreno Luzón.

limit the representation of minority parties in the first few elections under universal male suffrage. In fact, after 1900 the extension of the franchise made increasingly difficult to control electoral results in urban constituencies. There, elections gradually became more competitive and based on modern political practices.[30] At the same time, in rural districts, universal male suffrage forced candidates to reinforce their links with local clientelistic networks.[31]

The erosion of the Restoration's stability accelerated after World War I. Between 1917 and Primo de Rivera's military coup d'état in 1923, the government found it increasingly difficult to obtain a parliamentary majority and social turmoil was constant, with a growing share of society demanding political reform. However, as has been indicated, the origins of the crisis can be traced back to the first decades of the Restoration period. As may be seen in Figure 1, the

[30] Dardé, *Aceptación*; and Cabrera and del Rey, *Poder*, p. 72.
[31] Moreno Luzón, "Pleito," p. 72.

out-of-office dynastic party's share of elected deputies kept growing over time. The same was true of the minority parties' representation. As a consequence, the margin between the two dynastic parties contracted over time and, more importantly, the margin between these parties and the minority ones became smaller.

In sum, over time the strength and stability of the Restoration regime eroded to the point that Spain could only go one of two ways: democratic reforms or the elimination of the parliamentary regime. Actually, both solutions were tried during the interwar period. Before 1923, however, the political duopoly survived in an increasingly weak position, and this was probably reflected in a gradual change in its priorities. In the early Restoration years, the government focused on consolidating the two-party cartel and marginalizing other political forces. After 1890 the regime tried instead to keep discontent under control and to appease those social sectors demanding profound reforms.[32]

THE ALLOCATION OF PUBLIC RESOURCES DURING THE RESTORATION: THE ROLE OF GOVERNMENTS AND INDIVIDUAL MPs

Our main hypothesis is that the mix of government vote-buying and local autonomy shaped the allocation of road resources among provinces. On the one hand, governments subordinated the distribution of resources to the duopoly's global objectives. In the short run, these objectives reduced to implementing the turn system; in the long run, they included maintaining political stability without reform. On the other hand, MPs competed to obtain resources from the government, in order to increase their reputation and strengthen their links to elites in their districts. In the next paragraphs, we suggest some hypotheses as to how those two sets of factors might have affected the distribution of public expenditure during the regime and how their relative influence might have evolved with social and political change.

The Influence of MPs' Individual Characteristics and Incentives

Individual MPs' strategies seem to have been essential in the operation of the Restoration system. In political economy terms, there was therefore a large margin for the so-called "nonpartisan" political

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[32] González Hernández, "Manchas," pp. 181–87; Suárez Cortina, "Transformismo," p. 243; and Cabrera and del Rey, *Poder*, p. 105.

factors to influence the geographical allocation of public resources.[33] Our hypothesis in this regard is that a province would receive more funds if, on average, their MPs had greater incentives to seek administrative resources for their districts and/or higher capacity of influence on the central administration.

Incentives would depend positively on the degree of uncertainty of future electoral results. For instance, an established MP who "owned" a district (i.e., a *propio* MP) would have less need to build his reputation and would seek fewer resources for his constituency, whereas another candidate without a strong electoral basis would put more effort in building his reputation.[34] As for each MP's influence in Madrid, it would be enhanced by seniority or a leadership position within his party, and also by being a member of the party in office, since this would grant him better access to government officials through the formal and informal networks established among party members.

The Influence of the Regime's Priorities: The Early Decades

The Restoration regime found stability through the two parties' peaceful alternation in power. The system required limiting the opposition parties' parliamentary presence. Our hypothesis is that, during the early decades of the Restoration regime, if a province had a high number of districts that did not follow the turn system (i.e., that elected a higher share of MPs belonging either to the minority parties or to the dynastic party that was out of office), it would be punished, and such penalty would include fewer road funds. In other words, the dynastic parties' duopoly would use public spending to provide incentives for local elites to implement the turn system.[35] Actually, since the most serious challenges to the regime came from outside the duopoly, the government would be much tougher on the provinces that elected a higher share of third party MPs, than on those electing candidates from the dynastic opposition.[36]

The Influence of the Regime's Priorities: The Crisis of the Restoration

After 1890 the regime faced increasing challenges and these hindered the long-term continuity of the turn system. Our hypothesis is that those challenges also affected the global strategy of the regime and the use of

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[33] Levitt and Snyder, "Political Parties"; Levitt and Poterba, "Congressional Distributive Politics"; and Milligan and Smart, "Regional Grants."

[34] See, e.g., Dardé et al., "Conclusiones," p. 608.

[35] Diaz-Cayeros, Magaloni, and Weingast, "Tragic Brilliance"; and Hsieh et al., "Price."

[36] Moreno Luzón, "Pleito," p. 61; and Dardé, *Aceptación*, p. 253.

the spatial allocation of resources as a political tool. More specifically, in this latter period, the regime tried to keep discontent under control by making certain compromises with at least some sectors of the opposition or, in other words, by exchanging resources for political stability and constitutional loyalty.[37] One available instrument was to give a preferential treatment to "politically sensitive" territories, i.e., those electing candidates who refused the turn system and, especially, those choosing MPs from the minority parties. Therefore, in stark opposition to what we expect in the beginning of the regime, during the latter stage of the Restoration, if a province had a high number of districts that elected their MPs without respecting the peaceful turn and, especially, a large share of districts electing candidates from the minority parties, it would be privileged in the distribution of resources.

EMPIRICAL FRAMEWORK

Investigating these hypotheses is perforce limited by the availability of data. On the one hand, because road expenditure data are only reported by provinces, but not by electoral districts, we had to aggregate electoral outcomes data by province, and carry out the analysis at the provincial level. This unavoidable spatial aggregation has forced us to smooth local variation and introduces a measurement error problem in the analysis, for which no straightforward solution is available. There are, however, some reasons that may have reduced the incidence of this problem. Indeed, as Carlos Dardé et al. note, a significant number of provinces showed certain political unity during the period under study.[38] More importantly, local elites would not only be interested in an increase in their district's road mileage, but also in having a good connection with the main markets (such as the provincial capital), which would involve the completion of some provincial roads which ran partially out of their own district territory. Therefore, broadly speaking, the local elites of all districts in each province would actually be interested in the development of the whole provincial road network.

On the other hand, since road investment in the Basque Country and Navarre was mostly financed and executed by the provincial administrations (*Diputaciones*), we have excluded these four provinces (Álava, Biscay, Guipúzcoa, and Navarre) from the analysis. Hence, our

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[37] Ellman and Wantchekon, "Electoral Competition"; and Robinson and Torvik, "Real Swing Voter's Curse."

[38] Dardé et al., "Conclusiones," p. 563, highlights the provincial scope of some local powers at the time, and indicates that many provinces were controlled by a single *cacique* or clientelistic network.

final sample consists of a set of 45 provinces with an average of 309 districts and 372 elected deputies per election.

We have restricted our analysis to road expenditures undertaken by the central government between 1880 and 1914. We start in 1880, the year that followed the 1879 election, which is considered the beginning of the *turno pacífico* system. The 1914 adoption of the Ugarte Plan, which reduced the government's discretion over road construction spending, makes that year a good ending point. We assume that a given year's investment was influenced by the results of the nearest previous election. In the case of election years, we consider that the expenditure made by the government during the year was not influenced by that year's election outcomes. This is reasonable given that once approved, infrastructure spending was delayed by a somewhat involved implementation process. In other words, politicians needed some time before their influence on investment showed up at the local level. As a result, we include the following elections: 1879, 1881, 1884, 1886, 1891, 1893, 1896, 1898, 1899, 1901, 1903, 1905, 1907, and 1910.

Our dependent variable is annual expenditures on new road construction in constant pesetas per capita.[39] Information on public road investment has been extracted from the *Memorias, Anuarios and Estadísticas de Obras Públicas*, which were published regularly by the Spanish Ministry of Public Works (*Ministerio de Fomento)* between 1856 and 1924.[40]

The independent variables are all measured annually and at the provincial level. To capture the economic demand for roads, we estimate the impact of population density and the level of GDP per capita.[41] The time gaps in these variables have been filled through interpolation. We expect provinces with lower population density to get larger construction investment per capita (since a higher level of spending would be necessary in those provinces to connect a given amount of

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[39] Investment figures have been expressed in real terms by using the price index for "other construction" investment by Prados de la Escosura, *Progreso*.

[40] Although, ideally, we should have focused on public expenditure dedicated to second and third category roads, which were those more directly linked to territorial interests, the data on road investment are not disaggregated by category for some years of the period under study. However, since second and third category roads accounted for 93 percent of the new road mileage constructed during the period, we consider that the aggregate investment on all categories of state roads can be used as a good approximation to our variable of interest.

[41] These time-varying variables are considered in Herranz-Loncán, "Spatial Distribution," as determinants of provincial road endowments in Spain between 1860 and 1930. Other economic factors that appear to be relevant in that research are construction costs or the maritime or border character of a province. However, since those variables are time-invariant cannot be used to estimate the model through fixed effects.

population to the network). The opposite (positive) effect should hold in the case of richer (in terms of per capita GDP) provinces.

We then add electoral data. In this regard, the main source of information is the appendix to the book *El poder de la influencia,* edited by José Varela Ortega, which contains the name of a large share of the deputies that were elected in each district from 1876 until 1923, as well as their party of affiliation. This database, however, has numerous gaps, which have been filled by drawing on Modesto Sánchez de los Santos' volumes on the chambers elected in 1907 and 1910,[42] the yearly publication *El año político* (1895–1910), some of the newspapers published in the days after each election (*El Imparcial*, *El Liberal*, *La Correspondencia de España*, *La Época*, and *ABC*) and the Historical Archive of Deputies (1810–1977) of the Spanish Congress.[43]

This new data set allows us to calculate the *Relative seniority* of each MP, which measures the difference between the maximum seniority in the chamber after each election and the seniority of each deputy.[44] We then average that variable over the deputies in each province. The lower this indicator (the lower this difference), the more senior these deputies were, and the more able they would be to attract resources to their constituencies. Second, we measure the share of deputies in province i and term t who had been ministers in previous terms, as a proxy for their long-term political influence. Those MPs with a greater leadership position should garner more public funds for their provinces. Third, to capture the presence of *propios* MPs in province i and term t, we measure the share of deputies who: i) had been elected in the past in the same district; and ii) had sat with the opposition for at least one term of office (i.e., had not adapted to the turn system).

Finally, we divide the elected MPs into three types: government MPs, dynastic opposition MPs (Liberal MPs under a Conservative government and Conservative MPs under a Liberal government), and minority MPs (those not running as either Liberals or Conservatives). We then calculate the share of deputies belonging to the dynastic opposition and the share that belonged to the minority parties in

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[42] Sánchez de los Santos, *Las Cortes españolas: 1907* and *Las Cortes españolas: 1910*.

[43] See the website of the Spanish Congress:
http://www.congreso.es/portal/page/portal/Congreso/Congreso/SDocum/ArchCon/SDHistoDipu.

[44] By seniority we mean the number of elections, from 1876 until election t, in which the deputy X had been elected. Given that legislatures in Restoration times differed considerably in length, we have also computed the seniority by using the number of years in office instead of the number of elections. The results hold similar, but are not presented for the sake of brevity.

Variable	Description	Mean (S.D)
Road investment p.c.	Pesetas of road investment$_{it}$ / Population$_{it}$	1.16 (1.07)
Minority seats (%)	Minority parties' seats$_{it}$ / Total seats$_{it}$	0.07 (0.14)
Opposition seats (%)	Dynastic opposition party's seats$_{it}$ / Total seats$_{it}$	0.24 (0.18)
Propios (%)	No. of established deputies$_{it}$/ Total no. of deputies$_{it}$	0.28 (0.20)
Deputies who were ministers in the past (%)	Deputies$_{it}$ who were ministers in previous electoral terms/ Total no. of deputies$_{it}$	0.07 (0.25)
Relative seniority	$\frac{1}{N}\sum_{n=1}\left(\tau_t^{Max} - \tau_{n,i,t}\right)$ τ_t^{Max} : max. number of times that a deputy had been elected up to election year *t* $\tau_{n,i,t}$: no. of times that deputy *n* in province *i* at election year *t* has been previously elected. *N*: total number of deputies in province *i* in electoral year *t*	5.78 (3.61)
Population density	Population$_{it}$ / Km^2	42.16 (26.27)
GDP pc	(GDP$_{it}$ /1000) / Population$_{it}$	0.46 (0.17)

Note: Subindex *it* refers to province *i* and year *t*.
Sources: For *Road investment p.c.*, Ministerio de Fomento, *Memorias, Anuarios and Estadísticas de Obras Públicas* (1880–1914). For *Minority seats* (%), *Opposition seats* (%), *Propios* (%), *Deputies who were ministers in the past* (%), and *Relative seniority*, Varela Ortega, *Poder*, Sánchez de los Santos, *Las Cortes españolas: 1907* and *Las Cortes españolas: 1910*, *El año político* (1895–1910), *El Imparcial* (1876), *El Liberal* (1881–1910), *La Correspondencia de España* (1879–1905), *La Época* (1879–1905), *ABC* (1905), and Historical Archive of Deputies (Spanish Congress). For *Population density*, Population censuses, and for *GDP pc*, data provided by Julio Martínez-Galarraga.

each province.[45] Table 1 presents a summary description of the variables and their descriptive statistics and data sources.

Taken together, these data form a panel comprising 35 years (distributed among 14 elections) and 45 provinces. Since we can observe

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[45] Therefore, we take the share of government MPs as the reference category.

the behavior of units (provinces) at different points in time, we can capture variation between units as well as over time by using a linear panel data model with both time and province fixed effects as follows

$$i_{it} = \beta Political_{it} + \lambda X_{it} + \alpha_i + \alpha_t + u_{it} \tag{1}$$

where i_{it} is investment per capita on roads; $Political_{it}$ includes the political variables linked to our hypotheses; X_{it} accounts for economic variables that change over time; α_t represents year-specific effects capturing the impact of certain factors (such as economic crises, national policies, etc.) that occurred in a given year and affected all provinces; α_i represents province effects, accounting for factors that are specific to a given area but constant in time (e.g., construction costs, maritime and border provinces, etc.); and u_{it} is an error term.

Regarding the estimation method, since the results presented treat the province effects as fixed, this means that we identify the effects of political variables from within-province variation over time. Finally, according to several tests performed, the disturbances in our panel are both heteroscedastic and autocorrelated, which makes clustering at the province level necessary. Also, the fact that the value of the political variables is the same for the years between two consecutive elections indicate that clustering at the election level is also necessary. So, we cluster standard errors both by province and by election.

THE POLITICS OF ROAD SPENDING

Table 2 presents the outcomes of a set of regressions based on equation 1. Column 1 presents the fixed-effects estimates obtained from the baseline model (economic variables only) and columns 2 to 5 present the results when we include political variables. In all the regressions, the coefficients of the economic variables are statistically significant and have the expected sign: public investment per capita on road construction was lower in densely populated provinces and higher in provinces with larger GDP per capita.

To evaluate the impact of political factors, let us focus on column 5, which is based on the full model—the other specifications have much the same results. We find no evidence that either the share of minority MPs or the share of the dynastic opposition MPs had a statistically

TABLE 2
DETERMINANTS OF THE REGIONAL ALLOCATION OF ROAD INVESTMENT
DURING THE SPANISH RESTORATION

	(1)	(2)	(3)	(4)	(5)
	Political Variables				
Minority seats (%)		0.50*			0.40
		(1.690)			(1.355)
Dyn. opposition seats (%)		–0.01			–0.14
		(–0.058)			(–0.778)
Propios (%)			0.52**		0.60**
			(2.367)		(2.530)
Deputies who were ministers in the past (%)				1.27**	1.32**
				(2.132)	(2.165)
Relative seniority				0.04	0.06
				(0.969)	(1.383)
	Economic Variables				
Population density	–0.02**	–0.02**	–0.01*	–0.02*	–0.02*
	(–1.996)	(–2.224)	(–1.772)	(–1.876)	(–1.907)
GDP pc	3.42***	3.01***	3.57***	3.40***	3.20***
	(5.021)	(4.659)	(5.049)	(5.108)	(4.838)
Constant	0.22	0.55	0.06	0.15	0.28
	(0.458)	(1.033)	(0.124)	(0.307)	(0.510)
F-test time effects	5.29	5.13	5.18	5.14	5.09
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R-squared	0.143	0.146	0.149	0.151	0.162
No. of observations	1,575	1,575	1,575	1,575	1,575

* = Significant at the 10 percent level.
** = Significant at the 5 percent level.
*** = Significant at the 1 percent level.
Notes: (1) The figures in parentheses are *t*-statistics; (2) dependent variable: road investment per capita; and (3) all columns include provincial and time fixed effects.

significant effect on the amount of road investment received by a province. By contrast, the proportion of *propios* had a significant and positive impact on road investment. It thus seems that *propios* did not have lower incentives to lobby for their provinces, and instead it appears that they were particularly good at attracting resources for their provinces. More precisely, a standard deviation rise in the share of *propios* among a province's deputies would produce a 0.17 pesetas increase in per capita investment on roads (i.e., 16 percent of the standard deviation of the dependent variable). Similarly, the higher

the provincial share of deputies that had been ministers in the past, the greater the road funds that province received.[46] More concretely, a standard deviation rise in this variable would translate into a 0.33 pesetas increase in road investment per capita (i.e., 31 percent of the standard deviation of the dependent variable).

By contrast, the coefficient of the relative seniority of each province's MPs is not statistically different than zero, a result that, at first sight, seems surprising. There are, however, two possible complementary explanations for that. First, in line with suggestions made by Kevin Milligan and Michael Smart, once the seniority of a politician exceeds a certain threshold, his expectations of running for reelection might fall and, as such, he might relax his efforts in attempting to obtain spending for his district.[47] Second, the provincial share of *propios* MPs increased a province's allocation of road investment. By definition, these deputies were senior, so it seems that seniority was only relevant when the MP was politically independent and did not respect the turn.

As was suggested in Section 3, the governments' attitude towards the provinces that did not respect the turn may have changed with the gradual erosion of support for the Restoration. This may explain the lack of significance of the variables that measure the share of minority or dynastic opposition MPs when we test their impact over the whole period. In order to account for the presence of structural change in the relationship between the political variables and road spending, we have run two additional sets of regressions. In the first one, whose results are reported in Table 3, we consider that the changes in the governments' attitude towards the "rebellious" provinces were mainly associated to the exogenous shocks that took place in the 1890s (such as universal male suffrage or the colonial defeat). Therefore, we define a time dummy variable for the second part of the period under analysis (1892–1914), which is interacted with both the share of minority

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[46] We have run the same regressions with two alternative variables to measure the effect of potentially influential politicians: a dummy variable set to 1 if the minister of Public Works was a deputy elected for that province and the share of deputies in each province which were ministers at time *t*. None of these variables turned out to be statistically significant.

[47] See Milligan and Smart, "Regional Grants." In an attempt to contrast this hypothesis, we have constructed an alternative variable: the share of deputies, in each province, who had been deputies in this legislature and in *all* the previous terms. This means that they were the most senior representatives in the Parliament after each election. In this case, the effect of seniority is negative although not statistically significant (the results are not reported for the sake of simplicity).

TABLE 3
DETERMINANTS OF THE REGIONAL ALLOCATION OF ROAD INVESTMENT
DURING THE SPANISH RESTORATION. INTERACTION OF A DUMMY FOR THE
SECOND SUBPERIOD (1892–1914) WITH THE POLITICAL FACTORS

	(1)	(2)	(3)	(4)	(5)
			Political Variables		
Minority seats (%)		−1.20*			−1.22*
		(−1.874)			(−1.896)
Minority seats (%) × second period		2.09***			2.00***
		(3.019)			(2.880)
Dyn. opposition seats (%)		−0.77*			−1.00**
		(−1.917)			(−2.383)
Dyn. opposition seats (%)× second period		1.01**			1.13***
		(2.318)			(2.621)
Propios			0.52**		0.59**
			(2.367)		(2.573)
Deputies who were ministers in the past (%)				1.27**	1.41**
				(2.132)	(2.371)
Relative seniority				0.04	0.06
				(0.969)	(1.536)
			Economic Variables		
Population density	−0.02**	−0.02**	−0.01*	−0.02*	−0.02**
	(−1.996)	(−2.447)	(−1.772)	(−1.876)	(−2.102)
GDP pc	3.42***	2.65***	3.57***	3.40***	2.86***
	(5.021)	(4.302)	(5.049)	(5.108)	(4.527)
Constant	0.22	0.97*	0.06	0.15	0.69
	(0.458)	(1.893)	(0.124)	(0.307)	(1.303)
F-test time effects	5.29	4.99	5.18	5.14	5.08
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R-squared	0.143	0.162	0.149	0.151	0.178
No. of observations	1,575	1,575	1,575	1,575	1,575

* = Significant at the 10 percent level.
** = Significant at the 5 percent level.
*** = Significant at the 1 percent level.
Notes: (1) The figures in parentheses are *t*-statistics; (2) Dependent variable: road investment per capita; and (3) all columns include provincial and time fixed effects.

and dynastic opposition deputies.[48] This approach allows us to test for level differences between elections before and after 1890.

As an alternative, we ran a second set of regressions, whose results are presented in Table 4, and where we assume instead that the governments' change of attitude was gradual, being mainly the result of the country's socioeconomic evolution and the slow weakening of the political system. We evaluate this alternative hypothesis by interacting the political variables with a linear time trend as follows

$$i_{it} = \beta_t (\% \ Minority, \% \ Dynastic \ opposition)_{it} \qquad (2)$$
$$+ \eta (Propios, Leadership, Seniority)_{it}$$
$$+ \lambda X_{it} + \alpha_i + \alpha_t + u_{it}$$
$$\beta_t = \beta_0 + \beta_1 \times trend$$

In both tables, column 5, which shows the coefficients of the full model, confirms the hypothesis that the governments' attitude towards the provinces that did not respect the turn changed over time. In Table 3, higher shares of minority and dynastic opposition MPs reduced government expenditure on road construction during the early years of the period under study, but that effect was reversed after 1890. In addition, during the second subperiod, the positive impact of having a higher share of nongovernmental MPs was much smaller in the case of dynastic opposition deputies, something that is consistent with the fact that they represented less of a threat to the regime. More precisely, the coefficients in column 5 indicate that, during the first period, raising a province's share of minority MPs by one standard deviation would provoke a decrease of 0.17 pesetas in road construction per capita in that province (i.e., 16 percent of the standard deviation of the dependent variable). In contrast, during the second period, the same standard deviation increase would have translated into an uptick of 0.11 pesetas per capita (i.e., 10 percent of the standard deviation of the dependent variable). As for the dynastic opposition MPs, they produce similar effects to minority deputies in the first period and just a 2 percent increase during the second one.

The results reported in Table 4 are also consistent with the hypothesis that the regime changed its attitude towards the "rebellious" districts. In this case, using again the coefficients presented in column 5 we can

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[48] Comín, *Hacienda*, p. 495, suggests 1898 as the main turning point in the Restoration period. Actually, the main results of the analysis are not altered significantly if we take 1896 or 1898 instead of 1891 (again, these results are not reported for the sake of simplicity).

TABLE 4
DETERMINANTS OF THE REGIONAL ALLOCATION OF ROAD INVESTMENT
DURING THE SPANISH RESTORATION: INTERACTION OF A LINEAR TREND WITH
THE POLITICAL FACTORS

	(1)	(2)	(3)	(4)	(5)
	Political Variables				
Minority seats (%)		−1.74**			−1.74**
		(−2.557)			(−2.525)
Minority seats (%) × *trend*		0.09***			0.09***
		(3.661)			(3.513)
Dyn. opposition seats (%)		−0.71			−0.92**
		(−1.562)			(−1.976)
Dyn. opposition seats (%) × *trend*		0.04*			0.04*
		(1.681)			(1.878)
Propios			0.52**		0.56**
			(2.367)		(2.432)
Deputies who were ministers in the past (%)				1.27**	1.35**
				(2.132)	(2.266)
Relative seniority				0.04	0.05
				(0.969)	(1.256)
	Economic Variables				
Population density	−0.02**	−0.03***	−0.01*	−0.02*	−0.02**
	(−1.996)	(−2.599)	(−1.772)	(−1.876)	(−2.270)
GDP pc	3.42***	2.37***	3.57***	3.40***	2.58***
	(5.021)	(3.966)	(5.049)	(5.108)	(4.191)
Constant	0.22	1.17**	0.06	0.15	0.90*
	(0.458)	(2.271)	(0.124)	(0.307)	(1.698)
F-test time effects	5.29	4.98	5.18	5.14	4.72
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R-squared	0.143	0.162	0.149	0.151	0.178
No. of observations	1,575	1,575	1,575	1,575	1,575

* = Significant at the 10 percent level.
** = Significant at the 5 percent level.
*** = Significant at the 1 percent level.
Notes: (1) The figures in parentheses are *t*-statistics; (2) Dependent variable: road investment per capita; and (3) all columns include provincial and time fixed effects.

see that in an initial year ($t = 1$) a single standard deviation rise in the variable *Minority seats* (%) led to a 0.23 pesetas decrease in per capita road investment. However, this effect changed over time and, by 1914 (i.e., at $t = 35$) the effect of an increase of one standard deviation

in this variable was a rise of 0.20 pesetas per capita in road investment. Finally, in both tables, the effects of the other political variables capita road investment. However, this effect changed over time and, by 1914 (i.e., at $t = 35$) the effect of an increase of one standard deviation in this variable was a rise of 0.20 pesetas per capita in road investment. Finally, in both tables, the effects of the other political variables (*Propios*, *Deputies who were ministers in the past,* and *Relative seniority*) remain unchanged from those reported in Table 2.[49]

To sum up, although these two specifications involve different assumptions on the evolution of the relationship between road spending and the political variables, both are consistent with our main hypothesis about the evolution of the regime.[50] In both cases, the results of the estimation indicate that, in the early stages of the Restoration, political stability required the government to distribute relatively less road investment to those provinces where deputies were elected without regard to the turn. By contrast, as time went by and the crisis of the regime became apparent, such punishments did not work and the government tended to change its criteria for the allocation of road funds. As a result, over time, those provinces where the turn system was less respected and, even more so, those electing candidates from the minority parties, tended to receive more resources, probably in an attempt to limit discontent and to appease those social sectors demanding profound reforms.

CONCLUSIONS

This article has examined the distribution of state funding for road infrastructure during the Spanish Restoration. The case of Spain is particularly interesting because it was a semi-democratic system quite different from those of contemporary developed economies, which are the most frequent object of this kind of political economy analysis. It is also interesting because the hegemonic force was not a party but a duopoly, which established a system of alternation in power.

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[49] We have also tested the significance of the interaction of all other (political and economic) variables with a dummy for the second period. However, those interactions were not significant, which indicates that the impact of those factors was not affected by structural change.

[50] Despite the fact that the two sets of regressions are based on different assumptions on the relationship between spending and electoral variables, we have decided to present both sets of results, due to the uncertainty on the real shape of the relationship. The true dynamics was probably a combination of both processes, with some sudden shocks during the 1890s, which we cannot date with precision, as well as a gradual evolution throughout the whole period under study, with some potential changes in slope which we cannot either date with precision. Therefore, both models provide two partial and imperfect approaches to that process of change.

Our panel data set for Spanish provinces between 1880 and 1914 confirms that political factors played an important role in the regional distribution of road construction expenditures. The analysis shows that the allocation of public funds was affected by two different sets of political determinants: the delegation characteristics (such as the share of MPs with party leadership positions, and electoral independence), and the regime's global strategy and aims. In particular, during the early stages of the Restoration regime, those provinces with a higher share of districts that did not follow the two-party alternation system and, specially, those electing candidates from third parties, received fewer road funds. We suggest that this reflects the regime effort to control elections. Road subsidies were part of a set of incentives that encouraged the provinces to comply with the system. Over time, however, such punishment strategy disappeared and, since the last few years of the nineteenth century, the provinces that elected more candidates from the minority parties actually became privileged in the distribution of resources. Because the change in policy coincided with the weakening of the Restoration regime, we interpret it as an exchange of resources for political stability in "politically sensitive" provinces.

These results confirm the importance of pork-barrel politics in the allocation of road resources in Restoration Spain, despite the hardly democratic character of the regime. The influence of territorial interests on the geographical distribution of road expenditures was significant and sizeable. Indeed it helps to explain the inefficiency that characterized the construction of the Spanish road network, something of which contemporary opinion was perfectly aware. The waste of resources associated to this process necessarily had to constitute a burden on Spanish economic growth, and to contribute to the relative failure of investment in large transport infrastructure throughout the period under study.

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