

24 - 26 | November 2021 | Madrid
XLVI Reunión de Estudios Regionales

International Conference on Regional Science

Full cities, empty territories

Universidad Autónoma de Madrid



PAPER

Title: Was the allocation of public investment ideologically motivated? Evidence from the Francoist dictatorship in Spain (1939-1975)

Adolfo Cristóbal Campoamor
Universidad de Alcalá de Henares
Plaza Victoria, s/n,
28802 Alcalá de Henares, Madrid (Spain)
adolfo.cristobal@uah.es

Riccardo Ciacchi
Universidad Pontificia Comillas
Alberto Aguilera, 23
28015 Madrid (Spain)
rciacchi@icade.comillas.edu

Elena Martínez Ruiz
Universidad de Alcalá de Henares
Plaza Victoria, s/n,
28802 Alcalá de Henares, Madrid (Spain)
elena.martinez@uah.es

Ernesto Rodríguez-Crespo
Department of Economic Structure and Development Economics
Universidad Autónoma de Madrid
Francisco Tomás y Valiente, 5
28049 Madrid, Spain
ernesto.rodriguez@uam.es

Subject area: *(please, indicate the subject area which corresponds to the paper)*

15. Política y gobernanza regional y urbana

Keywords: Francoist Dictatorship, Spain, infrastructure, economic growth

JEL Codes: N34, O47, R12

24 - 26 | November 2021 | Madrid
XLVI Reunión de Estudios Regionales

International Conference on Regional Science

Full cities, empty territories

Universidad Autónoma de Madrid



1. Introduction

Despite the long time passed, the performance of the Spanish economy during the Francoist dictatorship has been subject to limited quantitative analysis by academics. Its macroeconomic features and evolutions have been carefully analyzed (see e.g., Calvo-González (2007), Prados de la Escosura et al. (2012), Espuelas (2012) or Cárdenas and Fernández (2020)). However, the quantitative literature has rarely descended into the micro-reality of economic agents within the country. Paucity of data may be a possible explanation, though previous historical episodes in Spain have received similar or even preferential attention (see e.g., the comments by Biescas (1989)). In fact, the words of Prados de la Escosura and Sánchez-Alonso (2019: 20) can be considered as conclusive in this sense, as “economic historians [...] left aside the 20th century, which has been more the field of economists [...]. The absence of debate about the long-run Spanish economic performance during the 20th century is striking”.

Our focus here will be the determinants of the territorial allocation of public investment during the Francoist dictatorship in Spain, which to the best of our knowledge remains largely unexplored by the academic literature. The literature on criteria for the allocation of public investment is centered on within (Cadot et al., 2006; Voigtländer and Voth, 2021) and between country comparative studies (Kemmerling and Stephan, 2010; Haque and Kneller, 2015). For the case of Spain, the evidence has indeed explored territorial patterns though only for infrastructure, and focused on the Restauración period (1876-1923) (Herranz-Loncán, 2007; Curto-Grau et al., 2012) or the current democratic regime (De la Fuente and Vives, 1995; Castells and Solé-Ollé, 2005; Albalade et al., 2012). We acknowledge that this strand of literature has left aside the Francoist dictatorship in Spain (1939-1975) and neglected the importance of this period of the Spanish history and other types of public investment.

We find a general academic consensus as to the meager achievements of the Francoist policy regarding the territorial (industrial) cohesion of the country. However, a certain debate has emerged about the rationality and motivations of the industrial policy in Spain, which was implemented by means of the public enterprise (mostly organized around the massive holding INI) and the Development Plans promoted by the Francoist regime. Here we aim to extend this discussion to some different policy instruments: the



public investment in infrastructure, education and health, which were also quantitatively important and especially relevant to achieve substantial economic growth.

In this respect, our research aims to shed light on the impact of this period's economic policy on the territorial allocation of public goods. Bel (2012) asserts that the provision of network infrastructure was associated to a centralization motive, which also favored the accessibility of Madrid, the capital of Spain, and this process has been persistent since the 18th century. Among other purposes, we aim to test empirically the validity of such hypothesis for the Francoist period, trying to assess the uniformity of the modern economic history of Spain about this issue. We use a territorial database for 50 Spanish provinces during the period 1940-1975 collected from different data sources. This fact is particularly important, since it allows us to avoid neglecting the importance of space in the analysis.

Furthermore, given a (hypothetically) differentiated political alignment of the Spanish provinces during the dictatorship, we will test the existence of a potential ideological motive behind the geographical allocation of public investment. The issue of the possible asymmetric attention paid by the Francoist economic policy to different Spanish regions has been controversial, giving rise to all sorts of explanations. For instance, Clavera et al. (1973), González Portilla and Garmendia (1988), Molinero and Ysàs (1998) or Harrison (2009) collect testimonies from this historical period, that point to a discriminatory treatment by the Francoist authorities to diverse areas of the country, especially Catalonia and the Basque Country. Certainly, Sudrià (1991) and Harrison (2009) claim that the weaker relative performance of Catalonia during early Francoism was not mainly due to an overt policy discrimination, but to the especial sensitivity of the Catalan economy to the autarkic restrictions in the 1940s, but the debate has never been really closed. We aim to offer a methodological attempt to analyze these issues quantitatively and shed light on a better understanding of the Spanish economic history. Our results are summarized as follows. Based on a theoretical setting, our empirical results find that the marginal effects of the oppositional identity are not significant at the provincial level. This suggests that ideological considerations did not play a determinant role in the regional allocation of public investment. However, we obtain a remarkable interaction effect between the local GDPs per capita and the presumable oppositional

intensity. That is, the government allocated more public resources to rich provinces where political turmoil may be threatening the political stability of the dictatorship. Such an attitude of the Francoist government is confirmed by an additional robustness analysis: increasing levels of conflict in labor relations, and not ideology per se, is associated with rises in the share of public investment provided to the conflictual areas. In this sense, our analysis fully endorses the following statement: "Non-democratic governments tried to buy political stability by increasing social spending, but only when they faced social pressure from below and felt politically threatened" (Espuelas, 2012: 221).

This paper is organized as follows: the next section introduces the corresponding conceptual framework and state-of-the-art. Section 3 presents the empirical analysis, while section 4 contains an evaluation of the main results. Finally, section 5 concludes.

2. Conceptual framework and literature review

2.1. *The Francoist dictatorship in Spain and its implications in terms of public policy*

It exceeds our breadth and purpose to offer a detailed synthesis about this politically controversial period in the Spanish history¹. Instead, we will try to discuss the main features of the decision-making process in terms of public policy, which had a direct impact on the territorial allocation of infrastructure, healthcare, and education.

As emphasized, among many others, by Clavera et al. (1973), Prados de la Escosura and Sanz (1996) or Carreras and Tafunell (2021), the workings of the Francoist economic policy were far from homogeneous over time. Gámir (2000) divided them into three stages: the interventionist autarkic era, the stabilization and liberalization period (culminated by 1959), and the subsequent process of economic growth (see e.g., Martínez-Ruiz and Pons (2020))². Gunther (1996) perceives a common thread along the

¹ For a more detailed and comprehensive analysis of the Francoist dictatorship in Spain, the reader is encouraged to consult Preston (1976), Fusi Aizpurúa (2001), Townson (2007) or chapter 25 in Tamames and Rueda (2008).

² Recent economic research is questioning that sharp discontinuity around 1960 within Francoism. As emphasized by Prados de la Escosura and Sánchez-Alonso (2019: 20), "a convincing explanation of why the historical determinants of Spain's economic backwardness weakened [...] from the 1960s onward is still lacking".

whole life of the dictatorship, concerning the political determination of public policy outputs. These characteristics could be synthesized as follows:

- a) The allocation of public expenditure and investment was based on an interdepartmental decision making very concentrated in a few hands: basically, the minister of finance and (from the late 1950s) the president of the Planning Commission. This personalistic feature was almost invulnerable to pressures from the rest of the cabinet. In contrast, the intradepartmental allocation was subject to multiple pressures from privileged “cronies”, with clear economic interests in the private sector (see e.g., Comín (2018)).
- b) Franco and his inner circle were generally uninterested in economic policy issues (see e.g., González (1979)). They would only intervene in these matters if the maintenance of the dictatorship and the public order were under threat. For instance, the 1973 tax reform proposal would be finally blockaded because it could have undermined the support to the dictatorship by certain social strata.³ However, Franco’s inner circle was careful enough to choose government officials from certain elite groups in order to preserve their conservative economic and cultural values.
- c) This lack of a (bottom-up) structural mechanism to aggregate social preferences on public goods resulted in an overrepresentation of the interests of the banking system, certain industrial corporations, the church, the army or the bureaucratic *cuadros*⁴. And the consequent infra-representation of some of the most vulnerable segments of society.
- d) One of the few reasons for the intervention of the highest political authorities in this decision-making process were revolt and sociopolitical turmoil. In these cases, the government usually tried either to exert repression or sometimes appease the opposition through targeted investment in specific sectors.⁵

³ According to Tamames (1973), certain middle-class sections thought that “the civil war had not been won” to bear the burden of those taxes.

⁴ For a detailed description on the importance of bureaucratic “cuadros”, a useful reference is Weber (1991).

⁵ Labor unrest in 1956, for instance, led to an increase in spending through the Ministry of Labor from 380 million pesetas in 1955 to 2668 million the following year. But the ministry’s allocation fell to 712 million pesetas in 1957, and to 276 million in 1958” (Gunther, 1996: 24).



The governmental quest for a strong industrial base (see e.g., Donges (1976), González (1979) or Braña et al. (1984)) was carried out at the expense of more balanced industrialization alternatives in terms of regional cohesion. This persistent strategy of accelerated industrialization gave rise by the mid-1950s to an important increase in public investment, financed with public debt. The consequent inflation precipitated some popular protests in the most important industrial nodes of the country: Asturias, Catalonia, the Basque Country, and Madrid (Maravall, 1970).

During the first stage within the life of the dictatorship, public investment was mainly devoted to building heavy infrastructure: water reservoirs, roads, etc. Over time, the attention shifted slowly towards the creation of a welfare state of very small proportions, through education and healthcare expenditures (Martínez Serrano et al., 1982). Under the auspices of the World Bank and taking France as the main example, the Spanish government introduced then a sequence of three Development Plans, in which indicative planning tried to coup with substantial regional and social imbalances. Although this strategy succeeded in consolidating specific industries like the automotive sector (De la Torre and García Zúñiga, 2013), it was generally criticized for the distortion of producers' incentives or the tolerance with institutional corruption (see e.g., Comín and Vallejo (2009)).

Certainly, the size of the state in Spain was significantly smaller than in other Western European countries (Comín, 1996). The reasons for this gap may be associated to an outdated tax system and the final policy of balanced state budgets. "[By 1975] the 19.5% of Gross Domestic Product that flowed to all levels of government in Spain [via taxes] was substantially below the OECD average of 32.7%" (Gunther, 1996: 6). These factors resulted in an underdeveloped provision of basic services (see e.g., Espuelas (2012)), despite the remarkable growth rates experienced from the early 1960s.

2.2. The socio-economic relevance of conflict in labor relations (1940-1975)

Although the different historical divisions were nuanced and numerous, much has been argued about the influence of economic factors on the fate of the Spanish Republic. The Republican government put in place structural reforms aimed at favoring a more equitable distribution of income and wealth, which led to growing social polarization.

24 - 26 | November 2021 | Madrid
XLVI Reunión de Estudios Regionales

International Conference on Regional Science

Full cities, empty territories

Universidad Autónoma de Madrid



The resistance of the traditional elites, fearful that such reforms would imply the expropriation of their sources of wealth, resulted in a unsuccessful military coup that turned into a civil war. Franco's victory meant the end of attempts to promote a more just society. The new state proclaimed that there would be no longer room for the class struggle. The new order would be of “harmonious” coexistence within a state conceived as a “gigantic union of producers”. Consequently, all the labor market institutions linked to the bilateral relations between workers and employers were abolished. The membership of horizontal, class-related trade unions was banned, and the exercise of any associated rights for workers was declared sedition, in the midst of a terrifying repression (see e.g., Molinero and Ysàs (1998) or Ysàs (2008)).

The new centralized, official trade union (Organización Sindical Española (*OSE*)) was vertically organized by productive sector; keeping the representatives of workers and employers subjected to a strict discipline, emanated from the Ministry of Labor. In practice, only the employers enjoyed from a substantial representation, since the workers' representatives were originally delegated by the single, official political party of the regime. However, although the working class was initially terrorized, the apathetic resistance progressively turned into an ambitious mobilization, geographically concentrated mostly in five key provinces (Asturias, Barcelona, Madrid, Guipúzcoa and Vizcaya). Only these five enclaves gathered, in 1973, 41.17% of the Spanish industrial labor force and 72.26% of the number of registered conflicts.

Among the key liberalizing economic reforms of the late 1950s, the Francoist dictatorship enacted some new legislation on labor relations that allowed for autonomous negotiations between workers and employers, partially out of the state's sphere of influence. These measures were finally oriented toward a certain rationalization of the market economy. Nevertheless, the evolving labor relations gradually allowed some members of the political opposition to infiltrate into the official trade union (see e.g., González Portilla and Garmendia (1988), Babiano (1995) or Lardín (2005)). Meanwhile, new protests emerged in the most affluent industrial areas of the country, as if economic development were awakening the awareness of the working class (Maravall, 1970).



Therefore, the political position of the *OSE* became hardly sustainable: they risked losing completely their electoral predicament in the designation of worker representatives; but simultaneously, they could not deviate from the fundamental orientations of the regime. Finally, the growing socio-political tensions induced some sectors of the industrial bourgeoisie to lose confidence in the regime's capacity to procure social order. As a result, all this mobilization could not precipitate the end of the dictatorship, but is thought to have contributed importantly to the advent of a new democracy in Spain (Molinero and Ysàs, 1998)).

2.3. *Literature review: economic and non-economic determinants of the allocation of public investment*

Economic theory and subsequent empirical studies have recognized the importance of certain drivers, such as public investment in infrastructure, healthcare, and education, to increase economic growth and development. Moreover, public investment is a key variable to explain cross-country variations in economic performance. The criteria to allocate public investment may be normative, and related mainly to economics, or they may depend on positive, non-economic factors connected to political incentives.

On the one hand, De la Fuente and Vives (1995) and Yamano and Ohkawara (2000) identify three basic normative criteria: efficiency, redistribution, and neutrality. First, efficiency is linked to the maximization of the aggregate returns to public investment at the national level. Second, there may be poorer regions with special needs, which requires redistribution by means of place-based policies. Finally, the normative criteria may be neutral, since the constitutional norms of the country may prescribe equal access to public capital in all regions; and therefore, the regional allocation of public investment should be decreasing in the initial stock of public capital.

In the case of Spain, De la Fuente (2004) evaluated the socio-economic optimality of the recent public investment policy. Taking as given the ex-post degree of redistribution observed, he compared the actual distribution of the stock of infrastructures with the optimal allocation resulting from a constrained optimization problem. His application of this setting to the Spanish economy suggested that public investment had been too redistributive in the year 1995. It is important to remark that Spain benefited from



On the other hand, Castells and Solé-Ollé (2005) focus on the period 1987-1996 to find that not only regional infrastructure needs, but also political factors governed the



allocation of public infrastructure investment. De la Fuente and Vives (1995) studied the impact of European funds on Spanish regional inequality in the years 1981, 1986 and 1990. They concluded that public investment in infrastructure plays a key role in determining regional performance. Parallel to their research, they find political influence as negligible criteria to allocate the funds, in contrast to previous studies.

Finally, Albalade et al. (2012) study the regional allocation of public investment in Spain during the period 1981-2005, disaggregating by network (road and rail) and airport infrastructure. These authors identified the existence of political factors, such as electoral results and party alignment, together with a centralization motive that assigns a crucial role to the transport accessibility of Madrid. However, in a recent study conducted for the period 1980-2008 in Spain, controlling for the spatial effect associated with neighbouring regions, Fageda and Olivieri (2019) find that political congruence – defined as larger levels of investment in those provinces where the affinity or support to central government is higher – is not significant.

Therefore, in order to identify a persistent (or discontinuous) pattern of political influence over time in Spain, it is necessary to shed light on the importance of politics, together with economics, when allocating public investment during the Francoist dictatorship (1939-1975). That is also important to evaluate whether a potential pattern of political incentives associated to extractive institutions in Spain is persistent or not.

3. Empirical analysis

3.1. Theoretical findings

Here we will provide the reader with some theoretical mechanisms to understand some determinants of the allocation of public investment, at the territorial level, during this historical period. The model, which will be described here and detailed in the Appendix, is inspired by Lohmann (1997). It aims to analyze the effects of labor productivity growth (our main exogenous variable) on conflict and the local provision of public investment (our endogenous variables). Therefore, the exogenous variable that unleashes all the transformations in this society is productivity growth, which (after the economic liberalization in the 1950s) was increasing considerably in Spain due to FDI and the imported technology (see e.g., Braña et al. (1984)).



The following theoretical setting departs from the list of issues examined by Acemoglu and Robinson (2009), since it tries to predict whether economic growth will intensify or dampen the struggle and prospects for success of the working class. In the model there are three socio-economic agents: capitalists, who act in a coordinated way by choosing their private investment levels and maximize profits; workers, who need to overcome a free-rider problem to demonstrate, in the presence of governmental repression, to improve their life conditions; and the government, who allocates territorially the public investment. We will assume that the existing government shares the same objective function as the capitalists.

Let us also assume that the government conditions the provision of public investment to the maintenance of stable labor relations, in which the productive factors receive the value of their marginal productivity. In particular, workers receive their market wage. Only if that continues to be the case, the government will provide workers in that province with a variable amount of the public good. Otherwise, if the workers break the conventional labor relations, they will then appropriate the whole output of the firms, but they will receive zero units of public investment.

We will consider that the government “moves first”, that is, the government officials internalize how the workers and capitalists will be affected by their choice of the level of public investment. The government spends on public investment with two different purposes: on the one hand, by conditioning such expenditure, the incentives to protest will be reduced and labor relations will tend to be preserved. On the other hand, capitalists will also be able to raise their expected profits and invest more private capital.

Moreover, the workers’ protests will only succeed if a certain mass of individuals decide to demonstrate. Every worker will choose to demonstrate with a certain probability, since doing it is a priori costly for him/ her due to the existence of repression. Given the expected payoff from both alternatives, that probability will make him indifferent between protesting or not. Then, an implicit characterization of the equilibrium probability for each worker allows us to derive the following series of results, which are proved in the Appendix:

Proposition 1: In the presence of a sufficiently mild repression, a higher level of local productivity will result in a higher probability of participation in the protests and a higher probability of success for the working class.

Proposition 2: In the presence of a sufficiently mild repression, a higher local productivity will also result in a higher expenditure on public investment.

Therefore, it is possible to expect from the data a positive correlation between the intensity of conflict and the public investment at the province level. In the provinces with a highest productivity growth, under low levels of repression, both the intensity of demonstrations and the public investment will tend to rise faster, since the working class would appropriate more resources in case of success.

3.2. Empirical model

Our baseline equation (1) is defined following previous specifications of the allocation of investment in infrastructure. More specifically, we follow Albalade et al. (2012) and Castells and Solé-Ollé (2005). In this equation, we intend to consider the factors that explain the territorial allocation of public investment:

$$\ln I_{it} = \beta_0 + \beta_1 \ln VOTESL_i + \beta_2 \ln GDPPC_{i,t-1} + \beta_3 \ln VOTES_i * \ln GDPPC_{i,t-1} + \beta_4 \ln POPULATION_{i,t-1} + \beta_5 \ln AREA_i + \beta_6 \ln TSTOCK_{i,t-1} + \beta_7 \ln DISTMAD_i + \rho_r + \varphi_t + \varepsilon_{it} \quad (1)$$

Where subscripts $\ln$, i , r , and t refer to the natural logarithm, the specific territory, the region linked to the territory and time, respectively. I_{it} is the amount of public investment received by province i at time t . $VOTESL_i$ is the share of votes to left wing and Catalan, Basque or Galician nationalist parties from province i in 1936. $GDPPC_{i,t-1}$ is the 1-year lagged value of GDP per capita at time t . $POPULATION_{i,t-1}$ denotes the 1-year lagged value of the population in province i during t . $TSTOCK_{i,t-1}$ refers to the 1-year lagged value of the total stock of public capital in province i at time t . $AREA_i$ is the geographical extension of the land surfaces occupied by province i , measured in square kilometres. Finally, $DISTMAD_i$ is the geographical distance between the province i and Madrid, the capital of Spain.

The remaining variables listed are controls. ρ_r denotes the controls for the specific region r and φ_t denotes the time controls, whose role is incorporating the effect of the business cycle to the econometric model. Finally, ε_{it} is the error term.

The use of electoral variables tries to ascertain whether public investment was partially driven by political considerations. GDP per capita is included to know whether more public investment was allocated toward poorer regions with a redistributive purpose (De la Fuente and Vives, 1995; Albalade et al., 2012). It is important to highlight that (i) our electoral variable is only computed for the elections in 1936 and no democratic elections took place again until 1977, and (ii) there exists a strong correlation between the electoral variable and GDP per capita, since wealthier and peripheral regions presumably presented a tougher opposition to the Francoist dictatorship. When these two variables are interacted, the resulting measure is time varying.

The stock of public capital is included to observe whether there existed neutrality criteria followed by the government (De la Fuente and Vives, 1995; Albalade et al., 2012). Population and land area are indicators of mobility needs, which tend to be positively associated with investment in infrastructure (Albalade et al. 2012). The reason for including the distance to the capital is related to the centralization motive, as pointed out by Albalade et al. (2012). Centralization implies that the allocation of infrastructure would follow non-economic criteria, since those peripheral provinces exhibiting more resistance to the Francoist dictatorship would be receiving fewer funds.

Finally, regional and time controls are included following Castells and Solé-Ollé (2005), as these variables capture the factors that are invariant across regions, as well as the effect of the business cycle. In addition to that, these controls allow to mitigate the existence of potential mismeasurement effects and omitted variable bias.

3.3. *Data description*

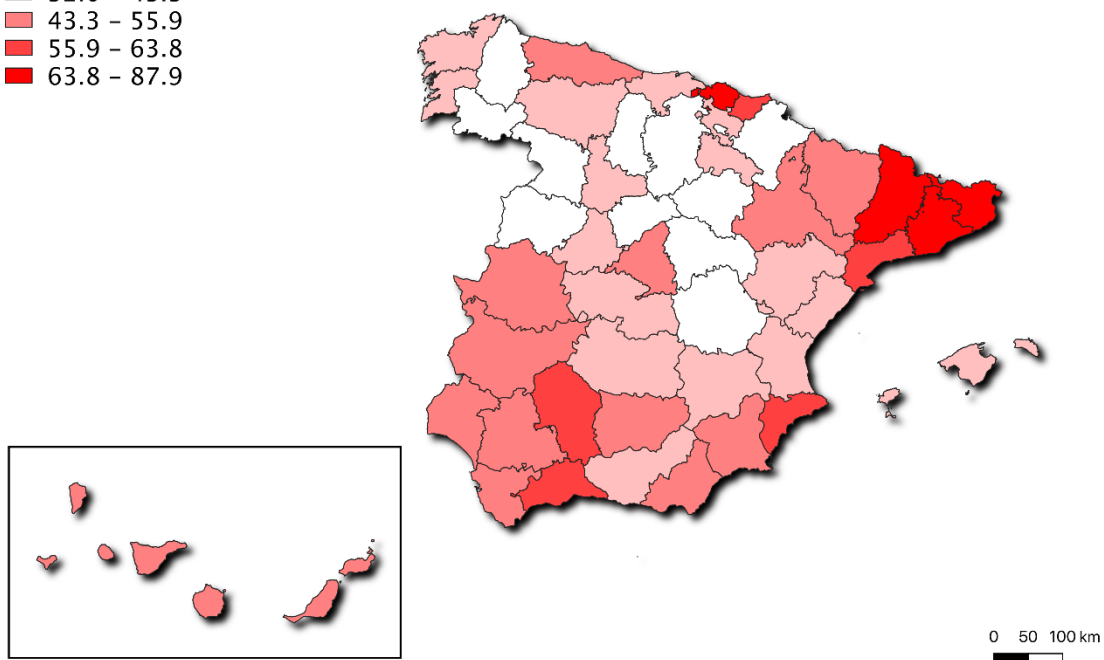
We measure the presumable opposition to the Francoist government at the provincial level, by the share of voting received by the left-wing or nationalist (Basque or Catalan) parties in February 1936 (Linz and De Miguel, 1977) and June 1977 as captured in Figure 1.⁶

⁶ Our qualitative results are consistent in both cases with the non-significance of the marginal effects of political ideology, regardless of the choice of electoral date. Therefore, in what follows we will report only the results linked to the 1936 democratic elections. The results with the 1977 electoral variable are available upon request.

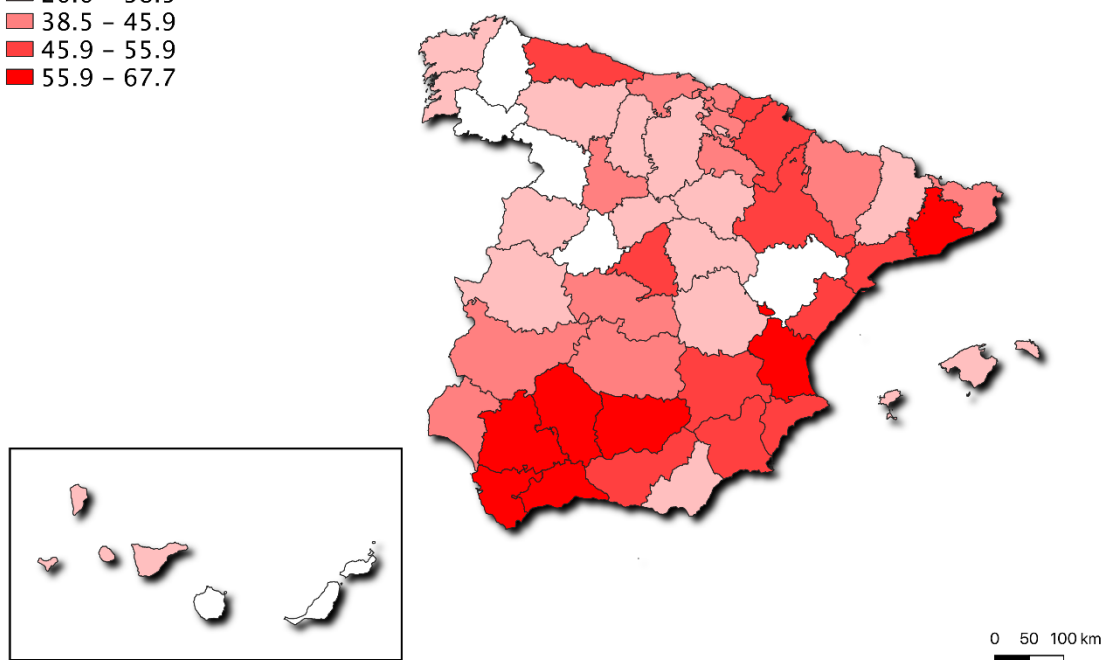
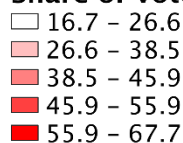
Figure 1. Presumable intensity of opposition to the dictatorship, by province (percentage)

Share of votes to left-wing in 1936

- 14.4 - 32.0
- 32.0 - 43.3
- 43.3 - 55.9
- 55.9 - 63.8
- 63.8 - 87.9



Share of votes to left-wing in 1977



According to Figure 1, there existed a great persistence in the territorial distribution of this electoral variable, which is used as a proxy to measure opposition to the Francoist government.⁷ It is also possible to observe that the wealthiest and most industrialized regions in Spain, together with some poorer Southern enclaves, were prone to show a more vigorous opposition to the dictatorship.

As for the regional pattern of investment allocation, together with different economic and geographical variables, our database contains a sample of 50 Spanish provinces, at the NUTS III⁸ level of territorial disaggregation. We gathered the provincial data from different statistical sources: historical data on gross value added, population and available income per capita were collected by Alcaide Inchausti – Fundación BBVA (2003) every five years, from 1940 until 1975. The stock and flows of public investment in infrastructures, healthcare and education come from the IVIE-Database on historical series of public capital.

⁷ The persistence of the effects of the civil war on the political behavior of Spaniards has been the subject of several studies, see for example, Tur-Prats and Valencia Caicedo (2020).

⁸ Nomenclature of Territorial Units for Statistics.



It is well known the extremely poor capacity to raise fiscal revenue by the Francoist governments, due to the outdated tax system in place. This fact affected crucially their willingness to spend on public investment, even in the a priori favorable context of the Development Plans (Comín and Vallejo, 2009). In fact, the proportion of public investment as a share of GDP rarely exceeded 1.5% and was very stable over time. However, public investment became an interesting indicator of the redistributive intentions of the different Francoist administrations.

Tables A1 and A2 in the appendix contain the list of Spanish provinces as well as the main descriptive statistics, respectively. We have also elaborated a ranking of the Spanish provinces, according to their percentual variation in the stock of public capital per capita, for the period 1940-1975. Judging by the result (see the Table A3 in the Appendix), it is difficult to observe any clear economic or ideological pattern. This fact confirms the pertinence of an econometric analysis to isolate the economic and non-economic determinants of the allocation of state investment. Moreover, it is important to pay attention to the migration patterns, as this classification may be sensitive to migratory flows, which affected the measurement of public investment per capita. During the Francoist dictatorship, internal and external flows of migration rose considerably (see e.g., Paluzie et al. (2009)).

The series on conflict in labor relations was provided by Gago-Vaquero (2014), using the historical statistics of the Spanish Ministry of Labor, for the time interval 1963-1974. Finally, our data on provincial land area and distances to Madrid were retrieved from the *Anuario Estadístico de España*, published by the Instituto Nacional de Estadística (www.ine.es).

3.4. *Estimation strategy*

For this study, we follow a random effects estimation, which is common for static panel models, which assume that lagged values of the dependent variable do not influence the current patterns. The decision between a pooled estimator or a fixed/random effects model that considers individual differences is fundamental to carry out the estimation of static panel models (Greene, 2012). To this extent, the previous equation (1) is modified and changed to a new equation (2), which is shown as follows:



$$\ln I_{it} = \beta_0 + \beta_1 \ln VOTES_i + \beta_2 \ln GDPPC_{i,t-1} + \beta_3 \ln VOTES_i * \ln GDPPC_{i,t-1} + \beta_4 \ln POPULATION_{i,t-1} + \beta_5 \ln AREA_i + \beta_6 \ln TSTOCK_{i,t-1} + \beta_7 \ln DISTMAD_i + \rho_r + \varphi_t + (\alpha + u_i) + \varepsilon_{it} \quad (2)$$

Equation (2) introduces an additional element in relation to equation (1): u_i . This is a group-specific random variable “similar to the error term except that for each group, there is but a single draw that enters the regression identically in each period” (Greene, 2012: 376). α is a constant term associated with the unobserved heterogeneity. Although this model is more efficient than the estimation by fixed effects because of its lower variance, the fixed effects model computes the average for each variable and may be more consistent. However, the fixed effects estimation drops all the time-invariant variables, which involves the omission of both the distance and land area regressors. Therefore, the implementation of the fixed effects model would make more difficult the assessment of economic or non-economic criteria to reallocate public investment.

Endogeneity is one of the major concerns when estimating panel models (Greene, 2012). To this extent, we lag the explanatory time-varying variables by one period. By lagging the variables one year, we avoid the spurious correlations between the explanatory and the dependent variable caused by identical business cycles at the t period, as the explanatory variables are expressed at the $t-1$ period. This approach has been followed in other studies to mitigate the effect of endogeneity (Albalade et al., 2012).

The literature on the regional allocation of public investment has not addressed the existence of spatial dependence. To account for the presence of spatial dependence in the levels of investment per capita and investment effort among provinces, we augment equation (2) by including a spatial lag of the dependent variable. Spatial regression models allow estimating the magnitude and statistical significance of spatial spillovers (LeSage, 2014). Equation (3) is shown as follows:

$$\ln I_{it} = \beta_0 + \rho W \ln I_{it} + \beta_1 \ln VOTES_i + \beta_2 \ln GDPPC_{i,t-1} + \beta_3 \ln VOTES_i * \ln GDPPC_{i,t-1} + \beta_4 \ln POPULATION_{i,t-1} + \beta_5 \ln AREA_i + \beta_6 \ln TSTOCK_{i,t-1} + \beta_7 \ln DISTMAD_i + \rho_r + \varphi_t + (\alpha + u_i) + \varepsilon_{it} \quad (3)$$

where W is the spatial contiguity matrix, and ρ is the spatial autoregressive parameter to be estimated. The spatial contiguity matrix, W , is an n by n matrix with element $w_{ij} = 1$ if provinces i and j are neighbors and zero otherwise. Once the W matrix is



calculated, the matrix is row-standardized – all rows sum to one. With a row-standardized matrix, the product $W \ln I_{it}$ is the average of the investment in neighbouring regions. The model in equation (2) is estimated by maximum-likelihood (Lee and Yu, 2010).

4. Results

4.1. Main results

As indicated above, we intend to know whether the oppositional alignment of a province was a significant determinant of its received level of public investment. In order to measure the variations in the local stocks of public capital, we have considered two dependent variables: the level of investment per capita in Table 1 (as in Albalade et al., 2012) and the “investment effort” in Table 2, being defined as the ratio of gross public investment over the initial stock of public capital (see e.g. Solé-Ollé (2010)). Tables 1 and 2 include four main scenarios in columns 1-4: column 1 includes no controls, column 2 only considers regional controls, column 3 only considers time controls, and, finally, column 4 includes both regional and time controls.

Table 1. Results for equation (2), period 1940-1975, estimated by Panel Random Effects. Dependent variable: level of investment per capita

Specification	(1)	(2)	(3)	(4)
$\ln VOTESL_t$	0.087 (0.119)	0.024 (0.180)	0.265** (0.100)	0.277* (0.162)
$\ln GDPPC_{i,t-1}$	1.529*** (0.127)	1.651*** (0.132)	0.799*** (0.138)	0.810*** (0.162)
$\ln VOTESL_t * \ln GDPPC_{i,t-1}$	0.271** (0.114)	0.385*** (0.124)	0.306*** (0.086)	0.314*** (0.093)
$\ln POPULATION_{i,t-1}$	-0.500*** (0.061)	-0.534*** (0.080)	-0.493*** (0.056)	-0.421*** (0.075)
$\ln AREA_i$	0.566*** (0.058)	0.422*** (0.103)	0.259*** (0.066)	0.313*** (0.101)
$\ln TSTOCK_{i,t-1}$	0.052 (0.084)	0.126 (0.094)	0.153* (0.080)	0.044 (0.090)
$\ln DISTMAD_i$	0.049 (0.035)	-0.182** (0.081)	-0.005 (0.033)	-0.084 (0.080)
Intercept	-0.434 (0.803)	1.036 (1.103)	0.417 (0.751)	1.023 (1.059)
Regional Fixed Effects	No	Yes	No	Yes
Time Fixed Effects	No	No	Yes	Yes
Observations	350	350	350	350
BP-LM test	22.30***	1.21	21.12***	5.85***



Note: Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. BP-LM test denotes the Breusch-Pagan Lagrange Multiplier test

Our regressors are exactly those chosen by Albalade et al. (2012), except for the ideological variable ($\ln VOTESL_i$), defined as the electoral share of oppositional parties in 1936, and the latter variable interacted with the provincial GDP per capita. The sign and significance of our regressors is like those in Albalade et al. (2012), although the variable $\ln DISTMAD_i$ has no significant impact on public investment in our regressions. Therefore, we cannot identify a centralization motive affecting the allocation of public investment during this historical period.

The effect of our ideological variable tends to be irrelevant as well, although its interaction with GDP per capita exhibits a considerable impact on both investment per capita and the investment effort. This fact could reveal that potential conflict and not ideological opposition was the driver of the allocation of public investment. The concern of the dictatorship about the potential conflict in the most industrialized, oppositional areas, could have threatened the local labor relations and so the stability of Franco's regime.⁹ We also find that the BP-LM test (Breusch and Pagan, 1979) is consistent with the random effects specification, as the value of the statistics often highlights the importance of considering the differences across individuals, except for column (2) that includes regional but no time effects. These results point to the sensitivity of the specification to the inclusion of the business cycle through time controls.

Table 2. Results for equation (2), period 1940-1975, estimated by Panel Random Effects. Dependent variable: investment effort

Specification	(1)	(2)	(3)	(4)
$\ln VOTESL_i$	0.131 (0.118)	0.047 (0.177)	0.303*** (0.101)	0.290* (0.161)
$\ln GDPPC_{i,t-1}$	1.533*** (0.126)	1.653*** (0.131)	0.878*** (0.139)	0.859*** (0.162)
$\ln VOTESL_i * \ln GDPPC_{i,t-1}$	0.290** (0.113)	0.401*** (0.123)	0.331*** (0.086)	0.336*** (0.093)
$\ln POPULATION_{i,t-1}$	0.546*** (0.061)	0.523*** (0.079)	0.570*** (0.057)	0.652*** (0.075)
$\ln AREA_i$	0.511***	0.390***	0.233***	0.290***

⁹ That would be in line with Espuelas (2012: 221), who finds that "non-democratic governments tried to buy political stability by increasing social spending, but only when they faced social pressure from below and felt politically threatened"



	(0.058)	(0.101)	(0.067)	(0.101)
$\ln TSTOCK_{i,t-1}$	-0.951***	-0.899***	-0.882***	-0.999***
	(0.084)	(0.093)	(0.081)	(0.089)
$\ln DISTMAD_i$	0.049	-0.155*	-0.002	-0.062
	(0.035)	(0.080)	(0.034)	(0.079)
Intercept	-0.444	0.926	0.424	0.917
	(0.801)	(1.084)	(0.765)	(1.050)
Regional Fixed Effects	No	Yes	No	Yes
Time Fixed Effects	No	No	Yes	Yes
Observations	350	350	350	350
BP-LM test	17.19***	0.38	23.48***	5.67***

Note: Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. BP-LM test denotes the Breusch-Pagan Lagrange Multiplier test

The results showed in Table 2 are very similar to the results of Table 1. $\ln GDP_{i,t-1}$ coefficients are positive and significant, but lower than in the previous table. The interaction between the electoral and the GDP per capita variables is not significant in column (1), when no additional controls are included. In contrast to the previous specification, the coefficient of the variable $\ln POPULATION_{i,t-1}$ is positive, which implies that the most populated provinces are the potential recipients of larger amounts of public investment. The stock of public investment, $\ln TSTOCK_{i,t-1}$, is significant, but its coefficient is negative, which suggests the application of neutrality criteria by the public administration during this historical period.

The results obtained at Tables 1 and 2 can be summarized as follows: although changes are not highly significant, the results are sensitive to the type of variable chosen to measure the allocation of public investment. In addition to that, coefficients do not change, but as showed by the Breusch-Pagan test, the overall specification of random effects is sensitive to the inclusion of time controls, which denote the high importance of the business cycle. Moreover, the government did not show as a fundamental priority the redistribution towards the most disfavored provinces. The positive sign and prominent magnitude of the coefficient on GDP per capita could reflect efficiency considerations, although the governmental capture by some local, affluent elites may have been important as well¹⁰. Hence, we conclude that economic criteria, related to efficiency, may coexist with non-economic ones when allocating the public investment in Spain.

¹⁰ As pointed by Acemoglu and Robinson (2012), the presence of extractive elites may hinder the economic development of a country.



We include additional specification tests on Table A4 of the Appendix, to demonstrate the consistency of our empirical specification. For this reason, we compute serial correlation, the Hausman test, and the Levin–Lin–Chu (LLC) unit root test. As a first stage, we have tested for the existence of first-order serial correlation in our panel data model (Wooldridge, 2002; Drukker, 2003). The p-value, greater than 5%, shows the existence of no serial correlation.

In addition to that, we show the results of Hausman's (1969) test for panel data. The results, with a null p-value, point to the prevalence of a fixed effects estimator. However, these results must be interpreted with caution, since the computation of this test requires to exclude all the time-invariant variables, as pointed by Albalade et al. (2012). Using the fixed effects model would imply excluding all the time-invariant differences and would not be representative of the real situation. Hence, our random effects specification is consistent since it does not exclude explanatory variables and does not present first-order correlation. We also test the existence of a potential structural break by testing the presence of unit roots in the panel data for each one of the dependent variables, following the Levin et al. (2002) test. The results of the test statistic, significantly lower than zero, denote that the null hypothesis of unit roots is rejected in favor of the assumption of stationarity for the two variables across the panel. Accordingly, these results are not aligned with a structural break during the Francoist dictatorship, since the mean and the variance of the public investment variables are both constant across the panel.

4.2. *An extension of the results by considering spatial dependence*

Concerning the existence of spatial dependence, Tables A5 and A6 in the Appendix show the estimation results of the spatial model (2). The inclusion of the spatial lag of the investment variable complicates the calculation of the marginal effect, as it is no longer the estimated coefficient. The marginal effect of one variable in a given province also depends on that in its neighbors, and on the neighbors of its neighbors, and so on.

LeSage and Pace (2009) propose three scalar measures to compute the degree of spatial dependence: the average direct effect, the average indirect effect, and the average total effect. The average direct effect is a measure of the direct effect of one variable in its own province. The average indirect effect is a measure of the spillovers, as it measures



the impact through the neighbors. Finally, the average total effect is the sum of the average direct effect and the average indirect effect. Tables (3) and (4) show the estimated impacts of the three effects.

Results show that the interaction of the ideological variable with the GDP per capita has a substantial positive and significant direct effect in the level of investment per capita and the investment effort in the province, and a lower but still positive and significant indirect effect. Accordingly, the consideration of spatial dependence in the allocation of public investment does not alter our previous results substantially and contributes to provide additional evidence on this topic.

Table 3. Direct, indirect, and total impacts for equation (3), period 1940-1975.
Dependent variable: level of investment per capita

Specification	(1)	(2)	(3)	(4)
Direct				
$\ln VOTESL_t$	0.208 (0.136)	0.298* (0.158)	0.28*** (0.101)	0.303** (0.142)
$\ln GDPPC_{i,t-1}$	0.970*** (0.123)	0.928*** (0.121)	0.718*** (0.14)	0.774*** (0.149)
$\ln VOTESL_t * \ln GDPPC_{i,t-1}$	0.213** (0.103)	0.276** (0.106)	0.278*** (0.084)	0.298*** (0.09)
$\ln POPULATION_{i,t-1}$	-0.326*** (0.077)	-0.501*** (0.076)	-0.435*** (0.066)	-0.461*** (0.078)
$\ln AREA_i$	0.451*** (0.075)	0.438*** (0.091)	0.264*** (0.067)	0.335*** (0.087)
$\ln TSTOCK_{i,t-1}$	-0.053 (0.089)	0.079 (0.088)	0.096 (0.092)	0.085 (0.094)
$\ln DISTMAD_i$	0.017 (0.050)	-0.056 (0.072)	-0.007 (0.035)	-0.066 (0.067)
Indirect				
$\ln VOTESL_t$	0.187 (0.128)	0.300* (0.171)	0.053* (0.027)	0.076* (0.045)
$\ln GDPPC_{i,t-1}$	0.871*** (0.137)	0.936*** (0.141)	0.137*** (0.051)	0.194*** (0.074)
$\ln VOTESL_t * \ln GDPPC_{i,t-1}$	0.191** (0.094)	0.278* (0.112)	0.053** (0.023)	0.075** (0.033)
$\ln POPULATION_{i,t-1}$	-0.293*** (0.077)	-0.505*** (0.104)	-0.083*** (0.028)	-0.116*** (0.044)
$\ln AREA_i$	0.405*** (0.085)	0.442*** (0.115)	0.05** (0.022)	0.084** (0.038)
$\ln TSTOCK_{i,t-1}$	-0.048 (0.081)	0.080 (0.088)	0.018 (0.017)	0.021 (0.024)
$\ln DISTMAD_i$	0.016 (0.045)	-0.056 (0.072)	-0.001 (0.007)	-0.016 (0.017)
Total				



$\ln VOTESL_t$	0.395 (0.262)	0.598* (0.327)	0.333*** (0.122)	0.379** (0.181)
$\ln GDPPC_{i,t-1}$	1.841*** (0.215)	1.864*** (0.228)	0.855*** (0.165)	0.968*** (0.193)
$\ln VOTESL_t * \ln GDPPC_{i,t-1}$	0.404** (0.195)	0.555** (0.214)	0.331*** (0.099)	0.373*** (0.114)
$\ln POPULATION_{i,t-1}$	-0.620*** (0.147)	-1.007*** (0.168)	-0.518*** (0.077)	-0.577*** (0.105)
$\ln AREA_i$	0.857*** (0.149)	0.880*** (0.175)	0.315*** (0.083)	0.419*** (0.116)
$\ln TSTOCK_{i,t-1}$	-0.101 (0.171)	0.159 (0.175)	0.114 (0.109)	0.106 (0.118)
$\ln DISTMAD_i$	0.033 (0.095)	-0.112 (0.144)	-0.008 (0.041)	-0.082 (0.084)

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table 4. Direct, indirect, and total impacts for equation (3), period 1940-1975.

Dependent variable: level of investment per capita

Specification	(1)	(2)	(3)	(4)
Direct				
$\ln VOTESL_t$	0.209 (0.144)	0.024 (0.154)	0.324*** (0.105)	0.23 (0.148)
$\ln GDPPC_{i,t-1}$	1.227*** (0.122)	1.126*** (0.118)	0.836*** (0.142)	0.822*** (0.154)
$\ln VOTESL_t * \ln GDPPC_{i,t-1}$	0.27** (0.106)	0.25** (0.107)	0.318*** (0.084)	0.288*** (0.091)
$\ln POPULATION_{i,t-1}$	0.575*** (0.083)	0.496*** (0.073)	0.583*** (0.071)	0.614*** (0.084)
$\ln AREA_i$	0.421*** (0.08)	0.293*** (0.088)	0.23*** (0.07)	0.277*** (0.091)
$\ln TSTOCK_{i,t-1}$	-0.887*** (0.092)	-0.828*** (0.083)	-0.9*** (0.096)	-0.953*** (0.098)
$\ln DISTMAD_i$	-0.021 (0.054)	-0.126* (0.069)	-0.019 (0.038)	-0.068 (0.071)
Indirect				
$\ln VOTESL_t$	0.139 (0.1)	0.023 (0.145)	0.042* (0.023)	0.054 (0.038)
$\ln GDPPC_{i,t-1}$	0.82*** (0.136)	1.058*** (0.165)	0.109** (0.048)	0.195*** (0.075)
$\ln VOTESL_t * \ln GDPPC_{i,t-1}$	0.18** (0.074)	0.235** (0.103)	0.041** (0.02)	0.068** (0.029)
$\ln POPULATION_{i,t-1}$	0.384*** (0.089)	0.466*** (0.101)	0.076** (0.034)	0.145*** (0.055)
$\ln AREA_i$	0.281*** (0.067)	0.275*** (0.09)	0.03* (0.016)	0.066** (0.031)
$\ln TSTOCK_{i,t-1}$	-0.593*** (0.116)	-0.778*** (0.143)	-0.117** (0.053)	-0.226*** (0.083)
$\ln DISTMAD_i$	-0.014	-0.118* (0.069)	-0.003	-0.016



	(0.037)	(0.067)	(0.005)	(0.018)
Total				
$\ln VOTESL_i$	0.348 (0.242)	0.047 (0.299)	0.366*** (0.121)	0.284 (0.182)
$\ln GDPPC_{i,t-1}$	2.047*** (0.204)	2.184*** (0.239)	0.945*** (0.161)	1.017*** (0.197)
$\ln VOTESL_i * \ln GDPPC_{i,t-1}$	0.45** (0.177)	0.486** (0.207)	0.359*** (0.096)	0.356*** (0.111)
$\ln POPULATION_{i,t-1}$	0.96*** (0.159)	0.962*** (0.162)	0.659*** (0.088)	0.76*** (0.116)
$\ln AREA_i$	0.702*** (0.136)	0.568*** (0.173)	0.26*** (0.08)	0.342*** (0.114)
$\ln TSTOCK_{i,t-1}$	-1.48*** (0.18)	-1.605*** (0.203)	-1.017*** (0.122)	-1.178*** (0.146)
$\ln DISTMAD_i$	-0.035 (0.091)	-0.245* (0.134)	-0.022 (0.043)	-0.084 (0.088)

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

4.3. Robustness of results and mechanism analysis

Now, in order to check if social conflicts or political ideology are driving our findings, we study whether there is a statistical association between conflicts, political ideology, and investment in infrastructures. Second, we explore whether there is evidence to assess that such an association is due to political ideology. Data on labour conflicts is available only since 1963 so that for this analysis, our sample period spans from 1963 to 1974. Namely, we consider the following regression models (4) and (5):

$$I_{it} = \alpha_i + \alpha_t + \beta_1 left_i \times con_{it} + \beta_2 right_i \times confl_{it} + \beta_3 center_i \times confl_{it} + \varepsilon_{it} \quad (4)$$

$$I_{it} = \alpha_i + \alpha_t + \beta_1 left_i \times years + \beta_2 right_i \times years + \beta_3 center_i \times years + \varepsilon_{it} \quad (5)$$

where $left_i$, $center_i$ and $right_i$ are different measures of political ideology in province i ,¹¹ $confl_{it}$ is a measure of workers in conflict¹² in province i and year t , $years$ is the number of years since 1936, α_i and α_t are respectively province and year fixed effects

¹¹ We are aware that some Basque and Catalan nationalist parties can hardly be defined as left-wing parties. However, for the sake of clarity, the term left includes these political parties since our objective is to measure the potential ideological opposition and the nationalist parties, without a doubt, were opposed to the centralizing and homogenizing attempt of the Francoist governments.

¹² Source: Gago-Vaquero (2014).

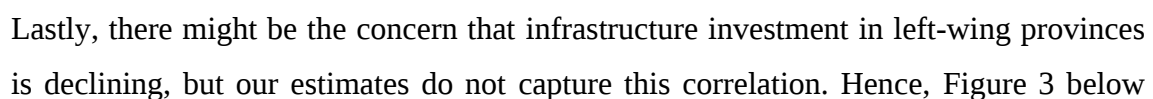


and ε_{it} stands for the errors. Note that this analysis is based on data at province-year level. In total there are 50 provinces, we cluster variance at province level.

Table A6 in the Part 2 of the Appendix shows the results of the two regression models above. In columns (1) and (3) the political ideology variables (i.e., left, center and right) are binary variables taking value 1 if the share of votes for that certain political ideology in the elections of 1936 is larger than 0.5. On the other hand, in columns (2) and (4) the political ideology variables (i.e., left, center and right) take the value of the share of votes in the elections of 1936. Since there are no provinces with workers in conflict and a majority of votes for center political parties, that variable does not appear in column (1). Column (1) finds empirical evidence of a positive (negative) statistical correlation between public investment and conflicts in left-wing provinces (right-wing provinces). Column (2) uses the exact share of votes for each of the three categories of political ideology and finds similar results. This might suggest that actually left-wing provinces benefited from higher levels of infrastructure investment due to their political ideology. To address this issue, columns (3) and (4) drop conflicts and focus on the number of years since 1936. If the effect on public investment is due to political ideology, there might be a concern that it becomes stronger as time elapses. Columns (3) and (4) find that the negative statistical associations for center and right-wing provinces are robust to this specification while the positive statistical association for left-wing provinces fades out. This finding suggests that this positive statistical association was due to the interaction between left-wing provinces and conflicts and not to the political ideology of such provinces per se. Possibly conflicts in such provinces were more violent, and in line with our theoretical model, the government had to invest larger amounts of money in such provinces to placate the concerns.

To this end, the last three rows of Table A7 in the Appendix show the p-values associated with the null hypothesis of the coefficients displayed in each row. Comparing such p-values for left-wing province suggests that these provinces exhibit statistically different associations from their center-wing and right-wing counterparts. While there is no conclusive evidence to state that the same is true for either center-wing or right-wing provinces. However, insofar as conflicts correlates positively with left-wing provinces

Figure 2. Results of the interaction between the left-wing variable and the year fixed effects





5. Conclusions

In this article, we have examined the extent to which the territorial allocation of public investment followed economic and non-economic criteria during the Francoist dictatorship in Spain. To accomplish our research objective, we combine a theoretical and an empirical analysis for a sample of 50 Spanish provinces, in the period 1940-1975. We find that both economic and non-economic criteria coexisted. In terms of the former, we found that public investment was not driven by redistribution goals, despite the numerous public statements of the authorities. On the contrary, the concentration of investment efforts in the most affluent provinces reveals the importance of efficiency criteria. That is, controlling for other determinants, the Francoist governments allocated public investment toward those affluent regions that were considered a safer bet.

However, non-economic criteria were also relevant, although the evidence does not confirm neither the existence of a centralization motive that favored the accessibility of Madrid, nor the significance of a potential ideological opposition to the regime. However, the results confirm the relevance of social unrest as a driver of public investment. The Francoist authorities were prone to avoid social conflict by investing especially in those provinces more inclined to register strikes and turmoil. In another vein, the public investment variable does not speak of any structural break around the 1959 Stabilization Plan, which implies that the latter did not induce a significant change in the magnitude and direction of public investment.

These results try to shed light to understand better the Spanish economic history and growth dynamics, although this topic presents avenues for further research that have not been explored in this paper. First, it would be convenient to extend the analysis to public consumption expenditure, as opposed to investment. Second, future research may consider disaggregating the infrastructure investment following Albalade et al. (2012) or Fageda and Olivieri (2019): airports and network investment. This disaggregation may be very important, since Albalade et al. (2012) only find a centralization motive for network infrastructure. Finally, a similar methodology could be extended to assess the allocative intentions of different dictatorial regimes over time and across space; especially in those whose public opinion was rarely consulted and, therefore, the territorial intensity of opposition was harder to identify.



References

- Acemoglu, D. and Robinson, J.A. (2009). *Economic Origins of Dictatorship and Democracy*. Cambridge University Press.
- Acemoglu, D. and Robinson, J. A. (2012). *Why nations fail: The origins of power, prosperity, and poverty*. Crown Business, New York.
- Albalade, D., Bel, G., & Fageda, X. (2012). Beyond the efficiency-equity dilemma: Centralization as a determinant of government investment in infrastructure. *Papers in Regional Science*, 91(3), 599–615.
- Babiano, J. (1995). *Emigrantes, cronómetros y huelgas. Un estudio sobre el trabajo y los trabajadores durante el franquismo (Madrid, 1951-1977)*. Siglo XXI de España Editores, S.A.
- Bel, G. (2012). *Infrastructure and the Political Economy of Nation Building in Spain, 1720-2010*. Sussex Academic Press. Cañada Blanch Centre for Contemporary Spanish Studies.
- Biescas, J. A. (1989). *La economía española durante el período franquista*. IV Curso para Historiadores del Instituto Gerónimo de Uztáriz.
- Braña, J., Buesa, M., & Molero, J. (1984). *El estado y el cambio tecnológico en la industrialización tardía. Un análisis del caso español*. Fondo de Cultura Económica.
- Breusch, T. S., & Pagan, A. R. (1979). A simple test for heteroscedasticity and random coefficient variation. *Econometrica*, 1287–1294.
- Cadot, O., Röller, L. H., & Stephan, A. (2006). Contribution to productivity or pork barrel? The two faces of infrastructure investment. *Journal of Public Economics*, 90(6-7), 1133–1153.
- Calvo-González, O. (2007). Military interests and economic confidence in Spain under the Franco dictatorship. *Journal of Economic History*, 67(3), 740–767.
- Cárdenas, L., & Fernández, R. (2020). Revisiting francoist developmentalism: The influence of wages in the Spanish growth model. *Structural Change and Economic Dynamics*, 52, 260–268.
- Carozzi, F., & Repetto, L. (2016). Sending the pork home: Birth town bias in transfers to Italian municipalities. *Journal of Public Economics*, 134, 42–52.
- Carreras, A., & Tafunell, X. (2021). *Between empire and globalization: an economic history of modern Spain*. Palgrave Studies in Economic History.
- Castells, A., & Solé-Ollé, A. (2005). The regional allocation of infrastructure investment: The role of equity, efficiency and political factors. *European Economic Review*, 49(5), 1165–1205.
- Clavera, J., Esteban, J.M., Monés, M.A., Montserrat, A., & Ros-Hombravella, J. (1973). *Capitalismo español: de la autarquía a la estabilización (1939-1959)*. Cuadernos para el Diálogo, vol. I y II.



Comín, F. (1996): *Historia de la Hacienda pública, II, España (1808-1995)*. Barcelona. Crítica.

Comín, F. (2018). Presupuesto y corrupción en la España contemporánea (1808-2017): lecciones de la historia in De Riquer, B., Pérez Francesch, J.L., Rubí, G., Toledano F.L. & Luján, O. (dirs). *La corrupción política en la España contemporánea*, Madrid, Marcial Pons Historia, 81–110.

Comín, F., & Vallejo, R. (2009). Los programas de inversiones públicas (1964-1976) ¿El instrumento presupuestario al servicio de los planes de desarrollo? In de la Torre, J., & García-Zúñiga, M. (eds). *Entre el Mercado y el Estado. Los planes de desarrollo durante el franquismo*. Servicio de publicaciones, 89–146.

Curto-Grau, M, Herranz, A., & Solé-Ollé, A. (2012). ‘Pork-barrel politics in semi-democracies: the Spanish ‘Parliamentary roads’, 1880-1914,’ *Journal of Economic History*, 72(3), 771–796.

De la Fuente, A. and Vives, X. (1995). Infrastructure and education as instruments of regional policy: evidence from Spain. *Economic policy*, 10(20), 11–51.

De la Fuente, A. (2004). Second-best redistribution through public investment: a characterization, an empirical test and an application to the case of Spain. *Regional Science and Urban Economics*, 34(5), 489–503.

De la Torre, J., & García-Zúñiga, M. (2013). El impacto a largo plazo de la política industrial del desarrollismo español. *Investigaciones de Historia Económica-Economic History Research*, 9(1), 43–53.

Donges, J. B. (1976). *La industrialización en España: políticas, logros, perspectivas* (Vol. 8). Barcelona: Oikos-Tau.

Drukker, D. M. (2003). Testing for serial correlation in linear panel-data models. *The Stata Journal*, 3(2), 1–10.

Espuelas, S. (2012). Are dictatorships less redistributive? A comparative analysis of social spending in Europe: 1950-1980. *European Review of Economic History*, 16(2), 211–232.

Fageda, X., & Olivieri, C. (2019). Transport infrastructure and regional convergence: A spatial panel data approach. *Papers in Regional Science*, 98(4), 1609–1631.

Fusi Aizpurua, J.P. (2001). *Franco: autoritarismo y poder personal*. Editorial Debolsillo (Punto de Lectura).

Gago-Vaquero, F. (2014). Evolución de la Conflictividad Laboral Colectiva en el Franquismo y la Transición, según los Datos del Ministerio de Trabajo. *Tiempo y Sociedad*, 17, 53–153.

Gámir, L. (2000). *Política económica de España*. Alianza Editorial, Madrid.

González, M. J. (1979). *La economía política del franquismo (1940-1970): dirigismo, mercado y planificación*. Editorial Tecnos, Madrid.

González Portilla, M., & Garmendia, J.M. (1988). *La posguerra en el País Vasco. Política, Acumulación, Miseria*. Kriselu, Donostia.

Greene, W. H. (2012). *Econometric analysis 4th edition. International edition*. New Jersey: Prentice Hall.



Gunther, R. (1996). *Spanish Public Policy: from Dictatorship to Democracy*. Centre for Advanced Studies in Social Sciences. Juan March Institute. Madrid.

Haque, M. E., & Kneller, R. (2015). Why Public Investment fails to raise economic growth in some countries? The role of corruption. *The Manchester School*, 83 (6), 623–651.

Harrison, J. (2009). Early Francoism and Economic Paralysis in Catalonia, 1939-1951. *European History Quarterly*, 39(2), 197–216.

Hausman, J.A. (1978). Specification tests in econometrics. *Econometrica*, 46, 1251–1272.

Herranz-Loncán, A. (2007). Infrastructure Investment and Spanish Economic Growth (1850-1935). *Explorations in Economic History* 44(3), 452–468.

Kemmerling, A., & Stephan, A. (2010). The determinants of regional transport investment across Europe. In: Bosch N, Espasa M, Solé-Ollé A (eds) *The political economy of inter-regional fiscal flows*. Edward Elgar, Cheltenham.

Lardín, A. (2005). Els treballadors industrials de Catalunya i el PSUC (1938-1959). *Butlletí de la Societat Catalana d'Estudis Històrics*, 16, 273–286.

Lee, L.F., & Yu, J. (2010). Some recent developments in spatial panel data models. *Regional Science and Urban Economics*, 40, 255–271.

LeSage, J.P., & Pace, R. K. (2009). *Introduction to Spatial Econometrics*. CRC Press, Taylor & Francis Group: Boca Raton, FL.

LeSage, J.P. (2014). What Regional Scientists Need to Know about Spatial Econometrics. *The Review of Regional Studies*, 44, 13–32.

Levin, A., Lin, C.-F., and Chu, C.-S. J. (2002). Unit root tests in panel data: Asymptotic and finite-sample properties. *Journal of Econometrics*, 108(1), 1–24.

Linz J., & De Miguel, J. (1977). Hacia un análisis regional de las elecciones de 1936 en España. *Revista Española de la Opinión Pública*, 48, 27–68.

Lohmann, S. (1997). Why did the East Germans rebel? *The Independent Review* Vol. 2, No. 2 (Fall 1997), pp. 303-310

Martínez-Ruiz, E., & Pons, M. A. (2020). 1959: The Stabilization Plan and the End of Autarky. In *Historical Turning Points in Spanish Economic Growth and Development, 1808–2008* (pp. 123–158). Palgrave Macmillan, Cham.

Martínez Serrano, J. (1982). *Economía española, 1960-1980: crecimiento y cambio estructural*. Blume.

Maravall, J. M. (1970). *El desarrollo económico y la clase obrera: un estudio sociológico de los conflictos obreros en España*. Colección Demos. Ediciones Ariel.

Molinero, C., & Ysàs, P. (1998). *Productores disciplinados y minorías subversivas. Clase obrera y conflictividad en la España franquista*. Siglo XXI de España Editores.

Paluzie, E., Pons, J., Silvestre, J., & Tirado, D. A. (2009). Migrants and market potential in Spain over the twentieth century: a test of the new economic geography. *Spanish Economic Review*, 11(4), 243–265.



Prados de la Escosura, L., & Sanz, J.C. (1996). Growth and Macroeconomic Performance in Spain, 1939-1993, In Crafts, N., & Toniolo, G. (eds). *Economic Growth in Europe since 1945*. Cambridge, Cambridge University Press, 355–387.

Prados de la Escosura, L., Rosés, J. R., & Sanz, I. (2012). Economic Reforms and Growth in Franco's Spain. *Journal of Iberian and Latin American Economic History*, 30(1), 45–89.

Prados de la Escosura, L., & Sánchez-Alonso, B. (2019). *Economic Development in Spain, 1815-2017*. Working Paper number 0163, European Historical Economics Society.

Preston, P. (Ed.). (1976). *Spain in crisis: the evolution and decline of the Franco dictatorship*. Harvester Press, United Kingdom.

Segura, J. (1992). La industria española y la competitividad. In *Anales de la Real Academia de Ciencias Morales y Políticas* (pp. 369–382). Ministerio de Justicia.

Smart, M., & Sturm, D. M. (2013). Term limits and electoral accountability. *Journal of Public Economics*, 107, 93–102.

Solé-Ollé, A. (2010). The determinants of the regional allocation of infrastructure investment in Spain. In: Bosch, N., Espasa, M., & Solé-Ollé, A. (eds) *The political economy of inter-regional fiscal flows*. Edward Elgar, Cheltenham.

Sudrià, C. (1991). Catalunya i la política econòmica del primer franquisme. Una reconsideració. *L'Avenç. Revista d'Història*, 149, 24–27.

Tamames, R. (1973). *La República. La Era de Franco. Historia de España Alfaguara VII*. Alianza Universidad, Madrid.

Tamames, R., & Rueda, A. (2008). *Estructura económica de España*. Alianza Editorial, Madrid.

Townson, N. (Ed.). (2007). *Spain Transformed: The Franco Dictatorship, 1959-1975*. Springer.

Tur-Prats, Ana and Valencia Caicedo, Felipe (2020). The Long Shadow of the Spanish Civil War (July 15, 2020). Available at SSRN: <https://ssrn.com/abstract=3659549> or <http://dx.doi.org/10.2139/ssrn.3659549>

Voigtländer, N., & Voth, H. J. (2021). *Highway to hitler* (No. w20150). National Bureau of Economic Research, Cambridge.

Wooldridge, J. M. (2002). *Econometric Analysis of Cross Section and Panel Data*. Cambridge, Massachusetts: The MIT Press.

Yamano, N., & Ohkawara, T. (2000). The regional allocation of public investment: Efficiency or equity? *Journal of Regional Science*, 40(2), 205–229.

Ysàs, P. (2008). El movimiento obrero durante el franquismo. De la resistencia a la movilización (1940-1975). *Cuadernos de Historia Contemporánea*, 30, 165–184.

Weber, M. (1991). *Escritos políticos*. Madrid: Alianza.

Appendix



A1. Specification of the theoretical model

Let us consider a country ruled by a market-friendly dictatorship, which is threatened by a collectivist opposition. The members of the opposition will try to expropriate the returns to the productive capital and distribute the existing resources among the working class. In order to achieve this goal in the province i , they need to demonstrate and take to the streets. Given the prevailing levels of repression, the necessary turnout of the demonstration needs to be k people out of a population of L_i individuals.

The production function in every province i of this country ($Y_i = K_i^\beta (A_i L_i)^{1-\beta}$) combines an aggregate stock of productive capital (K_i) and some efficiency units of labor ($A_i L_i$). We will undertake our comparative statics exercise with respect to the parameter A_i , trying to understand how productivity growth affects the magnitude of the protests. It will be assumed that, if the workers succeed, the whole provincial output will accrue to the labor force, whereas otherwise every worker will receive a wage rate (w_i) determined by a competitive labor market.

The government conditions the provision of infrastructure, health, and education to the maintenance of the status quo in labor relations. Only if that is the case, the government will provide workers in province i with G_i units of the public good. Otherwise, they will receive zero units, although they will appropriate the whole output of the local firms.

Let us denote by $P(\widehat{C}_i)$ and $\widehat{C}_i$ the probability of revolutionary success and the probability that any worker will decide to demonstrate, respectively. Protestors will succeed only if at least k workers decide to demonstrate. Therefore, the value of k can be considered an indicator of the strength of state repression. Capitalists will obtain a profit only if the protestors fail, and they need to advance an amount of capital K_i before production starts. Therefore, they solve the following optimization problem:

$$\text{Max}_{K_i} \left\{ \left((1 - P_i(\widehat{C}_i)) \beta K_i^\beta (A_i L_i)^{1-\beta} - K_i \right) \right\} \quad (1')$$

Therefore,

$$K_i = A_i L_i \left((1 - P_i(\widehat{C}_i)) \beta^2 \right)^{\frac{1}{1-\beta}}$$

$$\frac{Y_i}{L_i} = A_i \left((1 - P_i(\widehat{C}_i)) \beta^2 \right)^{\frac{\beta}{1-\beta}}$$



$$w_i = (1 - \beta) \frac{Y_i}{L_i} \quad (2')$$

It will be considered that demonstrating is costly for every participant, due to the effects of repression. There is a priori uncertainty as to the magnitude of such cost, which will be idiosyncratic for every worker and will follow ex-ante a uniform probability distribution with support $[0,1]$. Therefore, the cost level that makes workers indifferent between protesting or not is equal to their ex-ante probability of demonstrating. If the demonstrations succeed (fail), capitalists will (not) improve the workers' remuneration and every worker will get $\frac{Y_i}{L_i} (w_i + G_i)$, apart from the cost mentioned above in case of participation in the protests.

The equilibrium level of $\hat{C}_i$ is determined with the following indifference condition:

$$\begin{aligned} (w_i + G_i) \sum_{j=0}^{k-1} \binom{L_i - 1}{j} \hat{C}_i^j (1 - \hat{C}_i)^{L_i - j - 1} + \frac{Y_i}{L_i} \sum_{j=k}^{L_i - 1} \binom{L_i - 1}{j} \hat{C}_i^j (1 - \hat{C}_i)^{L_i - j - 1} = \\ = (w_i + G_i) \sum_{j=0}^{k-2} \binom{L_i - 1}{j} \hat{C}_i^j (1 - \hat{C}_i)^{L_i - j - 1} + \frac{Y_i}{L_i} \sum_{j=k-1}^{L_i - 1} \binom{L_i - 1}{j} \hat{C}_i^j (1 - \hat{C}_i)^{L_i - j - 1} \\ - \hat{C}_i \quad (3') \end{aligned}$$

The left-hand side of (3) corresponds to the worker's payoff if he does not participate in the revolts, whereas the right-hand side captures the net payoff in case of participation. After some simplifications, we can restate (3') as

$$1 = \binom{L_i - 1}{k - 1} \hat{C}_i^{k-2} (1 - \hat{C}_i)^{L_i - k} \left(\beta \frac{Y_i}{L_i} - (1 - \beta) G_i \right) \quad (4')$$

From (2) and (4) it is already possible to prove Propositions 1 and 2.

Proposition 1: In the presence of a sufficiently mild repression, a higher level of local productivity will result in a higher probability of participation in the protests and a higher probability of success for the working class.

Proposition 2: In the presence of a sufficiently mild repression, a higher local productivity will also result in a higher expenditure on public investment.

Proof of Proposition 1

The definition of the probability of success for the demonstrators implies that



$$P_i(\hat{C}_i) = 1 - \sum_{j=0}^{k-1} \binom{L_i}{j} \hat{C}_i^j (1 - \hat{C}_i)^{L_i-j} \quad (5)$$

When k is sufficiently close to one,

$$P_i(\hat{C}_i) = 1 - (1 - \hat{C}_i)^{L_i} \quad (6)$$

It is then possible to derive implicitly $\hat{C}_i$ as a function of G_i and the parameters of the model:

$$\hat{C}_i = (1 - \hat{C}_i)^{L_i-1} \left[\beta^{\frac{1+\beta}{1-\beta}} A_i (1 - \hat{C}_i)^{\frac{\beta L_i}{1-\beta}-1} - (1 - \beta) G_i \right] \quad (7)$$

Moreover, we can define the following function

$$H = \hat{C}_i - (1 - \hat{C}_i)^{L_i-1} \left[\beta^{\frac{1+\beta}{1-\beta}} A_i (1 - \hat{C}_i)^{\frac{\beta L_i}{1-\beta}-1} - (1 - \beta) G_i \right]$$

And apply the implicit function theorem, it is possible to conclude

$$\frac{dH}{d\hat{C}_i} = 1 + (L_i - 1) \frac{\hat{C}_i}{(1 - \hat{C}_i)} + (1 - \hat{C}_i)^{\frac{L_i}{1-\beta}-2} \beta^{\frac{2}{1-\beta}} A_i \frac{L_i}{(1 - \beta)} > 0 \quad (8)$$

And $\frac{dH}{dA_i} < 0$. Therefore,

$$\frac{d\hat{C}_i}{dA_i} = - \frac{\frac{dH}{dA_i}}{\frac{dH}{d\hat{C}_i}} > 0 \quad (9)$$

Proof of Proposition 2

Furthermore, the government chooses G_i to maximize the same objective function as the capitalists in (1), considering that public investment is not directly productive but attenuates conflict. Therefore, G_i is useful to reduce $P_i(\hat{C}_i)$. The first-order condition corresponding to the optimal investment behavior by the government is

$$1 + \beta^{\frac{1+\beta}{1-\beta}} A_i \frac{L_i^2}{1 - \beta} (1 - \hat{C}_i)^{\frac{L_i}{1-\beta}-1} \frac{d\hat{C}_i}{dG_i} = 0 \quad (10)$$

Where $\frac{d\hat{C}_i}{dG_i} = - \frac{\frac{dH}{dG_i}}{\frac{dH}{d\hat{C}_i}} < 0$.

So, if we define the function $J = 1 + \beta^{\frac{1+\beta}{1-\beta}} A_i \frac{L_i^2}{1 - \beta} (1 - \hat{C}_i)^{\frac{L_i}{1-\beta}-1} \frac{d\hat{C}_i}{dG_i}$, after some simplifications it is possible to obtain that



$$\frac{dG_i}{dA_i} = -\frac{\frac{dJ}{dA_i}}{\frac{dJ}{dG_i}} = \frac{(1 - \hat{C}_i)}{A_i \left(\frac{L_i}{1 - \beta} - 1 \right)} > 0 \quad (11)$$

Additional tables

Table A1. List of Spanish provinces (NUTS III) included in the sample

Albacete	Ciudad Real	Huelva	Navarra	Tenerife
Alicante	Coruña	Huesca	Orense	Teruel
Almería	Cuenca	Jaén	Palencia	Toledo
Asturias	Cáceres	Las Palmas	Pontevedra	Valencia
Badajoz	Cádiz	León	Rioja	Valladolid
Baleares	Córdoba	Lleida	Salamanca	Vizcaya
Barcelona	Girona	Lugo	Segovia	Zamora
Burgos	Granada	Madrid	Sevilla	Zaragoza
Cantabria	Guadalajara	Murcia	Soria	Álava
Castellón	Guipúzcoa	Málaga	Tarragona	Ávila

Table A2. Main descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
$\ln I_{it}^*$	350	-2.58	0.51	-4.10	-1.21
$\ln I_{it}^{**}$	400	-2.02	0.84	-4.00	0.18
$\ln VOTES_{it}$	400	-0.84	0.36	-1.94	-0.13
$\ln GDPPC_i$	400	-0.64	0.59	-1.73	0.99
$\ln VOTES_i * \ln GDPPC_i$	400	0.59	0.61	-0.80	2.87
$\ln POPULATION_i$	400	13.05	0.63	11.57	15.28
$\ln AREA_i$	400	9.09	0.55	7.55	9.99
$\ln TSTOCK_i$	400	13.91	0.68	12.37	16.94
$\ln DISTMAD_i$	400	5.86	0.74	3.50	7.71

Notes: * refers to the public investment as a share of the total stock of public capital, while ** denotes the public investment per capita.

Table A3. Ranking of Spanish provinces according to the growth rate of the stock of public capital per capita (1940-1975), percentage

Navarra	48.55	Pontevedra	234.04
Soria	55.83	Granada	237.67
Guipúzcoa	61.98	Badajoz	241.94
Zaragoza	112.03	Salamanca	249.93
Rioja	112.37	Coruña	250.94
Teruel	117.52	Burgos	256.18



Álava	137.54	Lugo	276.38
Ciudad Real	138.21	Guadalajara	283.76
Baleares	146.66	Cáceres	284.02
Ávila	151.30	Almería	301.08
Toledo	155.40	Cuenca	309.94
Barcelona	166.67	Málaga	322.98
Valladolid	166.94	Zamora	325.17
Girona	167.55	Córdoba	340.39
Jaén	188.06	Vizcaya	347.30
León	192.70	Castellón	351.35
Palencia	195.26	Albacete	354.46
Huelva	196.98	Huesca	357.80
Alicante	210.73	Cádiz	379.03
Madrid	214.88	Tarragona	383.11
Asturias	220.88	Valencia	413.26
Cantabria	221.37	Orense	470.31
Sevilla	224.79	Tenerife	484.61
Lleida	226.72	Segovia	489.97
Murcia	233.77	Las Palmas	573.59

Note: provinces are sorted in ascending order.

Table A4. Computation of additional tests

Specification	Table 1	Table 2
Serial correlation	0.80*** (0.376)	1.30*** (0.260)
Hausman test	65.15*** (0.000)	78.34*** (0.000)
LLC test	-70.58*** (0.000)	-20.67*** (0.000)

Notes: The values of the test are included together with their associated p-values in brackets, such as *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. To compute the serial correlation, we have used the xtserial Stata command taking column (3) as baseline but excluding all the time-invariant variables, since the regression takes the first-order differences. An identical procedure is followed to compute the Hausman test. LLC refers to the bias-adjusted Levin-Lin-Chu test for unit roots in panel data using the xtunitroot Stata command for each one of the dependent variables in Tables 1 and 2, respectively. The LLC test incorporates a number of lags such as the Akaike information criterion (AIC) for the regression is minimized and also a linear time trend.

Table A5. Results for equation (3), period 1940-1975, estimated by Spatial Panel Random Effects. Dependent variable: level of investment per capita

Specification	(1)	(2)	(3)	(4)
$W \ln I_{ij}$	0.523*** (0.042)	0.556*** (0.041)	0.169*** (0.051)	0.213*** (0.061)
$\ln VOTESL_t$	0.190 (0.124)	0.269* (0.142)	0.278*** (0.100)	0.300** (0.141)
$\ln GDP_{PC,t-1}$	0.888***	0.838***	0.713***	0.765***



	(0.120)	(0.117)	(0.139)	(0.148)
$\ln VOTESL_t * \ln GDPPC_{i,t-1}$	0.195**	0.249***	0.276***	0.295***
	(0.094)	(0.097)	(0.083)	(0.089)
$\ln POPULATION_{i,t-1}$	-0.299***	-0.452***	-0.432***	-0.456***
	(0.071)	(0.069)	(0.066)	(0.077)
$\ln AREA_i$	0.413***	0.396***	0.262***	0.331***
	(0.070)	(0.082)	(0.067)	(0.086)
$\ln TSTOCK_{i,t-1}$	-0.049	0.071	0.095	0.084
	(0.082)	(0.079)	(0.091)	(0.094)
$\ln DISTMAD_i$	0.016	-0.050	-0.007	-0.065
	(0.046)	(0.065)	(0.034)	(0.067)
Intercept	0.520	1.525*	0.730	1.182
	(0.993)	(0.875)	(0.792)	(0.890)
Regional Fixed Effects	No	Yes	No	Yes
Time Fixed Effects	No	No	Yes	Yes
Observations	350	350	350	350

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table A6. Results for equation (3), period 1940-1975, estimated by Spatial Panel Random Effects. Dependent variable: investment effort

Specification	(1)	(2)	(3)	(4)
$W \ln I_{ij}$	0.439***	0.535***	0.121**	0.203***
	(0.047)	(0.043)	(0.047)	(0.060)
$\ln VOTESL_t$	0.197	0.022	0.323***	0.227
	(0.136)	(0.140)	(0.104)	(0.147)
$\ln GDPPC_{i,t-1}$	1.158***	1.025***	0.833***	0.813***
	(0.122)	(0.114)	(0.142)	(0.153)
$\ln VOTESL_t * \ln GDPPC_{i,t-1}$	0.254**	0.228**	0.317***	0.285***
	(0.100)	(0.098)	(0.084)	(0.091)
$\ln POPULATION_{i,t-1}$	0.543***	0.452***	0.581***	0.608***
	(0.078)	(0.066)	(0.071)	(0.083)
$\ln AREA_i$	0.397***	0.267***	0.230***	0.274***
	(0.077)	(0.080)	(0.070)	(0.090)
$\ln TSTOCK_{i,t-1}$	-0.837***	-0.754***	-0.896***	-0.943***
	(0.089)	(0.076)	(0.096)	(0.098)
$\ln DISTMAD_i$	-0.020	-0.115*	-0.019	-0.067
	(0.051)	(0.063)	(0.037)	(0.070)
Intercept	0.366	2.057**	0.928	1.419
	(1.100)	(0.859)	(0.856)	(0.949)
Regional Fixed Effects	No	Yes	No	Yes
Time Fixed Effects	No	No	Yes	Yes
Observations	350	350	350	350

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table A7. Additional robustness results



VARIABLES	(1)	(2)	(3)	(4)
Center Share#Confl		-20,074*** (7,490)		
Left Share#Confl		19,499*** (6,494)		
Right Share#Confl		-15,316** (6,352)		
Left#Confl	2,609* (1,414)			
Right#Confl	-12,753*** (4,256)			
Center#Years			-2,706** (1,041)	
Left#Years			825.2 (1,893)	
Right#Years			-3,137*** (1,054)	
Center Share#Years				-16,147** (6,274)
Left Share#Years				-2,715 (6,374)
Right Share#Years				-15,422** (5,998)
Observations	600	600	1,750	1,750
left=center	0.0710	0.00500	0.0300	0.0400
right=center	0.00400	0.478	0.0100	0.825
left=right	0.00400	0.00700	0.0160	0.00400

Note: clustered variance at province level in brackets. All the scenarios include province and year fixed effects.

