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Party Nationalization and the Provision of Public Goods in Democracies: A Theoretical and Empirical Investigation

A thesis submitted for the degree of
Doctor of Philosophy

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Declaration

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Summary

The project investigates the extent to which political parties' organizational coverage and electoral geography – the degree to which they are successful at gaining electoral support throughout all regions within a country – affects both the incentives and opportunities of parties to engage in particularistic spending towards favoured regions. In political science, political party nationalization has figured prominently on the theoretical agenda, and scholarly assertions abound on the significance of party nationalization in determining the geographical 'scope' of national policy. However such claims regarding the importance of political parties' geographic 'linkages' for public policy, have rarely been subject to empirical scrutiny.

The central theoretical proposition is that the degree of nationalization affects parties' preferences over geographical distribution. Competition at the national level between statewide parties who run in, and represent, all regions in a state has a better chance of leading to nationalized, comprehensive policy programs. By contrast, regionally fragmented party systems will tend to lead to more particularistic policy programs that result from cross-regional log-rolls or policies that distribute benefits unevenly across geographic areas. The general objective of the project is to test the contention that regionalized political competition leads to inferior public goods provision compared with contexts where parties are nationally represented throughout all regions in a state.

In Chapter 1 we introduce the project, describing its framework and main objectives. Its main contribution is the literature on distributive politics – work concerned with the geographic allocation of goods and services by governments. In such empirical studies of distributive politics, scholars seek to ascertain the systematic determinants of the differential distribution of goods and services between regions in a country. The central perspective within this literature has emphasized the institutional determinants of particularistic policies: in particular voting rules and regime type are seen as especially important in explaining variation in distributive politics. Our focus, by contrast, is on direct influence of political parties in distributive policy. We emphasize that political party characteristics, relatively independent of the institutional environment, are important to explain variance in pork barrel activities both across countries and within countries over time.

Despite the prominent understanding of the importance of party nationalization in producing national public goods, this view has only recently been subject to empirical scrutiny. Chapter 3 presents a time series, cross-national investigation of the impact of parties with regionalized patterns of electoral support on governments' public spending priorities. When fiscal policy is bargained between parties that represent regionally specific interests, this is likely to lead to a
'fiscal common pool problem'. This comparative study makes a valuable contribution to the emerging literature finding that the extent to which national governments are representative of all regions within a country, has an influence on the level of spending on geographically concentrated (local) public goods by central governments.

While a number of studies have recently emerged investigating the policy consequences of parties’ variable electoral geography on public policy outcomes, this project is amongst the first to investigate the direct policy effects of party nationalization on distributive policy in specific countries. In our case study of the allocation of regional infrastructure investment by central governments in Italy (1972-2006) we point to the explanatory importance of variation in parties’ electoral geography to explain ‘macro’ shifts in the level of redistribution among regions. While the extant literature generally attempts to explain observed patterns in pork barrel spending in terms of institutional explanations, these explanations are insufficient to explain the large-scale changes to the system of inter-regional transfers we observe after 1994. The key implication we take from the study is the ‘functional’ nature of politically motivated regional investment in Italy. The insight is that political factors have a strong influence on regional investment in Italy across all periods studied (1972-2006) but the extent to which some regions are ‘disfavoured’ in terms of investment is strongly influenced by the political geography of the governing parties.

Likewise in our study of the allocation of infrastructure investment among Spanish provinces by the central government (1978-2010), we find that political institutional factors are inadequate to explaining observed variation in distributive policy, among political parties operating in the same institutional context. We find that the extent to which different parties in government pursue political ‘tactical’ distribution to favoured constituencies is, to a large extent, determined by their electoral geography.

The findings are relevant to a larger theoretical literature related to political economy and distributive politics. In particular, we argue that the emphasis in this literature on exploring patterns of politically motivated distribution should shift away from formal electoral institutional incentives that political actors face towards a greater cognizance of the importance of the distributive incentives generated by political geography.
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Chapter 1

1. Party Nationalization and Political Distribution in Democracies

1.1 Introduction

This project examines the effect of party nationalization on the nature of public goods provision in democracies. The study argues that nationalization of electoral alignments and party organization has repercussions for the extent to which 'regional favouritism' is a dominant feature of distributive policy in a particular country. In particular, it examines the impact of coalitional politics in the presence of parties with narrow geographic bases of support, such as regionalist parties or parties with regionalized patterns of support, on the amount of 'over-investment' by central governments in distributive log-rolling and regional pork barrelling (the allocation of public resources towards politically 'pivotal' constituencies). The project investigates the extent to which the organizational coverage and electoral geography of political parties – the extent to which they are successful at gaining electoral support throughout all regions within a country – affects both the incentives and opportunities of parties and individually powerful politicians to engage in particularistic spending towards favoured regions.

In this chapter we introduce the project, describing its framework and main objectives. As a whole it aims to make two main contributions, one theoretical and one empirical. Firstly, in seeking to understand why pork barrel activities vary across legislators and across countries, the project adds to a developing theoretical perspective in the distributive politics literature. Much of the literature takes as a point of departure the incentives of political parties to curb the efforts of legislators or regional factions to build regional support bases through pork barrel activities but does not directly examine party influence (Persson and Tabellini, 2003; Lizzeri and Persico, 2001). Rather it assumes that institutional factors, especially electoral institutions, are determinative of party behaviour and policy outcomes. In this prominent research tradition in political economy, the implication is that parties are epiphenomenal to institutional factors, in explaining patterns in political distribution (c.f. Persson and Tabellini, 2003, 13). However we argue that this institutional perspective in the literature has difficulty accounting for variations in the political distribution strategies that different parties pursue in the same institutional context.
While electoral institutions – the political institutions whose direct effects on policy are the most studied – are related to Laswell’s famous question (1936) of ‘who gets what, when and how?’ empirical research in this vein has tended not to capture the importance of intervening variables in producing policy outcomes. The relative nationalization of parties and party systems is one such intervening variable that we argue serves as a multiplicative mechanism between political institutions and policy outcomes (Taagepera and Qvortrup, 2012, 256). We address this lacuna, arguing that parties’ electoral and organizational coverage rather than purely institutional incentives are essential to explain variation between parties operating in the same institutional context – as well as variation over time within and between countries – in observed levels of pork barrelling and regional favouritism in policy outputs by central governments.

The central empirical contribution is to the political distribution literature, especially the emerging literature concerned with ‘regional favouritism’ in the allocation of government resources. We make a valuable contribution to this literature by detailing the effect that variations in political parties’ electoral geography have on regional pork barrel provision in Spain and Italy. We also explore the effects that variations in party electoral geography have on the composition of public spending in a cross-national study.

The logic that parties’ organizational characteristics are important to understanding variance in pork barrel politics has a long lineage in political science. For instance, an established branch of literature associated with E.E. Schattschneider’s ‘responsible party model’, emphasized nationalization as a key ingredient explaining programmatic and nationally-orientated policy-making by ‘responsible parties’ (Schattschneider 1960; Stokes, 1967). Under the responsible party framework, representatives cultivate programmatic party labels that target categories of voters, irrespective of their territorial origin.

Several studies in this tradition emphasize the role of strong cohesive parties in explaining variation in pork barrel activity and constituency service in different contexts. For example, cohesive parties are the primary explanation proposed for why pork-barrelling is less prominent in Parliamentary systems than in Presidential systems. However, as the literature on distributive policy has expanded in the past decade, the assumption that countries with parliamentary systems of government are less prone to pork barrel distribution, in the form of particularistic spending or regional favouritism in the distribution of goods and services by central government has continually been brought open to question (Golden and Min, 2013, 82; Tavits, 2009, 105). Recent findings in studies of intergovernmental transfers or geographically allocated spending, for instance, have found evidence of pork-barrel type distribution in political systems where we would least expect it on the basis of their electoral or political institutions (Kitschelt and Wilkinson, 2007).
This could be due to the fact that most studies ignore the geographic element to party strength. While parties can be strong and cohesive in the legislature, this does not necessarily mean that they act as national representative bodies as the 'responsible party model' suggests. Rather, parties may have variable incentives to provide pork or political favouritism in distributive policy depending on the extent to which they receive electoral support throughout all regions. This is obviously true of regional parties as well as political independents whose express goal is regional or local representation. However, it is also true of parties that may receive a significant share of the national electoral vote but do so on the basis of regionalized patterns of electoral support. It is argued that such parties are less likely to 'rein-in' legislators' pork-barrel impulses to target favoured regions.

This chapter is organised as follows. The first section sets out more comprehensively the theoretical perspective that underpins the project. The second section describes how the project is situated in the literature. The third section discusses some examples from particular countries illustrating the central proposition, that variation in party nationalization affects the level of pork-barrel distribution by central governments. The final section describes the research approach and outlines the structure of the remaining chapters in the dissertation.

1.2 Party Nationalization and Programmatic Politics

The analysis of political party nationalization has figured prominently on the theoretical agenda in political science at least since E.E. Schattsneider (1960) over half a century ago. Earlier studies saw the nationalization of party politics – or electoral voting – as a broad historical process paralleling modernization. Political nationalization involves the gradual (and in some views inevitable) formation of national electorates and party systems, party organizations and campaigns, as well as increasing prioritization and focus upon national issues and party programs. For many scholars, this nationalization of electoral alignments and political parties in Western democracies was responsible for some of the most drastic changes in political life in the Twentieth Century, including the 'transition' in many states from a fragmented and clientelistic type of politics dominated by local political personalities to national representation (Stokes, 1965; Sundquist, 1973; Caramani, 2004; Chhibber and Kollman, 2004). Nationalization of electoral trends and increased organization of parties across all regions and electoral districts within a country is a key explanation for the shift from patronage and localized politics to programmatic politics at earlier stages of democracy in developed countries.

For example, Caramani argues (2004, 2) prior to nationalization that the party systems in nineteenth century Western Europe long remained unstructured and highly territorialized which
had an effect on the distributive nature of the state. Instead of national public goods provision, politics at the national level was dominated by local issues and candidates. As Chhibber and Kollman (2004, 1) describe the 1850s 'a highly regionalized, fractious and turbulent decade in American party politics', local political issues dominated national politics as electoral competition was characterized by competition among state-level or regional parties with no national opposition party to compete with the Democrats for control of the government. The opposition Know-Nothings, a regionalized party 'founded by middle decade, not only because their northern and southern factions split over the slavery issue but also because they could not agree on a national policy program to deal with issues that were essentially local in American society to that time' (ibid, 1).

Strong national parties are the central force that reduced the territoriality and local orientation of politics in modern democracies. Gradually the nationalization of politics meant that party organizations structured along nation-wide cleavages replaced an atomized type of political representation. Candidates in the various constituencies became increasingly 'party candidates' who no longer represented exclusively local interests but instead nation-wide functional interests and values, giving the masses the possibility to influence directly national decision-making processes (Caramani, 2004, 31).

The existing literature has favoured the use of party nationalization as a concept and measure of the territorial structure of electoral politics (Jurado, 2013, 4). As a concept, party nationalization describes the dynamics of party competition across sub-national units or electoral districts. It refers to the degree to which vote returns for a particular party vary between districts at a particular point in time (we discuss other conceptual definitions in section 2.2.1). High levels of nationalization indicate that electoral competition follows similar patterns across districts in a particular country, while low levels of party nationalization indicate that electoral competition is more heterogeneous across sub-national units.

In contemporary comparative studies, the lack of territorial homogeneity in the vote shares of a party and/or party system in a country is often interpreted as implying the importance of local level district – as opposed to national level or partisan characteristics – to vote choice (Stokes, 1967; Rose and Urwin, 1975; Caramani, 2000; Jones and Mainwaring, 2003). In this view, a greater variability in vote percentages across districts indicates the relative importance of local or regional-level factors to national politics and, as a result, variable incentives of national legislators to focus on local relative to national level political concerns. This is particularly the case for regional or regionalist parties, but also for parties whose support is 'denationalized' or unequally distributed throughout the nation (Hicken et al., 2010). It is implied that the concept of party nationalization distinguishes political representation according to the importance of
territorial concerns for re-election. Electoral accountability differs between parties comprising government with a high equality in their territorial representation and those with relatively inconsistent coverage across the nation (Bawn and Rosenbluth, 2006).

Researchers in recent years have also proposed that variation in levels of nationalization of parties, as well as overall party systems, should have significant consequences for public policy making or patterns of public spending. The literature on the causes of party nationalization or variations in the strength of regional political movements has suggested a number of policy consequences that arise from variations in territorial support by parties. For instance, in a review of the nationalization literature, Jones summarizes the policy and distributive implications of such geographical variation:

'Decisions related to national transfers to subnational units, administrative reform, and subsidies may be strongly influenced by the degree of party system nationalization...Where a party's base of support is relatively constant across geographic units, it may be more likely to treat all units equally. In contrast, where its support varies widely across geographic units, we would expect it to base its decisions in part on the degree of support it receives in specific geographic units. These public policy consequences seem particularly likely if a weakly nationalized vote pattern falls along regional lines; that is, if a governing party fares markedly better in some regions than others' (2005, 17-18).

The main proposition put forth by scholars is that nationalization enlarges the partisan constituency of politicians, thereby widening the territorial scope of policy-making (Jones and Mainwaring, 2003; Morgenstern et al. 2009). However, studies of the causes of party nationalization often render only vague, impressionistic claims for why, and how, nationalization should have consequences for public policy making, leaving it to more recent authors to attempt to specify more detailed theoretical mechanisms linking party nationalization to distributive policy.

In a political distributive setting, this 'wider scope' has been mooted to have several effects on patterns of policy making. Three general claims can be observed in the literature, which are not mutually exclusive. Scholars have claimed that nationalization affects the level and composition of public spending by increasing universal-type transfers as opposed to targeted or inefficient pork-barrel allocations to particular regions or districts (Crisp, Olivella and Potter 2012; Jurado, 2013). Similarly, by reducing pork-barrel policy interventions nationalization increases the coordination and consistency of public goods spending, having a discernible (positive) impact on public goods outcomes (Hicken et al. 2010). Finally, nationalization decreases the power of geographically concentrated special interests over policy-making, making national bargaining more geographically pluralistic (Simmons et al., 2011).
As a result of one or a combination of these features of policy-making, scholars have investigated the link between countries' level of party system nationalization and several substantive policy outcomes. Lago-Penas and Lago-Penas (2009), for instance, in a cross-national study of government spending, examine whether the level of party nationalization has a systematic impact on the size and division of spending between budgetary categories over time. Hicken et al. (2010) investigate the effect of party nationalization on aggregate measures of public goods provision across countries, in this case the marginal impact of healthcare spending in decreasing infant deaths and increasing the number of children immunised against measles, two standard international public health benchmarks.

In all of these studies, party nationalization is related to pork-barrel as opposed to partisan models of political distribution. Partisan theories of government preferences (e.g. Hibbs, 1977) are concerned with how the ideological incentives of parties affect their choice over and implementation of macroeconomic policy and distributive outcomes. Partisan models generally deal with larger programmatic policies that change more slowly (and visibly) over time, are usually underpinned by broader societal ideals and are most likely to be affected by party ideology. Pork barrel models generally refer to (politically motivated) geographic allocations of goods and services, often referred to as 'tactical' distribution, where there is less of a clear ideological divide between left and right wing parties over distributive outcomes (see Dixit and Londregan, 1998). While partisan theories are more suitable to explaining differences between parties and governments in their preferences over distribution between individuals, pork barrel theories are generally better suited to explaining differences between parties in their preferences over geographical distribution. Nationalization studies are concerned with the distribution of goods or policy consequences across national territories, hence place themselves firmly in the realm of dealing with models of pork-barrel politics.

To summarize the relation between party nationalization and programmatic politics, the central theoretical proposition is that the degree of nationalization affects parties' preferences over geographical distribution. Competition at the national level between state-wide parties who run in and represent all regions in a state has a better chance of leading to nationalized, comprehensive policy programs (Hicken et al., 2010, 6). By contrast, regionally fragmented party systems will tend to lead to more particularistic policy programs that result from cross-geographic log-rolls or policies that distribute benefits unevenly across geographic areas. When political competition at the national level occurs between parties that represent specific subnational constituencies, then the outcomes of policy debates and conflicts should lead to two potentially damaging kinds of public policy outcomes:
1) An oversupply of pork-barrel policies resulting from log-rolls across sub-national units, whose benefits are concentrated in sub-national units with political 'clout' and may be larger than the marginal benefit to the nation as a whole would warrant (i.e. wasteful).

2) An undersupply of nationally-focused public policies. Bargaining over national policies is more likely to be politicized along regional lines. As Hicken et al note: 'Depending on the country, these latter, geographically targeted policies will benefit specific ethnic, religious, industrial, linguistic groups, but they will be less comprehensive and all-encompassing, and thus less effective and efficient, than if the parties were nationalized' (2010,3).

1.3 Relation to the Literature

Aside from the project's direct contribution to the emerging literature on the policy significance of party nationalization, this study speaks to a wide body of literature on how different forms of democratic government affect government spending (Bawn and Rosenbluth 2006). It is embedded in the literature looking at the relation between political institutions (such as constitutions and electoral systems), political outcomes (such as party systems) and public policy outcomes (Persson and Tabellini, 2003, 3). Specifically, it is related to three distinct literatures on electoral politics and public goods provision.

Firstly, it is relevant to the wide body of literature concerned with pork-barrel provision – the unproductive allocation of public resources to a particular jurisdiction with the cost spread diffusely throughout the whole population – as a form of indirect political exchange or 'linkage' between politicians and voters (see e.g. Cain, Ferejohn and Fiorina 1984; Diaz-Cayeros, Magaloni and Weingast, 2003; Keefer and Khemani, 2003; Kitschelt and Wilkinson, 2007). Secondly, it is related to a large cross-sectional empirical literature dealing with the link between various electoral institutions and the size and composition of public expenditure (Lizzeri and Persico, 2001; Milesi-Ferretti et al. 2002; Persson and Tabellini, 2003; Shelton, 2007). Thirdly, this research is also relevant to the political economy approach in the fiscal federalism literature, where political imperatives rather than benevolent social planning perspectives, are seen as driving social spending decisions, such as the distribution of inter-governmental grants or regional investment (see e.g. Wright, 1973; Seabright, 1996; Dahlberg and Johansson, 2002; Castells and Sole-Olle, 2005).

More specifically, it is related to a literature on the political economy of inter-regional redistribution in various countries. Such studies test various political-economic theories of why regions or sub-regional jurisdictions receive more than their 'fair share' of intergovernmental
grants or public transfers. The underlying theoretical question is why some regions have relatively more political clout to influence allocation of funds from central to sub-central governments. For instance, several studies have documented how certain types of institutions raise the ability of local politicians to lobby central government to 'extract' public investment for their regions in single country case studies (Cadot et al. 2006; Sole-Ole, 2010) and on cross-national samples (Hodler and Raschkey, 2014).

While the focus in the literature relating electoral institutions to tactical public investment provision has been on the institutional incentives parties or individual legislators have to distribute pork, electoral geography is perhaps an overlooked determinant of legislators’ preferences over budgetary policy. Most of the distributive politics literature has emphasized the institutional determinants of constituency service and pork barrel policies: in particular voting rules and regime type are seen as especially important in explaining variation in distributive politics (Cain et al 1987; Ames, 1995a; Golden and Picci, 2008: are prominent examples of within country studies; Persson and Tabellini, 1999; Milesi-Ferreti et al. 2002: are examples of cross-country empirical studies that are emblematic of this institutional view).

These institutions ‘fix’ the electoral returns to legislators of building a personal reputation. While ‘strong’ political parties have an effect on ‘reining in’ pork barrel distribution in this work, their effect is derived from the impact of the institutional environment on party cohesion in the legislature and in the electorate. Our focus, by contrast, is on direct influence of political parties on pork barrel activities and especially on parties’ variable incentives to pursue what we describe as ‘regional favouritism’ in a particular setting. In particular, we emphasize throughout the study that political party characteristics, relatively independent of the institutional environment in which parties compete, are important to explain variance in pork barrel activities both across countries and within countries over time.

The limited national scope of territorially concentrated parties may encourage such parties to behave in a similar manner to parties under plurality electoral rules, using narrowly targeted distribution because it is a less costly means to sway swing voters, or to retain the support of core constituencies, than broad redistribution involving the nation as a whole. In coalition governments commonly formed in proportional systems, parties with a low level of nationalization often make up the central government or provide support for minority governments. It is our contention that coalition governments consisting either solely or partially of poorly nationalized parties are likely to incur higher transaction costs in budget-making and fiscal policy (Lago-Penas and Lago-Penas, 2009). Poorly nationalized parties will require more distributive side-payments to support the passage of the budget than more nationalized parties.
On the other hand, nationalized parties may be important actors for ‘reining in’ particularism. A territorially integrated party structure affects the incentives of policy makers for a number of reasons. Strong national parties alter the cost-benefit calculations of individual politicians at both central and local level. If local politicians are regarded as a liability for the overall electoral profile of the party, they face severe consequences in terms of their own political careers. As a result, the opportunistic behaviour by local incumbents is likely to be constrained and, other things being equal, national policies will less of a reflection of their specific interests. Second, strong national parties complement this disciplinary function with the nurturing of long-term cooperation between party officials at different levels of governments and with different regional interests. Strong national parties act as coordinating institutions, reducing the fiscal common pool problem of central government, especially with regards discretionary expenditure (Beramendi and Diaz-Cayeros, 2006, 16). On the other hand, organizationally ‘weak’ parties that lack cohesion and have circumscribed geographic coverage are less able and may have less incentives to act in this coordinating capacity; they may be less able to censure the opportunistic behaviour of regional factions and indeed they may be more prone to engage in partisan pork-barrelling to regional strongholds.

1.4 Illustrative Examples

To summarize, we hypothesize that party system nationalization (regional fragmentation) should be positively (negatively) associated with public goods provision. Before turning to how we go about evaluating this hypothesis, the section below describes some cases to illustrate the logic of the proposition, that such regional fragmentation of the party system has consequences for distributive policy in a number of countries and, specifically, leads to greater levels of pork-barrel distribution. In the case of Spain and Italy, strong regionalist parties have been known historically to secure ‘disproportional’ investment for their regions. In Belgium, regionalized parties have historically ‘divided-up-the-spoils’ of regional investment via a semi-formal policy of legislative log-rolling. Amongst developing countries similar dynamics are visible, in Argentina, studies document how strong provincial parties are able to secure central government patronage as a form of side-payment to secure support for legislation on national level policies (Gibson and Calvo, 2000; Remmer, 2007). In India, several scholars have documented the effects of increased party system denationalization and regionalism of electoral politics since the 1980s on national distributive policy (Hicken et al., 2010).

While there are different mechanisms and interests by which the regional fragmentation of party systems affects macro-level distribution between regions in different countries, there are
common threads in all. Firstly, regional allocations based on political motivations tend to lead to higher levels of capital investment on average across all of these countries. We argue that this could be a result of public investment in these countries being used as a political tool or for rent-seeking (Keefer and Khemani, 2007). Secondly, regional investment tends to lead to less efficient and/or less equitable outcomes in terms of the public services produced by the regional investment that has been bargained amongst regionally fragmented parties.

When regional favouritism (regional investment based on patronage rather than programmatic considerations) plays a large role in the selection of projects and levels of investment the result of this process is a capital budget that is highly distorted (Prud’homme, 2004). In particular, regional infrastructure investment whose allocation is motivated by political considerations is likely to be less effective as a ‘public good’. Canonical examples of such ‘misallocation’ of investment are seen in the construction of ‘White elephants’ – investment projects with negative social surplus (Robinson and Torvik, 2004, 198). ‘White elephants’ can be thought of as public works projects that provide benefits to politically salient jurisdictions, such as local employment, but whose ‘service characteristics’ – such as enhanced coverage or access for the local population – do not justify their costs which are borne by the wider community (Henisz and Zelner, 2006, 263). Conceptually, if governments’ ‘misallocate’ investment to politically powerful jurisdictions (such as by increasing access or coverage in transport networks) for national level plans, there may be less overall coordination in local public goods provision. For instance, such politically motivated infrastructure projects are much larger and complex than necessary. Hence, we argue (and the cases below illustrate) that pork-barrel allocations of regional investment – aside from simply being ‘unfair’ from the point of view of under-privileged regions – are also likely to have aggregate effects upon national welfare. In these circumstances, public capital spending may not be as productive in generating the results in terms of growth that economists expect (Gramlich, 1994; Prud’homme, 2004).

1.4.1 Belgium: Log-Rolling and Regional Pork-Barrelling

In the 1960s, Belgian politics became increasingly dominated by ethno-linguistic tensions between the Dutch-speaking Flemings in the north and the French-speaking Walloons in the south (see Sweden and Jans, 2010). After the creation of three regions based around the linguistic communities in 1970, the three major traditional parties all split along linguistic lines creating the regionalized party system that persists to the present. Since none of the main parties (and only a handful of smaller parties) cover more than 57% percent of the territory of the country (in terms of constituencies in which they compete and win votes [Caramani, 2004,
122-123), this makes Belgium a particularly extreme case of a regionally fragmented party system. Nonetheless, it is useful to examine such an extreme case to distil the logic of the distributive bargaining dynamics.

One example of the effect that regionally fragmented party systems can have on geographical-based public spending and regional distribution by central governments is the infamous ‘waffle iron’ policy in Belgium prior to the fiscal decentralization reforms in 2001 (Bethuyne, 2005, 20). This was an explicit expenditure strategy followed by the Federal government prior to Belgian fiscal (regional revenue) decentralization, whereby money for large capital projects in one region needed to be compensated for by a similar level of spending in the other region regardless of objective need (Brawn, 2004, 39). Prior to 1989, infrastructure investment in each region usually had to be passed via omnibus legislation reminiscent of that analysed in the US distributive politics literature with large spending bills containing a hotchpotch of earmarked grants for investment projects in almost every state. In the pre-1989 variant of this budgetary bargaining method, a project in favour of one language community had to be matched with a similar sized – or often even identical – project for the other language community (Jennes, 2014, 19).

Under this system, the Flemish Community often received more capital investment than necessary as the Walloon Community needed the central government financing of capital investment to avoid default. This ‘divide-up-the-spoils’ log-rolling strategy in regional investment is credited with leading to a number of large ‘White elephant’ infrastructure projects being built as well as being a significant contributory factor to relatively high public debt in Belgium during this period (Sweden and Jans, 2010; Bethuyne, 2005, 2). In a theoretical sense it fits the description of Weingast, Shepsle and Johnsen (1981) of ‘inefficient universalism’– a situation where logrolling between regional representatives leads to budgets that are full of ‘oversized projects’ and in general inefficient levels of spending on local public goods at the expense of the average federal taxpayer.

According to Jennes (2014, 20), reforms to the system of territorial finance in 1993 replaced this matching or ‘specific’ waffle iron policy with a ‘general’ waffle iron-policy, whereby ‘earmarks’ or specific project bills were replaced with general purpose grants to the Regional Governments.

1.4.2 Spain: Regional Favouritism in Investment

Since the reconstitution of democracy in 1978 Spanish politics has been characterized by bipolar competition between two large national parties, as well as a number of significant regional parties. Since 1983 the right-wing PP and left-wing PSOE have alternated in government, often
with the support of regional parties at the national level and even more frequently in coalition at the regional government level. As we explore in Chapter 4 of this dissertation, it can be argued that the PP party is also denationalized to a significant extent, historically receiving weak support across a number of regions, especially amongst Autonomous Communities with a ‘Historic Nationality’. We argue that these regional cleavages in political party support, as well as the strength and influence of regional parties, explain some of the patterns in the geographic allocation of government resources that have been documented in Spain in recent decades.

There is a large journalistic as well as academic literature documenting some of the effects of regional favouritism in the case of Spain. It has been argued by several scholars that the distinctive features of Spain’s transport infrastructures (particularly road, rail and airport infrastructure) reflect long-term log-rolling strategy of capital resources among regions that was ‘sub-optimal’ from the point of view of economic efficiency. As Minder (2012) observes:

‘As part of a decade-long construction and housing boom, Spain added airports, toll roads and railway lines, often under pressure from regional politicians seeking a greater presence within the national transport network. Many of the recently built highways are now deserted, and only one-fifth of Spain’s airports made a profit last year’.

Perhaps the most glaring example of this infrastructure development is the large number of ‘White elephant’ public-owned airports scattered throughout Spain. There are multiple examples of such ‘ghost airports’ in Spain which seem to have been a particularly sought after political resource for local politicians (Govan, 2011).}

Since independence, transport networks have been built at an extensive pace, some of which (at least on an anecdotal level) appear to have had questionable cost-benefit underpinnings (de Rus and Nombela, 2007, 4). For instance, since the first high-speed rail line (AVE) was opened in 1992, Spain now has the largest high-speed rail network in Europe. However, it also has some of the most underutilized ‘carrying capacity’ of any high-speed rail network in the world. As Bel (2012, 16) reports, Spanish AVE passengers constitute only 6% of those in Japan, 15% in France and 30% in Germany, making large central government subsidies a necessary component of the AVE financing model.

It has been argued that other transport infrastructure investment have also been driven by political determinants. Successive central governments have pursued extensive highway building programs since 1982, building road networks at a rate that few other European countries approached, and now has more motorway kilometres per capita than France, Germany, the UK, or Italy (Holl, 2011, 1282). However as Bel (2012), and others (Stephen and Kemmerling, 2010; Sole-Olle, 2010) have argued, road construction appears to have followed a political as well as economic logic during these periods. Bel (2012, 15) argues that road construction is driven by a
nation-building logic held by successive central governments, wherein the objective is to use the 
‘public budget to turn the motorway network into a radial one, prioritizing the radial roads that 
converge on Madrid’. Kemmerling and Stephan (2010) also analyse roads expenditure by the 
central government (1983-1996) controlling for efficiency and equity criteria which might 
determine size and locational decisions. They explore a number of hypotheses related to the 
political motivations for locational decisions, finding that on average the (regional) party 
strongholds of government parties received a disproportional share of roads spending, once 
other criteria are controlled for. We return to this topic in Chapter 4, relating this political 
economy of regional investment in Spain to distinctive features of its party politics.

1.4.3 Italy: Regional Assertiveness and Reverse Regional Redistribution

The rise of a ‘regionally assertive’ party (van Houten, 2013), the Northern League, since its huge 
success in the 1992 general election, has coincided with significant reductions in financial flows 
from the central government to regions in the south of Italy. The success of the League is 
illustrative of a general feature of regionalist parties, as pointed out in the quantitative studies of 
regionalist party movements by van Houten (2000; 2013) especially. There is a general link 
between the economic position of regions and political regionalism. Other things being equal, 
regions that are relatively rich (within their countries) are more likely to give rise to regionalist 
parties and regionalist activity than poorer regions (Sorens, 2004; van Houten, 2013).

The ‘mechanism’ by which relative economic strength translates into political regionalism is 
often a desire to reduce public financial flows to poorer parts of the country. This is the case for 
‘ethno-regionalist’ movements in regions such as in Flanders and Catalonia, and plays an 
important role in newer instances of regionalism in Italy and Germany, where the League 
appeals for the reduction in transfers to south Italy, and the south German regions try to reduce 
transfers to the northern city states and the eastern regions (van Houten, 2013, 146). Thus the 
underlying concern linking economic to political regionalism seems to be largely distributive 
rather than a general concern about improving economic development (ibid).

Certainly the League appears to have had an impact on the regional fiscal flows within Italy in 
the past decade, its tenure of government coinciding with substantial reductions to the poorer 
southern regions. In terms of economic development funds, there has been a decline in 
development aid of approximately 17% measured in terms of per capita account transfer to 
private enterprises, families, social institutions and public works to the South since 1996 (Trigilia, 
2012, 141). The largest decline occurred during the House of Freedom governments 2001-6, in 
which the Northern League was a pivotal partner of the Berlusconi government coalition. As we
explore in Chapter 5, the post-1994 period seems to have witnessed a 'reverse redistribution' in terms of regional development investment from poorer Southern and Central regions towards the more developed Northern regions.

During the 1990s regional development policy in Italy underwent a profound change. In 1992, the 'Extraordinary Interventions' policy for the development of the Mezzogiorno (the eight regions of southern Italy) and regional convergence was concluded. In part the regional policy shift – manifested in reduced spending allocations to the South – was a response to the outcry by the Northern League and northern Italians (Ellis, 1999; Agnew, 2002).

For example, in an analysis of inter-regional fiscal flows during 1996-2007 period Vittorio (2009, 322) finds that, despite the profound regional disparities existing in Italy, the allocation of public spending calculated in per capita terms favoured the most developed regions, especially the Centre-North. This is especially the case with capital investment and other instruments of regional development policy. From the perspective of encouraging regional development and economic convergence, these fiscal flows appear perverse. As Vittorio says (2009, 323):

'In a nation in which profound regional development disparities exist, the distribution of financial resources aimed at territorial re-balancing should privilege the areas lagging behind. It does not seem to be the case in Italy, despite the fact that programming documents and Development plans established that 45% of public spending total should have gone to the Mezzogiorno area.'

1.4.4 Argentina: Side Payments to Pivotal Provinces

There is an extensive literature exploring the 'territorialization' of politics in Argentina in the 1990s. In electoral terms this had been displayed in a significant denationalization of nationwide parties – in terms of increasingly uneven support across provinces – as well as the increase in electoral success of a large number of provincial parties (Leiras, 2006; Gibson and Suárez-Cao 2010, Rodden and Wibbels, 2011). As Leiras describes there have been three main patterns in the party system competition since 1983: 1) a rise in the number and electoral success of provincial parties and geographically concentrated parties; 2) patterns of electoral competition at the national level have diverged from average patterns of competition at the provincial level and 3) there has been dramatically decreasing geographical success of one of the two largest national parties – the UCR – since 1999 (2006, 86).

The two main national parties in Argentina that have controlled the Presidency since 1983, the UCR and PJ, have distinct regional support bases, with high variation in inter-provincial variation in electoral performance, particularly the UCR (Leiras, 2006, 75). As Calvo and Leiras find, this electoral denationalization has resulted in substantial legislative denationalization in the
Argentine legislature, where ‘legislators develop policy targets that are local, forging closer ties with fellow members from the region or district’ (Calvo and Leiras, 2012, 4). This is reflected in the increased significance of the provincial ties among legislators as opposed to party ties in predicting co-sponsorship of legislative bills. It has also meant that legislative coalitions require the support of Provincial parties for the passage of national policy. These regionalized legislative coalitions are potential explanations for some of the distributive patterns found in Argentina.

Many scholars have documented that logrolling and regional pork-barrel spending form an integral part of fiscal relations between Argentine provinces and the Federal government (Gibson and Calvo, 2000; Porto and Sanguinetti, 2001). In terms of budgetary composition, Beramendi and Diaz-Cayeros document the high level of expenditures on territorialized expenditures as opposed to non-territorial expenditures such as social transfers, a fact they attribute in part to the fragmentation of the party system along regional lines (2006, 41). This ‘budgetary composition’ effect is possibly due to the fact that the benefits of ‘territorially concentrated’ expenditures, such as spending on regional infrastructure or on grants to sub-national authorities, are easier to control and direct to specific electoral constituencies than non-territorial expenditures, whose eligibility tends to be based on (universal) individual level characteristics such as income level or employment status (Milesi-Ferretti et al., 2002).

Regional pork barrelling also appears to have had a strong (negative) effect, making the system of inter-provincial fiscal flows non-progressive in terms of redistribution of regional income (Porto and Sanguinetti, 2001, 247). Over-represented states are especially privileged in terms of central government transfers with Dragu and Rodden (2011, 3), for instance, finding that the most-over represented states in Argentina receive between four and five times the amount of per capita transfers as the most under-represented ones.

1.4.5 India: Regional Pork Barrelling and the Effectiveness of Regional Spending

As many scholars have attested, the 1980s and 1990s marked a fundamental shift in Indian party politics, with a growing strength of regional and state-level political parties and weakening of national-level and nationally orientated political parties (Chhibber and Kollman, 2004; Kumar, 2010). The monopoly-like grip that the Congress party once held over national government in the 1970s was, by the 1990s, replaced by coalitions in which small parties with distinctive regional electoral bases provided support to governments in return for explicit promises of pork barrel expenditures for their states. As Rodden and Wilkinson note of the 1990s and early 2000s:
‘there really has been a more general shift in coalition politics in India, in which regional parties are able to extract massive resources from the center in return for participating in coalitions, while opposition states are punished’ (2004, 19-20).

Other scholars have noted how this regional fragmentation and denationalization of the party system, and subsequent influence on the distribution of fiscal resources between regions, has had negative welfare effects on the ability of central government to produce national public goods.

Hicken et al. (2010, 10) examine the impact of the increased regional fragmentation of party support on Federal government allocation of health spending. Interestingly, they find that increasing regional fragmentation of party competition over time is strongly correlated with increasing inequality of public health spending across the Indian states. This, they argue, is because increasing regionalism has led to increasing geographic particularism. Party system denationalization in the 1990s is also associated with a decreasing marginal effectiveness of Federal health spending on producing health outcomes, such as increasing measles immunization. The decreasing effectiveness of a given amount of expenditure in producing a given health output, is due to the fact that regionally allocated expenditure is ‘morselized’ among regions based on political considerations (e.g. if a regional party is supporting government) rather than based on needs-criteria or efficiency considerations (2010, 9-10).

Consequently, increasing regionalism in India has corresponded to poorer performance on public health statistics that are indicative of spending on public health services.

Simmons et al. also use India to illustrate their argument about how regionally fragmented party systems can discourage foreign direct investment into a country by increasing investors’ perception of risk. As they explain (2013, 14), a change in the partisan composition of government in a highly regionalized system carries with it the prospect of dramatic shifts in the national government’s stance toward FDI. In particular, since FDI tends to be regionally concentrated (e.g. around metropolitan regions), this increases the risk of expropriation of the returns on investment for purposes of redistribution towards regions that have been disfavoured with FDI. Where a party system is regionally fragmented, investors will bargain with government officials with specific regional constituencies and with incentives to cater to those narrow, sub-national interests. Under a nationalized party system, there ought to be less of this kind of uncertainty because parties strive to earn votes in all regions as opposed to a single region or a subset of regions.

1.4.6 Section Summary

While the preceding discussion is rather anecdotal, it illustrates how political regionalism has an associated effect on inter-regional fiscal relations, distribution and public goods outcomes in a
number of countries. More specifically, in each case the fragmentation of party systems along regional lines appears to have an effect on either the efficiency (Belgium, Spain, India) and/or equity (Italy, Argentina, India) of central government allocations of regional investment. In three cases, either small pivotal regional parties lead to regional pork barrelling (Spain, India), or non-programmatic regional development spending (Italy) or alternatively large parties with regionalized support lead to inefficient log-rolling of regional investment spending across regions (Belgium, Argentina).

1.5 Research Outline

1.5.1 Overview

In this section we give an outline of the design of the project and give a preview of the research chapters. We leave detailed discussion of research methodologies to the individual chapters.

The general objective of the project is to test the contention that regionalized party systems, those where the government and/or opposition are composed of parties with narrow regional support bases, lead to inferior public goods provision compared with contexts where parties are nationally represented throughout all regions in a state. We argue that the central ‘route’ by which such regional political cleavages reduce the efficiency (or effectiveness) and equity of national public goods, is via pork-barrel type distribution. In regionally fragmented party systems, distributive bargains over public goods provision (by central government) will tend to be politicized along regional lines rather than ‘programmatic’ lines. We test these general contentions in both a cross-national analysis and on two country level quantitative case studies.

We propose that the most likely avenue by which we will observe (and be able to observe) pork-barrel distributions by governments is in their capital budget. Hence, in general we explore the relation between the relative nationalization of parties and party systems upon both the level and allocation of capital investment by central governments.

As Tanzi and Davoodi (1998, 4) describe capital investment policy decisions relate to:

'(a) the size of the total public investment budget; (b) the general composition of that budget, i.e., the broad allocation among different categories of capital spending; (c) the choice of the specific projects and their locations; and (d) even the size and the design of each project.'

One of the distinguishing features of such decisions in comparison to other budgetary items is that there is nothing ‘routine’ about the capital investment budgets of most central governments. Decisions related to regional capital investment tend to be highly discretionary, leaving them open to suspicions of undue political favouritism. By contrast much current
spending reflects to a large extent, explicit or implicit entitlements or previous commitments (pensions, interest payments on the debt, public wages, subsidies etc.) thus allowing limited discretion in the short run (ibid, 4). Capital spending on the other hand can be highly discretionary and its allocation across regions tends to generate significant political conflict in most countries.

In the cross-national analysis we describe such pork-barrel distribution that takes place along regional lines as 'regional favouritism'. In this analysis we argue that the level of capital spending by central governments – once we control for other factors – serves as a good proxy for the extent to which such regional favouritism is a prominent part of government spending. In the two chapters exploring the regional allocation of capital (infrastructure) investment, we explore the effects of variation between parties (Spain) and over time (Italy) in the levels of nationalization of electoral support. In both cases, we also directly explore the influence of explicitly regional parties in government on the level of investment they are able to procure from central government. Below we briefly outline the cross-national chapter and the two within country case study chapters.

1.5.2 Structure of the Dissertation

Chapter 2 presents a selective review of the literature. As we have pointed out above, few studies have approached our topic on the impact of party nationalization on the geographical allocation of public goods, in a systematically empirical manner. While there is a comprehensive empirical literature in political science seeking to measure party nationalization as well as a behemoth literature on empirical aspects of politically motivated public goods provision, few works to date have comprehensively connected the two literatures. This is the central aim of the literature review section.

Chapter 3 is the first substantive empirical paper, investigating the impact of regionalist parties and regionalized patterns of electoral support on governments' public spending priorities in a cross-country, panel design.

The central theory espoused is that state-wide political parties differ in their incentives to pursue regional favouritism according to the degree to which a) they receive a homogenous share of the vote throughout all regions or districts b) they must compete with regionalist political parties in both national and sub-national elections. We argue that in coalitional bargaining over budgetary policy, parties with narrower bases of territorial support are more likely to prioritise spending on items with a strong geographically distributive component, such as public infrastructure investment rather than on broader budgetary items, such as social transfers, which cannot be
easily concentrated territorially. Where regional interests predominate in government, this should lead to spending on budgetary items that can be territorially concentrated in a given region. The empirical research involves a cross-national, quantitative study of the level of public infrastructure investment by central governments.

In any study of political distribution, we fully acknowledge that large n cross-country designs necessarily must use crude proxy measures, to capture purported intentions of actors (in this case the desire of parties in government to target their regional strongholds). While cross-sectional time series research is unlikely to give us much insight into the mechanisms driving political distribution, in the case of an under-studied research topic such as ours, hypothesis testing using a cross-country designs are often a necessary 'first-step' towards more refined analysis. We leave the discussion of our choice of cross-country conceptual and operational measures of regional favouritism to the chapter; however we note here that the central justification for adopting a cross-sectional design is to search for broad associations between our independent and dependent variables, rather than testing hypothesized theoretical mechanisms.

Both the within country chapters are designed to test our hypotheses as well as the theoretical mechanisms in a more refined manner. Chapter 4 investigates the importance of a political party’s ability to project its organization and support across jurisdictions (such as districts and regions) for distributive policy in the Spanish context (1978-2010). In line with an emerging political economy literature, we argue that the geography of electoral votes may be more important than electoral and constitutional rules in some political systems for shaping the preferences of governments over distributive policy and geographic redistribution (Jurado, 2013; Crisp, Olivella and Potter 2012; Simmons et al., 2011).

This chapter supplements the cross-country analysis, investigating the central proposition that the geographical dispersion of parties’ core support and the relative success of parties in claiming votes across all regions within their state significantly influence the content and allocation of their discretionary geographic spending during their term in office. The dependent variable in this study is the regional distribution of infrastructure spending by parties in central government over their term of office.

In the empirical analysis, ‘tactical distribution’ towards politically (electorally) pivotal constituencies serves as a proxy for pork-barrel provision. In Spain we observe significant time variation in the use of tactical ‘pork barrel’ spending between governments. Explaining this temporal and cross-sectional variance in parties’ use of tactical infrastructure spending is the central objective of this chapter. Political institutional factors have difficulty accounting for
temporal patterns within Spain, for instance, why some governments in certain time periods appear more prone than others to relying on political ‘tactical distribution’ in regional investment. This chapter argues that the electoral geography of individual parties and spatial patterns in party system aggregation incentivises policy-makers to be more responsive to particular geographic constituencies than to wider partisan constituencies. While nationalization of electoral performance in a country induces wider programmatic priorities over geographic distribution, fragmentation of electoral support along regional lines encourages the use of pork barrel spending both as a means to reward loyal core supporters and as a side-payment to regional parties that are pivotal to government formation.

Chapter 5 explores the political economy of inter-regional redistribution in Italy (1972-2006). Theoretically, it emphasizes the role various nationalized parties in Italy have played historically, in mediating the distributional conflicts among regions at central government level. It argues that to understand the fundamental shifts that have occurred in the level of territorial redistribution among regions in Italy, it is important to explore the political incentives generated by the ‘denationalization’ or regional fragmentation of electoral party politics that occurred after the 1992-1994 party system crisis.

We investigate the distributional impact of this regional party system fragmentation. The main dependent variable is the allocation of public investment spending – one of the main instruments of regional development – among regions from 1972 to 2006. We find that although the governments under the leadership of the DC used regional investment as a tool to ‘buy’ electoral support (in general favouring regional party strongholds), during this period infrastructure investment also followed a redistributive logic, where poorer, less developed regions received substantial investment.

1.6 Conclusion

This project is prompted by an empirical puzzle in the distributive politics literature. Despite being the privileged explanation in the comparative literature, political institutional explanations have been inadequate to explaining patterns in political distribution in contexts thought to be ‘less prone’ to pork barrel distribution. Recent studies have emphasized that pork-barrelling is not a deviant political linkage strategy confined to candidate-centred systems or single-member district systems, but rather an omnipresent representational linkage and functional allocation strategy commonly pursued in all political systems (see Kitshelt and Wilkinson, 2007; Tavits, 2009a). While we do not claim that such empirical puzzles are prima
facie evidence of the inadequacy of political institutional explanations of distributive politics, it does suggest that empirical work in comparative politics has been overly focused on the institutional incentives that actors face in a political distributive setting. For instance, such literature that has sought to determine if electoral systems have a direct impact on policy-outcomes has deemphasized important political variables, such as party systems, that have been regarded as 'epiphenomenal' to institutional factors. While electoral and political institutions are essential to explaining incentives that 'office-seeking' political actors face for re-election, the role of political parties themselves as institutions in their own right has tended to be downplayed in much of this work (cf. Hopkin, 2012 for similar perspective).

Electoral factors, such as the degree to which politicians seek to cultivate a 'personal vote', may explain variation in certain types of electorally-motivated distribution, such as 'vote-buying' patronage or clientelism, which involve transfers to individuals, such explanations are less able to explain parties' preferences over broader types of political distribution between regions. For instance, candidate incentives are a less plausible explanation for the allocation of large-scale infrastructure projects to party strongholds. We argue that the way parties respond to variations in their electoral support along regional lines is likely to have consequences for particular types of political distribution, especially the allocation of 'geographically targetable' central government resources among regions.

Aside from this contribution to an emerging theoretical perspective in distributive politics, the project makes a contribution to a large established literature in political science on party nationalization. While scholarship on the causes of nationalization has a long lineage, and has been strongly suggestive of propositions regarding the substantive effects of variations in party geography on policy outcomes, only very recently has an empirical literature emerged to deal with this issue directly. Our study makes a valuable contribution to this emerging empirical literature, and is the first study (as far as we are aware) to attempt to systematically examine the effects of variation in party nationalization on policy outcomes on a within country basis.

**Endnotes**

1 We review this budding literature on the policy effects on party nationalization in chapter 2. Both examples of this literature cited here are amongst the first studies to empirically investigate the policy effects of nationalization.

2 The etymology of the term 'waffle iron politics' (wafelijzerpolitiek) is related to the idea that regional investment in one region was matched by the same level and often same 'type' of investment in the other region, just as a waffle iron creates two identical waffles. For example,
military bases in Flanders were matched by military bases in Wallonia (Vervaeke, 2009). An archetypical example of 'unnecessary' or excessive matching investment that is often used is the Strepy-Thieu boat lift in Wallonia; construction on which began in 1982 and whose funding was apparently given as a reciprocal investment for the expansion of the Zeebrugge port in Flanders. As a budgeting method the waffle iron was not confined to infrastructure or public works investment, as it also was prominent in public and private sector subsidies, as McGillivray (2004, 105) describes in the case of the ailing steel industry in the 1980s.

\[3\] This ‘general’ or bloc grant waffle iron practice seems to have been significantly reduced by the ‘Lambermont’ revenue decentralization reforms in 2001 (Blochliger and Vammaille, 2012).

\[4\] One of the most infamous of these airports is the CiU Real airport built in 2008, estimates for whose construction range from 356 million euros to one billion euros, which was closed in 2012 (Knight, 2012). From 1990-2010, 48 new airports were built in Spain, 43 of which were international. Of these, only 11 now are self-sustaining due to a lack of demand, a situation which does not appear to be the result of the economic downturn alone.

\[5\] As we note in the literature review (section 2.2), throughout the dissertation, unless otherwise stated, when we refer to the ‘comparative literature’ in the distributive politics tradition, we are referring to empirical studies that explore distributive policies in contexts other than the United States. We make this distinction due to the predominance of US studies in the literature, which tends to be *sui generis* leaving unexplored assumptions regarding the effect of different institutional configurations on political distribution.

\[6\] In common with other literature (e.g. Kitschelt and Wilkinson, 2007; Hopkin, 2012) we think of political variables, such as party organization and party systems, as ‘informal’ institutions rather than as ‘formal’ institutions or as institutions codified in a constitution or in statute.
Chapter 2

2 Literature Review

2.1 Introduction

The project speaks to three branches of literature within political science. Firstly, it is directly related to the literature on electoral geography and party nationalization. Secondly, it is relevant to the large literature on distributive politics. Thirdly, the project is related to the literature on political behaviour in the electoral and legislative systems research.

This first section reviews the pertinent literature on party nationalization and party system nationalization. Firstly, we describe the differing conceptual definitions of electoral and party nationalization as well as the approaches to measurement of nationalization found in the literature. We then describe some of the fundamental debates surrounding the 'causes' of party nationalization and as well as explanations for the variation in regional-political cleavages across political contexts. Finally, we review the emerging literature that has investigated the 'consequences' of nationalization and variations in electoral geography on public policy.

The second section reviews pertinent literature in the distributive politics tradition. The emphasis in this review is on the comparative empirical literature dealing with pork-barrel distribution outside of the US context. Firstly, we describe the central explanatory focus of this comparative literature as being mainly concerned with how political institutional variation incentivises pork-barrel spending in different contexts. In this review we emphasize the distinction between approaches that focus on the incentives and behaviour of individual legislators, and those that focus on parties (which is more appropriate for Parliamentary contexts). Secondly, we discuss the issue of what type of political constituencies are privileged in political distribution in particular reviewing theoretical approaches dealing with the issue of rational distribution strategies of politicians as encapsulated in the 'swing/core' debate in the literature. Finally we attempt to provide an overview of empirical approaches to pork-barrel distribution in the comparative literature. We discuss approaches to operationalizing and measuring 'pork' in studies dealing with single country and multi-country research designs.
2.2 Causes and Consequences of Party Nationalization

2.2.1 Party Nationalization: Conceptual Definitions

In the US context, questions regarding nationalization of the vote have been on the agenda of political scientists since at least Schattsneider (1960), but only recently has this literature begun to emerge in other contexts or cross nationally. Schattsneider identified the nationalization of the vote beginning in the 1930s as a major shift in US politics. Its main consequence was to enhance the importance of elections by making parties more representative of national median policy position. Stokes (1965; 1967) was amongst the first to note the relation of nationalized voting to normative models of 'responsible party government' in comparison to the relation of local voting to constituency-service and pork barrel modes of representation (Lupu, 2008, 5). A nationalized electorate was also seen as essential for the ability of representatives to form cohesive legislative coalitions, as nationalized electoral competition forged stronger ties between legislators of the same party rather than pulling them apart on the basis of local issues (Cox and McCubbins, 1993).

Scholars concerned with 'party nationalization' have tended to use the term in two relatively distinct ways. Firstly, scholars refer to party nationalization as the degree to which there is an equal distribution of party votes across different districts or other subnational units at a single point in time (Caramani, 2004; Jones and Mainwaring, 2003). Morgenstern et al. refer to this as 'static nationalization' (2009, 1323). The core conceptual concern in measuring the degree of static nationalization is the extent to which a party has broad appeal across different regions across the nation.

A second conceptual definition is what is described as 'dynamic nationalization', which considers the degree to which a party's vote in various districts changes uniformly across time (Morgenstern et al. 2009, 1323). The dynamic conception refers to the extent to which nationalized electoral trends influence a party's support in comparison to localized electoral trends. If national political events are determining electoral change, changes in parties' support should be similar in all districts, whereas if local factors are determinant there should be dissimilar movements in party support across districts (ibid).

The distinction is empirically important, as Morgenstern et al. find (2009, 1336) that the two main conceptions of nationalization are not strongly correlated (which is indeed what we would expect given their conceptual distinctiveness).

Our project is concerned with static nationalization, as generally when scholars cite a policy consequence of party nationalization it is in relation to this definition. Although this is not to say that scholars have not discussed potential political or policy implications arising from dynamic
nationalization. However we leave this issue posed by 'dynamic nationalization' to explore in future research.

2.2.2 Measuring Nationalization

There are a number of methods that have been used to measure (static) party system nationalization and the nationalization of individual parties. One party system measure is the so-called 'inflation index' that has been used frequently by a number of scholars and influential works (Chhibber and Kollman, 2004; Moenius and Kasuya, 2004). An example of an inflation measure is Cox's proposed measure (1997) of cross-district coordination and 'linkage'. Linkage refers to the degree to which 'politicians seeking election to the national legislature from different districts...run under a common party label' (Cox, 1997, 181). However as Moenius and Kasuya note, Cox's original 'linkage' notion refers to the organizational similarity or coordination of candidates under party labels prior to elections. However, since the measure is based on ex ante electoral returns it is actually a measure of 'the degree to which parties are uniformly successful in winning votes across districts' (2004, 545). In this sense 'linkage' is the extent to which local or district level party competition is similar to national level party competition, in terms of the (effective) number of parties in competition.

The 'index' of cross-district party linkages uses an inflation factor (I) to measure how much higher the effective number of parties at the national level (ENPnat) is than effective number of parties at the district level (ENPavg). The index is calculated as:

$$I = \frac{ENP_{nat} - ENP_{avg}}{ENP_{nat}}$$

(from Cox, 1997, 181)

Perfect linkage would have I = 0, if I = 10 then about 10% of the size of ENPnat can be attributed to poor linkage (i.e. localized parties).

Inflation measures are probably the most commonly used measures of party nationalization in the literature (especially the influential study on causes of nationalization by Chhibber and Kollman, 2004) and similar studies to ours concerned with the effects of party system nationalization on policy outcomes, have relied upon this measure (e.g. Simmons et al., 2011). One of the main benefits of inflation measures is that they require slightly less information than other party nationalization measures (see Bochsler, 2010, 159). However they are also prone to a number of problems of reliability.

Firstly, since they are based on the difference in the number of parties at the local and at the national level, they assume that the number of parties at the local level is smaller than at the aggregated national level. This logic is more suitable to a single-member plurality electoral
system than a PR system. The measure of 'average fragmentation' of party systems along regional lines does not seem intuitively appealing if the number of parties running at the district level is larger than the national level. One obvious problem with this measure is that the more fractionalised districts compensate for the small party system fractionalization in other districts potentially giving a low average fractionalization score for the entire country even in states with a large number of regional parties. If it is the case that there are a number of districts with a high number of parties competing and a number of districts with a small number of parties competing, any regional heterogeneity will be effectively averaged out (Bochsler, 2010, 160). A second problem more specific to our purposes, is that this index is that it only measures the territorial variance of the party system rather than individual parties.

Bochsler (2010) provides a comprehensive review of the various measures of party nationalization and political regionalism that have been used to date, identifying the shortcomings of each. He identifies a number of problems with all the measures of territorial variance in party and party system support, arguing that the Gini coefficient measure of the distribution of a party’s vote shares across districts is the most reliable and intuitively appealing, if one’s objective is to measure regional heterogeneity in party support. This so-called Party Nationalization Score (PNS) measure was first suggested in a paper by Jones and Mainwaring (2003) and has become standard in the literature looking at the causes and consequences of party nationalization and political regionalism (Morgenstern et al. 2009; Crisp, Olivella and Potter, 2012; Castañeda-Angarita, 2013).

The Gini coefficient is conventionally used (and was originally developed as) a measure of wealth and income inequality; however it can be easily converted to a measure of territorial variability in the distribution of support for a political party. The basic idea is that in the case of a homogenous distribution of party support (in terms of its vote share), every district will cast a number of votes for the party which is approximately proportional to the district’s size or the party will win a similar share of the vote in each district. In the case of heterogeneous distributions most of the party’s votes are concentrated in few districts (see Appendix 7.1.1). When calculated for the party system as a whole, the average Gini coefficient distribution of all parties is weighted by the size of each party. Furthermore, it is standard to take the inverted measure of the Gini coefficient (1-Gini), as a high distribution can be interpreted as a greater level of party nationalization (a more homogenous vote share across districts) (Jones and Mainwaring, 2003, 142). In addition, the Gini coefficient unlike other measures of variability has an upper and lower limit (1 and 0) making it useful for cross national comparison.

Bochsler (2010) suggests two main modifications to the simple Gini coefficient which are especially important for its use in cross-country comparisons. To take into account the variation
in the size of the territorial units within countries which the Gini is based he suggests weighting the measure by the size (in terms of electorate population) of each unit. He also suggests that one standardise the Gini coefficient to take account of the variable number of units upon which calculations are based (this procedure is explained in detail in Appendix 7.1.2). We adopt the weighting suggestion but not the standardization suggestion for reasons we explain in the appendix (Morgenstern et al., 2014).

2.2.3 Causes of Territorial Politics: Cleavages or Institutions?

There are two primary explanandum to be found in the literature on party nationalization. Firstly, there is the macro-historical dimension, related to nation-building processes mainly in Western Europe. As Caramani describes, the central objective of this dimension is to describe and explain the long-term nationalization of politics in Western democracies:

‘Through nationalization processes, the highly localized and territorialized politics that characterized the early phases of electoral competition in the nineteenth century were replaced by national electoral alignments and opposition. Peripheral and regional specifies disappear, and sectional cleavages progressively transform into nationwide functional cleavages.’ (2004, 1)

The second and related explanandum is why regional cleavages and sub-national politics and party systems ‘persist’ or are a prominent feature of the politics of some countries and not others.

On the first dimension, empirical research investigating the macro-phenomenon of progressive national integration of electorates and party systems is not that common. As Caramani (2000; 2004) shows convincingly, electoral competition in West European states steadily became more ‘nationalized’ as democracy consolidated. The central objective of Caramani’s work (undoubtedly the leading scholar in this field) is to explain why all the party families in Europe tended towards nationalization of support in the course of the 19th and 20th centuries with the exception of the ‘regionalist’ party family (2004, 162). This question is related to the large literature in the modernization theory tradition stemming from Lipset and Rokkan (1967). While beyond the scope of this review, broadly such ‘assimilation’ of localized political organizations and electorates into nationalized political movements is the result of modernization in the form of increasing urbanization, industrialization, schooling, communication and transportation; all brought about by the Industrial Revolution in different countries.

Ethnic, regional-economic and national cleavages are the main explanation in Caramani’s work for second explanadum, namely the ‘persistence’ of territorial politics and indeed the apparent reversal of nationalization processes in a number of countries such as Belgium, Italy, Spain and
the UK. However a rival approach to that of Caramani's with its emphasis on population diversity, is that of Chhibber and Kollman (2004) whose main explanatory factor is the degree of fiscal centralization which encourages the aggregation of local political movements to form national parties; in comparison to fiscal decentralization which encourages the proliferation of regional parties. 'Party aggregation' across districts is driven in part by the territorial level at which the most important political decisions are taken: where key issues are addressed at the level of the nation-state, candidates will have a strong incentive to join together across districts forming parties which can coordinate in the national political institutions to defend the interests of voters.

As the fiscal resources of the state become larger and more centralized local candidates and voters have a greater incentive to support national parties. To explain why the number of parties and the extent of party aggregation have changed over time within certain countries, one must look at the fiscal (institutional) relationship among levels of government. This is the core reason given by Chhibber and Kollman (2004), for instance, why the Indian party system is so fragmented despite having a 'strong' electoral system (single member plurality) that on the basis of Duverger's Law 'should' foster a two-party system (Amorim Neto and Cox, 1997).

While Chhibber and Kollman (2000, 339) concede that ethnic, religious and regional divides in India are part of a full explanation for the large number of regional parties in India compared to the US, they argue that the temporal changes in the party nationalization in both countries cannot be explained by reference to population diversity alone. In a number of countries they tie such emblematic expansions in the welfare commitment of the (centralized) state, to increasing centripetal pressures towards party nationalization. For instance, according to the authors the 'nationalized', two-party system that emerged in the US was only cemented by the unprecedented centralization of political and economic powers in the Federal government following the New Deal. Similarly, they attribute the marked expansion in support for regional parties in India in the 1990s, to the disintegration of Federal government welfare programs and control over fiscal relations with state governments that marked the end of Indira Gandhi era.

Central to the institutional explanation for the extent of party nationalization and the variance in the strength of regional parties within countries, is the idea that regional cleavages are inadequate to explaining variation either phenomenon as these cleavages do not vary to a great extent over time. Rather it is decentralization of fiscal and political competencies which determines incentives of regional politicians to mobilize extant cleavages (or create new ones) in order to appropriate regional power (Brancati, 2009).

Undoubtedly there is a strong empirical relation between the fragmentation of party systems along regional lines and levels of decentralization in a country (see Chapter 3, section 3.4).
However when considering the effect of political decentralization on party nationalization it is important to distinguish the proportion of territorial variation in party system nationalization measures that comes from regional variation in the district vote shares all (national) parties and the strength of explicitly regional parties. As Brancati defines the latter, they are parties that compete and win votes in only one region of a country and tend to focus their agendas on issues affecting only these regions. Political decentralization encourages regional parties to form and voters to support them because decentralized systems have regional legislatures in which regional parties have a greater opportunity to govern. As Brancati (2007, 139) describes:

'Regional legislatures may also exist in centralized systems, and in some cases they may even be elected by voters, but because regional legislatures lack decision-making authority in centralized systems, politicians have little incentive to form parties different from those that govern at the national level'.

However, the direction of causality is unclear and it is difficult to make the argument that decentralization is exogenous to regional party strength just as political centralization is exogenous to party nationalization. As we show in Chapter 4, exploring party nationalization over time in Spain, it is certainly not obvious that decentralization reforms expanded support for already existing regional parties or decreased party nationalization of the major parties. However successive decentralization reforms were certainly associated with increases in support for new regional parties that emerged in Autonomous Communities historically lacking strong existing regional identities, most notably the Canarian Coalition. Increases in support for existing regional parties in Spain at particular elections has been more obviously connected to a 'protest vote' by electorates in certain regions. For instance, the large bump in support the Republican Left of Catalonia (ERC) received after public discontent with the central government’s handling of the aftermath of the Madrid bombings in 2004 (Chari, 2004, 957) or the rise in support for secessionist sentiment and regionalist parties after the economic crisis in 2010. These events appeared to be more obviously related to discontent with state-wide government parties than explicitly connected to issues of fiscal decentralization.

In terms of the regional variation in the vote shares of all parties, on the other hand, it may be that electoral system variables encourage or discourage party nationalization within countries. However there isn’t a great deal of scholarship on this issue. It is unclear whether the 'restrictiveness' of electoral laws- the extent to which they encourage reductions in the number of parties competing- is an important factor explaining whether regional sentiments find expression in a new political party as opposed to a political faction within an existing national party. It is possible, for instance, that both the 'mechanical' and 'psychological' effects of simple plurality (SMD) systems reduce the potential for regional parties compared to more proportional systems. However both Proportional electoral systems and Majoritarian electoral systems are
home to regional parties and varying levels of party system nationalization. Using the Gini coefficient measure in a sample of OECD countries, Jurado finds no evidence that PR systems are related to higher values of party system regionalisation (2013, 7).

Morgenstern et al. (2009) expound a different logic to that which expects greater proportionality to lead to more regional parties and/or lower levels of party nationalization. In their analysis they propose that SMD systems are likely to lead to lower levels of nationalization than more proportional systems. This is due to the greater cross-district coordination difficulties that parties face under SMD systems: ‘where strenuously competing in all districts is less likely, than in PR electoral environments’ (ibid, 1327).

According to this logic, parties’ cross-district coordination difficulties are more pervasive in SMD systems for two reasons. Firstly the greater number of districts allows greater differentiation of party strategies (electoral appeals) along geographic lines. Secondly, the smaller geographical size of districts makes it more likely their area will encompass a homogenous group of people (or preferences), making it distinct from those around it (in terms of its electoral preferences). In their empirical analysis, Morgenstern et al. find that the SMD electoral systems are more prone to lower (individual) party nationalization, suggesting strong support for their above hypothesis.

Aside from the general voting system, there are a number of other electoral laws that are likely to affect party nationalization. In terms of proportionality national level thresholds are undoubtedly important in reducing the number of regional parties competing in a system. Regional parties are unlikely to have much of a national influence in countries where there are high national thresholds, especially in centralized systems, unless they are able to form pre-electoral alliances with larger parties as in Italy and Germany.

Brancati (2007) finds that concurrent national and sub-national elections are also an institutional factor that reduces the strength of regional parties a cross-country statistical analysis of 37 countries. Even more determinative are cross-regional voting laws where parties cannot compete exclusively in one region of a country, such as exist in Indonesia. We expect both the ballot laws and proportionality are marginal influences on the level of party system nationalization in a country rather than the main explanatory factors.

Finally it does not appear that the type of executive – whether a country has a parliamentary or presidential constitution – is important to explaining the level of overall party system nationalization. As Morgenstern et al. (2009) describe:
'Parties operating within both constitutional frameworks face the same challenges in spreading their support across the nation, and neither system gives parties special incentives to develop particular spatial patterns' (1327).

2.2.4 Party Nationalization: Public Policy Consequences

A recent literature has emerged exploring the 'consequences' or policy outcomes that are associated with variations in party system nationalization and regional political cleavages within countries. All of this literature is cross-national in scope with most investigating the correlation of party system nationalization (and its inverse, regional party system fragmentation) with broad measures of public spending and budgetary composition at either central government level or general government level (i.e. aggregate budget of all levels of government).

Jurado (2013) is one such time-series, cross country (TSCS) study that fits this description. The main theoretical claim of this study is that the territorial incentives to provide different types of spending policies are contingent upon political parties' geography of votes. More specifically, Jurado argues that the degree of territorialisation of parties' electoral support will affect politicians' distributive strategies independently of the electoral system. His main empirical claim is that countries with higher party system nationalization should devote more public expenditure to policies that have a 'broad' non-exclusive territorial impact rather than public expenditure items that have a narrow territorial impact. The main dependent variable is the percentage of (general) government budget that is devoted to social expenditures (such as healthcare) and social security transfers: the two measures for 'universalistic spending programmes' (ibid, 9). His main independent variable is the 'Electoral Gini' coefficient – the measure suggested by Jones and Mainwaring (2003) for party system nationalization – and the sample is composed OECD government expenditure data from 26 developed countries. Employing a set of relevant controls (including an indicator for the proportionality of the electoral system as well as a measure of government ideology), he finds that countries with higher levels of party system nationalization tend to spend larger amounts on both social security transfers and, more especially, spending larger amounts on healthcare, than countries with lower nationalization. Jurado interprets this finding to suggest that the 'territorial distribution of votes is much stronger and consistent mechanism explaining the composition of public spending than the electoral system' (2013, 13).

Hicken, Simmons and Kollman (2010) TSCS (n=57, t=10) analysis of the influence of party system nationalization on the 'effectiveness' of public health expenditures, comes to similar conclusions regarding the association between party nationalization and the universality of public policy outcomes. Their main proposition is that in countries where regionalised political (party) conflict is prominent, public distribution is likely to contain more 'pork-barrel' spending targeted to
particular districts or regions and this is likely to have an impact on the effectiveness of public policy. As they describe the central proposition:

‘Depending on the country, these latter, geographically targeted policies will benefit specific ethnic, religious, industrial, linguistic groups, but they will be less comprehensive and all-encompassing, and thus less effective and efficient, than if the parties were nationalized.’ (ibid, 4)

Their main dependent variable of interest is the marginal effectiveness of public health expenditure at the central government level in individual countries, in producing public health outcomes (in this case, increasing Measles Immunization throughout the population). Their main finding is that nationalized party systems are associated with higher marginal effectiveness of health spending on immunization, in both developed and developing countries.

Simmons et al. (2011) explore the effect on party system nationalization on a country’s success in attracting Foreign Direct Investment (FDI) from multi-national firms. Their central argument is that governments in nationalized party systems are better able to offer credible commitments to investors regarding the future effective corporate tax rate and offer the promise to investors that their investments will not be used for geographic distribution to poorer regions.

Since reneging on FDI commitments can offer short term benefits to poorer (less urbanized) regions (which tend to be less attractive for FDI investment) a change in the composition of government post-investment comes with a risk that there will be a change in the national government’s stance towards FDI. However appropriation of gains from FDI for regional distribution is less likely in nationalized systems because all parties represent both FDI rich and poor regions, which requires that politicians maximize the joint utility of all districts. Within national parties issues regarding the inter-regional distribution of FDI are ‘embedded within the party and understood by politicians who choose to join the party and by voters who choose to support the party’ (ibid, 10). Regionalized party systems, on the other hand, can prove less attractive to capital owners because regionalism increases the probability investment returns will be appropriated by the government and used for geographic based redistribution. They find strong support for this thesis on cross-national basis, with more nationalized party systems receiving significantly higher levels of FDI across time.

Lago-Penas and Lago-Penas (2009) have looked at how particularistic legislative behaviour – arising from the degree of party system nationalization in a country – may not impact the amount of public expenditure per se, but the degree of lag in the composition of public finance. They hypothesize that where territorial units are discrete from one another in terms of the different parties they elect; there is more scope for territorial interests to affect the nature of
public policy. This may impact on the degree to which legislatures are able to reallocate funds between budgetary categories over time. As they explain:

'Since budgets are derived from multilateral bargaining, the survival of sub-national parties introduces additional transaction costs of change and therefore increases the rigidity of budgets.' (2009, 87)

They find some support for this hypothesis employing panel data models.

Several scholars have also begun to investigate the ‘conditional effects’ of political-institutional (Castañeda-Angarita, 2013) and demographic (Crisp, Olivella and Potter, 2012) variables on the relationship between party nationalization (regionalization) and public policy outcomes, specifically the composition of government budgets between territorially broad compared to narrow expenditure items. On a cross-national sample, Crisp et al. empirically test the proposition that party system nationalization should reduce the proportion of the government budget devoted to targeted territorial spending (the proxy for pork barrel spending) and increase expenditure on universal public goods (such as social security transfers and national level public goods) that are not as geographically targetable.

One of their unique contributions to the literature is to introduce an interesting conditional variable to capture the different distributive strategies parties adopt to appeal to voters across the national territory. The logic espoused is that there are two ‘routes’ by which parties achieve nationalization across districts. The first is route is implicitly assumed by most studies of party nationalization and distributive policy, that parties nationalized by promising the same policy program across districts and receiving roughly equal levels of support for that program everywhere. However, parties can also become national by being adept at tailoring their programs to cater to heterogeneous sets of constituencies without developing nationally orientated programs. In terms of distributive politics this implies that:

'[B]ecause of these two paths...party-system nationalization is, therefore, a necessary but insufficient condition for putting an end to pork-barrel or parochial politics' (ibid, 5).

They argue that while low levels of nationalization are always ‘bad’ in the sense they lead to regionalized politicking and pork barrel spending, high levels of nationalization are not always ‘good’ in the sense of reducing pork barrel spending and generating nationally orientated policies.

The extent to which parties become nationalized electorally on the basis of national policy platforms is likely to be affected by the extent of ‘cross-district similarity’ in terms of population diversity in a country. As they describe, cross-district similarity should condition the effect of party nationalization on producing nationally orientated policies (ibid, 7):
'The logic behind this is that parties that achieve homogenous electoral returns across dissimilar constituencies are expected to have done so by appealing to the local concerns of their support base in each district—a procedure that is not necessary when the same set of appeals resonates across districts in similar ways, which is more likely to occur the more indistinguishable each parties' supporters are across districts.'

Their conditioning variable – cross-district similarity – is a measure of the ethnic/linguistic fractionalization in each country. Their main dependent variable is the percentage of (general) government budget composed of 'targetable' government spending. This is the converse to the spending composition indicators used by Jurado (above), and is essentially the proportion of government budget allocated to local public goods, such as investments on capital and on fixed capital (more on this budgetary composition approach to measuring pork barrel spending below). Like Jurado, they also investigate the effect of party nationalization upon universal spending items (social security transfers). One other unique attribute of the Crisp et al. study is that they are the only scholars in the literature (apart from our study) to investigate the effects of nationalization of specific parties (those composing government) on fiscal outcomes. All other studies investigate only the effects of party system nationalization.

Their results indicate support for this hypothesized conditional effect, with highly nationalized (government) parties tending to spend more on non-targeted goods, only when cross district similarity (or ethnic homogeneity) is at comparatively high levels in a country. As they describe:

'Only some nationalized party systems will generate public policy outcomes that are national in scope. We found that although government nationalization increases the national scope of budgetary policy and reduces its parochialism, this increase largely depends on how similar government [party] constituencies are across countries.' (ibid, 19)

Castañeda-Angarita (2013) also investigates the conditional effects of party nationalization on fiscal policy, in presidential democracies in Latin America. In line with the literature, he argues that in countries where party systems are highly nationalized (i.e. parties' electoral performance across electoral districts is more homogenous) legislators will prioritize national issues in order to get re-elected. On the other hand, in regionalized party systems central government spending will be focused on targeted transfers to subnational governments. The share of targeted expenditures (pork barrel) will be especially high in countries with regionalized party systems during time periods when the party that controls the executive (presidency) only holds a minority or bare majority in the legislature. Where this is the case, the president will need to transfer more resources to particular electoral districts in order to build a stable coalition in the legislature to get policies approved.

As a proxy for targeted pork barrel expenditures (or side payments) from central government to sub-national governments, Castañeda-Angarita uses the total sum of central government
transfers (or grants) to subnational governments every fiscal year (as percentage of GDP), and tests the theoretical claim with data from seven Latin American countries from 1990 to 2006. He finds that central governments in regionalized party systems spend a greater proportion of the public budget on such territorially targeted transfers and less on national or non-targeted transfer spending. However, the effects of this regional fragmentation on the composition of spending are conditional upon legislative bargaining considerations:

'[T]he spatial structure of electoral politics does not seem to exert an isolated influence on the type of government spending. The size of president's coalition shapes such effect because the legislative bargaining becomes more expensive as the president's coalition shrinks.' (2013, 10)

The literature on the policy effects of party nationalization and political regionalism has grown considerably in recent years yet it is still under-developed. While it has expanded into number of 'policy areas', including a number novel proxies for pork-barrel expenditure and other forms of regional favouritism (e.g. impact of regional party influence over regional expropriation on investors' uncertainties upon FDI), the literature is still almost exclusively concerned with the effects of party system nationalization (with the exception of Crisp et al. 2012) and indeed (probably as a result) is focused on cross-national variation. As Hicken et al. (2010, 24) describe the 'next step' in this literature is very much to concentrate specific policies within countries:

'[T]o understand better the geographic affects of public policies and how those might relate to party nationalization, something difficult to quantify in a consistent manner across many countries given available data, it would be ideal to conduct in-depth analysis of government budgets and sub-national outcomes on a small number of cases in order to trace out causal effects.'

Our analysis of the effects of party nationalization and political regionalism on infrastructure investment in Spain and Italy takes up this call so-to-speak, tracing out how within country variation in the nationalization of state-wide parties and in the strength of regional parties has affected policy outcomes within these countries, namely the allocation of regional investment in different time periods.

2.3 Research on Political Distribution and Pork-Barrelling

2.3.1 Defining Distributive Policy

This project speaks to a large literature dealing with so-called 'pork-barrel' theories of distributive politics. In its broadest definition, distributive policies are those that 'involve taxes and transfers, and in particular the decisions about allocations of government goods and services to identifiable localities or groups' (Golden and Min, 2013, 74). However it is convention in this literature to understand 'distributive' policies as involving the decisions over the geographical
allocation of public benefits. The standard Weingast, Shepsle and Johnsen (1981) definition describes the central conflict generating problem at the core of distributive politics, the fact such decisions confer geographically concentrated benefits but their cost is diffusely spread across the general population (through general taxation, for instance). Hence the fact that 'geography' is the basis for political representation and organization in most political systems (e.g. via electoral districts) is the central feature of this 'problem'. As Weingast et al. describe (1981, 644) the conceptual distinction with other types of policies:

'Although the motivation to create nondistributive programs may have a geographic basis (as when a politician is moved to support a policy because many of his constituents fall into the beneficiary group), the fact remains that the beneficiary group is not geographically defined or determined. In contrast, geography is the hallmark of distributive politics: Programs and projects are geographically targeted, geographically fashioned, and may be independently varied.'

While studies of distributive politics, and especially pork-barrel expenditures, derive their original inspiration from legislative models of Congressional behaviour (Weingast et al., 1981) and electoral theories based on the specificities of the US context (Mayhew, 1974), scholars of comparative politics have increasingly become attentive to the dynamics of politically motivated geographic distribution in a diversity of contexts with different institutional and party system configurations.

According to Golden and Min (2013):

'In the past decade, in part because of the increasing availability of relevant data for countries other than the United States and in part because of its theoretical fecundity, this once almost invisible topic now ranks among the liveliest for students of comparative politics' (2013, 74).

We do not attempt a systematic review of the findings in the comparative empirical literature in distributive politics but emphasize the relevance of a few key analytical perspectives for our project.

For manageability we divide this literature based on a few key questions, and as a short hand, refer to the allocation of benefits to favoured constituencies as 'pork barrel'. While in the next section we describe various trends in the conceptual and empirical measurement of 'pork', for the theoretical review it is useful to think of the substance of 'pork' simply as the 'distribution of infrastructure projects to favoured constituencies for electoral purposes'. We conclude this section with a brief discussion of some of the empirical and theoretical puzzles that remain in this literature, and how our project contributes to what we argue is an emerging research agenda within the political distribution literature that seeks to explain variation within institutional contexts in distributive strategies that parties (as opposed to individual legislators) pursue. We review the distributive politics literature under three headings:
1. What incentivises pork barrel distribution?

2. Who (or what type of districts) gets ‘targeted’ (are preferred) by pork barrel distribution?

3. How is pork barrel distribution operationally defined and measured?

2.3.2 What incentivises Pork Barrel Distribution?

The vast majority of studies on comparative distributive politics are concerned with the institutional determinants of pork. Due to space considerations we omit discussion of the (vast) literature on fiscal federalism, which focuses on how fiscal and political relations between governments lead to different political distributive outcomes (e.g. Tiebout, 1956; see Besley and Coate, 2003 for a review of these types of studies in relation to local public goods provision). Instead we focus on work that is orientated towards political distribution at the central government level. In terms of political institutions, we deal with the literature on electoral institutions (Proportional vs. Majoritarian and Party-Centred vs. Candidate Centred) and legislative-executive institutions (Parliamentary vs. Presidential systems and Centralized versus Decentralized Legislatures).

A. Electoral Incentives

The comparative literature (i.e. that dealing with contexts outside the US) on the differential ‘pork barrel’ incentives created by Proportional compared to Majoritarian electoral systems is heavily grounded in formal political theory (Lizzeri and Persico, 2001; Persson and Tabellini, 1999) but in general its empirical applications have tended to position themselves towards cross-national comparisons (Milesi-Ferretti et al. 2002; Persson and Tabellini, 2003, ch.4).

The possibility of electoral district marginality, where marginal seats can be ‘bought’ by distributing pork or patronage to a small subset of voters, is the central reason why Majoritarian/Plurality systems are thought more prone to pork barrel spending. Proportionality creates incentives for parties to maximize their total vote share across all districts, and hence does not give parties incentives (although individual MPs may still have particularistic incentives) to target goods to particular geographic constituencies. As a result, parties elected under proportionality rules will tend towards programmatic distribution. This ‘marginality’ incentive is especially important under Parliamentary forms of government, where parties typically have greater control over the public purse strings and can direct ‘partisan’ pork to marginal constituencies (Denemark, 2000). Examples of this research in a ‘within country’ context (and on specific programs) are mainly concentrated in the UK, where parties’ are observed distributing
pre-election pork to marginal constituencies in the form of public services provision (see Smith, 2007, ch.8; Glennerster et al. 2000), local authority grants (Ward and John, 1999) or protecting geographically concentrated industries to bolster electoral support in key sets of constituencies (McGillivray, 2004, 15).

However, pork barrel incentives (this time for individual MPs) are also generated under simple-plurality rules due to the need to attract a ‘personal vote’ (Shugart and Carey, 1995). Since candidates need to distinguish themselves from co-partisan competitors (most frequently in candidate selection), MPs may attempt to distribute pork to their constituencies in order to enhance their visibility for re-election. Intra-party competition will also lead to similar ‘personal vote’ incentives in ‘candidate-centred’ PR electoral systems (such as Open-List PR or PR-STV) where electors can rank candidates in order of preference and in which parties do not have full control over access to and ranking within the electoral ballot. Milesi-Ferretti et al (2002) contend that (at a national level) these personal vote incentives will affect the general composition of public spending, where patterns of public spending tend to favour visible localizable goods in Single Member District (SMD) systems with primaries (ibid) and in candidate centred PR systems (Golden and Picci, 2008). By contrast, in party-centred PR systems, such as those with Closed-List ballots, intra-party competition is not extensive and legislators do not have an incentive to cultivate a ‘personal vote’ or a ‘local vote’ (Grofman, 2005). As a result, under these systems legislators are expected to prioritize the distribution of geographically universal and programmatic public goods (such as broad welfare policies) (Golden and Min, 2013, 76).

B. Legislative Opportunities

Comparative studies of the political institutional determinants of pork are also inspired by the formal legislative bargaining models which deal theoretically with fiscal policy as a common pool problem (Baron and Ferejohn, 1989). Many theories of distributive conflict rely on some variant of the common pool model: ‘whereby society is divided into competing groups, none of which has an incentive to constrain its spending demands’ (Annett, 2002, 5). If we think of electoral institutional theories as being concerned with variation in the incentives of politicians to meet (latent) demand of constituents for pork⁴, it is useful to think of empirical works deriving from the legislative bargaining tradition as being focused upon the opportunities that legislators have to engage in pork. Such studies generally take the incentives of legislators to respond to demand for pork as fixed, and detail hypotheses about how different institutional configurations allow representatives to pursue pork barrel distribution. As Rodden and Wilkinson note, the legislative bargaining approach:

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‘[V]iews the distribution of grants as the outcome of legislative bargaining between the executive and legislature, or between members of a coalition government’. (2004, 5)

Over-simplifying only slightly, in the comparative literature on this topic the opportunities of individual legislators to engage in pork barrel spending depend upon the degree to which political institutions incentivise or ‘enforce’ party cohesion in the legislature. In presidential systems with weak party discipline, like the US or several Latin American countries, legislators have greater freedom to respond to electoral incentives to provide pork than in Parliamentary systems where the reliance of the executive on confidence voting (amongst other factors) gives parties greater leverage over individual MPs. In classical formulations, such a legislature that is divorced from the executive is known as a ‘decentralized’ legislature (Weingast et al., 1981; McGillivray, 2004).

In fiscal bargaining in decentralized legislatures (due to the lack of party discipline and the geographic nature of representation) ‘pork’ is distributed via a ‘norm of universalism’ which increases the size of government. Based on the theoretical insight from Weingast, Shepsle and Johnsen (1981), the central mechanism at play is the ‘law of 1/N’ where each legislator has an incentive to vote for projects for his/her district that gives him/her one unit of benefit, but only 1/N unit of tax cost (Diaz-Cayeros et al 2006, 2). Where N is the number of districts, government expenditure is expected to increase with the number of districts. As Perotti and Kontopououlos describe, empirically this notion has two main components: the number of decision-makers and the rules of the budget process (2002, 191)

Important variations on the classic ‘law of 1/N’ model are found in the comparative empirical literature, such as the number of decision-makers being the number of parties represented in parliament (Mukherjee, 2003), the number of parties in a government coalition (Bawn and Rosenbluth, 2006) or the number of ministers in cabinet (Perotti and Kontopoulos, 2002). However, as Bawn and Rosenbluth assert, in these variant applications of legislative bargaining model ideas to parliamentary contexts, the theoretical mechanism driving increased budget sizes is not a norm of universalism, as in the decentralized legislature models, in which the size of the public sector is determined by logrolls in which all parties benefit (2006, 254). Rather benefits are distributed according to the preferences of government parties, and increased budget sizes are more often conceptualized as resulting from ‘side-payments’ or ‘transaction costs’ in multi-party bargaining (Rodden and Wilkinson, 2004).
2.3.3 Who gets ‘targeted’ by pork barrel distribution (or what type of district gets favoured in political distribution)?

It is possible to identify two main subsets of comparative pork barrel literature based upon how they conceptualize distributive allocations as attempts by politicians or parties to ‘protect themselves electorally by targeting specific groups of voters’ (Golden and Min, 2013, 73). The first subset contains studies dealing with (traditionally) the central debate within the distributive politics literature, whether politicians target core or swing voters. Empirical applications in this subset test hypotheses derived from well-known formal models of optimal (rational) strategies of distributive targeting (especially: Cox and McCubbins, 1986; and Lindbeck and Weibull, 1987). The second subset is characterized by a more eclectic mix of theoretical priorities, but as Golden and Min note, the main question is whether political or ethnic favouritism affects the allocation of goods and services. In comparison to the swing/core literature, such studies tend to ‘take a theoretically more relaxed view than the swing versus core voter debate’ (ibid, 82). The emerging literature on the policy consequences of party nationalization (including our own) should certainly be described under the latter label tending to adopt such a ‘relaxed’ approach to the rational theoretical underpinnings and ‘micro-foundations’ in terms of how they conceptualize political (regional) favouritism. In reviewing the formal theoretical literature on the ‘swing/core’ debate, we take the opportunity to explore the rational theoretical logic behind empirical theories regarding the effect of parties’ linkages (organizational coverage) across regions on their distributive priorities.

The central argument in all of the ‘policy effects’ of party nationalization studies (reviewed in section 2.2) is that regionally concentrated parties have incentives to target their ‘core’ districts or regions (i.e. their electoral strongholds). As a corollary, the regional strongholds of the opposition party should be disfavoured. However, this literature to date has been relatively silent on issues related to the rational theoretical specifics regarding what ‘type’ of districts or regions should benefit or be disfavoured under variable levels of nationalization. The given logic of why a party that only purports to represent a single region (regional party) should, in bargaining over fiscal outcomes, only have their region’s interests in mind is clear-cut; however the logic is less clear why this should be the case for parties that represent a subset of regions (e.g. parties with regionalized patterns of support). Why is it that significantly denationalized parties (i.e. those that have unequal shares of their vote throughout all units in a country) are expected to favour their regional strongholds as opposed to marginal or even opposition regions?

The previous studies described implicitly assume that ‘regionally fragmented parties’ are more likely to target their home geographic constituencies, however the causal logic for why this
should be the case only applies in extremis, that is, for extremely regionalized parties. Yet, previous studies empirically investigate the effect of variance in geographical support shares on distributive strategies, which requires an explanation independent of the simple logic underpinning a single regional party’s distribution strategies.

For instance, consider a hypothetical example. Party A is a regionalized party, which receives the majority of its support (e.g. 60%) in Region X, one of four (equal sized) Regions in a country. In terms of political distribution, a rational theory should define how increasing coverage across regions affects the distributive incentives of Party A. For instance, if party A receives some support in another Region Y (but its variance in still highly skewed across the regions) does this affect its incentives to expand the ‘scope’ of its tactical policies to include (at least parts of) region Y? With regards to efficiency, under the condition of wider but skewed support patterns, why would party A choose to engage in a ‘divide-up-the-spoils’ regional log-rolling strategy as opposed to a Pareto welfare-optimizing distribution strategy, wherein all regions benefit?

If skewed variance leads party A to focus its energies on its main support base (as, for example, Hicken, Simmons and Kollman [2010] imply), we require a theory about how this skewed variation in territorial coverage encourages parties to focus distributive strategies on their core support, and not on more marginal support bases or even on potential opponent support bases. This project suggests that perhaps the most fruitful avenue for research is to consider how skewed geographical variance in support affects the assumptions of the perennial models of political distribution that underpin the ‘core/swing’ debate, in particular the Dixit and Londregan swing voter model of political distribution (1996).

The Dixit and Londregan (1996) model provides the main theoretical micro-foundations for studies of distributive politics. The main implications are that since voters with strong partisan attachments require larger transfers to vote for the opposing (non-affiliated) party, parties compete for political moderates, or swing voters. Swing voters are simply voters whose attachment to their own party is weak enough that a sufficiently large material enticement or allocation could induce them to vote for the other party. In Dixit-Londregan, politicians usually engage in symmetrical strategies in which all target swing voters, where the size of the transfer to particular groups – defined by occupation, geography or demographics – is determined by the position of the ‘cut-point density’ of the groups’ partisan predispositions.

The logic of targeting a swing district is particularly compelling because doing so can make the difference between winning and losing a seat (Cox, 2010, 9). However, many empirical studies find that parties target their core districts (e.g. Levitt and Synder 1995; Diaz-Cayeros, Estevez and Magaloni, 2012). As Cox contends, when studies find that distributive benefits flow to the
strongholds of the governing party or parties rather than to swing districts, they may be
discovering that governments are sometimes ‘probability-of-majority’ maximizers rather than
vote maximizers:

‘[l]f a government allocates benefits to maximize its probability of retaining a majority,
then it may sometimes decide that retaining a vice-like grip on a small majority is the
optimal strategy.’ (2010, 11)

As Cox (2010), and others (Diaz-Cayeros, Estevez and Magaloni, 2012) contend, several structural
characteristics of voter support might encourage parties to adopt this risk-averse strategy.

The central logic behind the swing district model is that when the parties have no special
relationships with any groups (such as strong personal clientelistic relationships), the parties’
allocations are driven by the density of swing voters in each district. As Cox points out (2010,
11), there are two central features of the swing voter model: (a) all voters vote; and (b) the
number of parties is exogenously fixed at two. Under these assumptions, parties can only
increase their share of the vote by persuasion (by means of distributive transfers).

However, if we relax the two assumptions above, then in addition to persuasion, parties also
have to worry about mobilization and coordination. In other words, the probability that voter h
votes for party L depends on: whether h participates in the election or not (mobilization);
whether L is the only left-wing party on the ballot or not (coordination); and whether h prefers
party L to party R (persuasion). A further consequence of this observation is that as persuasion
becomes more difficult – if voter preferences are highly immutable, such as in the case of a
highly polarized electorate – then consequently mobilization and coordination become the
central vote winning strategies (Cox, 2010, 14).

In terms of rational distribution models, our central proposition is that low nationalization could
be one factor that incentivises parties to be more risk averse in their tactical distribution
strategies, hence encouraging them to focus their energies on targeting their core district
support.

This prediction is due to the factors which we observe underpinning low levels of nationalization.
In particular, regional or ethnic cleavages are the main factors that are associated with low levels
of nationalization, especially where these cleavages are territorially based (Amorim Neto and
Cox, 1997; Bochsler, 2006, 21). In effect, as others have pointed out, high party nationalization
has historically been determined by parties’ abilities to unite groups across the national territory
based on appeals to over-lapping functional cleavages, such as those predicated upon economic
left-right distinctions (Caramani, 2004, 31). Due to the relative immutability of these territorial
cleavages, low nationalization may encourage parties to focus more on maintaining their
support among core regionally-based groups – through strategies of coordination and mobilization – than on persuading other groups to support their platform⁶.

2.3.4 Pork-Barrel Politics-Conceptual Definitions and Empirical Measurements

This section reviews some of the conceptual definitions of pork-barrel distribution as well as the various empirical measurements that are used in the comparative literature in studies with single country, single program emphasis as well as studies that seek to measure the phenomenon on a cross-national basis. On a cross-national basis the ‘budgetary composition’ approach that distinguishes between ‘broad’ and ‘narrow’ program categories is almost the singular approach adopted. We define the conceptual definitions of pork that are most uniform across all studies, and progress to a review of the operational definitions and measures found in the literature.

On an intuitive level, pork-barrelling is usually thought of as being an inefficient government resource allocation or wasteful and costly government spending, channelled towards a particular district, based on political criteria rather than programmatic (or publicly explicit) criteria, such as those relating to needs, equity or efficiency considerations. Intuitively, it is seen as being costly, particularistic and ‘above-ground’ i.e. both visible to voters and geographically localizable (Diaz-Cayeros et al 2006, 2). These criteria of pork-barrelling derive from the notion that if governmental distribution is to be an electorally valuable credit-claiming resource for politicians or parties, voters should know and care about the pork. This means that scholars’ definition of ‘pork’ usually precludes (universal) public goods or transfer spending that cannot be targeted geographically. As Golden and Min note in their review of the literature:

‘Broadly, then, pork-barrel goods are local public goods, whereas patronage, or clientelistic, goods are not; the latter, in addition, target individuals with the aim of creating partisan or political loyalty that will endure over time.’ (2013, 77)

In this review we privilege the discussion of empirical measures of pork that deal with explicit expenditure or policy metrics rather than political behavioural measures or survey measures. An example of the latter, are studies that infer pork barrel allocations on the basis of the amount of constituency service performed by politicians (Ingall and Crisp, 2001) or on the basis of membership of legislative committees with competency in distributive policy areas (Stratmann and Baur, 2002) or on the basis of the types of bills a legislator initiates or supports (Golden, 2003; Crisp et al. 2004).
An important observation that can be made is that most approaches to the operationalization of pork spending are deductive in nature, in that scholars begin with a theory of what are likely to be equilibrium outcomes of pork 'deviations' in comparison to welfare-maximizing allocations. Another way to think about this is that 'dependent-variable' orientated research is uncommon in the pork-barrel canon. 'Pork allocations' usually occur on the basis of criteria that are not rendered fully public (Stokes et al. 2011, cited in Golden and Min, 2013, 77). Hence some theoretical priors are required of researchers regarding what a 'political' as opposed to a 'programmatic' distribution is likely to look like.

We identify three broad approaches to the conceptual operationalization of pork. Firstly, a very extreme definition of pork is found in the 'size of government' public choice literature, particularly that dealing with the fiscal common pool problem of central government (Persson and Tabellini, 2003). In this literature, the overall size of the public sector (as a percent of GDP) indicates the extent to which fiscal policy is 'fragmented' and the relative success of different groups in extracting benefits from government. An influential study in this research vein is Bradbury and Crain (2001) who adopt this 'size of government' approach to test their theory regarding the effects of legislature size on public spending. Their central hypothesis is that bicameral legislatures are less prone to log-rolling than unicameral legislatures, as each house acts as a check on the redistributive particularism of the other. On a cross-section of countries, they find that larger legislatures (with more representatives) tend to spend more on overall government spending (according to the law of 1/n logic), but this effect is depressed in bicameral systems, which they interpret as supportive of their central thesis (ibid, 321). As Diaz-Cayeros describe this 'size of government' operationalization:

'The implicit assumption in most studies is that pork is a fixed proportion of government spending, and a larger budget contains proportionally more pork.' (2006, 8)

A second approach we describe as the 'composition of budget' approach, or the classification of expenditure programs according to their geographic breadth. The primary assumption behind many macro orientated studies dealing with credit claiming and pork-barrelling is that the ratio of 'targeted' to 'non-targeted' items of government expenditure, including (but not limited to) spending on Local Public Goods such as physical infrastructure (as well as, depending on the study, public sector wages and public consumption), serve as a good proxy for the overall levels of pork-barrel expenditure in the government budget (cf. Milesi-Ferreti et al. 2002; Keefer, 2009, 809)

Broadly, this common research strategy unites scholars dealing with discretionary pork-barrelling on a single country, single program basis (e.g. Ames, 1995b; Golden and Picci, 2008), and scholars comparing the size and composition of government expenditure on cross-sectional
basis (Boix, 1997; Persson and Tabellini, 2005). At the heart of this literature is the idea of a trade-off in government redistributive decision-making between geographically diffuse and programmatic benefits and pork-barrel distribution. If all governments claim credit for what they have done in office, we expect that those that are more beholden to small, geographic constituencies tend to favour more pork-barrel projects than legislators less beholden to small, territorial clienteles (Franzese et al., 2007). However within this broad versus narrow classification approach, a wide variety of programs are considered as constituting ‘pork’. As Diaz-Cayeros et al. argue, even abstracting away from the problems of comparability across contexts (amongst a multitude of other problems), most of measures of pork-barrelling on a cross-national basis have only unsatisfactorily touched upon the substantive definition, namely, that it is a form of expenditure which should be locally excludable and visible and in some way ‘non-programmatic’; usually meaning inefficient from the point of view of the national median taxpayer (2006, 1).

As a more conceptually accurate proxy (based on the broad/targeted program logic), Diaz-Cayeros et al. (ibid) propose the share of government capital spending on ‘residual capital expenditures’- the share of government capital expenditure in a particular country which cannot be account for by their specified econometric controls (Diaz-Cayeros et al, 2006, 6). In essence, they propose comparing ‘optimal’ levels of capital investment expenditure- which they derive from economic research into optimal levels of public investment for infrastructural development and economic growth- against observed expenditure levels. As we argue in Chapter 3 (section 3.3.1), as a cross-national measure of government spending on broad versus targeted programs, this operationalization is the most defensible proxy for pork barrel spending. While obviously prone to inaccuracies, problems of unreliability as well as being dependent upon normative assumptions; ‘over-spending’ on capital (territorialized) goods by governments, is the closest and most theoretically defensible proxy we can employ for this phenomenon on a cross-national basis.

A third general approach to the operationalization of pork is what Golden and Min (2013) designate as the ‘responsiveness’ approach. As they describe, such empirical studies as exist in this category operationalize pork in terms of the welfare and redistributive consequences of various patterns of (geographic) allocation. The objective of such studies is to investigate whether: ‘allocations that occur are welfare maximizing, equitable, or, to put it another way, preferred by the median voter’ (ibid, 87).

One of the central distinctions of this approach with the previously explored composition of budget approaches is the emphasis on equity in services provision. The central justification of operational definitions of pork in the latter approach is one of efficiency, where ‘misallocation’
of government resources to politically powerful constituencies is manifested as waste and inefficiency in government budgets (and results in ‘over-spending’). In the responsiveness approach by contrast, issues of geographical equity are also considered to a greater degree, where such politically motivated ‘misallocation’ also has equity effects in terms of progressive redistribution, and in that sense is ‘non-programmatic’. As Golden and Min (2013, 86) observe, if allocations of geographically targeted investment are welfare maximizing, then attempts to unpack the specific political conflicts that lay behind them are spurious or incidental (ibid, 87). It is only when allocations do not appear to follow a specific ‘policy logic’ – for example, being driven by efficiency or equity considerations – that the issue of a district receiving preferential treatment on the basis of its political affiliation emerges as a second-order research question.

Our conceptualization of patterns in the allocation of regional investment expenditure in Spain (chapter 4) and Italy (chapter 5) according to ‘Programmatic’ versus ‘Tactical’ criteria for investment is an attempt to operationalize pork-barrel spending according to this responsiveness approach. In these studies we investigate whether regional allocation follows programmatic criteria, defined according to the efficiency or equity criteria. Evidence of particularistic or pork-barrel spending (called tactical redistribution) is whether districts that are ‘objectively’ equal on these criteria receive different amounts of investment and, if so, whether these differences in non-programmatic investment are correlated with the ‘political profitability’ of the district. As Golden and Min describe (2013, 89), in general pork barrel studies adopting a policy responsiveness approach are uncommon (c.f Diaz-Cayeros et al. [2012])). However, such an approach is more frequently adopted in the literature dealing with the political economy of regional investment and infrastructure spending, which our project speaks to directly (Castells and Sole-Olle, 2005; Cadot et al. 2006; Sole-Olle, 2010; Kemmerling and Stephan, 2010).

2.4 Conclusion

This project is firmly embedded in a number of established literatures, particularly that dealing with the relation between political and institutional incentives of politicians and legislative behaviour. It also addresses a wide literature on political distribution, both in political science and economics seeking to ascertain the impact of political institutions on political and policy outcomes.

The approach adopted represents a move away from the exclusive institutional focus in the comparative pork barrel literature. As the review of the emerging literature on the ‘policy consequences’ of party nationalization attempted to outline, this is an exciting area of new research that connects established branches of political science on the nature of party systems
with the substantive policy outcomes. In contributing both empirically and theoretically to this emerging work, we seek to further interest in the relevance for policy outcomes of long-studied political variables in political science.

Endnotes

1 Stokes is suggestive of such a view, where legislators' beliefs about the importance of national political events and trends to vote choice affects party cohesion: 'Many influences affect the solidarity of a legislative party, but the members' perception of forces on their constituents voting behaviour is surely among them...If the member of the legislature believes, on the one hand, that it is the national party and its leaders which are salient and that his own electoral prospects depend on the legislative record of the party as a whole, his bonds to the legislative party will be relatively strong....But if the legislator believes, on the other hand, that the public is dominated by constituency influences and that his prospects depend on his own or his opponent's appeal or on other factors distinctive to the constituency, his bonds to the legislative party will be relatively weak' (1967, 184).

2 Such indices measure the difference between the average number of parties competing at the local district level in comparison to the national level. They are known as inflation indices because the central idea is that this measure is 'inflated' (and cross-district coordination is weak) if the party system is larger at the national level than the district level.

3 This is not the say that there hasn't been a historical literature detailing incentives towards 'parochial' forms of political behaviour in comparative studies. In a review of 'comparative pork barrel' studies in 1986, Lancaster writes an illuminating description on the state of the literature: 'Despite the apparent generality of such political behaviour, studies on pork barrel politics have concentrated on the United States....virtually no studies have compared pork barrel politics as a special type of distributive politics. A few [comparative] studies, however, have examined the broader concept of constituency service...These studies suggest that representatives from similar electoral systems engage in similar forms of constituency service' (69).

4 Most studies in the empirical literature assume that pork is valued by voters. This assumption is justified due to uncertainty on behalf of representatives. As Mayhew articulates, the pursuit of pork is often seen as being driven by self-help logic despite uncertainty of its electoral value: 'How much a particularised benefit counts for at the polls is extraordinarily difficult to say, but it will be hard to find a Congressman who thinks he can afford to wait around until precise information is available' (1974, 57). While the logic expressed applies to individual legislators it is potentially applicable to partisan pork.

5 Related to the idea that regionally concentrated parties are able to extract side-payments due to a pivotal legislative position, several scholars have documented the effect of regionalist parties with secessionist ambitions and that are able to pose a credible secessionist threat on achieving greater levels of regional favouritism in distribution from central governments in a number of countries (Toha, 2009 in Indonesia; Treisman 1998 in Russia). The bargaining mechanism driving allocations in these countries is extra-parliamentary and somewhat beyond the scope of our study. However in Chapter 3 we directly describe and address the idea that regional representatives that can pose a credible threat of regional secession may be able to secure more regional favouritism in national policy.

6 The logic that policy makers target their core regions due to risk-aversion by both politicians and voters is central to the treatments of ethnic politics and distribution in Africa, where ascribed political identities naturally limit the size of coalitions formed to compete for resources. In such contexts, distributive benefits are directed within core support groups rather than to opposition supporting ethnic groups (see Kasara, 2007; Burgress et al. 2010).
Chapter 3

3 Party Nationalization and Regional Favouritism across Countries

3.1 Introduction

A large and growing body of work in political science and economics is concerned with what is described as ‘regional favouritism’ in the geographical allocation of goods and services by governments. In such empirical studies of distributive politics (specifically pork barrel spending by governments) scholars seek to ascertain the systematic determinants of the differential distribution of goods and services between regions in a country (Hodler and Raschky, 2013). As Golden and Min (2013, 82) point out, in this relatively new branch of political science a wide range of empirically relevant factors emerges including history, culture and religion, caste and ethnic affiliation, partisanship and political power, and features of government institutions. This chapter complements the literature on distributive politics by taking a systematic look at regional favouritism in the allocation of goods and services by governments in a large and diverse sample of countries, attempting to employ a broad measure that captures the aggregate distributive effect of many different policies. It presents an argument that has a long lineage in political science, emphasizing the role of strong, national parties in controlling the geographic allocation of public spending and reining in particularistic spending. We argue that this older political science literature, concerned with the role of party ‘linkages’ across regions, is especially relevant to this new empirical field of enquiry.

Within political science parties are considered to be organizations that amalgamate a range of diverse interests that span a wide geographical range. In this view, parties are essential ‘intermediary institutions’ helping to mitigate the inevitable regional distributive conflicts that arise during the allocation of government resources between jurisdictions. Strong ‘national’ parties that receive a proportionate share of the vote throughout all regions are seen as less likely to engage in pork barrel-type spending to specific jurisdictions (Schattsneider, 1960; Stokes, 1967).

On the other side of the coin, scholars lament the regional fragmentation of party systems, implying that it reduces the ‘scope’ of national-level public policies, by encouraging the expression of particularism and regional favouritism (Crisp, Olivella and Potter, 2012; Jones and
Mainwaring, 2003). In this view, while the 'demand' from voters for pork barrel projects is a universal constant throughout all political systems, an essential determinant of the extent of regional favouritism in a country is whether or not parties are strong national organizations or, alternatively, whether they are weak and fragmented along geographical or into personalistic factions.

However, this prominent view on the role of strong national parties in both the electoral systems and distributive politics literature has rarely been subject to systematic, cross-country analysis. This chapter is amongst the first to attempt to investigate the intuitive notion that strong national parties help to rein in the distributive impulses of both individual politicians and regional factions within legislatures. Nationalized parties with widespread support throughout their state reduce the fiscal common pool problem inherent in regional distribution, reducing tendencies towards regional favouritism in public policy. The chapter investigates this notion, investigating the effect of the nationalization versus the regionalization of politics and political parties on broad measures of public spending across a diverse range of countries.

As enunciated in the introduction, the extent to which 'regional' or 'regionalized' parties – parties that only represent one region or subset of regions within the national territory – are influential in setting governments' public spending priorities is likely to have an effect on the composition of central government budgets. We argue that in government or coalitional bargaining over budgetary policy, parties with narrower bases of territorial support are more likely to prioritise spending on items with a strong geographically distributive component, such as public infrastructure investment rather than on broader budgetary items, such as social transfers, which cannot be easily concentrated territorially (Jurado, 2013; Castañeda-Angarita, 2013). Regional Parties – due to their restricted geographical constituency – have a natural tendency to pursue regional favouritism, or to seek 'over-sized' public investment projects for their political constituencies.

We propose two main mechanisms by which regional parties will be able to extract regional pork from central government. First, if regional parties occupy a pivotal position in the legislature, they may be able to extract regional pork barrel as a side-payment in return for legislative support (Castañeda-Angarita, 2013). Second, and perhaps less obviously, their role 'in the electorate' might be important for pressurizing state-wide parties to respond to regional grievances by 'out-bidding' regional challengers (Meguid, 2008). It is argued that, in aggregate, side payments and the dynamic of 'out-bidding' could lead to a fiscal common pool problem in central government, or what has been described as 'inefficient universalism': where central government budgets are full of pork barrel spending and grants earmarked for regional
infrastructure that is 'larger' and more costly than the interests of the nation (or median tax payer) would choose in an optimal social welfare function (Primo and Synder, 2010).

Empirically, we propose that this 'fiscal common pool' effect of regionalised politics can be observed in the level of public investment by governments. The central empirical hypothesis is that once the public policy relevant portion of public investment is accounted for, through various regression controls, we may witness 'over-investment' in capital projects increasing under governments that either are composed of denationalized parties with regionally circumscribed support or that have to compete with a number of regional parties in national elections (Henisz and Zelner, 2006, 264).

The empirical research involves a cross-national, quantitative study of public infrastructure investment by central governments. The project tests two main contentions. Firstly, it asks whether party nationalization affects the composition of public budgets at central government level. Secondly, it asks whether regional party strength has an effect on public spending, particularly the size of territorial spending by central governments.

Our main dependent variable is a measure of central government public expenditure that aims to capture the proportion of the annual budget composed of spending on items that are the most amenable to discretionary, territorial targeting (Milesi-Ferretti et al., 2002). The measure largely consists of the percentage of public budgets devoted to fixed capital projects, such as roads, public buildings and other territorially concentrated public works projects. It includes two main components: direct central government (net) purchases of fixed assets (infrastructure spending) and central government grants to lower level governments ear-marked for purchases of fixed assets.

This chapter is organized as follows. Firstly we set out in more detail the theoretical link between regional political cleavages and the public spending priorities of governments. Secondly, we describe our empirical strategy, the reasoning behind our focus on 'highly prized' infrastructure goods for which central government has a high discretion and the measurement of our main independent variable: 'regional party competition'. Finally we test our main contention that regional parties lead to more territorial expenditures on average, in the absence of government nationalization, on a time-series cross section of countries.
3.2 Theory: Party Nationalization and Distributive Politics

3.2.1 Nationalized Parties as Disciplining Mechanisms in Regional Distribution

As outlined in the introduction, our central theory is that strong, nationalized parties with representation throughout all regions of the country are important in reducing regional targeting of public resources allocation. The central theoretical argument is that nationalized parties rein in pork barrel spending by acting as a ‘disciplining mechanism’ that reduces the so-called ‘common pool’ problem in fiscal policy and regional allocation at central government level.

A great deal of political science and public choice theory is concerned with the issue of fiscal policy as a common pool resource dilemma, in which politicians or groups of politicians (political parties) have incentives to distribute resources disproportionally to their own constituencies; ultimately leading to higher public spending on aggregate (Primo and Synder, 2010). This common pool resource problem is particularly acute in the distribution of local public goods by central government (e.g. in the provision of physical infrastructure) because there is (almost universally) a tax-benefit disconnect between those who benefit from projects (the recipients in a particular region), and those who pay for them (the general tax payer).

This tax-benefit disconnect gives each representative a large benefit from spending directed towards his or her constituency, without their constituents having to incur the full (or proportionate) costs of the expenditures through higher taxation or debt obligations. As Perotti and Kontopaulos (2002, 195) describe the tax-benefit disconnect in distributive policy:

‘Individual groups – and hence, indirectly, their representative in the fiscal decision-making process – benefit from specific types of expenditures; by contrast, because of basic constitutional principles, typically taxation falls on large segments of the population and cannot be easily targeted.’

Without a ‘disciplining mechanism’, such as a strong government executive or strong cohesive parties in the legislature, due to the common pool problem the level of spending devoted to pork barrel benefits increases with the number of N jurisdictions (regions) in a state. With a large ‘N’ any infrastructure project effectively becomes free of charge for its recipients in any particular region, which as Diaz-Cayeros et al. (2006, 5) describe ‘produces incentives to spend beyond even the most permissive conceptions of economic optimality’.

While the fiscal common pool problem is highly abstract, the dilemma it describes is especially prevalent in the (centralized) provision of large infrastructure or public works projects. In deciding upon regional allocation of infrastructure at central government there is a tendency to pass budgets that are too large and full of wasteful, over-sized public projects, especially to the benefit of ‘politically pivotal’ or powerful regions (Primo and Synder, 2010, 354). While fiscal and
political decentralization is usually the prescribed ‘corrective’ to this pork barrel tendency, large-scale infrastructure is one public good for which central governments almost unavoidably must maintain control due to externalities and spill-over effects of provision (Gramlich, 1994).

There are several factors that scholars have proposed that mitigate (or exacerbate) the fiscal common pool problem of public budgets. One important factor is the effect that formal institutions – such as electoral or constitutional systems – have on the strength and cohesion of parties (Levitt and Synder, 2010; McGillivray 2004). In parliamentary democracies, especially those with proportional representative electoral systems, politicians do not have the same incentives or opportunities to channel disproportional resources to their own geographic constituencies. Strong, cohesive parties provide the leadership in legislatures that rein in the impulses of legislators to manipulate the size and location of favoured projects, reducing the proportion of public budgets devoted to particularistic items of expenditure (McGillivray, 2004). Strong parties also have a role ‘in the electorate’ investing in party reputations, such as one for fiscal responsibility and nationally oriented policy-making.

However an often overlooked role of parties in distributive politics is their geographical scope or coverage. Parties act as national organizations providing ‘linkages’ across all districts and regions in a country (Cox, 1997; Kitschelt and Wilkinson, 2007). While the role of party cohesion in parliament in preventing inefficiently large expenditures and/or projects is the subject of much scholarly attention (e.g. Bradbury and Crain, 2001), the idea that the relative national scope of political parties is also important in explaining the incentives and opportunities of national legislatures to engage in regional particularism is a relatively unexplored topic (c.f. Crisp et al. 2012; Castañeda-Angarita, 2013; Simmons et al 2013). In terms of representation of their constituents, ‘nationalized parties’ have to take account of a wider diversity of territorial interests than parties with concentrated regional support. Theoretically, this means that a larger proportion of total investment in public projects will be borne by their supporters in the form of tax revenues and public debt obligations. In terms of accountability, nationalized parties with a wide national constituency have greater motivation to build a reputation for fiscal responsibility and therefore to internalize the cost of distributive projects (Cox and McCubbins, 1993).

To illustrate this logic, Hicken et al. (2010, 5) consider two hypothetical countries each with two regions (X and Y) and four parties (A, B, C, and D). In Country 1, all parties get equal shares of the vote in all constituencies, which is commensurate with their overall national vote share, i.e. if party A gets 35% overall it should get 35% in both regions, if party B gets 10% overall, it should get 10% in both regions. In Country 2, the polar opposite situation pertains, with only parties A and B attaining representation in region X and only C and D attaining representation in region Y.
In these hypothetical scenarios the logic is clear, in Country 1 the parties’ pattern of geographic support encourages maximal representation, and hence the scope of public policy is geographically universal. In Country 2, Hicken et al. expect maximal distributive benefits to flow to region X if parties A and B comprise government and vice versa with region Y if parties C and D comprise government. If A and C comprise government, they expect a legislative log-roll to occur which, it is implied, might increase the equity of distributive benefits. However, policy-makers in this case will still aim to ‘divide-up-the-spoils’ in public policy terms thereby exacerbating the fiscal common pool problem (also see Simmons et al., 2011 on the effects of this ‘dividing-up-the-spoils’ strategy on private investment (FDI) decisions of firms).

### 3.2.2 Causal Mechanisms

In cases where strong state-wide parties have to compete with specifically regionalist parties, we hypothesise that this might incentivise them to spend more on geographic distribution. We suggest that strong Regional Parties (RPs) may increase pressure for regionally targeted spending through three routes:

i. If RPs are part of, or supporting, government coalitions at Central Government level (legislative side-payment).

ii. If RPs pose a particularly strong autonomist or secessionist threat (appeasement).

iii. If RPs are a significant electoral threat to the governing party (electoral outbidding).
While we spell out some situations where regional parties may have an effect on regional distribution, we do not provide direct empirical tests of these mechanisms in the cross-country analysis.

### 3.2.2.1 Pork as Legislative Side-Payment

In several countries regional parties often have direct power in legislative or coalitional bargaining over budgetary policy, either in their role supporting minority governments (e.g. Spain after 1993 and 1996 elections) or as part of a governing coalition (e.g. India after 1998 election or Italy after 1994). In government, most often regional parties stated government program is to renegotiate the ‘fiscal deal’ with central government in favour of their regional constituency (van Houten, 2000). On a more prosaic level, since central government almost universally controls access to funds for large-scale public projects, their objectives are also to bring important ‘bricks and mortar’ development to their regions.

Explicitly regional party participation is a relatively rare feature of most government coalitions. However as previous studies have documented, parties with weak ‘linkages’ across districts or regions could also have a ‘negative’ effect on state finances (Lago-Penas and Lago-Penas 2009; Crisp, et al. 2012) or other public policies (Hicken et al. 2010; Simmons et al., 2011).

Such parties that are significantly denationalized (i.e. receive an unequal level of support throughout the nation) are a more common feature of coalitions in a number of countries and they may be less able, or willing, to play a role as fiscal custodian when participating in central government. Denationalized parties, it is argued, do not fully internalize the costs of distributive spending by central government, since their support base is more geographically concentrated than nationalized parties (Lago-Penas and Lago-Penas, 2009). Similarly, parties that are characterized by regionalised patterns of electoral support may be more enticed to tactically distribute funds to their supporters (Crisp et al. 2012). We explore the proposition that denationalized parties in government exacerbate the fiscal common pool problem at central government level by distributing local public goods that can be concentrated in particular districts or regions.

### 3.2.2.2 Pork as Appeasement of Regional Grievance

State-wide parties (SWPs) might be encouraged to pursue regional pork-barrelling in their competition with regionalized parties in either national or sub-national elections. We argue that SWPs may attempt to pre-empt increasing voter support for regional parties by pursing regional
favouritism (Agnani and Agray, 2010, 10; Meguid, 2008). For instance, several scholars investigating the determinants of inter-governamental grants between regions have explored the ‘exit grievance’ hypothesis. That is, regions with the most credible threat of exit or secession from the state receive more grants from the central government as a form of appeasement (Treisman, 1998 for Russia; Toha 2009 for Indonesia).

Another, not mutually exclusive, possibility is that SWPs use central grants or direct infrastructure spending for nation-building purposes, in part to quell support for autonomist regional political movements (Bel [2012] makes this argument for Spain). While Bel (2012) argues that large-scale infrastructure policy by the central government in Spain has historically been marked by a strategy to increase centralization and reduce regional sentiments, another interpretation of the nation-building logic is that regionalism in many countries is often underpinned by a strong distrust of the central state by regional electorate and political elite, which is reinforced by the strategy and rhetoric of regional parties (Roller and van Houten, 2003). As Glazer (1989) has argued, as political goods, large scale infrastructures are a durable, credible and highly visible signal of commitment by the central state or state-wide parties to regional constituencies, and as such should be a good in high demand in political contexts characterized by deep distrust between jurisdictions.

3.2.2.3 Pork as electoral outbidding

Aside from the policy-goals of state-wide parties – to pre-empt autonomist ambitions by appeasing regional developmental grievances and/or to pursue nation-building centralization – there may also be electoral reasons for why central government geographic distribution is affected by the presence of strong regional parties. Since regional parties compete exclusively in a restricted territory, they do not have to balance the interests of competing regions, by for instance, internalizing the cost of public projects in the same way as we expect SWPs to do. As such, their electoral promises and rhetoric are usually infused with regional specific demands that do not have to take account of the wider policy context.

Regional parties have a credible claim to defend the interests of the region more powerfully than SWPs as that are not bound by national party ties or linkages (Wilson, 2009, 2). The unique selling point of their political message is to articulate real or perceived regional grievances. While the policy goals of regional parties often emphasize autonomist ambitions, regional economic or developmental grievances often form the backbone of their policy rhetoric. One way for SWPs to compete is by appearing to take seriously the regional grievances articulated by their regionalist challengers even if often they cannot support autonomist ambitions of regional electorates.
Some scholars have pointed out that in Italy, for instance, the success of the Northern League and its government partner, Forza Italia, in monopolizing electoral support in the North was in large part due to its ability to cast regional political discourse around perceived grievances relating to regional infrastructure deficits and historical underfunding of investment from central government (Agnew and Shin, 2008, 43).

Under direct electoral challenge from regional parties in either general or regional elections, SWPs may be pressurised into (or strategically choose) 'out-bidding' regional challengers in terms of the resources that can be secured locally from the central government (Roller and van Houten, 2003, 5). Pressure may also come 'internally' to SWPs from party colleagues, under pressure from regional challengers, who may be in a position to lobby party leaders to secure funding for prized public projects from the centre to augment their powerbase in regional constituencies.

The central argument is that the electoral pressures imposed on SWPs by regional parties lead to a dynamic of 'out-bidding' over geographic distribution. Regional parties pose a direct legislative and electoral competitive 'threat' to SWPs which enhances the fiscal common pool problem at central government level.

3.2.3 The Conditional Effect of Party Regionalism on Regional Investment

In this section we describe some of the potential conditional effects of different institutional configurations on the relationship between party regionalism and the allocation of public investment by central governments. In any comparative study of inter-governmental or inter-regional public spending, the issue of constitutional federalism is one of the main challenges for explaining government expenditures. As we reasoned above, party regionalism via the mechanisms outlined, creates a potential fiscal common pool resource problem for central government budgeting. However, it is possible that the extent of fiscal or political decentralization in a country, may condition the effect of regionalism on the distributive strategies that parties' adopt in government.

In our account of the fiscal common pool problem that political regionalism perpetuates for central budgeting, we described a common view in the fiscal federalism literature (for a review, see Tendler, 1997; Treisman, 2007) that fiscal (revenue and expenditure) and political decentralization is potentially a means of mitigating this budgetary dilemma, as lower level (regional) governments and the beneficiaries of regional investment (i.e. the regional taxpayers)
are required to share a greater cost burden of the provision of local public goods (even those with a high inter-regional spill-over such as large infrastructure investment).

As we expand upon below, our main means of controlling for the complexities posed by the differences in the extent of decentralization across countries is the case selection, in which we attempt to use only direct central government controlled expenditures. We also directly enter a number of controls in the regression models for differences in the degree of fiscal decentralization and constitutional federalism. However quite apart from the relatively direct institutional intervening effects on regional investment spending, there are a number of political (strategic) reasons why federal structures might interact with the level of party nationalization in a number of ways.

For instance, as we documented in the case of Belgium after the revenue decentralization reforms in 2001, federal or decentralized fiscal structures are generally to the benefit of wealthier regions. These regions can generally hope to reduce their revenue burden while retaining a larger portion of regional revenues for investment in their own region where there is a high degree of decentralization. Therefore it is in generally in the economic interests of the wealthier region to promote fiscal and political decentralization and representatives of wealthier regions have historically been the driving force behind fiscal decentralization reforms introduced internationally (for examples in Latin America see Fallati, 2005; for Europe see van Houten, 2013).

Where the decision to make regional infrastructure investments is transferred from central to regional or state governments, all other things equal, this will have an overall negative redistributive effect for the poorer region. One means of reducing the negative redistributive effect of decentralization on poorer regions, is to implement revenue sharing or equalization schemes across regional jurisdictions and/or to increase spending from central government to the poorer regions. This is most frequently the raison d'être for the existence of long-standing regional investment programs in federal countries, such as the Appalachian Regional Development Program in the United States or the Federal Unity Fund (FDF) in Germany.

It is conceivable that regional parties or denationalized state-wide parties representing wealthier regions may adopt different distributive strategies under centralized systems than under Federal systems. Where there are deep regional political cleavages in a Federation, regional representatives from wealthier regions are likely to attempt to reduce overall regional investment from the central government as (in the aggregate) this has a redistributive effect on overall inter-regional fiscal relations. In highly centralized settings, such as the UK, the option to compartmentalize infrastructure investment under the responsibility of sub-national
governments is unlikely to be a realistic option in the short duration of a government. In the centralized scenario due to the long-time duration it requires to renegotiate fiscal governance structures, denationalized parties with a wealthy regional base are more likely to prioritize getting their share of investment for their electoral bases by, for instance, channelling infrastructure investment to the regions or subset of regions they represent.

On the other hand, in Federal countries, regionalised parties representing wealthier regions may be more likely to simply attempt to reduce the Federal (central) government overall spending on inter-regional transfers (including regional investment spending). This is because spending powers have already been compartmentalized under state or regional governments, and it is in their interest to reduce the revenue share going to the Federal government to fund large-scale regional investment.

Nationalized parties in Federations – the parties with a stake in all regions rather than a subset – may in fact be the ones that spend more on targeted allocation precisely because of their greater geographical coverage. In effect, these parties have a greater interest in maintaining higher regional investment than parties that represent only wealthy regions in a Federation. In Federations, it may be that nationalized parties in fact pursue higher regional investment than denationalized parties because they have a greater electoral stake in maintaining national solidarity via inter-regional redistribution, as they represent both wealthy and poor regions.

Therefore it is possible that the effects of political regionalism on overall regional investment may be conditional upon the inter-government structures (Federal or Unitary) that are in place in a country. In the empirical analysis, we need to appropriately account for the potentially conditional nature of the connection between party nationalization and investment spending. For this reason we introduce an interaction term in our regression models, seeking to capture the potentially intervening or conditional effects of decentralized political institutions.

Since, a priori, we do not know whether regional parties predominate represent the wealthy or poor regions within different countries, we do not specify theoretical expectations in detail. We simply note that there are strong theoretical reasons, related to the nature of inter-regional distributive conflicts in Federal countries, to expect there might be a conditional effect, and we need to appropriately account for this in our empirical models. In terms of expectations, it is likely that if regional parties in a Federation represent the wealthier regions, they may attempt to reduce the overall redistributive burden of their region (state) rather than seek to further inflate the regional investment budget of central government. If this is the case, we would observe the opposite empirical outcome than those specified in the unconditional hypotheses,
without acknowledging the interactive effect of fiscal decentralization on distributive strategies of regional parties.

3.2.4 Operationalized Hypotheses

The following cross-sectional analysis does not attempt to decipher via which 'route' or mechanism regional parties elicit higher levels of pork in public budgets. Rather, the main objective is to search for systematic associations between regional political competition and measures of regional favouritism in public budgets amongst a diverse sample of countries. In general we expect there to be an empirical association between regional political conflicts and territorial spending by governments, which we operationalize as public capital investment. From the theoretical discussion we derive three testable hypotheses:

1. Countries in which the party system is lowly nationalized should have higher levels of public capital investment by central government over time, in comparison to countries with highly nationalized party systems.

2. Countries in which regional parties are strong (i.e. garner a significant share of the national vote) should have higher levels of public capital investment by central government over time, in comparison to countries where regional parties are not significant actors in the party system.

3. Central governments composing either regional parties or state-wide parties with low nationalization should spend more on public capital investment during their term of office in comparison to governments composed of parties with higher nationalization.

To account for the potentially conditional nature of the party nationalization, given the above reasoning we test a further hypothesis:

4. Central (federal) governments in Federations composing either regional parties or state-wide parties with low nationalization should spend less on public capital investment during their term of office if these parties primarily represent the wealthier regions in a country and this should be reflected in lower overall public capital investment.

3.3 Research Design

3.3.1 Dependent Variable: Public Capital Spending

As with almost all theories of distributive politics, we are rarely able to directly observe pork barrel or politically motivated transactions, and indeed, usually effects are unobservable without a normative theory of what programmatic or policy-orientated distribution versus political
distribution should look like (see, for instance, Dahlberg and Johansson 2002, 28; Golden and Min 2013). Díaz-Cayeros et al. (2006, 3) summarise the deductive approach used in most studies of politically motivated distribution:

'To define pork, we choose to start deductively, specifying the types of spending that might be misused for political ends.'

The main empirical strategy is to focus on expenditures that are highly centralized and could be considered especially 'prized' local public goods for regional development (Barca, McCann, & Rodríguez-Pose, 2011, 6). Public infrastructure is a particularly attractive credit claiming resource for tactical targeting because it tends to be more visible than monetary transactions or aid expenditures (Mani and Mukand, 2007; Golden and Picci, 2008) and, as a result, enables parties to signal their competence to their territorial constituency. In addition, public capital spending, such as roads or highway investment almost universally involve a high degree of discretion on behalf of central governments and it tends to be more straightforward for governments to reallocate infrastructure expenditures between regions than other forms of redistribution, such as through employment policies (Tanzi and Davoodi 1998, 4; Castells and Solè-Ollè, 2005).

This issue of the political efficacy of infrastructure for credit claiming, has recently been taken up by scholars of regional development to explain the (over) reliance in many countries on infrastructure spending as an instrument of regional development policy. In most countries, central government infrastructure financing is the main instrument of regional economic convergence policy or regional development. However, recent endogenous growth theories in economics, as well as empirical studies of infrastructure investment – especially in the area of transport – have demonstrated the often ambiguous and frequently countervailing impact of large scale infrastructure investment on regional convergence (for review see Puga, 2002). For instance, one of the countervailing effects of establishing better transport links to underdeveloped regions is that often, instead of increasing regional growth rates in poorer regions by stimulating local supply side conditions, better transport links actually increase agglomeration effects in the core at the expense of businesses in peripheral regions (World Bank, 2009).

The World Bank Regional Development Report (2009), for instance, is critical of the excessive use of 'Spatially-targeted' regional development instruments (such as infrastructure provision), as opposed to 'Spatially-blind' regional development instruments, based on development criteria that emphasise inter-personal (or individual) inequality or deprivation rather than inter-regional inequality or deprivation (such as individual transfers or human capital development). Spatially-blind policies emphasise universal individual eligibility criteria, whereas spatially-targeted policies focus on differences between regions. As Burca et al. (2011, 8) conjecture:
The appeal of these [regional infrastructure investment strategies] has been their simplicity, tangibility and popularity. Building roads and sanitation is not just a precondition for development, but also something demanded by society, highly visible and extremely attractive for decision-makers. Roads and other types of physical infrastructure can be built relatively quickly and allow for ribbon cutting right before the elections.

Furthermore, infrastructure is highly prized because it can be a more credible form of geographic distribution, less amenable to removal in subsequent time-periods. As the literature on the politics of infrastructure provision has emphasised, infrastructure is territorially concentrated and fixed, and hence is seen as a more credible form of distribution than other monetary subsidies which can be more readily removed in subsequent time periods (Crain and Oakley, 1995, 4). As Glazer (1989) points out, voters have a bias toward durable capital intensive projects in absence of durability enhancing institutions, such as a mechanism to ensure future governments cannot renege on their promises (Crain and Oakley, 1995, 4). In practice, long lived capital projects constrain future governments, as the option to renew or reject projects by the next government is severely restricted.

Deductively, we argue that ‘over-spending’ or ‘over-investment’ on capital projects by central governments is the most theoretically justified operational proxy for pork barrel spending that can be employed on a cross-national basis. The main approach is to attempt to control for supply and demand factors that (legitimately) affect aggregate spending on public infrastructure investment across countries over time. In doing so, one is in effect setting up a normative benchmark by which to measure ‘optimal’ levels of public capital spending compared to ‘excessive’ levels of spending. In particular, we are interested in how politically motivated geographic allocation may affect aggregate capital spending, when other factors affecting capital infrastructure investment are controlled for.

If the externalities in investment decisions are less internalized by parties with low nationalization – such as the size of a particular project relative to its inter-jurisdictional spill-over benefits – there is likely to be relative over-investment in infrastructure on aggregate (Knight, 2004). In this conceptualization, ‘over-investment’ arises by virtue of (1) national parties’ incentive for out-bidding regional challengers and (2) Denationalized or regionalized parties’ greater incentives for own-district (own -region) spending.

In terms of aggregate welfare effects of regional pork-barrelling, if governments trade-off local responsiveness to politically powerful jurisdictions (such as by increasing access or coverage) for national level plans, there may be less overall coordination in infrastructure provision. For instance, while roads investment in a particular jurisdiction may benefit the local population in terms of reduced congestion or local employment during construction, if this investment is
based on political motivations, it may be larger than the marginal benefit to the nation as a whole would warrant (Cadot et al., 2006), perhaps also resulting in a large number of ‘white elephant’ infrastructures. Commonly cited examples of ‘white elephant’ projects include subsidies-in-aid for capital development or construction projects (such as universities, hospitals, roads, airports) whose location is based on political rather than economic considerations (Henisz and Zelner, 2006, 263; also Robinson and Torvik, 2004).

Public capital spending is measured as central government direct expenditure on purchases of fixed assets plus central government grants to sub-national governments earmarked for purchases of fixed assets. The data is taken from the IMF Government Finance Statistics Database (2013). We parse this variable of what we deem to be its less discretionary component, consumption of fixed capital, which is the (presumed) percentage of public capital spending on depreciation costs associated with fixed capital. While in many cases, spending on the upkeep of public capital or infrastructure is a deliberate choice of governments, especially the timing of such expenditures (e.g. whether the bulk of fiscal measures are undertaken in cyclical or counter-cyclical periods), we argue that the initial choice over whether or not to invest in public capital formation reflects greater discretion on the behalf of current governments – and hence, their public policy priorities – than spending allocated to depreciation costs.

3.3.2 Independent Variables: Regionalised Party Competition

We define ‘Regionalised Party Competition’ as occurring where state-wide national parties are forced to compete with Regional Parties, that is parties that primarily represent one or a few regions of a country and are usually set up to articulate regionally focused policies, or for the defence of regional interests (be they economic, religious or ethno-national). Regionalised party competition also occurs where there are significant state-wide parties that are substantially denationalized that is, do not receive an equal proportion of their votes throughout all regions or districts.

Typical countries where the latter type of regional party competition is prevalent are Spain and Italy, where strong state-wide parties compete with regional parties that garner a significant proportion of votes in particular regions. Typical countries with state-wide but denationalized parties include Belgium and Switzerland – where all parties are denationalized – and the UK – where support for state-wide parties (i.e. Labour and the Conservative Party) is either weak or non-existent in certain regions (Scotland and Northern Ireland).
On a conceptual level, 'Regionalised Party Competition' is our main independent variable of interest. This concept compares party systems by the territorial configuration of electoral support, specifically addressing two questions (Caramani, 2004, 111). Firstly, how regionalized is the support for the main parties that comprise government? Secondly, what is the impact of regional parties, that is, parties specifically created for territorial defence usually on the basis of linguistic, religious or economic distinctiveness?

To address the first dimension, we characterise parties by the extent to which they receive equal electoral support throughout all electoral districts, or in other words, the extent to which they are nationalized. The party system nationalization score (PSNS) of each country is used as a broad measure indicating the extent to which all parties (above 5%) in a country receive a homogenous share of votes across all electoral districts in a country. To address the impact of specifically regional parties, we follow other studies and calculate the vote share of parties (see next section) that receive votes in only one region or small subset of regions of a country (Brancati, 2009; van Houten, 2000). To calculate these variables we use electoral returns from national level elections to the lower legislative chamber in 27 countries, across 155 elections from 1972-2008. This data comes from two sources: Brancati’s Global Elections Database (hereafter GED [2013]) and Kollman et al. Constituency Level Data Archive (hereafter CLEA [2013]).

3.3.2.1 Measuring Party System Nationalization (PSNS)

One of the main contributions of this project to the literature on regionalism and pork barrel politics is the definition of parties’ territorial bases of representation along a spectrum according to their degree of party nationalization, as well as the definition of party systems according to their degree of nationalization. The concept of party nationalization refers to the degree to which vote returns for a particular party vary between districts, at a particular point in time. In this project party nationalization (PN) and party system nationalization (PSN) is a determining factor in parties’ budgetary composition priorities.

We use a weighted Gini-based coefficient, as suggest by Bochsler (2010), applied to parties’ district vote shares to describe the overall level of party system nationalization in a country. In case of homogenous distribution (high PN) every territorial unit will cast a number of votes for party x which is approximately proportional to the unit’s size, or the party will win a similar vote share in every territorial unit. In case of heterogeneous vote distributions, most of the votes for party x are concentrated in a few territorial units. When PN is perfect the Gini equals 0 and when it is extremely unequal it equals 1. The measure is inverted by minus 1, to approach a more
intuitive reading, where a lower level of PN approaches zero, a high level approaches 1 (see Appendix 7.1 for discussion of interpretation of electoral Gini coefficient and the district number and size weighting procedures). The individual party Gini coefficients \((G_i)\) are aggregated, weighting each party's Gini by their vote share at national level \((V_n)\), so the Gini for the party system as a whole is calculated by:

\[
Gini = \sum_{i=1}^{N} (G_i)(V_n)
\]

Figure 3.1 Party System Nationalization across Countries

Party System Nationalization Across Countries 1972-2008

Notes: Author own calculations based on electoral district data from CLEA (2013) and GED (2013)

Figure 3.1 gives the average PSNS for the 27 countries. As we can see, the level of nationalization varies markedly across party systems. The PSNS acts as a cumulative measure for what can be thought of as regional divisions in voting. It captures both the level of regionalization in the vote shares for major parties as well as the influence of explicitly regional parties. The measures presented in Figure 3.1 of the nationalization of party systems mostly accords with intuitive perceptions of regional electoral divisions in different countries. However there are some exceptions to this, notably France\(^1\). There are strong regional divisions in both developing and developed countries as indicated by the PSNS. In Asia, the scores for Thailand (Selway, 2011; Nelson, 2005) and South Korea (Lee and Brunn, 1996) capture the regional divisions in the vote share for state-wide parties – and in India, state-level and regional parties – in national elections.
In Latin America, the party systems in Argentina, Brazil and Colombia have quite poor nationalization in some time periods, which is mainly due to the strength of provincial and state-level political parties in these countries (Jones and Mainwaring, 2003, 154).

Among developed countries, Belgium in all periods, and Italy and the UK since the 1990s all have comparatively low nationalization. Perhaps surprisingly, the Spanish party system is comparatively quite nationalized; however, as we argue in Chapter 4, the party system measure obscures substantial differences in the nationalization of individual parties.

A final conceptual issue that we should discuss is the extent to which variance in electoral returns between districts reflects the importance of local versus national level concerns to vote choice. As Katz (1973, 818), for instance, argues regarding this contention: although homogeneity in vote choice between districts could imply that there are similar mixes of voters, with similar ideological persuasions across districts, it could also be consistent with a situation in which a party successfully employs locally-tailored appeals in each district, rather than relying on a national party reputation.

Nonetheless, in lieu of better indicators of this conceptual phenomenon, these measures are perhaps the closest proxy we can employ. As Morgenstern et al. (2009, 1324) assert:

‘Varied voter expression across districts, regardless of its origins...should yield different party behaviour and thus is an important indicator of variance in the representative process.’

Furthermore, while Katz’s critique applies to the situation where parties with high nationalization employ regional favouritism to maintain homogenous support across districts, we should still expect that parties which have been unable to successfully nationalize, to engage in electoral targeting of their core constituencies (Crisp et al., 2012, 22). In this manner, the empirical tests below represent a conservative test of the proposed effect of nationalization upon pork-barrel spending.

### 3.3.2.2 Measuring Regional Party Strength (RP)

For this measure we must categorise parties according to whether they are a ‘national party’ or ‘regional party’. A regional party is defined as a party that nominates candidates for elections, and obtains the majority of its votes, in a strict subset of the regions of a state (often just one), and primarily (albeit not necessarily) appeals to that subset (van Houten, 2007, 557). According to our definition a party does not need to see itself as ‘regional’ to be coded as regional but it does need to be regionally concentrated (and by assumption organized) (van Houten, 2000, 8). As an alternative to categorizing parties as regional parties according to their party platforms or
political agendas, we opt for a 'data-driven' approach to defining regional parties identifying parties based on the geographic basis of their electoral support. While this view of regional parties does not encapsulate information about the specific strategies or goals of the parties, it lends itself well to cross national comparison. It is preferable moreover to alternatives, such as coding regional parties as such based on their names or platforms – both of which may be biased and misleading (Brancati, 2009, 158-9). Defining regional parties according to the coverage of electoral support is also standard in the quantitative empirical literature dealing with regional parties (e.g. van Houten, 2007; Brancati, 2007 & 2009; Ziegfeld, 2012).

Figure 3.2 Regional Party Electoral Strength across Countries

There are two main approaches to categorizing regional parties in this quantitative literature. The first (used by Brancati, 2009) identifies regional parties as those that only receive votes in one region (broadly defined as administrative regions of a state e.g. NUTS2 level in EU nomenclature). The second approach (that we adopt) is less restrictive, categorizing parties as
regional if they are highly concentrated in a subset of regions rather than a single region in a state. The reason for doing this is that we believe from an intuitive point of view that our categorization better captures parties that are conventionally thought of as regional. For instance, strictly adhering to Brancati’s categorization would exclude the Northern League in Italy (which obtains a majority of its vote share from 3 out of 20 regions in Italy) and the Basque Nationalist Party in Spain (which is active in both the Basque Region and Navarre). Furthermore, Brancati’s approach is more sensitive to the geographic definition of regions employed and discriminates heavily against contexts with smaller administrative regions.

However the measurement of regional parties according to this ‘subset of regions’ logic is more involved, requiring measures of concentration in vote shares of parties. We use the measure of party concentration suggested by Ziegfeld (2012). This is the Herfindahl-Hirschman Index (HHI) applied to the district vote share of each party that contests a national election to the lower legislative house in each election. This is a measure of market concentration used in economics and is defined as the sum of the squares of the market share of each firm competing in a marketplace. Within political science, it is also the basis for the ‘effective number of parties’ measure for comparing party systems (see Gallagher and Mitchell, 2005, 598-604). To measure political party regional concentration, it involves dividing the votes for a party in a region by the party’s total vote and then squaring the result. However since regions are of different sizes, the votes for each party are reweighted by the size of the region. This means dividing a party’s votes in a region by the share of the (national) total valid votes that comes from the region. This gives us a number for each party on a scale of 0 to 1, with higher values indicating higher regional concentration.

Where \( V_j \) represents each party’s votes in Region \( j \) and \( V_n \) represents each party’s national vote and \( N \) is the number of regions, the HHI for an individual party is:

\[
HHI = \left( \sum \left( \frac{V_j}{V_n} \right)^2 - \left( \frac{1}{N} \right) \right) / \left( 1 - \left( \frac{1}{N} \right) \right)
\]

Following Ziegfeld (2012) we adopt a ‘critical value’ of 0.18 to categorize a party as regional. The justification for using this value (although arbitrary) is that it is the value adopted under US competition law to assess levels of market concentration. A score greater than 0.18 is regarded as a highly concentrated market approaching monopoly (Ziegfeld, 2013).

To calculate this measure we use Brancati’s Global Elections Database (GED [2013]) and Kollman et al. Constituency Level Elections Archive (CLEA [2013]) to obtain data on party vote shares at the district level. In order to calculate our measure of regional concentration, we aggregate each district to the regional level in each country. We exclude countries with electoral districts that cover the entire state (e.g. the Netherlands and Israel) as well as countries with mandatory
cross-regional voting laws (e.g. Indonesia). We define a region according to the International Organization for Standardization (ISO) classification, which is the administrative level directly below the central government. For Europe this corresponds to the NUTS2 regional level in most cases, which defines the regions for the application of EU Regional Policy. In order to classify each country’s electoral districts according to the region in which they are situated we use the geographical database Geonames available through the R statistical package software.

As we can see from Figure 3.2 there is substantial variation across countries in the strength of regional parties. As a mean in all countries across elections, regional parties receive just above 5%. However in some countries there are, in effect, no regional parties according to our definition (less than 1% or 2% national vote share) while in others, parties that receive the majority of their votes in just one or a few regions are leading actors in the party system, such as in Belgium, India, Bolivia and Thailand.

3.3.2.3 Measuring Nationalization of Parties in Government (PNG)

In coalition politics, we usually expect regional parties to attempt to target their home supporters disproportionately with distributive goods (Kemmerling and Stephan, 2010). However, it may be that moderately nationalized state-wide parties (i.e. those with regionally clustered support) also have incentives to target their supporters (Hicken et al., 2010). While previous studies have investigated the importance of Party System Nationalization on political outcomes and policies, we are among the first to more specifically look at the impact of party nationalization of government parties (Crisp et al. 2012 also adopt this measure). Since nationalization is variable across parties within countries, we hypothesise that if nationalization is important for government decision-making, it is the nationalization of parties comprising government office that should have the largest bearing on government policy. The main strategy is to define central governments by the territorial homogeneity of the vote shares of the parties comprising government at the preceding election (Party Nationalization of Government [PNG]). This is straightforward in the case of single party governments, where the government takes the PN score of the majority party from the preceding election. In the case of (formal) coalition governments, the PNG score is the average Gini coefficient ($G_i$) of the participating parties weighted by the number of seats ($S_i$) held by each party in the legislature. For minority governments that rely on external (legislative) support, we include parties in the PNG score if they were necessary for government investiture. The PNG is calculated as:

$$
PNG = \sum_{i=1}^{n} (G_i)(S_i)
$$
Information of governments’ composition, investiture, duration and parties’ seat share is taken from the Beck et al. Database of Political Institutions (2011).

Figure 3.3 Nationalization of Parties in Government across Countries

Nationalization of Parties in Government,
Weighed Average (1972-2008)

Notes: 1) Authors own calculations based on electoral district data from CLEA and GED 2) PNG= Party Nationalization of Government; 3) Horizontal dotted line= Average across countries; 4) Definition of Federal and Unitary states from Database of Political Institutions, with exception of Spain which we coded as Federal due to extensive decentralization.

As can see in Figure 3.3 above, the PNG score reflects the inclusion of regional parties in government in a number of countries depressing the average Gini coefficient score for countries in a number of time periods, such as in Italy the Northern League, Spain the Catalan and Convergence Union and the Basque National Party, in Finland the Swedish People’s Party and India the various regional/regionally concentrated parties that formed the United Front government 1996. However, the PNG score is also depressed in a number of countries due to the participation in government of a number of state wide parties with low nationalization across their states, such as the Justicialist Party (PJ) and the Radical Civic Union (UCR) in Argentina, in Brazil the Social Democracy Party (PSDB), in Thailand the Democrats or Thai Rak Thai.
3.4 **Descriptive Statistics**

This section we present some descriptive patterns in the main dependent variable, as well as some of the bivariate correlations between the capital spending and our three measures of party regionalism. Figure 3.4 presents the time series of mean and median level of capital spending across countries divided into developed and developing country samples. Three observations should be stressed. Firstly, since the 1970s there is a clear decline in the share of central government capital expenditure as a percentage of GDP especially among developed economies. This observation has been made by other scholars looking at infrastructure spending by governments and has sparked a large literature in economics looking at the causal direction of the relation between productivity growth and public capital spending in developed economies, i.e. whether deteriorating economic conditions have reduced capital stock growth or vice versa (Cadot et al. 2006, 1134). While there are exceptions to this trend, for most developed economies there were lower values in the late 1990s and 2000s than in the 1970s and 1980s.

![Figure 3.4 Public Capital Spending across Time](image)

**Figure 3.4 Public Capital Spending across Time**

Public capital spending as percentage of GDP: Unbalanced sample of 27 countries

Notes: 1) Own author calculations; 2) Source = IMF Government Finance Statistics
Another observation that should be made from Figure 3.4 is that capital spending is substantially higher in developing economies than in developed ones. As mentioned, this is what we should expect given the lower capital stock in these countries. Finally, in developed economies the mean and median get closer over time, implying that there is some convergence of public capital shares across these countries, while among developing countries there appears to be divergence between the mean and median over time, which could (amongst other factors) be due to the divergence in economic output among developing economies implying differing needs for public capital spending.

Figure 3.5 presents the variation across countries in their shares of public investment. As we can see this is substantial. There is also a substantial difference between the average share of public capital in unitary (on the right-hand side of the graph) in comparison to federal states, as indicated by the horizontal lines. It is possible that variation reflects institutional differences in relations between governments in each country. We attempt to deal with this issue in a number of ways.

**Figure 3.5 Public Capital Spending across Countries**

Notes: 1) Own author calculations; 2) Source: IMF Government Finance Statistics; 3) Unitary countries are arrayed on the right hand side; Federal countries are on the left.

Firstly, in the within country models the country fixed effects account for this institutional variation. Secondly, in the between country models (where we omit country fixed effects) we...
include a dummy for federal countries and a measure of the level of fiscal decentralization in each country. One final caveat that should be made is that the measure of capital expenditure that we use is a net measure, which is the purchase of fixed assets less the disposal of fixed assets and depreciation. This is why in a number of country-years, the value of expenditure approaches zero. Numerous countries (notably Brazil) also have negative values in a couple of years, which is attributable to the disposal (privatization) of large infrastructure fixed assets. We censure the measure to make negative values zero, as we are not interested in negative values (i.e. disposals).

Figure 3.6 Three Measures of Party Regionalism – Unitary vs. Federal States

Notes: (1) All variables = Mean of both groups across all years; (2) Both average nationalization of government parties (PNG) & party system nationalization (PSNS) are inverted so Gini coefficient on y-axis is interpretable as regional vote share fragmentation rather than nationalization (2) Federal States=Argentina, Australia, Austria, Belgium, Brazil, Colombia, Germany, India, Spain, US; Unitary= Bolivia, Costa Rica, Czech Repub., Denmark, Finland, France, Greece, Ireland, Italy, Jamaica, Japan, Korea, Norway, Portugal, Sweden, Thailand, UK.
In terms of our three measures of party regionalism (unsurprisingly) there are very substantial differences between federal and unitary states. As we can see in Figure 3.6 below, in unitary states, regional parties are quite rare, while regional parties are significantly more prominent in federal states. Likewise the nationalization of party systems and of parties in government tends to be substantially higher in unitary relative to federal states.

It is obviously likely that the relationship between political decentralization and regional/denationalized parties is an endogenous one, wherein decentralization might increase the strength of already existing regional parties. Our study remains agnostic about the causes of party nationalization versus regionalism, only to note that Federalism or fiscal decentralization by itself did not 'cause' the emergence of regional parties in most countries where we have sample data (e.g. Spain).

However, it is possible that regional parties play a different role in federal systems than in unitary states. For instance, due to the existence of state or regional governments in Federal states, regionalist parties might have more lobbying (or ‘blackmail’) potential when dealing with central government. Another plausible dynamic could be that in unitary systems of government, regional parties and denationalized parties may be able to extract more resources from central government due to the higher levels of fiscal imbalance between levels of government and the greater central concentration of state resources. In Belgium, for instance, ‘waffle iron politics’ (see section 1.4.1), whereby an infrastructure investment in one region was matched by an equal sized (or identical) allocation to the other region, was much more prominent before the decentralization reforms (that made Belgium a de facto federation) in 1989 (Jennes, 2014, 20).

As a final descriptive exercise in Figure 3.7 we plot the bivariate relationship between our three measures of party regionalism and public capital shares across countries in different time periods (each observation represents a 5-year interval), comparing federal and unitary states. The scatterplots reveal clear differences between federal and unitary states in the relationship between all three of our measures of regional party cleavages and capital expenditure by central government.
Figure 3.7 Bivariate Relationships Party Regionalism and Capital Spending in Unitary vs. Federal States

Relationship between Party System Nationalization & Spending in Federal vs Unitary Countries

Relationship between Gov. Party Nationalization & Spending in Federal vs Unitary Countries

Relationship between Regional Party Strength & Spending in Federal vs Unitary Countries

Notes: Each observation is a five year interval for each county
In unitary states, the relationship is a negative one between greater nationalization of parties, on the one hand, and levels of capital expenditure on the other. This implies support for the hypothesis that nationalized parties tend to depress the level of capital expenditure. However, in federal states the bilateral correlations between party regionalism and capital expenditure suggest the opposite relationship. There is a positive correlation between nationalization of the party system and of parties composing government and capital spending. This suggests that in fact, regionalized party systems are correlated with decreased capital spending in federal states. To capture this conditional effect of federalism on our party regionalism measures, we estimate the models with an interaction term, multiplying the Federal dummy (1 indicates a Federal state, 0 a Unitary state) by each of the three measures of party regionalism.

3.5 Empirical Estimation

3.5.1 The Determinants of Public Capital Spending

The main testable implication of our theory on a cross-national basis is that public capital spending should be larger under party systems where a) parties receive a fairly heterogeneous share of their vote in different regions/constituencies and/or b) explicitly regional parties are strong or influential both electorally and in government.

While it is argued that public capital spending as a percentage of annual GDP captures a good deal of particularistic or targeted spending, relying solely on this measure over-estimates the true value of pork-barrel expenditure. There are other reasons for high levels of spending on capital projects other than purely political motivations. For instance, while an above average level of capital spending in a given year in a developing country might be a highly productive use of expenditures on vital infrastructure projects, in a developed country with an over-built infrastructure network, this spending might be electorally advantageous but economically inefficient. Of course, whether or not there can be over-spending on infrastructure or capital projects is a highly subjective issue. For example, while spending on unnecessary highway construction might be wasteful in the medium to long term, in the short term it can constitute necessary economic demand stimulus, such as the debate over pork-barrel in Japan illustrates (Nakamoto and McLannahan, 2012; also Golden and Min 2013, 43).

To construct this measure we use a vector of controls derived from the literature on productive infrastructure investment in an attempt to control for economically productive investment. The residual component of capital expenditures once we have controlled for these economically relevant measures is considered to contain higher proportion of inefficient expenditure, our proxy for pork-barrel spending. Table 3.1 in Appendix 7.2a details the sources for all variables.
3.5.1.1 Economic Controls

There are three economic variables included in the baseline model: Real GDP Growth, Real Interest Rate and Real GDP per capita. Real GDP growth is included as an indicator of cyclical factors. If governments are pursuing a counter-cyclical spending policy, one would expect capital spending to increase as real growth decreases (Sturm, 2001, 6). The real interest rate is included as a proxy for labour/capital ratios in an economy. The logic underlining this variable comes from neo-classical growth models (Arrow and Kurz, 1970), where interest rates indicate the relative scarcity of capital and hence the cost of governments in engaging in capital expenditure. Lower interest rates raise the economically recommended level of capital spending (Diaz-Cayeros et al. 2006, 13). Finally, GDP per capita (measured in constant baseline year 2005 US dollars) is included as a control for the level of development. We expect the level of development to negatively affect the proportion of capital spending in national budgets. As capital spending is spent on durable projects, such as infrastructure, developing economies should have a relatively greater need for productive public capital. They should also have higher initial costs to incur, such as costs of establishing infrastructure networks as opposed to extending them. Hence, high capital spending it is assumed will generally be more efficient in developing than developed countries.

3.5.1.2 Structural Controls

The only structural variable we include in the baseline model is the population density in a country. This is included as a demand variable, as it is hypothesised in the literature on the determinants of public capital spending, larger rural populations should increase spending on public capital. This is because most public capital is spent on infrastructure, which is relatively more expensive to provide to sparse populations (on a per capita basis) than dense, urban populations (Sturm, 2001; Estache and Sinha, 1999).

3.5.1.3 Budgetary Controls

We include two variables describing the state of central government finances: Central Government Debt as percentage of GDP and Central Government Primary Budget Deficit as a percentage of GDP. While these variables are potentially endogenous to the dependent variable it was thought necessary to include them since both are determined to a large extent by decisions of previous governments and structural factors, and both are likely to effect the ability
of central governments to spend. We expect both factors to negatively affect capital expenditure. To avoid endogeneity both variables are measured at a lag of 1 year.

### 3.5.1.4 Institutional Controls

We include three institutional controls: **Personal Vote** is a categorical variable measuring the degree to which a country’s electoral system encourages personal vote seeking by legislators, **fiscal decentralization** is the percentage share of total revenue collected by sub-national governments, and **federalism** is a dummy variable indicating whether a country is federal or not. **Personal Vote** is based on the Carey and Shugart (1995) classification, as adapted by Wallack et al (2003). This is a summary index (on a scale of 1-10), averaging the extent to which four electoral system variables incentivise personal vote seeking on behalf of legislators. These four considerations are:

i. ‘Ballot’ – Extent of party and citizen control over candidates access to and ranking on the electoral ballot.

ii. ‘Pool’ – whether or not votes are pooled across members of the same party – gives an indication of the value of a party over a personal reputation.

iii. ‘Vote’ – the number and specificity of votes cast – gives an indication of whether voters can cast one or many votes, and whether it can be cast for individual candidates or parties.

iv. ‘Average District Magnitude’ – the average number of representatives elected to the legislative lower house in each constituency (Wallack et al. 2003, 136).

Deriving expectations from previous studies (Persson and Tabellini, 2001; Milesi-Ferreti et al. 2002; Hicken and Simmons, 2008), we expect this variable to have a positive impact on the proportion of capital spending.

While we are agnostic about the effects of both federalism and fiscal decentralization, it is important to include them as control variables as both may significantly affect the level of expenditure on capital goods in a country. Other studies have found that political and fiscal decentralization tends to increased spending on infrastructure by central government (Estache and Sinha, 1999).
3.5.2 Estimation Issues

We estimate two types of models attempting to capture the effect of party regionalism on capital expenditure over time within each country as well as on explaining differences in the share of public capital between countries. First we estimate 'within country' models that account for variation across time within countries but do not estimate effects upon between country variation. The unit of analysis in these models is annual share of public capital expenditure by central government. In each model the measures of party regionalism are taken from the last election. The variables take a lag of one year, which means that in election years the party regionalism measures take the value of the previous election.

Since the model includes country effects we omit several variables that are time invariant or have limited time variability over the sample period. These within country models only include the main independent variables of interest – the party regionalism measures – as well as the cyclical economic variables to control for temporal trends within countries namely: GDP per Capita, Real GDP Growth and Real Interest Rate. Due to the co-linearity of the party regionalism measures we include them each in a separate model.

In a separate set of within country models we include an interaction term to capture the conditional effect of state type (federal or unitary) on our party regionalism measures, multiplying the Federal dummy (1 indicates a Federal state, 0 a Unitary state) by each of the three measures of party regionalism.

Second, we estimate 'between country' models to evaluate the effect of our independent variables on explaining variation between countries in the share of capital spending. In this model we omit country effects but include a more comprehensive set of control factors for country factors that determine capital spending. We also include time controls to account for temporal heterogeneity. However one of the main problems with our sample is that it is extremely unbalanced and too small to include fixed year effects. To attempt to mitigate problems of omitted variable bias and temporal heterogeneity we divide the sample into 5-yearly intervals and estimate the average value of each variable for each period. We then include fixed effects for each period in a pooled OLS model.

In estimating these models the dependent variable is the average spending of governments as a share of GDP between consecutive elections. We omit spending in the first year of term by each government from our analysis for each case, as it is likely that this reflects the spending priorities of prior administrations rather than current administrations. As others have noted, it is also advisable to drop the first year of spending from analyses of government spending over periods,
as this may be distorted by political budget cycles (Lago-Penas and Lago-Penas, 2009, 93).
Similarly all control variables are the averaged values between consecutive elections.

Given the time series cross-sectional nature of our data the standard assumption of independently, identically distributed errors is unlikely to hold, and preliminary analyses using Breusch-Pagan test indicated heteroskedasticity. However due to the unbalanced nature of our dataset it does not make sense to calculate panel corrected standard errors (PCSEs) to estimate the covariance matrix. Alternative estimation techniques, such as Park’s Feasible Generalized Least Squares are inappropriate for our data given the restricted number of time-observations per unit, which would lead to drastically inflated standard errors (Beck and Katz, 1995).

Generalized Method of Moments procedures, with instrumented variables are also precluded because of the averaged nature of the variables.

Autocorrelation is also an issue in the within country models but less of an issue on the models estimated between countries with period fixed effects. We do not include the lagged value of dependent variable as it absorbs the significance of the other variables and other authors have argued that in the case of ‘discretionary’ expenditures such as capital spending, it does not make theoretical sense to include the lagged value in the regression equations (Diaz-Cayeros et al., 2006).

### 3.6 Empirical Results

We present results from the ‘within’ country estimates where the coefficients indicate the effects of the variables on changes across time within each country (see Table 7.2 Appendix 7.2).

In the first three models without the interaction effects, one of our measures of party regionalism – the strength of regional parties – is insignificant. Both party system nationalization and the party nationalization of government are significant but have the opposite effect to that hypothesized at the outset: increased party system and party of government nationalization over time tends to increase capital spending in a country rather than reducing it. However given the heterogeneous effects we identified in the descriptive statistics, notably that party regionalism has differing effects on capital spending in unitary in comparison to federal states, this is unsurprising.
Figure 3.8 Interaction Term Effect 'Within' Country Models

Notes: 1) Interaction effects from Within Country fixed effects models; 2) From top: panel 1 = PSNS * Federal dummy (1=indicates Federal State); panel 2 = PNG * Federal dummy; 3) Dotted lines indicate 95% confidence bands; 4) On the x-axis PSNS and PNG are both centred around their mean.

The models (Table 3.2 below) including the conditional effects of 'state type' are a better fit for the data. Both Party System and Party of Government nationalization are significant once we account for the conditional effects of state decentralization (i.e. whether a state is federal or unitary). Figure 3.8 presents the conditional effect of state type in interaction with both party nationalization measures on spending over time within countries on capital investment as a percentage of GDP. From panel 2 (reading from the left) we can see Party system nationalization has a strong positive effect on capital investment in federal states, a 10% increase in Party Nationalization increases capital spending by on average 0.7% of GDP per year in federal states holding other variables at their mean.
### Table 3.2 Regression Results for Within Country Models

**Determinants of Capital Spending Within Countries 1979-2010**

**Dependent Variable:** Capital Spending % GDP (logged)

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real GDP Growth (log)</td>
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<td>-0.010</td>
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<td>(0.024)</td>
<td>(0.024)</td>
<td>(0.024)</td>
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<tr>
<td>GDP per capita (log)</td>
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<td>0.008</td>
<td>0.008</td>
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<td></td>
<td>(0.040)</td>
<td>(0.040)</td>
<td>(0.040)</td>
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<tr>
<td>PSNS</td>
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<tr>
<td></td>
<td>(0.295)</td>
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<tr>
<td>Regional Party Vote</td>
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<tr>
<td></td>
<td></td>
<td>(0.820)</td>
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<tr>
<td>PNG</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>Federal</td>
<td>0.568***</td>
<td>0.185</td>
<td>0.272**</td>
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<td></td>
<td>(0.165)</td>
<td>(0.117)</td>
<td>(0.119)</td>
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<tr>
<td>PSNS*Federal</td>
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<td>County Fixed Dummy</td>
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<td>Y</td>
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<tr>
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<td>T=31</td>
<td>N=492</td>
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<td>Adjusted R²</td>
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<td>0.524</td>
<td>0.530</td>
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<tr>
<td>F Statistic</td>
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<td>18.988***</td>
<td>19.445***</td>
</tr>
</tbody>
</table>

Notes: (1) standard errors in parentheses, ***, **, & * indicate statistical significance at 99%, 95%, 90% levels (2) All models estimated OLS with Country Fixed Effects.

The nationalization of government parties also has a significant effect on capital spending over time within countries; however, the effect is weaker and only significant at the 90% level. In unitary countries, the slope of the coefficient for both nationalization measures (party system and government) is negative but flat with wide confidence margins indicating that the effect of party nationalization over time in unitary countries is negligible. In many ways these results are not surprising given the lack of countries with significant temporal variability in all three of the party regionalism measures.

As a second formal test, we look at the effect of party regionalism in explaining across country differences in the level of central government spending on capital goods in different time
periods. Since the effect of state type is so strong we only present the models that include the interaction terms between state type and party regionalism (Table 3.3)

### Table 3.3 Regression Table for Between Country Models

<table>
<thead>
<tr>
<th>Determinants of Capital Spending Between Countries (5-Yearly Intervals) 1979-2010</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variable:</strong> Capital Spending % GDP (logged)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real GDP Growth (log)</td>
<td>0.136**</td>
<td>0.124**</td>
<td>0.137**</td>
</tr>
<tr>
<td></td>
<td>(0.056)</td>
<td>(0.056)</td>
<td>(0.056)</td>
</tr>
<tr>
<td>GDP per capita (log)</td>
<td>-0.141***</td>
<td>-0.102***</td>
<td>-0.128***</td>
</tr>
<tr>
<td></td>
<td>(0.030)</td>
<td>(0.031)</td>
<td>(0.030)</td>
</tr>
<tr>
<td>Real Interest rate (log)</td>
<td>0.030</td>
<td>-0.003</td>
<td>0.024</td>
</tr>
<tr>
<td></td>
<td>(0.032)</td>
<td>(0.032)</td>
<td>(0.032)</td>
</tr>
<tr>
<td>Fiscal Decentralization (log)</td>
<td>-0.021</td>
<td>-0.030</td>
<td>-0.037</td>
</tr>
<tr>
<td></td>
<td>(0.028)</td>
<td>(0.028)</td>
<td>(0.029)</td>
</tr>
<tr>
<td>Electoral Personal Vote Incentives</td>
<td>0.001</td>
<td>0.006</td>
<td>0.004</td>
</tr>
<tr>
<td></td>
<td>(0.009)</td>
<td>(0.008)</td>
<td>(0.008)</td>
</tr>
<tr>
<td>Budget Balance</td>
<td>0.009</td>
<td>0.012</td>
<td>0.007</td>
</tr>
<tr>
<td></td>
<td>(0.011)</td>
<td>(0.011)</td>
<td>(0.011)</td>
</tr>
<tr>
<td>PSNS</td>
<td>-0.458</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.391)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Party Vote</td>
<td>3.542***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.052)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PNG</td>
<td></td>
<td>-0.716</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.533)</td>
<td></td>
</tr>
<tr>
<td>Federal</td>
<td>0.236***</td>
<td>0.076</td>
<td>0.210***</td>
</tr>
<tr>
<td></td>
<td>(0.072)</td>
<td>(0.077)</td>
<td>(0.069)</td>
</tr>
<tr>
<td>PSNS*Federal</td>
<td>1.445***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.535)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPvt*Federal</td>
<td></td>
<td>-3.840***</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1.072)</td>
<td></td>
</tr>
<tr>
<td>PNG*Federal</td>
<td></td>
<td></td>
<td>1.593**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.685)</td>
</tr>
<tr>
<td>Constant</td>
<td>2.111***</td>
<td>1.929***</td>
<td>2.016***</td>
</tr>
<tr>
<td></td>
<td>(0.331)</td>
<td>(0.327)</td>
<td>(0.330)</td>
</tr>
<tr>
<td>Period Fixed Effects Included</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Observations</td>
<td>181</td>
<td>181</td>
<td>181</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.198</td>
<td>0.216</td>
<td>0.187</td>
</tr>
<tr>
<td>F Statistic</td>
<td>3.965***</td>
<td>4.314***</td>
<td>3.753***</td>
</tr>
<tr>
<td>(df = 15; 165)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes (1) standard errors in parentheses, ***, **, & * indicate statistical significance at 99%, 95%, 90% levels (2) Period Fixed Effects indicating 5-yearly intervals since 1979-2010 included (3) All models estimated with Pooled OLS.
The results are quite revealing with all three measures of party regionalism telling a similar story. In unitary states party nationalization (party system and government) depresses territorial spending while the strength of regional parties increases territorial spending.

However as we can see from Figure 3.9, in federal states the opposite situation pertains for both party nationalization measures. On average in federal states, the more nationalized the parties of government and the party system in general, the more the central government devotes to capital spending in all time periods. The effect of government party nationalization on capital spending is even stronger, with ‘highly nationalized’ government parties (in the 4th and 5th quantile range) spending on average 1.1% more on capital spending than parties in government with low nationalization (1st and 2nd quantile range), in each time period holding other variables at their mean. In unitary states, by contrast the results are closer to those hypothesized, namely that high levels of party nationalization depress capital spending in the order of about 0.7% GDP per period.

The situation is less clear when it comes to regional parties in federal systems, with there being little effect of regional party strength on territorial spending by central government in federal systems. In unitary countries, the presence of regional parties does correlate with higher capital spending. While regional parties are relatively rare in unitary states, in those where they do exist, in periods where they receive more than 3% of the total national vote share, governments spend on average about 0.35% of GDP more on public capital, than where there are no regionalist parties present.

We test various model specifications to check the robustness of the results. These results are not robust to the inclusion of the lagged value of central government Debt as a percentage of GDP which is due to the co-linearity of all three measures of party regionalism and public sector debt (for debt and regional party strength pearsons correlation coefficient \( r = .3 \)). The substantial bivariate relationship between high levels of government debt in countries with regionally fragmented party systems (such as Belgium, Argentina and India) corroborates anecdotal assertions we made in the introduction about the often high levels of public debt found in countries with strong regional cleavages (e.g. the effect of the ‘waffle iron’ policy in Belgium on level of public debt).
Figure 3.9 Interaction Term Effect 'Between' Country Models

Notes: 1) Interaction effects from Between Country Period fixed effects models; 2) From top: panel 1= PSNS * Federal dummy (1=indicates Federal State); panel 2= PNG * Federal dummy; panel 3= RP * Federal dummy; 3) Dotted lines indicate 95% confidence bands 4) On the x-axis PSNS and PNG are both centred around their mean.
3.6 Discussion

In this section we interpret the results of the empirical analysis. In particular we suggest some plausible reasons why nationalized parties are associated with greater targeted spending in federations but less targeted spending in unitary states. On the other side, we espouse some reasons for why regionalized political competition appears to lead to greater levels of targeted spending in unitary states but not in federations.

In unitary states, the hypothesized relationship between party regionalism and levels of spending on public capital appear to be supported. In these states, we find that countries with Nationalized political competition, on average spend less on targetable public goods than countries with regionalized political competition. We interpret this finding to imply that National Party linkage is important for explaining public spending priorities. Specifically National Parties 'link' groups across the national territory and reduce particularistic spending in the form of regional favouritism in local public goods provision. We found that the nationalization of government parties (as opposed to the party system as a whole) is especially important in reducing expenditure on capital projects. Since the electoral constituency of nationalized parties is broader due to their wider geographic representation, they have strong incentives to internalise the cost of large-scale public projects, and to reduce wasteful spending in the form of 'over-sized' projects to particular regions. On the other hand within unitary states, governments with narrower representation throughout regions (including regional parties and denationalized parties) tend to spend a greater share of the national income on public capital. Since this effect is directly related to the government level (rather than the party system), it can be interpreted to imply that these parties demand more regional pork for their constituencies in exchange for passing policy at central government level. This is consistent with the side-payment mechanism whereby regional or denationalized parties are able to extract pork for their constituencies if they are pivotal partners in government coalitions.

However the association with the electoral strength of regional parties with higher levels of capital spending in unitary states suggests that the 'side-payment' mechanism is not the only route by which regional parties lead to more regional favouritism in government budgets. This finding could be consistent with the hypothesis that the electoral strength of regional parties matters as it leads national parties to attempt to 'out-bid' regional party challengers that threaten them electorally in certain regions. The finding that regional party cleavages have this effect in unitary states but not federations suggests this is a plausible reason for a good deal of regional pork barrelling in some countries. For example, fiscal relations between regions in the UK are heavily skewed by such political considerations, resulting in much higher per capita
spending in Northern Ireland and Scotland even once needs variables are taken into account. As Girapaios and Bishop assert, the favourable treatment of these two regions is clearly related to political factors:

‘a central political issue has been the desire to keep the UK ‘united’ by giving special treatment to those areas that might otherwise have wished to secure greater independence from the UK’ (2005, 808).

Since regional parties are uniquely able to foment and appeal to regional grievances in their electoral rhetoric, if National Parties are to compete with them in either general or regional elections they may have to appear to take serious these grievances – such as those concerning regional economic disparities or infrastructure deficits – and promise to channel resources to regionalist strongholds to ally these concerns. In federations we find almost the opposite relation between party regionalism and capital spending to that hypothesized. This result could be interpreted in a number of ways.

Firstly we find that the electoral strength of regional parties does not correlate with higher levels of public capital in federal countries. This could be interpreted to mean that to the extent that regionally fragmentated parties have an effect on government spending: decentralization and vertical separation of government helps to offset these potentially ‘negative’ effects, such as the overgrazing of discretionary spending at central government level. This is very plausible, as again anecdotal evidence from the Belgium case suggests that waffle iron policy was severely constrained after successive rounds of decentralization. However it may also be that regional pork-barrel is obtained by regionally concentrated parties but it does not lead to higher aggregate levels of capital spending. For example, if a regionally concentrated party is able to control government on their own even excessive pork-barrelling to their own jurisdictions would not lead to high aggregate spending if they ignored other regions. As the effective geographic constituency of parties with low nationalization is narrow, while they may engage in tactical geographical distribution, this might not have an effect on aggregate spending as these parties only have to target a subsection of districts or regions.

With regards regional and denationalized parties’ participation in government, we find that this leads to lower spending on public capital. Nationalized parties in government in federal systems spend more on average on public capital. This finding is inconsistent with the hypothesis that national parties internalize the costs of regional distribution and rein-in particularistic spending as part of government. From the theory expounded it is difficult to conjecture why nationalized parties would spend more on regional favouritism. One interpretation that could be consistent with the theory is that nationalized parties spend more on regional pork barrelling in federations
precisely because of the deeper political regional cleavages. Nationalized parties in the federal level are more prone to engage in regional favouritism as a means of nation-building.

If this is the case in some countries, the question is why regional or denationalized parties would lead to a reduction in aggregate spending on public capital. One plausible reason why the participation of these parties might reduce aggregate spending is if regional infrastructure (public capital) spending is highly redistributive from regions with higher average revenues to those with lower average revenues. As van Houten, for example, has noted in Europe, 'regionally assertive parties' tend to be from wealthier regions within their countries (2013, 145). If regional investment (such as part of a long-standing regional development policy) is highly redistributive, a regional party from a wealthy region may still direct expenditures towards their home district but this could have the effect of reducing aggregate regional investment. As we argue in chapter 5, such a dynamic appears to have occurred in Italy, where the governments containing the Northern League 'disproportionally' favoured the League's regional strongholds. However this occurred in conjunction with (or on the basis of) a renegotiation of regional investment policy wherein the highly redistributive system of transfers from northern to southern Italy was replaced by a more 'efficiency' orientated investment policy that placed much less emphasis on regional inequalities or infrastructural deficits in the allocation of investment.

3.7 Conclusion

The results are quite descriptive but they reveal that party nationalization may be an important variable to consider for studies of political distribution. While analysis at such an aggregate level cannot adjudicate between specific mechanisms – such as the legislative side payment hypothesis, nation-building/appeasement hypothesis or electoral outbidding hypothesis – our analysis indicates that the strength of regional parties in certain contexts may also be important for public spending priorities.

Specifically, our analysis indicates that the breath of geographic support for parties in government, in the absence of strong regional parties, is an important determinant of budgetary priorities – specifically, the amount of expenditure dedicated to specifically geographic distribution. Secondly, the interaction between Federalism and party regionalism reveals that, it is in fact highly nationalized parties that are more likely to respond to the demands of regional parties for territorial distribution in Federations. We conjectured that this could be in line with the policy-goals of national parties to pursue nation-building or to discourage secessionist grievances. However, the result could also be commensurate with a situation where state-wide
parties are under electoral threat from regional parties, and need to engage in regional favouritism to ‘out-bid’ their regional opponents.

In the next section we attempt to parse these hypotheses in a more specific case analysis. We investigate countries with different configurations of regional party competition. Firstly, we investigate the case of Spain: a party system characterized by strong regional parties that compete with strong national state-wide parties. Secondly, we look at a similar case of Italy, where regional parties only became a fixture of electoral competition in the 1990s.

The central argument is that we expect states where regional political actors – especially regional political parties – are strong, to pursue significantly different regional development strategies than states where regional political actors hold less sway in the central state. While in almost all countries there are some forms of core-periphery political cleavages, usually taking the form of regional economic grievance over unequal or overly centralized development or alternatively ethnic/cultural grievances, in many democracies regional political actors are subsumed within national political groupings, such as national political parties. The subsequent chapters ask whether regions with explicit political representation through the party system at the national level, experience different and/or ‘better’ regional outcomes, than similar regions without such representation.

Endnotes

1In France, the PSNS (i.e. nationalization of the party system score) is quite low despite the fact that the major parties (such as the Gaullists and the Union pour la Democratie Francaise) are rather nationalized across regions. Historically strong regionalist parties were not a predominant feature of the French party system (with the possible exception of the agrarian Hunter Party [Chasse, Peche, Nature, Traditions]). While there are regional differences in Left-Right political affiliations, the main reason for the low PSNS in France is due to historically unstructured system of electoral alliances that parties have traditionally built with one another, forming differentiated alliances from constituency to constituency (Caramani, 2004, 146). In large part this is due to the Majoritarian quota of the of the two-party system (Elgie, 2005, 126). This means that the territorial coverage of state-wide parties across constituencies is often incomplete (if they opt of out a constituency race to support their ally) and it also means that small parties with limited geographical scope are a persistent feature of the electoral landscape.
Chapter 4

4 Party Nationalization and the Politics of Geographic Redistribution in Spain

4.1 Introduction

This chapter investigates the importance of a political party's ability to project its organization and support across jurisdictions (such as districts and regions) for distributive policy. As conventionally defined, distributive policy deals with political decisions over the allocation of government resources between political and administrative jurisdictions. As defined by Weingast, Shepsle and Johnsen: 'A distributive policy is a political decision that concentrates benefits in a specific geographic constituency and finances expenditures through generalized taxation' (1981, 644).

In essence, the content of distributive policy entails decisions over the geographic allocation of grants and direct provision of local public goods by central governments to lower level jurisdictions or authorities, such as decisions over size and location of infrastructure investment. Infrastructure investment especially when decided at central government level is usually also highly redistributive. The regional allocation of infrastructure investment acts to redistribute money from certain regions (those that pay taxes) to others (those in which the investment is made) (Sole-Olle, 2010).

In line with an emerging political economy literature, we argue that the geography of electoral votes may be more important than electoral and constitutional rules in some political systems for shaping the preferences of governments over distributive policy and geographic redistribution (e.g. Jurado, 2013; Crisp, Potter and Olivella 2012; Simmons Hicken and Kollman 2010; Rodden 2010). This chapter supplements the previous cross-sectional analysis by investigating the central proposition that the geographical dispersion of parties' core support – and the relative success of parties in claiming votes throughout the whole nation – significantly influence the content and allocation of their discretionary geographic spending during their term in office. The dependent variable in this study is the regional distribution of infrastructure spending by parties in central government, over their term of office.

In recent years, much literature in both political science and economics has paid increasing attention to the factors that might explain the regional allocation of public investment in infrastructure (Kemmerling and Stephan, 2002; 2010; Knight, 2004; de la Fuente, 2004).
Research in the field has focused particularly on the efficiency/equity trade-off in terms of geographic redistribution in conjunction with the differing political partisan interests of governments in providing explanations for systematic patterns in the allocation of investment.

The central concern of these within-country studies of regional investment, especially physical infrastructure as well as intergovernmental grants, is determining the extent to which allocation decisions at central government level are based on expected productivity output or equity concerns ('programmatic considerations') or alternatively on the strength of regional lobbying or electoral importance of a jurisdiction ('tactical considerations'). In this conceptual distinction of government allocation decisions – also relied upon in this chapter – ‘tactical distribution’ reflects a government responsiveness to or favouritism towards particular geographic constituencies in distributive policy. ‘Programmatic distribution’ on the other hand reflects responsiveness to a broader partisan or ‘national’ constituency interest. In this conception, it is important to emphasize that ‘programmatic distribution’ is still reflective of a potentially partial view of the national interest, where the broadest constituency interest a party might serve is their partisan constituency. However, while certain areas with concentrations of party support may benefit more than others by a particular expenditure program, legislators or parties favour partisans residing in certain districts only insofar as they conform to the national distribution of party support (Franzese et al., 2007, 6).

Tactical distribution serves as a proxy for pork-barrel provision. In Spain, for instance, we observe significant time variation in the use of tactical ‘pork barrel’ spending between governments. We argue that this indicates the salience of geographic constituencies for parties as opposed to their wider partisan constituencies. Explaining this temporal and cross-sectional variance in parties’ use of tactical infrastructure spending is the central objective of this paper. The incentives to be responsive to geographic or partisan constituencies likely vary with district and national level electoral competitiveness, partisan polarization, and other features of specific elections as well as of more permanent features of electoral and party systems (Franzese et al. 2007, 6).

However, as we explore in the next section institutional factors have difficulty accounting for temporal patterns within Spain (as well as other countries) in the level of pork barrel spending. For instance, institutional factors have difficulty in accounting for why some governments in certain time periods appear more prone to relying on ‘tactical distribution’ in regional investment.

This study argues that electoral geography of individual parties – and spatial patterns in party system aggregation – structures policy-makers incentives to be attentive to particular geographic
constituencies or wider partisan constituencies. While nationalization of electoral performance in a country induces wider programmatic priorities over geographic distribution, fragmentation of electoral support along regional lines encourages the use of pork barrel spending both as a means to reward loyal core supporters and as a side-payment to regionalist parties that are pivotal to government formation. At one extreme, we argue that regionalist parties may bolster both the lobbying impact and the electoral strength of regions with regards their efforts to secure infrastructure allocations from central government. At the other extreme, regions that are poorly represented by state-wide parties participating in central government, may be ignored or ‘disproportionally disfavoured’ in the game of geographic redistribution.

All governments need to buy out strong regional interests or muster electoral support across regions. However, where party nationalization is strong, there might be fewer incentives for central government actors to disproportionately favour particular regions over others. This is because strong state-wide parties are more likely to internalize the cost of particularistic projects. We investigate this proposition, exploring the effects of electoral geography – specifically the breadth of parties’ electoral support – on allocations of infrastructure investment among Spanish Provinces and Autonomous Communities (regions) by the central governments in Spain from 1978-2010.

The remainder of this chapter is organized as follows. The next section discusses the case selection justification and how we attempt to control for potentially confounding institutional factors. The subsequent section describes the main patterns in party nationalization and regional competition in Spain. We then move on to a discussion of the empirical design and econometric methodology. The final sections describe the results of the empirical analysis and discuss their implications for the wider theoretical concerns.

4.2 Case Selection: Large Roads Expenditure in Spain 1978-2010

Spain is an interesting case to explore the effect of electoral geography on political distribution. Firstly, as will be expanded below there is significant variation both between parties and over time in the political geography of parties. Secondly, several institutional features that are argued to be the leading driver of pork barrel politics are absent in the Spanish case. We list these institutional incentives in a descriptive table (Table 7.3: Appendix 7.3) giving expectations in the Spanish case, from deriving from predictions in the theoretical literature.

To summarize our analysis, it is argued that, in terms of institutional incentives, pork barrel or particularistic spending is unlikely to be incentivised by the electoral system in Spain which is a Closed List Proportional Representation System with d’Hondt formula. Unlike in single member
plurality electoral systems, PR systems lack the ‘district marginality incentive’ to target swing districts in an effort to sway a small amount of influential voters to win a seat. In PR elections, parties have incentives to maximize total votes making votes valuable everywhere and, hence, there is no reason to favour particular districts on the grounds of marginality. Similarly the ballot rules in Closed List systems, on their own, are unlikely to generate incentives for individual candidates to seek to build a ‘personal vote’ in their district by channelling particularistic funds (Carey and Shugart, 1995).

Figure 4.1 Malapportionment across Electoral Districts, Spain

Apportionment Across Districts 1978-2010, votes/ seats ratio

Notes: (1) Apportionment measured as number of votes to seats for legislative lower house in general elections. (2) Source: own author calculations, data from Spanish Ministry of Interior. (3) All electoral districts (n=50) included except Ceuta and Melilla.

However two institutional features may have an effect on incentivising pork-barrel provision by parties. Firstly, due to the fixed, historic nature of the electoral boundaries (based on historic provinces) and the constitutional imperative of having a least two seats per Province, there is significant malapportionment or over-representation of small, rural provinces. In terms of tactical spending, this implies that the cost of a seat is ‘cheaper’ in an over-represented district than in an under-represented district. For instance, in terms of the seat to vote ratio at the 2000
general election, it took on average 90,873 votes for a single seat in Madrid (the most under-represented Province) to an average of 18,169 and 28,199 votes in Soria and Teruel (the most over-represented).

Other studies have shown that malapportionment can be an important determinant of the size of intergovernmental grants (Atlas et al. 1995), or other central government transfers (Dragu and Rodden, 2011), a district or region receives. The analysis controls for this institutional factor by including the votes/seats ratio of each electoral district in the regression models.

The level of decentralization in Spain is another institutional factor that could incentivise pork barrel spending, or simply 'over-spending', on local public goods such as infrastructure projects. Fiscal decentralization could theoretically lead to increased central government spending on infrastructure for two reasons.

Firstly, if there is a ‘mismatch’ between the spending competencies of regional governments and their revenue raising competencies this could exacerbate the ‘fiscal common pool problem’ of central government. If regionally voted expenditures on infrastructure, for instance, is financed via central taxation this could lead to over-spending on local infrastructure. This problem – known as ‘vertical fiscal imbalance’ – is associated with larger public sectors in general and especially larger government expenditure on items that are geographically concentrated (see e.g. Estache and Sinha, 1999). Despite regional governments having relatively large public sectors relative to central government, there is a large vertical imbalance in revenue raising autonomy between central and regional governments in Spain. In 2001-2003 for instance, regional government revenues accounted for 21.2% total revenues, however 52.7% of these regional revenues were financed by intergovernmental grants and subsidies from central government (Cantanero and Perez, 2012, 216). In addition Spanish regional governments are still heavily reliant on central government for the financing and planning of most large-scale projects (de la Fuente et al., 1995, 34; Alabate et al. 2010).

A central issue with regards central government control over the allocation of large roads expenditure concerns the extent to which automatic matching grant mechanisms are used to finance road building in the Provinces and Municipalities. Automatic matching grants might reduce the discretion of central governments in deciding upon allocations if it is statutorily required to automatically ‘match’ regional or provincial/municipal level authority expenditure. In other words, with this financing mechanism lower level governments can initiate a centrally financed project without explicit approval of central government. However, automatic matching grants are not regularly employed to fund large roads infrastructure in Spain (Alabate et al. 2012; Bel, 2012) as elsewhere (Blöchliger and Petzold, 2009).
Secondly, fiscal and political decentralization to regional governments could lead to higher—or at least greater variability in—spending on local public goods, such as infrastructure, if there is significant preference heterogeneity between jurisdictions (Oates, 2006). This claim is derived from the highly abstract Tiebout (1956) economic justification for decentralization. It could occur in practice, if regional governments pursue different regional development strategies. For instance, Rodriguez-Pose (2000, 96) describes how the infrastructure and the attraction of FDI have been at the heart of the Galician development and economic convergence strategy, while the Navarran strategy has put less emphasis on infrastructure and concentrated effort on support for labour activation measures, research and development, rural economic diversification schemes and teaching and training.

We control for the effects of decentralization mainly via the case selection of spending areas. The expenditure items considered are highly centralized both fiscally—with regards their financing—and politically—with regards discretionary autonomy by central government over size and location of expenditure allocations and projects.

Contrary to what might be expected in a highly decentralized system of government, infrastructure policy is highly dependent on central institutions, government as well as parliament, in Spain (Alabate et al. 2012, 600). The central government is responsible for all commercial ports, airports, virtually all its railways and the vast majority of motorways. We investigate only expenditures on motorways and national secondary roads by the central government. The main reason for limiting the study to large roads investment is for the practical reason that not all provinces are suitable locations for ports or airports. Similarly, the large portion of railways expenditure (in the last decade in any case) has been driven by a small number of High Speed Rail corridors and a similar logic applies (Bel, 2012, ch.5). As Alabate et al. (2012, 607) point out, in Spain as a rule surface transportation networks (including large roads infrastructure) have tended to be funded from budget while airports and ports have in the main been (partially) funded by users charges, as in most developed countries. Budget funded infrastructures are more likely to be determined by considerations of redistribution and political objectives than (partially) user-funded public infrastructure.

In summary, the main rationale behind choosing centrally financed large roads expenditures is the assumption that roads expenditure is a universally applicable and universally prized local public good across all Provinces (electoral districts) and Autonomous Communities (regions). In common with the pork-barrel literature, we assume that infrastructure is a valuable political good for credit claiming purposes due to its tangibility, visibility and the level of discretion underpinning locational decisions (e.g. for the canonical formulation of this argument see Mayhew, 1974; see Tanzi and Davoodi, 1998 for a representative argument of why political
manipulation is often present in public capital projects). As Rodquez-Pose (2000, 106) for example argues in the case of Spain:

'[T]he development of infrastructure is...highly visible and supported by public opinion and politicians can capitalise on achievements before local and regional elections'.

In other words, parties comprising central governments have a high degree of discretion and autonomy over the location and amount of large roads expenditure to each province during their term of office and, as a result, an ability to implement their development and regional redistribution priorities as well as an ability to use these expenditure allocations to pursue other political objectives.

### 4.3 Patterns of Electoral and Political Geography in Spain

This section will briefly explore patterns in the 'nationalization' of electoral trends in Spain. It is argued that two features of party competition are particularly important to consider for territorial distribution. First, the importance of regionalist parties both electorally and legislatively at the national level. Second, the variation between the two largest state-wide parties, in their level of nationalization across electoral districts (Provinces) and across regions (Autonomous Communities).

While the main feature of central government level in Spain is bipolar competition between left and right to win the plurality of seats in the Congress (the lower legislative house), the state-wide parties are also faced with regionalist party competitors in a number of key electoral battle grounds with large number of seats. In Catalan municipal province of Barcelona for instance, there are 30 parliamentary seats in play, 9% of the total number of seats in the Congress.

Two main features of this regionally fragmented pattern of competition are especially important to consider. Firstly in terms of government formation, regionalist parties often play a pivotal role as 'kingmakers' for the two larger parties. Although individual regionalist parties tend to be quite small at the national level, they have an outsized role in government formation due to the difficulty larger parties have in winning a majority of seats in the Congress, and due to the centralist position of key regionalist parties- especially the Catalanian CiU and the Basque PNV.

Secondly, the ability of regionalist parties to attract votes away from either of the state-wide parties may give them an outsized role in framing the electoral debate and influencing the electoral promises of state-wide parties to particular regions. Since regionalist parties are more likely to run on platforms that emphasize 'local' issues, this may pressurize state-wide competitors to emphasize their ability to defend or favour 'local' interests. This 'localization' of
electoral platforms might become more important for distributive purposes if an electoral district becomes pivotal to a party’s seat margins.

Two main sets of hypotheses have been put forth to explain variation in the nationalization of electoral trends and of party support (as discussed in section 2.2.3). Daniele Caramani’s influential study (2004) of trends in nationalization in Western Europe generally posits a modernization perspective to explain the observed pattern of positive secular nationalization. In this view, the persistence of sub-national variation in electoral trends or party support can for the most part be explained by ethno-regional or language differences between regions within a country.

Figure 4.2 Support for Regionalist Parties across Years 1978-2008

Notes: (1) Votes share of regionalist parties as a percentage of total regional vote in elections to legislative lower house (2) Regions selected are those with a significant regionalist party presence defined as greater than 5% in at least one election (3) Regionalist parties are those that espouse a regional specific or autonomist platform and receive the great majority of their votes in only one region. (4) Vertical dotted lines indicate phasing of major decentralization reforms in Spain.

Another influential study of party system aggregation and nationalization across regions by Chhibber and Kollman (2004) emphasizes the importance of institutional centralization to explain variation in levels of nationalization or levels of support for sub-national parties. Their central argument is that ethno-regional diversity within countries is inadequate to explain variation in party nationalization both within countries over time or between countries. Rather their emphasis is on the institutional incentives that sub-national parties have to remain as separate entities or to cooperate to secure the ‘prize’ of central government offices. This
institutionalist perspective also posits the notion that as political centralization increases (decreases) voters also have a greater (lesser) incentive to support distinct sub-national parties. The political centralization perspective suggests that the significant successive decentralization reforms in Spain should increase support for regionalist parties and also perhaps lead to a 'denationalization' of support for the state-wide parties.

However our descriptive analysis of time patterns in party nationalization does not give much support to this institutionalist hypothesis. The electoral share of regional parties is relatively constant across time periods. While there is a slight uptick after the establishment of regional governments in 1984, it doesn't seem to have significantly increased the vote share of smaller or regional parties in national elections (see Figure 4.2).

If we look at Figure 4.3, we can see that there is significant variation across regions, as well as provinces (electoral districts), in the vote share of the two main parties of the democratic period: the left-wing Partido Socialista Obrero Espanol (PSOE) and the right-wing Partido Popular (PP). Especially in the earlier years, the PP enjoyed much higher support in some regions (e.g. Castillia-
than others (e.g. Andalucia). In addition, the PP has historically, and still today, receives very limited support among the ‘historic nationalities’ — especially the Basque Region and Catalonia — as well as in the regions with significant support for regional parties especially the Canary Islands (with the Galicia Region being an exception to this). The PSOE on the other hand, appears to have had a much more homogenous share of support across all regions.

A more systematic measure of the geographic disparity in vote support across provinces is to look at the evolution of the Gini Coefficient measure of the distribution of voter support for the two main parties. The Gini Coefficient in this case is weighted by the size of the electorate in each region, and can be considered as a measure of the nationalization of each political party. As well as the time series for the distribution of votes of the PSOE and PP, Figure 4.4 also demonstrates party system nationalization score (PSNS) over time as well as the party nationalization of the parties composing government (PNG).

There are two options about how to measure the nationalization of government. Firstly, we could adopt the strategy of only including the party that controls the government executive after successive elections. Since Spain has never experienced any formal government coalitions, this would mean that the PNG score would be the same as any of the three single parties that have controlled government (UCD, PSOE or PP). However this approach would not take into account the informal coalition dynamics that are a central feature of Spanish politics. While there has never been a formal coalition between parties to form the government cabinet, there have been numerous occasions when minority governments have formed that rely on support of smaller parties through informal legislative agreements. With the exception of the United Left Coalition support for the PSOE these smaller parties have been regionalist parties. We therefore adopt a more ad hoc approach to defining the nationalization of the government during specific periods. We take the average of all Gini coefficient nationalization score of all parties considered essential to government formation and stability during specific periods. This average is weighted by the number of seats held by each party in the Congress.

As we can see in Figure 4.4 there is no striking time trend in the nationalization of either of the two main parties except perhaps to observe that the People’s Party (PP) has tended to become more nationalized over time, and is a good deal more nationalized than its predecessor, the Union Centro Democratia (UCD) party. Certainly, the hypothesis that ‘denationalization’ or a regionalization of the electorate is driven by political or fiscal decentralization doesn’t seem to be borne out by either the time trends on the geographic dispersion of the vote shares of the main parties, or in the vote shares of regionalist or autonomist parties. The vote share of regionalist parties in national elections has fluctuated, or even trended downwards overtime,
not what we would expect if institutional decentralization were driving a process of regional party system fragmentation.

The most notable variation in the Gini coefficient trends is between parties. In particular, there are substantial differences between the two largest parties—between the UCD and PSOE in 1978 and 1979 elections, and between the PP and the PSOE thereafter. The PSOE has a much higher degree of nationalization. It receives a more homogenous share of the vote in each region than the UCD or PP as well as being much more competitive in the regions with large support for autonomist or nationalist parties—Catalonia, the Basque Region and the Canary Islands.

Figure 4.4 Time Series of Evolution of Gini Coefficient of Vote Share of Main Parties 1978-2008

![Gini Coefficient Vote Share Across Electoral Districts](image)

Notes: (1) y-axis: Gini coefficient of vote share of parties in general elections to legislative lower house weighted by district vote share as % national total (2) Acronyms: PP = Party Popular; PSOE= Partido Socialist Obrero Espanol; UCD=Union Centro Democratia; PSNS = Party System Nationalization Score; PNG = Party Nationalization of Government (3) The vertical dotted lines indicate periods of consecutive terms of office for each party.

As outlined above, we expect this geographical dispersion to matter for public policy considerations. We test whether the level of nationalization of the government incumbent party...
matters for how public infrastructure investment is distributed between Provinces. In line with previous theoretical expectations, we anticipate that the allocation of investment is likely to be better predicted by 'programmatic criteria'—primarily those relating to either the efficiency or equity of investment—under governments whose parties have a 'high nationalization' to those with a lower nationalization. We expect that tactical 'pork barrel' considerations better predict the allocation of public investment under governments with lower nationalization.

How to define these tactical considerations is a difficult task. However generally, tactical considerations are considered to be electoral or political. Parties in government that receive a more heterogeneous vote share throughout districts and that are only very minor players in some regions of the country—such as PP or its predecessor the UCD—are more likely to:

a) be able to rely on pork-barrel projects to bolster support in either core or marginal districts because they are less restrained having to develop a reputation for geographical fairness and fiscal rectitude and

b) they have less incentive to evenly distribute spending throughout all districts and regions, as spending in opposition districts/regions that are not marginal is likely to be ineffective as a means of bolstering support.

We test this proposition—parties with greater nationalization are more prone to programmatic spending and allocation, and parties with lower nationalization are more prone to tactical spending and allocation—by observing the allocation of roads expenditure between electoral districts (Provinces) by each of these parties when they compose government.

We also investigate the effects that regional party participation in government 'coalitions' (as support for minority governments) has on distribution to the regions they represent. We describe these regions as 'pivotal' when their representative regional parties are essential for government survival. In practice, pivotal regions are Catalonia and the Basque Region—during the PSOE minority government 1993-1996—to which we add the Canaries Region during the PP coalition government 1996-2000. Provinces in Catalonia are considered pivotal during the PSOE minority government 2004-2008, as the Catalan Republican Party was essential to government investiture and stability during this period. The expectations are that being a pivotal region should significantly increase the amount of investment funds dedicated to districts in these regions during this period. In the terminology of the analysis, these regions should be 'disproportionally' favoured in their allocations of investment. However, outside of this period we expect—especially for the duration of the UCD (1978-1982) and PP (2000-2004) single party governments—that districts in these regions should be 'disproportionately' disfavoured in
investment from central government. As we alluded to above, this expectation is due to the historically low support these parties have gained in these regions.

4.4 Interpretative Framework: Is Infrastructure Allocation Driven by Programmatic or Tactical Redistribution?

Infrastructure investment, especially when decided at central government, level is usually highly redistributive. The regional allocation of infrastructure investment acts to redistribute money from certain regions (those that pay taxes) to others (those in which the investment is made) (Sole-Olle, 2008). In line with Dixit and Londregan’s conceptualisation (1996), we identify two distinct forms of redistributive policy: Tactical and Programmatic.

In ‘Tactical redistribution’, known as pork barrel politics in the US or particularistic spending elsewhere, decisions over allocations are based on the political or electoral productivity of investment. As Sole-Olle (2008, 5) describes, the politicians’ (parties’) implicit allocation criterion behind this form of redistribution is simply: ‘If I [we] invest in this region, am I [are we] more likely to retain power’.

In ‘Programmatic redistribution’ the government withdraws resources from certain regions and redistributes them to others based on ‘objective’ economic criteria. It is not clear what ‘objective’ criteria mean in this case since infrastructure investment could be directed either to regions with high project impact (efficiency criteria) or to regions with low output levels to foster economic convergence or regional development (equity criteria). Programmatic allocations may be decided upon with possibly either policy motives or electoral considerations in mind, but subject to certain legislative or constitutional constraints that ensure universal individual eligibility regardless of geography. Programmatic redistribution usually has public good qualities in that redistribution is from a given class of beneficiaries to another (e.g. from rich to poor regions) but within the class of beneficiaries, particular regions that qualify cannot be excluded.

As Sole-Olle discerns (2008, 6), under Programmatic redistribution the central government does not directly choose the amount of money sent to each district, but sets broad policy objectives with regards redistribution, which can be considered the responsiveness of investment to levels of income. ‘Programmatic considerations’ can be thought of as those that governments make in setting the formulae funding for geographic allocation (see Smith, 2007). We expect that government ideology will be the largest determining factor of these programmatic considerations.

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Right wing parties are expected to prioritize efficiency criteria in investment allocation, while left-wing parties are expected to prioritize equity or income redistribution in investment allocation (Cadot et al., 2006). Efficiency criteria emphasis the impact of investment on aggregate output rather than on broadly ensuring equal distribution of infrastructure stock across areas or on using infrastructure investment as part of a regional development or regional adjustment policy aimed at convergence of regional output.

Communities with a higher marginal productivity of public investment are typically those with higher income levels and effective infrastructure endowments (de la Fuente et al., 1995, 32). As Kemmerling and Stephan (2010, 279) describe, in practice following an efficiency criteria tends to imply that governments invest where there are more users of the infrastructure (i.e. more cars, trucks or miles driven) which basically means investing in rich regions or where there is a lower stock of capital (i.e. a region is ‘rich’ but already has the appropriate road stock it might not obtain more investment).

Equity criterion on the other hand, emphasizes regional development priorities. Such programmatic criteria aim to promote growth of poorer regions of a country to reduce or eliminate any locational component of inequality in which people of similar characteristics have different incomes depending on place of residence. They may also act as regional adjustment policies where the policy aim is to help regions cope with transitory difficulties arising, for example, from adverse sectorial shocks (de la Fuente et al., 1995, 32).

The regional development and ‘new economic geography’ literature generally recognises an efficiency/equity trade-off in the allocation of public investment (see Puga, 2002; de la Fuente 2002). As de la Fuente et al. (1995, 15) highlight, regional development policies that emphasize equity and redistribution are nothing more than the territorial expression of two of the guiding principles of public intervention in the welfare state: the reduction of inequality and the provision of social insurance against diversifiable risks. However, such a policy may involve an efficiency cost in terms of reducing aggregate income (nation-wide) below its potential. Focusing on regional development instead of efficiency could discourage the concentration of specialized firms in large urban regions, for instance, decreasing output growth due to agglomeration (Puga, 2002; Barca et al. 2011). This is documented in the case of Spain, by de la Fuente (2004), who finds that substantial investments in the poorer regions did result in convergence in income, but at the cost of reducing overall national growth.

We investigate the distribution of infrastructure investment between provinces according to the Programmatic versus Tactical conceptualization. Broadly, three research questions attempt to characterize investment priorities of individual governments:
1. Is infrastructure investment being directed to the regions with higher project's impact thus following an efficiency criterion?

2. Is investment being devoted to regions with low output levels thus following a (equity-based) redistribution logic?

3. Alternatively, is investment being devoted to regions where the political productivity of investment is highest?

The coefficients of the Efficiency/Equity variables (Capital stock endowment and GDP per capita in each Province) and structural variables (land area, population size and population density) will tell us whether two electoral districts that are equal on economic terms (e.g. same GDP per capita and same structural traits) receive the level of investment and, if this is not the case, the political variables that correlate with some districts receiving more money than others despite their similarity in terms of objective criteria (Sole-Olle, 2008, 9).

If neither efficiency or equity criteria nor other ‘economic criteria’ of province can account for the observed investment a province receives in a given year, we then turn to the ‘tactical criteria’ to see what are the political drivers of infrastructure investment allocations. Evidence of particularistic or pork-barrel spending (tactical redistribution) is if differences in levels of investment (between districts that are economically equal) are correlated with differences in their inferred ‘political productivity’.

The ‘political productivity’ of a province is proxied by a number of political variables that are designed to indicate the potential electoral and lobbying influences of a particular district (see Schady, 1995; Cadot et al., 2006). The ‘electoral power’ of a district depends upon whether a given level of net transfers sways some voters in favour of the incumbent more easily than others (whether it is a core or a swing/marginal district). The ‘lobbying power’ of a district depends on whether its representatives have disproportional influence in government stability (in the case of Spain this means if district elects a regional party supporting the government or if the district is malapportioned). The estimates of electoral and lobbying influences should be seen as complementary rather than as a test of one hypothesis against the other (Cadot et al., 2006, 1136).

4.5 Theorizing Tactical Redistribution: Who Receives Allocations?

The main theoretical models of tactical redistribution are those of Lindbeck and Weibull (1987) and Cox and McCubbins (1986). Both are office seeking models of political distribution that seek to define what the most rational distributive strategy is for politicians seeking to be re-elected.
The main empirical prediction of the first model is that monies will flow to swing districts where there are a high proportion of swing voters. A swing voter is simply a voter whose attachment to her own party is weak enough that a sufficiently large material inducement could entice her to vote for the alternative party. The Cox and McCubbins model, by contrast, predicts that parties are risk adverse in their distributive strategies and lack information to target swing voters. Hence, in this model they target their core vote supporters.

The Dixit and Londregan model (1996) is often seen as a synergy of the Lindbeck and Weibull and Cox and McCubbins models. As Golden and Min (2013, 78) describe in their comprehensive review of the distributive politics literature, this model provides the main theoretical micro-foundations for studies of distributive politics. Drawing on it, a considerable number of empirical articles investigate whether core or swing voters receive more allocations by politicians. The main implication of the model is that since voters with strong partisan attachments require larger transfers to vote for the other party, in the game of distributive politics parties compete for political moderates. In Dixit-Londregan, rational politicians are usually expected to engage in symmetrical strategies in which all target swing voters.

However, in some situations politicians allocate goods to core voters with strong partisan preferences. This type of particularistic spending, sometimes referred to as ‘Machine politics’ occurs when a party has a substantial information advantage about its constituents and is able to precisely target goods to specific individuals (ibid, 79). The rationale for allocating goods to one’s core constituents is that the transfers can be precisely targeted due to informational advantages by parties and there is effectively no waste.

Our analysis is relatively agnostic about whether tactical distribution aimed at re-election should be towards swing or core districts. In some senses, it is difficult to know what a ‘swing district’ is under a PR system with large district magnitude, as is the case in Spain. Indeed, as many theoretical perspectives suggest (Besley and Case, 2003) – and most empirical applications investigating the problem of targeting transfers to groups of voters imply – whether parties target core or swing voters depends upon a number of contextual factors and likely varies from election to election.

The prediction central for our theoretical purposes is that parties with lower nationalization should engage in more tactical spending overall, either to swing or to core districts, while parties with higher nationalization should be less engaged in tactical spending.

Given this theoretical ambiguity we perform a descriptive exercise to ensure our empirical models are specified correctly, checking the validity of our assumptions that there is essentially a linear relationship between a district’s political affiliation and the level of investment it receives.
For instance, if there is essentially a curvilinear relationship (as the swing district argument would suggest) between political affiliation and investment, then a linear specification would be inappropriate. This situation might occur if, for example, districts at a particular ‘cut-point’ (such as about 40% vote share for the incumbent party) consistently receive the maximum allocation of investment, and core districts that vote in higher numbers for the incumbent party (say about 50%) are systematically disfavoured with investment.

We graph the relationship between government incumbent party vote share in each district and the amount of investment it receives in a given year and fit a (non-parametric) smoothing spline, which fits a local regression line through the scatterplot (Green and Silverman, 1994). The purpose of this exercise is to check the assumption that the responsiveness of investment to each district based on its vote share is essentially linear in different time periods in form.

The results of this analysis are presented in Figure 4.5 below. As we can see, for the first two governments of the democratic period led by the UCD party (1978-1982), the relationship is highly linear and symmetric. For the other two party periods- the PSOE governments (1983-1996 and 2005-2010) and the PP governments (1996-2004), the relationship appears to be flatter on the left side (at low levels of incumbent vote share). However, for the allocation of investment to be consistent with the statics of the swing voter model we would expect there to be a concave relationship between vote share and investment where the smoothing spline of investment should peak around a median density cut-point and show a decline in investment towards core districts. There is little evidence of this being the case. For the PP governments, we see a clearer pattern of a spike in investment towards districts at the upper end of their vote share but not the decline in investment towards at the higher end of their vote share.

For a true test of the swing voter versus the core voter models, one requires election data at the individual level. Data is required on the number of voters in each district that are at the ideological ‘cut-point’ between the two largest (left and right wing) parties. Districts with larger number of these voters should receive the largest transfers as these voters are most amenable for shifting their vote in response to material inducements. However, given that this type of data is difficult to collect and very infrequently available most studies of politically motivated geographical allocation conceptualise districts at this ‘cut-point’ as those that are either the most competitive between the two largest parties or alternatively those where the incumbent is most ‘at risk’ of winning or losing an additional seats.

The empirical analysis in this section suggests that linear estimation of the relationship between incumbent vote share and allocated investment is a good approximation, and a lot less arbitrary than choosing a cut-point density for swing districts. To approximate the swing district
As well as the effect of incumbent vote share (Incumbent Vote) and the difference between the two largest parties (Vote Margin), the analysis also investigates the influence of additional political variables on the allocation of funds to districts. Firstly, we investigate the influence of
legislative malapportionment: the fewer votes are needed to win a seat the 'cheaper' a seat is to buy via pork-barrel spending. This has been found to be an important variable in some contexts in determining the size of inter-government grants to a particular district or region (e.g. see Rodden, 2009; Gibson and Calvo 2000; Ames, 1995a).

Secondly, partisan alignment between central and regional governments could also be an important determinant. Credit claiming for a particular project is more electorally productive if both the regional and central government can claim credit simultaneously (see Kemmerling and Stephan, 2010). This alignment logic may be more applicable to intergovernmental grants than direct expenditures however it could also be important.

Finally, we investigate the impact of regional parties explicitly, considering the regions they represent as pivotal regions if these parties are participating in government coalition or if they are essential to the survival of a minority government.

4.6 Empirical Design

To test the main hypothesis, that party nationalization has a significant bearing on the incentives and ability of parties to engage in tactically targeted allocations of investment spending rather than programmatic spending, we consider two sets of models. The first set of models is run on the entire sample period, with the unit of analysis the yearly roads investment in each province by central government. The second set of models is run on sample subsets, with each sub-period covering a term of office of each of the 10 governments that were elected and formed between 1978 and 2010.

The full sample period models explicitly test the hypothesis that lower party nationalization of the government executive is associated with increased spending on physical infrastructure in either core party strongholds or swing districts, controlling for a set of economic covariates. The sub-period models more explicitly probe which political variables are most important in explaining expenditure allocations to particular districts above what we would expect given their objective economic characteristics, and whether this type of tactical political expenditure was more important during some government periods than others.

The basic underlying equation will look like:

$$i_{j,T} = \alpha + \beta_1 Z_{j,p} + \beta_2 K_{j,T-1} + \beta_3 Y_{j,T-1} + \beta_4 X_{j,T} + \mu_{j,T}$$  (1)

Where $Z$ = vector of political variables, $K$ = capital stock per capita available at the end of the previous year, $Y$ = income per capita lagged by one year, $X$ = vector of other structural controls, and $\mu$ = error term. The subscript $j$ indicates electoral district, $T$ indicates year, and $P$ each terms
of office. Note that the coefficients $\beta_1,...,\beta_4$ are assumed to be period specific; the expectation that these coefficients (or at least some of them) are not stable over time is the reason we choose to estimate the model by sub-periods in addition to the full sample model. Note that the political variables are not indexed by $T$, but only by $P$ meaning that most of them do not show variation during the term of office. This is also the main reason for not including district fixed effects in the equation. While this may entail some loss of consistency, the vector $X$ includes some district characteristics that are fixed in time (e.g. land area), therefore 'soaking up' the unobserved district characteristics.

In the case of election years, we consider that the investment allocated is made by the government in place prior to the election. This is reasonable since most voted expenditure allocations take place early in the year, and are difficult (but not impossible) to alter prior to the scheduled annual budget.

To reiterate, the interpretation of this model will tell us whether two electoral districts with the same capital stock per capita, $K_{t-1}$, the same income per capital, $Y_{t-1}$, and same structural traits, $X$, receive the same level of investment. If this is not the case, which political variables influence why some districts receive more expenditure that others, even where their objective economic criteria does not suggest that this should be the case (Sole-Olle, 2008).

The first set of models using the full sample period, is estimated using a Hausman-Taylor (HT) estimator. The HT estimation technique provides an alternative to the 'all-or-nothing' approach to panel data regarding the correlation between the regressors ($X_i$) and the unobservable individual specific effect ($\alpha_i$) (Baltagi et al. 2003, 361).

The HT estimator relaxes the hypothesis of exogenous regressors that is assumed by GLS random effects methods but unlike the Fixed Effects estimator, it can handle endogenous time invariant explanatory variables in the regression equation. The estimation of the causal effect cannot rely on Fixed (unit) effects since time invariant regressors are eliminated by the within and first difference transformations. A random effects model may be inappropriate since the exogeneity assumption underpinning random effects method is unrealistic due to correlations between the regressors and unobserved heterogeneity. We assume that the unobserved unit effects are fixed through time.

The HT estimator is an instrumental variable estimator without external instruments. The distinguishing feature of this model is found in the assumptions on the correlation between the individual unit specific effect and the sets of time-varying and time-invariant regressors. The exogenous variables, i.e. the variables that are uncorrelated with unobserved individual unit effect, serve as their own instruments. The time-varying endogenous variables are instrumented
by the deviation from individual means and the time-invariant endogenous variables are instrumented by the individual average of the exogenous time variant variables.

The model is specified in a two-part formula, the second part containing the exogenous variables that are assumed to be correlated with the random effects and used as instruments. The time varying exogenous variables used as the instruments are population density, vote seat ratio and GDP capita at t-1. All variables are at the district level and measured in logarithm. The total area \((\text{km}^2)\) of each district is used as the time invariant exogenous variable. A Hausman test comparing the HT-model with a Fixed (within) Effect model is non-significant, indicating the appropriateness of the exogeneity assumptions for the instruments in the HT model (Baltagi, 2005, 132).

For the sub-period models, we adopt a different methodology since with shorter time periods the individual unit heterogeneity and exogeneity assumptions required for the shorter panels are less unrealistic. As well as this, the subset models do not include the lagged dependent variable on the right hand side of the model due to a lack of degrees of freedom, so we need to take into account time dynamics. In these specifications we estimate the models via GLS with random effects and a first order autoregressive disturbance (AR1).

### 4.7 Data and Variables

In this section, we describe the variables used in the empirical analysis as well as the sources they are drawn from. The data for each variable was obtained for the Spanish provincial level (the electoral district level in Spain), which means that we have information for 50 provinces from 1978-2010. We exclude the autonomous cities of Ceuta and Melilla due to concerns over the comparability of these jurisdictions with others in Spain, and due to historical administrative boundary changes of these units which make attempts to separately parse the data for each unit unreliable. This gives us balanced sample of 1650 observations. The main variables are described below.

#### 4.7.1 Dependent Variable

The infrastructure data used only includes expenditure by central government on large roads and highways. This is for several reasons to do with controlling for cross-district functionality (not all types of infrastructure spending are applicable to all districts) and the effects of fiscal decentralization as mentioned above. It is also because the infrastructure stock data for public roads capital is the most comprehensive and complete. The data comes from the database
elaborated by and available through the research organization Foundation BBVA (FBBVA) and collected by the Spanish Ministry of Public Works and Transport. Investment effort by central government in each district is the main dependent variable, measured as a percentage of capital stock in existence at the end of the previous year. Generally, roads investment accounts for more than half of transportation investment in a given year (Castells and Sole-Ole, 2005, 1178).

We choose to measure infrastructure investment as a percentage of existing capital stock compared to several possible alternatives. Other studies have used alternative measures such as percentage year on year change in value of capital stock (Kemmerling and Stephan, 2010; Burgess et al., 2010) or the monetary value of investment per capita (Alabate et al., 2012). It is likely our measure captures variable infrastructure needs across jurisdictions that this latter measure does not. For instance, measuring investment effort as per capita investment ignores potential variations in capital depreciation across jurisdictions. The former measure suffers from the problem that the value of capital stock may not always accurately reflect changes in central government investment, but could equally reflect variations in productivity or procurement across jurisdictions (Golden and Picci, 2005). As Sole-Olle asserts (2010, 303), measuring investment as a percentage of existing stock introduces an error correction mechanism into the regression analysis, where the investment 'adjusts' to deviations in investment in response to a disequilibrium between the previous capital stock and other determinants.

Figure 4.6 shows a time plot of the investment effort made by central government expressed as a percentage of the existing capital (roads) stock at the end of the previous year, and also expressed as a percentage of real GDP (current prices). We can see that spending measured as a percentage of both denominators declined with the arrival of democracy in 1978, and experienced an abrupt increase with the election of the left-wing PSOE in 1982. The PSOE period of government from 1982-1996 undertook a sustained, substantial increase in infrastructure investment (despite a dip in investment due to deficit reduction policies of the Gonzalez government in 1984-1986). Following the election of the right-wing PP government in 1996, investment dipped below 1.2% GDP and remained relatively stable until 2000, when it decreased again owning to the deficit reduction policies of the PP government. However the PSOE government did not increase investment on its return to office in 2004, except for a brief increase in investment aimed at fiscal stimulus in 2008 (OECD, 2010).
We see from Figure 4.7 both left and right wing governments in Spain broadly distribute infrastructure investment according to ideological or programmatic criteria. The graph shows the kernel density of yearly investment in each one of the 50 Provinces over the period, comparing rich (solid line) and poor (dotted line) provinces defined as those areas with average GDP per capita above and below the yearly median for the whole country. The graph is broken down into periods covering consecutive terms of office where there was a single party majority government led by the various parties: the left-wing PSOE, and right-wing UCD and PP parties. While this is only a descriptive analysis, not subject to any economic or demographic controls, the kernel density graphs illustrate that the PSOE governments of 1983-1993 (and also 2004-2010 not shown) tended to favour poorer Provinces. The PP government of 2000-2004 tended favour wealthier Provinces (graphs for the 1996-2000 PP minority government do not show a clear difference between investment in rich and poor Provinces), suggesting that efficiency concerns or other reasons favouring redistribution towards wealthy provinces were more important in their allocation criteria. The first two governments of post-Franco Spain, controlled by the right-wing UCD did not tend to favour wealthy provinces above the median income, and indeed appeared to redistribute towards poorer regions, as others have also found (Sole-Ole, 2010; de la Fuente, 2004). Although not presented here, the graphs are roughly the same if we measure capital investment per capita.
Figure 4.7 Programmatic Regional Redistribution, Various Parties in Government.

Kernal Density: Comparing Investment
Rich/Poor Provinces

Period 1978-1982 (Right: UCD)  
Period 1983-1993 (Left: PSOE)

Period 2000-2004 (Right: PP)  
Democratic Period 1978-2010

Investment as % Existing Capital Stock (Year t-1)

Notes: (1) x-axis= Yearly roads Investment allocated to each district by central government (as % capital roads stock); y-axis= kernel density estimation (2) Poor/rich= Provincial GDP per capita below /above yearly median (3) Period 1 = UCD single majority party governments; period 2= PSOE single party majority governments; Period 3 = PP single party majority government; period 4= full democratic period 1978 until 2010.

4.7.2 Independent Variables

4.7.2.1 Economic Variables

The net capital stock (Roads) also comes from the FBBVA and is measured at 2005 prices. This variable measures the overall estimated value existing capital stock of roads in each province.
less estimated annual depreciation. The stock variable is used to compute the investment effort and also as a control variable. The coefficient on the capital stock will indicate whether a province with a higher endowment of transport infrastructure receives a higher or lower degree of expenditure. If a government follows efficiency criteria (i.e. spending money where it is expected to have the greatest impact on economic output) the coefficient of this variable should be positive. The stock variable enters into the model with a lag of 1 year, indicating the capital stock available at the end of the previous year.

The other economic controls included are: income per capita measured at provincial level, population density, total land area, and an indicator of the level of responsibilities in the provision of infrastructure by different regional governments in a given year.

Income per capita is GDP per capita at provincial level, expressed as thousands at 2000 euro prices. The data comes from two sources, 1980-1995 income data comes from the Spanish National Statistical Institute (Instituto Nacional de Estadistica [INE]) Regional Accounts Database. Data for 1996-2010 come from Eurostat Regional Accounts Database. Data values for 1977-1979 were imputed using linear interpolation techniques. Exchange rates for Pesos to European Currency Units come from the IMF International Finance Statistics. The income variable captures whether the central government invests in poorer or richer regions. To avoid endogeneity, the variable is included at a lag of one year.

A central assumption adopted in the empirical analysis is that both the Capital Stock variable and the Income per capita variable can substitute for level of utilization of infrastructure services. Since we do not have data on roads utilization for the whole period, we assume that the wealthier a province is the higher its infrastructure utilization rates. In other words the assumption that is critical to the analysis is that there is a close positive correlation between measures of traffic congestion, volume and usage (e.g. vehicle stock, miles driven, haulage intensity). While not ideal, it is a reasonable assumption to make as it is fairly established that at the regional level, GDP growth and level tracks growth and intensity of freight transport, which is the single largest contributor to capital depreciation i.e. GDP growth gives us useful proxy for potential marginal output or need for infrastructure investment based on intensity of use (see Garcia et al. 2008). The assumption is frequently used in studies of the determinants of the regional allocation of infrastructure investment (e.g. Alabate et al. 2012; Sole-Olle, 2008; de la Fuente et al. 1995).

Some demographic and geographical variables are included to capture variable cost and demand. Population density of each province is included as a measure of infrastructure demand. Population is measured in thousands, and was obtained from the INE (various censuses).
Population density should in general decrease the cost of infrastructure investment per capita (Estache and Sinha, 1999) as dense, urban areas often have cost-advantages in providing infrastructure services. However a relatively unexplored issue is that – specifically due to this cost advantage in the provision of public goods – urban jurisdictions may optimally receive larger grants per capita than rural areas. There is some evidence in European cities that this is the case (Dragu and Rodden, 2011, 7). In any case, population density is an important cost control in the analysis.

Total population is used as a measure of transport demand in each province, and it should increase infrastructure investment per province. It enters the model as a denominator of the existing capital stock.

Total Area of each Province in km\(^2\) is included as a measure of Province size. Larger provinces may increase investment in infrastructure however this is highly co-linear with population density and is excluded from the sub-period models. Without this variable we still have confidence in the estimates owning the measurement of the dependent variable as a percentage of existing capital stock, rather than as a monetary value.

The level of responsibilities variable is a dummy variable is taken from Alabate et al. (2012). It indicates that the regional governments of Navarra and the Basque Country had greater responsibility over primary roads in the period considered. The remaining regional governments only had responsibility for secondary roads. The dummy variable should have a negative impact on the spending by central government in Provinces of these two regions.

### 4.7.2.2 Political Variables

This section describes, firstly, the measurement of the main political independent variables used in the full sample model; and secondly, it describes the political variables used as independent variables in the various sub-period models, which attempt to measure the amount of tactical redistribution each party engaged in during their term of office.

The main independent variable of interest is the degree of Party Nationalization of the Government Executive (PNG). In the full sample model, this variable is used in an interaction term to discern if governments with low nationalization are more prone to tactical distribution. PNG is interacted in separate models with the vote share of the incumbent party in each district, designed to show the responsiveness of investment to ‘party strongholds’ at different levels of party nationalization.
In addition, in a separate model PNG is interacted with a dummy variable that indicates whether a district was a ‘swing’ district at the last election. A swing district is defined as one where there is less than 5% absolute difference separating the two largest parties.

The information for these variables – and all the political variables (except Alignment) – comes from the Spanish Ministry of Interior. Importantly, the PNG can only give us an indication whether periods in which the government was occupied by either a single party with a low nationalization (such as the UCD or PP) or was occupied by a (informal) coalition which included regional parties, which by definition have extremely low nationalization, were more prone to delivering funding towards either core or marginal districts. It does not make sense to include this variable in the sub-period models as it does not vary over the period of office.

### Table 4.1 Descriptive Statistics of Variables Used in Empirical Analysis

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment% capital stock</td>
<td>8.71</td>
<td>5.20</td>
<td>0.97</td>
<td>53.62</td>
</tr>
<tr>
<td>Investment per capita (euro)</td>
<td>187</td>
<td>159</td>
<td>7</td>
<td>1,443</td>
</tr>
<tr>
<td>Provincial GDP per capita (euro)</td>
<td>11,778</td>
<td>6,983</td>
<td>1,832.12</td>
<td>40,120.31</td>
</tr>
<tr>
<td>Capital Stock Value (millions, euro)</td>
<td>1,348</td>
<td>1,059</td>
<td>189.44</td>
<td>8,151.24</td>
</tr>
<tr>
<td>Area (Km-sq.)</td>
<td>10,042</td>
<td>4,874</td>
<td>1,560.10</td>
<td>21,766.30</td>
</tr>
<tr>
<td>Population Density (per Km-sq.)</td>
<td>121</td>
<td>160</td>
<td>8</td>
<td>795</td>
</tr>
<tr>
<td>Vote: Seats Ratio (thousands)</td>
<td>55,707</td>
<td>15,774</td>
<td>18,169</td>
<td>100,309</td>
</tr>
<tr>
<td>Incumbent District Vote (%)</td>
<td>41.97</td>
<td>10.22</td>
<td>0.00</td>
<td>67.53</td>
</tr>
<tr>
<td>Incumbent District Vote Margin (abs %)</td>
<td>14.07</td>
<td>10.46</td>
<td>0.08</td>
<td>53.41</td>
</tr>
<tr>
<td>PNG (Gini Coef.)</td>
<td>0.85</td>
<td>0.05</td>
<td>0.76</td>
<td>0.93</td>
</tr>
<tr>
<td>PSNS (Gini Coef.)</td>
<td>0.83</td>
<td>0.02</td>
<td>0.81</td>
<td>0.87</td>
</tr>
<tr>
<td>Aligned Regional Govs.(number of cases)</td>
<td>Aligned</td>
<td>38%</td>
<td>non-Aligned</td>
<td>62%</td>
</tr>
<tr>
<td>Pivotal Districts</td>
<td>N= 80</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We include five political variables that are hypothesized to influence government allocations across provinces: Vote Margin, Incumbent Vote Share, Pivotal, and Alignment. These variables are included in models estimated on samples covering the time periods by term of office.

The first variable is vote share of the incumbent government party as percentage of total district vote in each electoral district at the preceding election. This variable measures the extent to which parties divert funds towards political strongholds i.e. those provinces where they have a strong electoral position relative to other parties.

The alternative electoral distributive tactic is to divert particularistic funds towards marginal or swing districts, where additional spending has a disproportionate effect on the election outcome if it can sway a small number of undecided or floating voters. As stated above, the theoretical...
underpinnings of the ‘swing district hypothesis’ are shaky outside of the conventional first-past-the-post context. In a proportional representation electoral system with large district magnitudes, it is difficult to operationalise the notion of a swing district. The conventional approach is to use a measure of marginality or district competitiveness. We define the variable \( \text{Vote Margin} \) as the absolute difference between the two largest parties at the previous election, measured on a continuous scale. Due to the high co-linearity of \( \text{Incumbent Vote share} \) and \( \text{Vote Margin} \) both variables are not included in the models at the same time.

The third political variable included is the district vote to seats ratio (logged). This variable measures the apportionment of seats to votes in each district. A higher seat to vote ratio reduces the amount of votes it takes to win an additional seat, and increases the probability that a small number of voters can sway an electoral race. A higher malapportionment of a district should increase the investment a district receives (across all periods).

The fourth political variable is a dummy variable \( \text{pivotal} \), indicating if any of the regional parties that gain support in an electoral district are participating in government. This variable is discussed further below.

The final political variable is a dummy variable indicating whether the regional government is or is not aligned with the central government. Many fiscal federalism and political economy studies argue that regions with governments that are aligned with the central level are likely to be favoured in inter-regional fiscal redistribution, for credit-claiming purposes. Some scholars argue that favouring regions with aligned partisans in power is a more likely political distributive strategy than targeting swing districts in highly decentralized settings, as central government actors are less able to reap the rewards from distributing regional finance (Leon, 2010; Kemmerling and Stephan, 2002).

We enter this variable in the full sample models as a control. However, since it is likely that this variable makes more sense at the Regional (AC) level than at the electoral district (Provincial) level, and since it is co-linear with \( \text{Incumbent vote share} \) of each district, we include this in a separate model with variables aggregated at the Regional level.

We used different methods to determine whether governments are aligned. The first is the most straightforward method, where two governments are aligned if they are controlled by the same party (either as a single party majority/minority government or as a leader of a coalition). A second approach suggest by Sole-Olle and Sorribas-Navarro (2008), is to measure alignment on a categorical scale, with maximum values indicating that both central and regional governments are controlled by single party majorities, intermediate values indicating if one or more coalition partners in central and regional government match, and no alignment indicating that no parties
in control of either government match. We used both approaches and found marginal differences using either measure. The simple, former measure attains greater significance and this is the one presented.

4.8 Empirical Results

4.8.1 Models Estimated Using Full Sample Period 1978-2010

Table 4.1 and 4.2 presents the descriptive statistics and the correlation matrix for the main variables. From Table 4.1, we can see that there is significant variability in the main regressors. In Table 4.2, notice that there is significant co-linearity between some of the main political variables. This is hardly surprising as many of the political variables measure similar phenomena.

Table 4.2 Correlation Matrix of Variables included in Analysis

<table>
<thead>
<tr>
<th></th>
<th>Investment Per Capita</th>
<th>Investment Per capita</th>
<th>GDP Per capita</th>
<th>Capital Stock</th>
<th>Area</th>
<th>Density</th>
<th>Votes Incumbent Vote Margin</th>
<th>PNG</th>
<th>PSNS</th>
<th>Alignment</th>
<th>Pivotal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment</td>
<td>1</td>
<td>0.505</td>
<td>1</td>
<td>-0.134</td>
<td>0.328</td>
<td>0.573</td>
<td>1</td>
<td>-0.083</td>
<td>0.015</td>
<td>0.018</td>
<td>0.018</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.134</td>
<td>1</td>
<td>0.328</td>
<td>0.015</td>
<td>0.573</td>
<td>1</td>
<td>1</td>
<td>-0.083</td>
<td>0.015</td>
<td>0.018</td>
<td>0.018</td>
</tr>
<tr>
<td>Capital Stock</td>
<td>0.073</td>
<td>0.155</td>
<td>-0.165</td>
<td>-0.063</td>
<td>0.516</td>
<td>1</td>
<td>1</td>
<td>0.073</td>
<td>0.087</td>
<td>0.018</td>
<td>0.078</td>
</tr>
<tr>
<td>Density</td>
<td>0.038</td>
<td>0.480</td>
<td>-0.389</td>
<td>0.516</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0.073</td>
<td>0.087</td>
<td>0.018</td>
<td>0.078</td>
</tr>
<tr>
<td>Votes/Seats</td>
<td>-0.033</td>
<td>-0.297</td>
<td>0.283</td>
<td>0.015</td>
<td>0.573</td>
<td>1</td>
<td>1</td>
<td>-0.033</td>
<td>-0.297</td>
<td>-0.033</td>
<td>-0.004</td>
</tr>
<tr>
<td>Incumbent Vote</td>
<td>0.106</td>
<td>0.014</td>
<td>-0.104</td>
<td>0.35</td>
<td>0.194</td>
<td>-1</td>
<td>1</td>
<td>0.106</td>
<td>0.014</td>
<td>0.018</td>
<td>0.018</td>
</tr>
<tr>
<td>Vote Margin</td>
<td>0.092</td>
<td>-0.134</td>
<td>-0.197</td>
<td>-0.00</td>
<td>-0.034</td>
<td>0.555</td>
<td>1</td>
<td>0.092</td>
<td>-0.134</td>
<td>-0.134</td>
<td>0.078</td>
</tr>
<tr>
<td>PNG</td>
<td>0.077</td>
<td>0.087</td>
<td>0.378</td>
<td>-0.00</td>
<td>-0.012</td>
<td>0.108</td>
<td>0.065</td>
<td>0.077</td>
<td>0.087</td>
<td>0.018</td>
<td>0.078</td>
</tr>
<tr>
<td>PSNS</td>
<td>-0.191</td>
<td>0.210</td>
<td>0.645</td>
<td>-0.00</td>
<td>-0.007</td>
<td>0.265</td>
<td>0.114</td>
<td>-0.191</td>
<td>0.210</td>
<td>-0.134</td>
<td>-0.134</td>
</tr>
<tr>
<td>Alignment</td>
<td>0.122</td>
<td>0.071</td>
<td>-0.076</td>
<td>0.23</td>
<td>0.188</td>
<td>0.447</td>
<td>0.258</td>
<td>0.122</td>
<td>0.071</td>
<td>0.018</td>
<td>0.074</td>
</tr>
<tr>
<td>Pivotal</td>
<td>-0.007</td>
<td>0.027</td>
<td>0.101</td>
<td>-0.22</td>
<td>-0.139</td>
<td>0.048</td>
<td>-0.329</td>
<td>-0.007</td>
<td>0.027</td>
<td>-0.134</td>
<td>-0.039</td>
</tr>
</tbody>
</table>

Table 4.3 below presents the results from three models estimated upon the full sample period. The interaction terms in the three models are the main variables of interest in the full sample models. The first model interacts the vote share of the incumbent party obtained in each electoral district (from the previous election) with the level of nationalization of the party (or parties) composing government during that period. The model is designed to test the notion that the more highly nationalized parties are less likely to favour their core districts with infrastructure spending; while governments with less nationalized parties are more likely to
favour their core districts with infrastructure spending. This hypothesis receives support in the models.

Model 1 indicates that during time periods where the parties in government have high levels of nationalization (PNG = 0.90); core districts are not favoured to a significant extent. In fact at high levels of PNG, the incumbent vote share of a district has a slightly negative association with investment, indicating that government parties with higher nationalization (0.95 or higher) do not tend to favour their core constituencies with distributive spending. However the picture is less clear at the lower end of observed government party nationalization (0.80 or lower). The slope of the coefficient on the interaction term at low values is basically flat, indicating the party 'colour' of a district does not have a bearing on the distribution of infrastructure spending, when parties with low nationalization occupy office (Figure 7.2: Appendix 7.3 graphs the interaction effect from Model 1). The confidence intervals of this line however are large, making it statistically non-significant. This indicates that at the lower end of PNG, district vote share has no predictive power on the amount of infrastructure spending a district receives.

A possible explanation for this could be due to the fact that Spanish governments with low nationalization are those that include regionalist parties that have the coalition bargaining power to shape infrastructure allocation towards districts in their home regions rather than the core districts of the main government party. These districts tend to have a low vote share for the main incumbent party.

We investigate this proposition in the Model 2 by including an indicator variable for each district in a region that elects a regionalist party participating in government during these periods. Interestingly, this is an important variable that that strengthens the association between incumbent party district vote share and amount of infrastructure investment in a district in a given year. In particular, it has implications for the strength and direction of the relationship between core district vote and amount of infrastructure investment during the tenure of a government (coalition) with low party nationalization. Figure 4.8 plots the conditional effects of party nationalization on the responsive of investment to the vote share of the incumbent in each district. As we can see when pivotal district status is controlled for, the slope of the line becomes positive and significant for low levels of government party nationalization.

Figure 4.8 gives us a sense of the magnitude of the effect of the district vote share for the on the amount of investment allocated received by each district, when government is composed of parties with differing levels of nationalization. For parties with high nationalization (e.g. observed Gini coefficient ~ 0.90), core district strongholds do not appear to be favoured by investment decisions of central government.
### Table 4.3 Regression Models on Full Sample

Regional Allocation of Infrastructure Investment in Spain (1978-2010)

**Dependent variable:** Roads Investment/Capital Stock t-1 (Logged)

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provincial Income t-1(GDP, logged)</td>
<td>0.084 (0.008, 0.175)</td>
<td>0.033 (-0.057, 0.124)</td>
<td>0.053 (-0.038, 0.145)</td>
</tr>
<tr>
<td>Capital Stock t-1(logged)</td>
<td>-0.660*** (-1.205, -0.503)</td>
<td>-0.586*** (-1.748, -0.425)</td>
<td>-0.628*** (-1.157, 0.108)</td>
</tr>
<tr>
<td>Area (Km-Sq logged)</td>
<td>-0.560* (-1.106, -0.015)</td>
<td>-0.449 (-0.817, -0.503)</td>
<td>-0.432 (-0.817, -0.503)</td>
</tr>
<tr>
<td>Population Density</td>
<td>0.612*** (0.396, 0.827)</td>
<td>0.557*** (0.344, 0.771)</td>
<td>0.538*** (0.323, 0.753)</td>
</tr>
<tr>
<td>Responsibility</td>
<td>-0.084 (-1.205, 1.038)</td>
<td>-0.083 (-1.200, 1.033)</td>
<td>-0.044 (-1.157, 1.068)</td>
</tr>
<tr>
<td>Swing District Dummy</td>
<td>-0.192 (-0.408, 0.023)</td>
<td>-0.236* (-0.448, -0.023)</td>
<td>-0.223* (-0.437, -0.008)</td>
</tr>
<tr>
<td>Vote Seats Ratio (logged)</td>
<td>0.090*** (0.046, 0.135)</td>
<td>0.097*** (0.053, 0.142)</td>
<td>0.050** (0.010, 0.091)</td>
</tr>
<tr>
<td>Alignment</td>
<td>-0.083 (-1.205, 1.038)</td>
<td>-0.083 (-1.200, 1.033)</td>
<td>-0.044 (-1.157, 1.068)</td>
</tr>
<tr>
<td>Pivotal</td>
<td>0.544*** (0.416, 0.672)</td>
<td>0.328*** (0.219, 0.438)</td>
<td>0.328*** (0.219, 0.438)</td>
</tr>
<tr>
<td>Incumbent Vote Share (District)</td>
<td>-1.088*** (-1.751, -0.425)</td>
<td>-2.421*** (-3.146, -1.697)</td>
<td>-0.618 (-1.340, 0.103)</td>
</tr>
<tr>
<td>Swing*PNGw</td>
<td>-4.775*** (-7.942, -1.609)</td>
<td>-12.646*** (-16.271, -9.020)</td>
<td>-3.618 (-7.342, -1.885)</td>
</tr>
<tr>
<td>PNG-weightedlogged</td>
<td>2.816*** (1.462, 4.171)</td>
<td>6.614*** (5.009, 8.219)</td>
<td>1.275*** (0.938, 1.612)</td>
</tr>
<tr>
<td>Balanced Panel n=50 T=33 N=1650</td>
<td>38.24*** (7.092, 18.439)</td>
<td>36.21*** (7.092, 18.439)</td>
<td>38.24*** (7.092, 18.439)</td>
</tr>
</tbody>
</table>

**Notes:** (1) 95% CIs in parentheses, ***, **, & * = statistically significant at 99%, 95% and 90% levels; (2) Capital Stock, Income and Land Area measured in per capita and logged; Pivotal indicates a district in a pivotal region; the Swing District dummy variable is calculated based on the District Margin Variable- abs(Incumbent’s vote share- Opposition Vote Share) where Swing District = 1 if vote margin is less than 0.05%; Alignment=central and regional government controlled by same party; PNGw= party nationalization of government measured by gini coefficient weighted by district vote share; Responsibility = Whether Regional Government has infrastructure spending responsibility (3) Interaction term Model 1 and Model 2= vote share of incumbent party (nearest previous election) in each district * PNGw; Interaction term Model 3 = Swing District * PNGw (4) Method of Estimation: Hausman-Taylor Instrumental Variable Estimator.
However when parties with lower nationalization compose government, districts that vote for the incumbent party tend to be favoured disproportionally by investment. The coefficient of the interaction term is significant at the .01% level, however we can be less confident of this effect for districts that vote heavily for the incumbent party as the confidence intervals overlap (e.g. give the incumbent upwards of 50%). Overall, the coefficient suggests that a district giving a mean level of support to the government party (40%), will receive on average approximately 6% less investment when the party comprising government is highly nationalized (Gini Coefficient ~ 0.90) than when it is less nationalized (Gini Coefficient ~ 0.80). Since the mean level of investment per year is around 12% of existing capital for the sample period, this is a substantial yearly effect.

Figure 4.8 Model 2 Interaction Term-Relationship between incumbent party vote share of district and amount of investment received in given year

Another hypothesised determinant of regional favouritism is whether regionalist parties are pivotal for government formation and survival. The descriptive statistics presenting investment to these ‘pivotal’ regions over time appear to support this pattern. Figure 4.9 plots investment effort towards these regions before, during and after their respective regionalist parties were pivotal for government formation. The dotted line represents average investment towards the other 14 regions excluding the pivotal regions. Both per capita roads investment and investment
as a percentage of existing roads stock are plotted to get a rounded picture of the investment effort.

Figure 4.9 Time Series of Investment to Districts in Pivotal Regions 1978-2010

--- Pivotal Regions
--- Average All Regions

Investment per capita

(1) y-axis= log(roads investment) per capita (upper lines) and log(roads investment) as percent existing capital stock
(2) Periods demarcated by dotted lines indicate years where regionalist parties were in informal agreements with minority governments led by either PSOE (1993-1996 & 2004-2008) and PP (1996-2000) offering legislative support in exchange for policy input during government tenure; (2) Party Abbreviations: CC = Canarian Coalition; CIU= Convergence and Union; ERC=Republican Left of Catalonia; PNV= Basque Nationalist Party; (4) Other governments received investiture and legislative support from regionalist parties (PP 2000 and PSOE 1989) but either had the legislative majority (e.g. PSOE in 1989 and the PP in 2000) or had enough support from other parties (e.g. PSOE in 2004).

On both measures, both the Canary Islands and Catalonia regions tended to receive below average investment from the central government. This is also true of the Basque Region for the investment as percentage capital stock. As we can see, however, during the periods of regionalist party coalition for each region (between the vertical dotted lines), each region tends to receive either above or equal to the mean investment allocation. This pattern is especially clear in the case of the Canary Islands on the capital stock measure. There is a clear spike for the Canary Islands during the 1996-2000 period when the Canarian Coalition (CC), a regionalist party, provided support for a PP-led government. In the years after the CC exited from government, this region was allocated investment substantially below the mean. Both Catalonia and the Basque Region were allocated investment substantially below the average (as % capital stock) up until the Catalan Convergence and Union (CiU) and the Basque Nationalist Party (PNV)
became supporters of the PSOE minority government in 1993, at which point both regions converged to the mean level of investment.

While Catalonia continued to receive the mean level of investment in the decade subsequent to the CiU exit from the PP-led coalition in 2000, investment to the Basque region substantially dropped below the mean for the decade subsequent to the PNV exit from the same coalition in 2000. Model 2 indicates that over the entire period (as a percentage existing capital stock), districts in these regions received about 1% more investment in the years that 'their' respective regionalist parties were pivotal for government formation. Again, the confidence intervals for this effect are quite large (between 0.7% and 2%) and clearer picture of the magnitude of the average effects and the variance across periods is given in the models estimated on specific government periods.

The final model (Model 3) estimated on the full sample is designed to test the hypothesis that parties with lower nationalization favour swing districts as opposed to their core district strongholds. This variable had to be estimated in a separate model due to the co-linearity between incumbent vote share and marginal vote share. For reasons of clarity and interpretation, this model is estimated using a dummy variable indicating swing vote districts. A swing vote district is a district in which the majority incumbent party returned less than 5% of the vote share above or below the main opposition party at the previous election. The substantive results do not change whether the model is estimated using the continuous variable Swing district dummy variable or whether the original continuous Vote Margin is used.

The confidence intervals of the coefficient estimated on the interaction term are very wide. This indicates that the impact of swing district status on the amount of infrastructure investment a district is allocated in a given year, at different levels of government party nationalization, is non-significant. This could be interpreted to mean that parties in government both with high and low values of nationalization, do not appear to favour swing districts when allocating infrastructure investment. The result could also be consistent with the proposition that district marginality is not a natural concept in PR elections with large districts or alternatively it could be due to the inadequacy of the proxy measure: district competitiveness. In any case, the importance of marginality is further explored in the models estimated on samples covering individual term of office sub-periods which tell us more about the behaviour of specific governments.

While the full sample model is prone to problems of temporal heterogeneity and as a result we should possibly have more confidence in the magnitude of effects derived from the sub-period models, it does give an indication that in Spain, party nationalization has been an important
factor in certain time periods for restraining governments from pursuing regional favouritism in investment.

### 4.8.2 Models Estimated by Terms of Office Sub-Periods

The second formal test of the hypothesis that parties with lower nationalization in government are more likely to engage in pork-barrel distribution, is provided by the regression models estimated by individual terms of office for each party. For each term of office (defined below) we ask: 'Is Tactical spending more prominent under governments composed of parties that are less nationalized?'

In practice, this means inquiring whether the governments composed of parties with lower nationalization disproportionally favoured either their core or swing districts during their term in office. Table 4.4 presents the pork barrel expectations for individual governments.

The central hypothesis is that the party 'colour' of each district should be a larger determinant of how much investment funding it receives under governments where (a) the majority/plurality party of government has a relatively low nationalization, and (b) regionalist parties are essential to government investiture and stability. Alternatively, models are also estimated to check the hypothesis that districts with the lowest margin of vote between the two largest parties are preferred under governments with lower nationalization.

<table>
<thead>
<tr>
<th>Period</th>
<th>Main Govt. Party</th>
<th>Other Coalition Members</th>
<th>Party Nationaliz. (PNS)</th>
<th>Govt. Nationaliz. (PNG)</th>
<th>Core or Marginal Districts</th>
<th>Pivotal Regions</th>
<th>Region Gov. Alignment</th>
<th>Income Redistribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978-79</td>
<td>UCD</td>
<td>-</td>
<td>0.77</td>
<td>0.78</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>1980-82</td>
<td>UCD</td>
<td>-</td>
<td>0.81</td>
<td>0.81</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>1983-86</td>
<td>PSOE</td>
<td>-</td>
<td>0.90</td>
<td>0.89</td>
<td>-</td>
<td>No Effect</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>1987-89</td>
<td>PSOE</td>
<td>-</td>
<td>0.90</td>
<td>0.89</td>
<td>-</td>
<td>No Effect</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>1990-93</td>
<td>PSOE</td>
<td>-</td>
<td>0.89</td>
<td>0.88</td>
<td>-</td>
<td>No Effect</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>1994-96</td>
<td>PSOE CiU,PNV</td>
<td>-</td>
<td>0.90</td>
<td>0.80</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>1997-00</td>
<td>PP CiU,PNV,CC</td>
<td>-</td>
<td>0.85</td>
<td>0.76</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>2001-04</td>
<td>PP</td>
<td>-</td>
<td>0.81</td>
<td>0.86</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>2005-08</td>
<td>PSOE ERC, IU</td>
<td>-</td>
<td>0.92</td>
<td>0.91</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>2009-10</td>
<td>PSOE</td>
<td>-</td>
<td>0.93</td>
<td>0.93</td>
<td>-</td>
<td>No Effect</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>
Essentially the hypotheses are derived from the variable political geography of incumbent parties. One obvious problem of relying on this method is that we cannot control for the effects of ideology on the allocation tactical investment. It is expected that the left-wing PSOE distributes more towards poorer jurisdictions, and vice versa for the right-wing parties. To capture these different ideological preferences, both the capital endowment and wealth of each district is controlled for in the analysis. However, we cannot control for the fact the left-wing parties might be less prone to relying on pork-barrel spending than right-wing parties (or vice versa). While it is unclear why left-wing parties would be less prone to pork barrel spending (and this isn't a well-established theoretical theme in the literature) it is plausible that left wing and right wing parties and their voters would have distinct preferences for pork-barrel transfers.

Unfortunately, the only solution is to interpret the results with caution given the covariance of left-wing partisanship with higher party nationalization in the Spanish case. We estimate the responsive of allocated investment (per capita) to each electoral district based on its vote share for the incumbent party in each district as well as based on the absolute difference between the two largest parties at the previous elections. Equation 1 is estimated for each time period corresponding thiso each term of office in Spain from 1978-2010. There are ten party terms of office overall. Each model is estimated using GLS with random effects and an AR(1) disturbance.

4.8.2.1 Programmatic Distribution

In terms of broad programmatic distribution, our results are consistent with other studies that find that Spanish territorial spending tends to be highly redistributive towards Provinces with less developed infrastructure endowments (de la Fuente, 2002 & 2004). The interpretation of the results on the coefficients indicating programmatic distribution is based on the models presented in Table 7.5 (Appendix 7.3). Across all time periods (both left-wing and right-wing) governments tend to distribute towards regions with lower endowments of capital stock, as indicated by the negative coefficient on the lagged value of capital stock across all time periods. This redistribution towards less capital developed regions is especially strong for the left-wing PSOE governments of the 1990s. Only during two government terms – the UCD 1978-79 and PP 1997-2000 – is the capital endowment of a Province an insignificant predictor of investment.

However in terms of the Programmatic expectations based on left-right ideology of the parties in government, the results for the effects of Provincial income (GDP per capita) on capital investment are more mixed and also counter-intuitive in terms of partisan expectations.

For the right-wing UCD governments 1978-1982, over both terms, the coefficient on the lagged value of provincial income per capita is non-significant. However, this could be due to the fact
that during the first UCD government, investment tended to favour poorer provinces while during their second term, it tended to favour relatively wealthier provinces when we control for other variables.

Similarly mixed results pertain for the PSOE governments. The results for longest consecutive PSOE tenure in office – 1983-1996 – indicate that provinces with middle income (per capita) tended to benefit the most from investment (when controlling for other factors). However, this differs for individual terms of office. For instance, in the 1990s the PSOE’s allocation of investment was highly redistributive towards poorer Provinces. In 1994-1996 period, for instance, a 10% decrease in GDP per capita of a Province, increased annual investment to it by about 0.9%. The poorer Provinces in terms of per capita income (between about 6,500 and 9,500 euros) received between 4% and 5% more investment per year compared to the wealthier Provinces (between 14,000 and 16,000 euros) during this period.

Contrary to expectations redistribution tended to be towards poorer provinces during the first PP government 1997-2000, however Provincial income is an insignificant predictor of investment during its second term (and possibly indicates greater redistribution towards wealthier regions). However, all-in-all, provincial GDP is not a very strong predictor of investment expenditure across several periods.

In terms of the structural/ functional controls, Population density is a strong negative predictor of amount of investment allocated to a Province, indicating that as a percentage of existing capital stock, rural and sparsely populated areas tend to receive more investment. This is likely because of the higher costs of providing infrastructure in these areas. The dummy variable indicating a greater level of responsibility by regional governments in a given period over infrastructure provision is significant for several periods up until the late 1990s. This is possibly because the decentralization of infrastructure responsibilities gradually became more standardized among all regions after this period.

4.8.2.2 Tactical Distribution

This section describes the effect of the political variables (incumbent vote, vote margin, vote/seats ratio and pivotal) on investment in each term of office. In terms of the expectations laid out in Table 4.4 regarding the tactical distribution activities of each party in government, the sub-period models provide substantial support.
4.8.2.2.1 Incumbent Vote Share and District Vote Margin for Incumbent

The regression Tables 7.4 and 7.5 (Appendix 7.3) present results estimated by sub-period. The UCD governments of 1978-79 and 1980-83 appear quite responsive to their stronghold districts. For example, the results indicate that an increase of 10% from the mean in the vote share of a district for the UCD during this period increased the subsequent investment effort (investment as a percentage of capital stock) to the district by about 1.2% per year (see Table 7.5: Appendix 7.3). The effect is even more pronounced for the second UCD government, where the results indicate that a 10% increase in the UCD vote share of a district increased investment by between 1.4% and 2.5%. Since the mean yearly investment was approximately 9% of capital stock during this period, this is a substantial difference.

The PP-led governments during this period also appear to have engaged in a significant level of tactical distribution during its two terms in office, once as a minority government relying on regionalist party legislative support (1996-2000) and again as a majority party government (2000-2004). Interestingly, the PP appears to have favoured slightly different types of districts during both periods. As a minority government the PP pursued a 'risk-averse' strategy (Cox, 2010, 348) of targeting incumbent strongholds (those districts that gave it between 40% and 55% of the vote [Table 7.5]) while during the majority government period it appears to have favoured marginal districts, where it was most competitive with the PSOE in the 2000 election (Table 7.4).

The effects of this tactical distribution appear to be substantial (see Table 7.5). In the first period, a 10% increase in the vote share of a district for the PP, received between 1.13% and 1.27% higher levels of investment (as a percent existing stock). Again, given the mean yearly investment was 8.2% existing stock this is a substantial magnitude.

For the majority PP government 2000-2004, marginal districts received the greater levels of investment controlling for other factors (see Table 7.4). As marginality increases by a percentage vote (i.e. a district becomes more competitive between the PSOE and the PP) a district receives between 0.3% and 0.7% increased investment. Districts where the difference between the PSOE and PP was less than 5% in the 2000 election, received about 0.76% more investment per year than those where the difference was in vote share was around 15%.

During the PSOE terms of office in general neither incumbent vote share nor margin of victory are significant predictors of investment allocated, however this differs for individual terms of office.

Across all six terms of office (1983-1996 and 2005-2010) the PSOE does not tend to favour stronghold districts while in office (Table 7.5). If anything the pattern seems to be the opposite
with the PSOE favouring districts that did not vote in high numbers for it. In general, the PSOE does not seem to favour marginal districts; however, this is not the case across all time periods (Table 7.4).

Interestingly, there is an exception to the general pattern for the PSOE during the 1993-1996 period when the party held power as a minority government via informal legislative agreements with two regionalist parties. There is also evidence that marginal districts were favoured during the 1983-1986. During this later period marginal districts where the difference between the two largest parties was about 10% received about 0.48% greater level of investment than those where the (absolute) difference was about 20% between the PP and the PSOE (see Table 7.4). However, due to the strong performance of the PSOE in 1983 (the first election it gained a majority of votes), there were not a lot of ‘marginal’ districts, and the effects are largely driven by districts where the difference between the PSOE and PP was less than 10% (rather than 5%), which we might not consider marginal. For the 1993-1996 period on the other hand, there were far more districts where the difference between the PP and PSOE was marginal (less than 5% and less than 10%) and these districts received substantially more funding. For example, districts below 5% received about 1.36% more investment per year than those where the difference was 15% between the two largest parties. In the section below (section 4.9) we discuss possible reasons why it is only during this period that there is significant evidence that the PSOE targeted marginal districts with funding.

4.8.2.2.2 Pivotal Regions

The results indicate the government supporting regionalist parties had significant effects on investment to districts in their represented regions, during particular time periods.

During the PSOE minority government 1993-1996, for instance, districts in pivotal districts received on average 4.4% higher investment than non-pivotal districts, shifting mean investment from approximately 9.5% to 14% per district-year (see Table 7.4 and 7.5: Appendix 7.3)

Pivotal district status is a substantial predictor of investment allocation during the PP minority government term (1996-2000), increasing investment by about 3.8% per year. Given that the mean is 8.3% per year, this implies an increase to 11.73%, which is a substantial difference in investment.

However, pivotal region status does not have a significant effect on investment during the PSOE minority government 2004-2008 (Catalonia is the only region considered pivotal during this period). This could be because the main regionalist party that provided legislative support for
this government, the Catalan Republican Party (ERC) was just one of many (legislative) coalition partners that the PSOE could rely upon for support.

The results are consistent with the descriptive analysis above, suggesting that these regions (Catalonia, the Basque region and the Canary Islands) are favoured in comparison to mean government investment when ‘their’ regionalist parties are pivotal to government formation and legislative majorities. However, there is not much support for the observation that they are ‘disfavoured’ by investment – once other economic and district characteristics are controlled for – in other periods.

4.8.2.2.3 Malapportionment

It is difficult to interpret the effects of malapportionment on investment effort to each district, but in general, how over-represented a district is in terms of the vote to seat ratio is a significant predictor during certain time periods for both the PSOE and the PP parties (see Table 7.4 and 7.5: Appendix 7.3). During the 1993-1996 PSOE government for instance, highly over-represented districts (those with an individual vote to seats ratio of about 30,000) received on average 11.5% investment from central government, while ‘under-represented’ districts (vote to seats ratio of about 70,000) received on average 8% investment allocation. Similarly for the PP government 1997-2000, the over-represented districts received on average 10% while the over-represented districts received about 7% per year.

4.8.2.2.4 Partisan Alignment

As discussed above, we think it is likely that the effect of partisan alignment between regional and central governments is more likely to be of significance for the Regional level (Autonomous Community) rather than the District level (Provincial). In addition, the alignment of a region is highly co-linear with the incumbent vote share of a district (Pearson’s r= 0.45). It is our view, that the alignment hypothesis should be seen as complementary to the other ‘tactical distribution’ hypotheses rather than competing. For these reasons, we estimate the effect of partisan alignment on investment effort to each of the 17 autonomous communities with the Provincial level data aggregated to this level. Again, we use GLS (AR1) with random effects. However estimating the effect of alignment by term of office as we have done with the other models runs into a degrees of freedom problem given the limited number of cross-sections (regions) available. We therefore opt to estimate the regional-level models on sub samples spanning longer time periods, covering each party’s consecutive tenure in government. We do not include
the period 1978-1982 in the sample as there were very few regional governments prior to 1983. This forces us to exclude the UCD party's tenure in government.

Overall the results for the partisan alignment variable are not significant (these are presented in Table 7.6: Appendix 7.3). This is contrary to the findings of the full sample model where alignment was a significant predictor of investment to district-region. However most of the variables perform poorly in terms of statistical significance in the models estimated on regional level data. This could be due to either misspecification or measurement error in aggregating data. It could also be due to substantive reasons however. Although partisan alignment may be important for certain types of investment (particularly inter-governmental grants [e.g. see Leon, 2010]) it may be less important for direct expenditure on public goods and services to lower level jurisdictions by central government in Spain.

4.9 Discussion

There is significant support for the main hypothesis that relative levels of party nationalization affect the distributive priorities of parties in government.

At the extreme end, parties with very low nationalization – the regionalist parties – have been able to extract quite large concessions in the form of disproportional regional investment from central government when they act as 'king-makers' to the larger state-wide parties. This finding is confirmed by all models for the periods when regionalist parties had formal legislative agreements with the two main state-wide parties to support them as minority governments (1993-2000). The findings also reveal that the level of favouritism in investment towards districts in these regions is substantial.

At an intermediate level of nationalization, there is evidence that parties are more prone to engaging in pork barrel distribution. According to the models the less nationalized state-wide parties – the UCD and the PP – appear to have engaged in more tactical spending to either their core or marginal districts during their tenure in office, than the PSOE. The UCD governments especially tended to target their stronghold districts: provinces in which they held very strong electoral support. This picture is somewhat less clear for the PP governments, where there is less of a linear relationship between district vote share and investment allocation. The results are consistent with the notion that there is a slight curvilinear relationship between district vote share and investment during the PP government periods, where districts that gave 40-50% vote share to the incumbent are the most favoured, as opposed to either opposition or districts that gave a majority of its votes to the incumbent party (extreme party strongholds).
In general there is quite significant support for the main hypothesis that comprehensively nationalized parties in government rein-in regional favouritism and pork barrel spending. However this isn't a universal phenomenon. For instance, while the PSOE did not engage in much tactical spending to either core or marginal districts during its two periods of consecutive control of government from 1983-1996 and 2004-2010; it did tend to favour districts with lower vote to seat ratios in most periods. During the period when it relied upon the support of regionalist parties to form government it also targeted *Marginal* districts; those where they were closet to the PP in terms of vote share at the previous election. While it is difficult to say why this might be the case, it could be that regionalist parties encouraged this pork-barrel spending by the PSOE via a type of log-rolling or regional balancing logic. Since, as we find the PSOE had to spend investment disproportionately in the regionalist party strongholds (presumably) to maintain their continued legislative support during this period, perhaps this made key ministers more responsive to demands for investment from their own party's electorally pivotally localities. This could also be because the party was especially wary of losing support to the PP in these districts given its (unexpected) significantly decreased performance in the previous election.

### 4.10 Conclusion

The results of this country study of the relationship between parties' electoral geography and distributive politics presented in this chapter are strongly supportive of the general argument. We find variation across parties in terms of their electoral nationalization seems to be co-linear with their use of 'pork-barrel' spending during their term of office. This is especially the case for the regionalist parties when they compose government. As we would expect, their regions tend to be significantly favoured in terms of investment (when controlling for other factors) when these parties are in government. This suggests that these regions are 'disproportionally favoured' when the regionalist parties are in a 'king-maker' position for government formation and endurance.

We also observe greater levels of pork-barrel spending- either to core or marginal districts- by the state-wide parties that are less nationalized. As we showed in the descriptive analysis of geographical trends in party support, both (centre) right UCD and PP parties have historically received quite low levels of support in certain regions and certain districts. The PSOE on the other hand, has historically received much more homogenous support across all jurisdictions. We argue that this makes it more likely that the PSOE leaders would 'rein-in' regional favouritism and pork-barrel spending because it internalizes the cost of this regional favouritism.
due to its representation of all regions. The UCD and PP on the other hand both have a greater opportunity and greater incentive to engage in regional favouritism in the form of pork-barrel spending. On the whole this is what we find. Based on a range of measures of ‘tactical distribution’, investment during the UCD and PP governments is much more responsive to short-term political factors than during the PSOE governments.

Endnotes

¹There are 52 Provinces in Spain which are synonymous with the electoral district. There are 17 Autonomous Communities that contain varying number of Provinces and Municipalities. We refer to Provinces and electoral districts and as ACs and regions as synonymous in the terminology of the paper.

²Informal Legislative Coalitions in Spain: 1989-1993 PSOE with CC; 1993-1996 PSOE with PNV and CiU; 1996-2000 PP with CiU, PNV and CC; 2004-2008 PSOE with IU and ERC. With regards to the first Zapatero government (2004-2008), some commentators have pointed out that this government should not be considered a ‘formal minority government’ in the sense that Strom (1990) has used, as the PSOE did not make a formal legislative support agreement with the ERC or IU (Field, 2008, 43). Although the second PSOE-led government of 2008-2011 was short of 7 seats of a majority and the government’s investiture did rely on abstention by the many of the smaller parties, Zapatero explicitly refused to make any legislative agreements with smaller parties and sought to govern alone.

³During the González government of 1989–1993, the PSOE was short of one seat of an overall majority with the Canarian Coalition providing its support. However this is not considered a ‘pivotal’ region during this government, as in reality the PSOE relied more heavily upon other legislative partners, such the United Left Coalition for stability.

⁴Kernel density estimation is a method for visualizing the underlying distribution of a continuous variable (similar to a histogram). It is a non-parametric technique in that it does not assume any underlying distribution of the variable. A kernel density estimate is the sum of ‘bumps’ assigned to every value. As Trosset describes (2009, 171): ‘[t]he logic of the empirical distribution is this: by assigning probability $1/n$ to each $x_i$, one accumulates more probability in regions that produced more observed values’. Each bump represents the probability assigned to a neighbourhood of values around a data point, thus a higher ‘bump’ indicates a larger number of observations falling in a particular neighbourhood of values.
Chapter 5

5 Party System ‘Denationalization’ and Inter-Regional Redistribution in Italy 1994-2006

5.1 Introduction

This paper explores the political economy of inter-regional redistribution in Italy. Theoretically it emphasizes the role various national parties in Italy have played in mediating the distributional conflicts among regions at central government level. It argues that to understand the fundamental shifts that have occurred in the level of territorial redistribution among regions and regional development policy in Italy, it is important to explore the political incentives generated by the ‘denationalization’ or regional fragmentation of electoral party politics that occurred after the 1992-1994 party system crisis. We argue that the decline in the strength of nationalized parties and emergence of strong regionalist parties and parties with more circumscribed regional support bases lead to the shifts in the system of inter-regional redistribution and the breakdown of the implicit ‘fiscal contract’ between North and South that occurred in the 1990s (Ambrosanio et al., 2010).

As is well documented prior to 1992, the main state-wide parties of government – primarily the Christian Democracy (DC) party and the Italian Socialist Party (PSI) – not only divided the ‘spoils’ of government vertically via clientelistic transfers to individuals (e.g. Chubb, 1982; Golden, 2003), they also shared state resources horizontally (geographically) among regions. Different parties and factions of parties had dominant roles in mediating between central government and the various regions and localities in which those parties and factions were most strongly embedded. This is how the country was drawn together in the presence of deep social and economic geographical cleavages and the absence of a strong national identity (Agnew, 1997, 106). At the same time, however, the parties generally saw themselves as candidates for national office and offered themselves to the electorate in most, if not all, constituencies (Agnew, 1997; 2002). While both the two largest parties of the post-war period – the DC and the Italian Communist Party (PCI) – had strong regional bases of support both parties were organized and contested seats nationally (Shin and Agnew, 2007). The degree of party nationalization mattered for public policy considerations, as although the parties were factionalized along regional lines the factions within the main parties (particularly the DC) served to integrate these fragmented regional interests into electoral support for the party as a whole (Agnew, 1997, 105).
However the parties that replaced the main state-wide parties after the ‘Mani Pulite’ investigation in the early 1990s were not as organized nationally as the old established parties had been. Generally the new parties of government did not win seats in or contest as many constituencies throughout all regions as had been the case in the old party system (Agnew, 1997). This is obviously the case for one of two main parties to ‘replace’ the DC in North Italy: the regionalist and autonomist Northern League. However the main inheritor, Forza Italia (FI), was also significantly less nationalized than the in the 1990s than the DC had been.

Instead of organizing nationally in all constituencies, Forza entered into electoral pacts with two regionally concentrated parties: the Northern League in the North and the National Alliance in the South beginning in 1994. It is argued that the subsequent governments that emerged from these electoral alliances between regionally concentrated parties, had less incentive to keep up the implicit distributional compact between regions that had characterized Italian politics since the 1950s.

We investigate the distributional impact of this regional party system fragmentation. The main dependent variable is the allocation of public investment spending – one of the main instruments of regional development – among regions from 1972 to 2006. We find that although the governments under the leadership of the DC used regional investment as a tool to ‘buy’ electoral support (in general favouring regional party strongholds) during its period of dominance, infrastructure investment also followed a redistributive logic, where poorer, less developed regions received substantial investment.

The regional fragmentation of the party system that occurred during the early 1990s lead to a breakdown in the ‘implicit contract’ of inter-regional redistribution between the North and the South that had characterized Italy during the First Republic (see Vittorio, 2009; Ambrosanio et al 2010). The emergence of the regionalist Northern League in particular, appears to have had an impact on the regional fiscal flows within Italy in the subsequent decade. The period 1996-2006 witnessed a ‘reverse redistribution’ towards the more developed Northern regions, in line with the policy platform of the party, in opposition to the net fiscal flows from the North to the South (Agnew, 2002, ch.7 & ch.8). In terms of economic development funds, during this period we see a decline in development aid towards poorer Southern regions of approximately 17% measured in terms of per capita account transfers from central government to private enterprises, families, social institutions and public works (Vittorio, 2009, 321). The largest decline occurred during the second House of Freedom governments 2001-6, in which the Northern League was a pivotal partner of the Berlusconi government coalition. In addition, for capital infrastructure investment by central government specifically, we find that during this period the Northern
League's strongholds in the Centre-North regions received the largest part of regional development spending flows.

We argue that these findings are relevant to a larger theoretical literature related to political economy and distributive politics. In particular, the emphasis in this literature on exploring patterns of politically motivated distribution should shift away from formal electoral institutional incentives that political actors face towards a greater cognizance of the importance of distributive incentives generated by political geography.

This chapter is organized as follows. Firstly we begin with a discussion of previous literature and explanations for pork barrel spending and regional favouritism in Italy. We then discuss some of the stylized trends in public spending and regional redistribution over the sample period, and discuss our central argument and hypotheses relating the shifts in party nationalization in Italy to the changes in regional spending. We describe our empirical methodology and present our results from descriptive statistics and econometric models. Finally we discuss the implications of the results in the context of the overall dissertation.

5.2 Regional Pork-Barrel Spending in Italy

The main objective of this chapter is to explain the shift in the regional distribution of infrastructure investment and regional favouritism that occurred after the demise of the DC hegemony and party system crisis in 1992-1994. An extant literature on regional distribution in Italy generally attempts to explain observed patterns in pork barrel spending in terms of institutional explanations. However we argue that the institutional hypotheses forwarded to explain the prevalence of pork-barrel regional expenditures in post-war Italy are less plausible since the electoral system reform in 1993.

The new electoral laws in Italy were purportedly designed to reduce territorial political incentives to engage in regional favouritism and pork barrelling by parties. While the main 'objective' or expectation on behalf of electoral reformers in 1992-1993 was the belief that a new electoral system should reduce the number of parties gaining representation and produce greater government stability; the preference vote option of the existing Open List-Proportional Representation (OL-PR) system was also associated with corruption (Katz, 1996, 36). However while these institutional 'fixes' that came with the collapse of the party system in the 1990s may have mitigated the practice of providing clientelistic transfers or patronage to individuals (or smaller scale jurisdictions) as some scholars have implied (Golden, 2003); it does not seem to have led to a reduction in the use of infrastructure spending as a means of favouring politically pivotal regions (regional favouritism).
In the terminology of the paper, we argue that the post-1994 parties of government engaged in just as much ‘tactical’ allocation of regional infrastructure investment, as the DC did in prior decades. Government parties in the post-1994 period tended to disproportionately favour their regional strongholds with investment and disproportionately disfavoured regional strongholds of the main opposition party. However, due to the shift in the geographical locus of power in the Second Republic (1992-present) away from the under-developed Southern Mezzogiorno and towards the wealthier Northern Regions, the pattern of regional favouritism that developed in the 1990s and 2000s became less redistributive and less conductive to regional development in poorer regions.

Political institutional incentives – such as ‘personal vote incentives’ engendered by the electoral system or ‘common pool incentives’ generated by the legislative structure of the Italian parliament (‘little laws’) – cannot explain either the persistence of regional pork-barrelling in investment post-1992 or the patterns of investment allocations that took place in the period under of study.

In the post-war period (pre-1992) pork barrelling at the central government level has often explained as a function of the incentives generated by the OL-PR electoral system. A macro-literature argues that in distributive policy, parties in PR electoral systems should target their core supporters while in Majoritarian electoral systems parties should target their marginal districts. This difference between Proportional and Majoritarian systems often leads some scholars to the expectation that in the former, pork-barrel spending to particular districts should not be a favoured distributive strategy for parties as – given the large magnitudes of the districts – it is more advantageous from a cost-benefit point of view to ‘target’ a wider partisan or social (i.e. demographic) constituency via universal transfers rather than via local public goods (Milesi-Ferreti et al. 2002; Persson and Tabellini, 2003).

To the extent that parties do engage in territorial pork barrelling, they are usually expected to target their core electoral strongholds where it will be less expensive to attract the marginal supporter and where it is critical to fend off the formation of new parties (Golden and Picci, 2008 271; McGillivray, 2004, 109). However preference voting in PR elections upsets this logic, as under OL-PR individual politicians have incentives to build a personal reputation independent of, or in addition to, their party reputation.

As Golden and Picci (2008) argue in the case of Italy in the 1953-1993 period, preference votes were important for career advancement within parties. Even if ‘highly placed’ (within party ranks) DC legislators were unlikely not to gain a seat (in all constituencies), the allocation of ministerial positions was strongly influenced by the number of preference votes a politician (or
her ‘faction’) received at elections (2008, 272). This preference vote option in Italy’s OL-PR could potentially lead to a situation where the re-election incentives of powerful legislators competed with the collective interests of their own party. Following others (McGillivray, 2004), Golden and Picci (2008, 272) hypothesize that under Italy’s OL-PR there are two main influences on discretionary allocations, one coming from individually powerful deputies and a second from the strength of governing political parties.

Golden and Picci (2008, 269) argue that this competition between powerful party MPs and the interests of the party as a collective was recurrent in post-war Italy, as the most powerful legislators affiliated with the DC were elected from southern electoral districts whereas the party’s core strength historically lay in the religiously observant North-East. In their study, they hypothesize that due to the personal vote incentives of the pre-1994 electoral system, pork-barrel spending was most frequently targeted towards the ‘core districts’ of powerful Ministers in Southern Regions, rather than the ‘core district’ strongholds of the party as a whole in the North-East.

However, Golden and Picci’s interpretation of the favourable treatment (in terms of greater levels of pork-barrel spending) of the Southern regions during the post-war period, as representing a ‘clash’ between the Party’s core interests and the interests of individually powerful politicians is potentially problematic. Certainly in the 1950s, the constituencies in the North-East represented the DC party strongholds in terms of electoral support. However by the 1970s, the DC had become just as strong (if not stronger) in all of the Southern regions of Italy. As Agnew (1997) points out, by the 1980s the DC was under severe electoral pressure in the North-East and North-West even before the crisis precipitated by the Mani Pulite investigation. Nonetheless, for our purposes it is enough to note that the OL-PR system that existed prior to 1993 is reputed to have been a significant causal factor in the high levels of pork-barrel spending that were associated with DC governments and have been documented in previous empirical work (especially Golden and Picci, 2008). Most existing quantitative empirical investigations of the regional distribution of pork-barrel during the DC period find that the electoral strength of the party is an important predictor of the amount of resources a jurisdiction (province [Golden and Picci, 2008; Sapienza, 2004] or region [Kemmerling and Stephen, 2008]) receives$. According to these studies the DC tended to favour its core strongholds, while disfavouring opposition strongholds (those of the Italian Communist Party) with regional spending (Golden and Picci, 2008, 281; Kemmerling and Stephan, 2008, 17; Sapienza, 2004, 378).

The legislative structure in Italy during the post-war period was also credited by many scholars as multiplying opportunities for individual legislators to engage in pork-barrel and patronage. The main legislative mechanism incentivising pork-barrelling was the ability of legislators in the
Chamber of Deputies (lower legislative house) to initiate legislation during the committee stage without having to submit the bills to the general assembly of the House (Golden, 2003; Koff, 2000, 123). Bills concerned with restricted sectional objectives could be amended and passed in the Permanent Committees without having to move to the floor of the house. So-called 'little laws' (*leggine*) were frequently introduced by as Private Members Bills and tended to be directed at particular clientales and localities. These bills were mostly concerned with issues of employment in public and state-owned enterprises (Golden, 2003, 201). As Furlong (1994, 110) notes, much of the debate post-1994 surrounding parliamentary patronage focused on the need to reform procedures to reduce the output of *leggine*. As he describes:

'Those opposed to the use of Parliament for these restricted sectional objectives coined the sarcastic reference to them as 'leggine con fotografie' — laws whose impact was so limited that the photographs of all citizens concerned could have been attached to the draft bill as supporting information' (Furlong, 1994, 108).

More generally, Alesina et al. in their analysis of the Italian parliamentary legislative and budget-making procedures, point to the ubiquity of 'open amendment rules' whereby parliament can make increased spending amendments beyond government proposals (1995, 32). They argue that these open amendment rules are a potential theoretical explanation for 'inefficiently' large public spending bills and the historical accumulation of debt by central government in Italy.

Overall the composite institutional explanation espoused by extant literature is that the personal reputation building inducements generated by the preference vote electoral system — and coupled with the 'weak' factional nature of Italian parties (especially the DC) — created the incentives for individually powerful politicians to target their core support bases; while the legislative structure (in a similar way to the 'earmark' amendment arrangement in the US) provided individual politicians with the opportunity to target pork barrel resources to their stronghold districts.

The electoral reform in 1993 offers an opportunity to submit these institutional explanations to greater scrutiny. We suggest that while institutional incentives — especially the preference vote incentives of powerful Ministers — are an important part of the story explaining patterns in political distribution to regions in Italy, such explanations are insufficient to explaining fundamental temporal shifts that occurred in political distribution between regions. In line with the main argument of the dissertation — that variance in parties' electoral geography are crucial to explaining their preferences over the regional allocation of pork-barrel spending — we argue that the much noted trends in the allocation of regional infrastructure and development spending (that coincided with the electoral reforms and party system crisis in the early 1990s) can only be explained by reference to the shifts in Italian electoral geography. In particular, we argue that the electoral system reform of 1993 should theoretically have reduced incentives for
parochial representation on behalf of Key Ministers, as was one of its reputed purposes (Bartolini, 2002). Similarly, it is arguable that the shifts in the regional distribution of pork in the 1990s can be attributable to the fiscal ‘common pool resource problem’ whereby individual members either propose or amend legislation providing patronage to their localities.

5.3 The Effect of Electoral Reform in Italy

The 1993 electoral reform replaced the OL-PR system with a form of Mixed Member Proportional Representation (MMP) electoral system. From 1994 to 2005 the Italian legislative elections used a mixed system in which three-quarters of the Parliament were elected in single member districts (SMD), with one-quarter elected via a party lists based on 32 constituencies. Mixed systems are sometimes considered the ‘best of both worlds’, allowing citizens to use their SMD votes to reward an individual candidate for her attention to local needs and their list votes to reward a party for its policy stances and government program (Shugart & Wattenberg, 2001, 10).

While there is a paucity of theorizing on the issue of the pork barrel incentives generated by MMP systems, some studies suggest that these types of electoral systems generate competing incentives among legislators elected under the different procedures. While SMD-elected MPs have incentives to engage in personal reputation building by servicing their local district, their list colleagues are incentivised to engage in party reputation building by focusing on national policy-making. Stratmann and Baur (2002), for instance, use the differential memberships of SMD members on ‘distributive committees’ in the German Bundestag to infer that these MPs are more concerned with serving the local needs of their constituents than in national legislation. However, there is very little evidence, from any context where MMP is in operation, that this personal reputation incentive translates into greater pork barrel spending. This is likely due to the leverage over individual members that control over the list gives to parties. This is the conclusion of a study by Stoffel, for instance, of pork-barrelling by German MPs. He finds that although MPs under MMP face competing principals (district and party) with both pressuring MPs to concentrate on their respective affairs, in most instances the most effective re-election strategy for MPs is to focus on their party priorities (2014, 86).

In comparison to the Open-List system, it could be argued that under the MMP system government ministers do not ‘have to’ chase preference votes by engaging in localism and can afford to be ‘nationally orientated’ since the party can place them on its list for the next election. This was especially the case in Italy (1994-2005) because of the ‘dual candidacy’ provision that meant that candidates who lost in an SMD race could be elected via their party list (Scheiner,
2008, 162). Parties can punish behaviour that impairs legislative unity or the party reputation by refusing an MP a good list position. In this way, the behavioural incentive placed on individual MPs created by the list portion reduces the localistic incentives of the SMD system, enabling parties to ‘rein-in’ the particularistic impulses of SMD legislators. In this regard, the most important electoral law reform was the removal of the ‘preference vote’ incentive that existed under the old electoral system. Under the new electoral system preference votes were no longer a means of career advancement for individual politicians, and hence an enticement for resource allocation to the home constituencies of Ministers or committee chairs.

However one electoral law that undoubtedly had a significant impact on maintaining the regional fragmentation of the party system was the provision in the 1993 reform that enabled parties to form pre-election cartels allowing SMD candidates to run under the banner of an entire alliance. While this gave parties strong incentives to coalesce into alliances – and produced the bi-polar competition between left and right blocs – it did not give parties the same incentive to merge under a single label, as a pure majoritarian system might have done (Scheiner, 2008, 166). It this way, the cartel rule allowed regionalist parties and other parties with restricted geographical coverage to continue to exist as separate entities rather than being incentivised to merge into the larger, more nationalized parties.

In terms of legislative opportunities for pork, during this period the institutions regulating legislative process in Italy did not undergo substantial reforms. However, according to Golden (who attributes these changes to the electoral law reforms) there was a massive drop in the number of leggine passed after 1994. As she notes (2003, 206):

‘Whereas more than half of Italy’s laws had been passed solely in committee in the X Legislature [1987-1992], without ever being voted on by the entire floor, bills passed in committee fell to less than 8 per cent of the total in the XII Legislature [1994-1996] and about 13 per cent in the XIII [1996-2001]’

Hence the working assumption of our study is that the institutional reforms in 1993 reduced institutional pork barrel incentives and opportunities of individually powerful government MPs by giving greater control to parties over the re-election prospects of their members. However as we argue below, this institutional reform did not lead to the reduction in regional pork barrelling of central government resources that we would expect given the institutional arguments. As we detail, the post-1994 period witnessed a drastic reduction in the amount of investment that had historically been ‘disproportionally’ targeted to the Southern regions. However, this shift away from favouritism in the South did not imply a greater adherence to programmatic criteria in regional investment allocation decisions. Rather we argue that regional investment during the ‘Second Republic’ (1994-2006) entailed just as much regional favouritism in investment towards politically pivotal constituencies as had taken place during the decades of DC dominance. While
the electoral reforms may have given more power to parties over individual MPs, it did not imply that parties would no longer have incentives to favour their core support. In particular, we argue that patterns of regional distribution that were evident during this period (in general favouritism towards the wealthier Northern regions) can only be explained by reference to (1) the incomplete nationalization/regional fragmentation of the main parties that emerged to replace the DC in government post-1994; (2) the pivotal importance of the regionalist Northern League both electorally and legislatively (in terms of government formation).

5.4 Patterns of Regional Political Geography in Italy 1972-2006

In this section we describe the evolution of Italian party geography, describing variation in parties' vote shares across regions and in particular comparing the pre- and post-1994 party systems. As in other chapters, we describe such 'electoral geography' along two dimensions. First, in terms of the nationalization of state-wide parties across all regions (the homogeneity of their vote share across regions). Second, in terms of the electoral strength of regionalist parties across time periods. In the following descriptions of the regional distribution of parties' vote shares for the 1994-2006 period we only use election returns from the proportional representation (PR) component for national elections to the Chamber of Deputies (Italian Lower House). This is to ensure the comparability with the pre-1994 period. One potential problem with measuring the total vote share of each party by region using this method is the possibility that electors split their SMD and List votes, and hence only measuring regional vote share as a percentage of the PR vote could be misleading (Plesia, 2013). However, this is a standard practice among electoral geographers comparing parties' electoral returns pre- and post-1994 and split ticketing does not seem to affect returns at such an aggregate (regional) level (Agnew and Shin, 2007, 291-292).

The old regime of parties that had dominated Italy since 1947 collapsed between 1987 and 1996, mainly as a result of the public's disgust and frustration with the DC's and the PSI's widespread corruption, the extent of which was revealed publicly by the Tangentopoli ('Bribesville') scandal and the Mani Pulite ('Clean Hands') investigation. In 1991, owing to fallout from the End of the Cold War the left-wing opposition of the Italian political spectrum largely occupied and dominated by the Italian Communist Party (PCI) also split into two parties- the Re-founded Communist (RC) and larger Social Democratic Party of the Left (PDS).

During the old regime, the main parties of Italy campaigned nationally but each had regional bases in which their support was consistent and concentrated. The Christian Democrats (DC)
found support in the north (the ‘white’ zone) and the south, and support for the Italian Communist Party (PCI) was strongest in the centre of Italy (the ‘red’ zone).

Figure 5.1 Pre-1994 Regional Vote Share of Major Parties

Statewide Parties Vote Share Across Regions 1972-1992

Notes: 1) own author calculations based on data from the CLEA; 2) y-axis represents vote share of each party by PR constituency (n=32) aggregated to regional level with autonomous provinces Trentino-Alto Adige/South-Tyrol and Valle D’Aosta omitted; 3) Mean and Standard deviation bars refer to vote share of three parties in the region over all elections during period; 4) Letters in brackets beside region labels indicate macro-region (in EU nomenclature the NUTS1 level); C = Centre; I = Insular; NE = North-East; NW= North West; S = South. (4) Party Abbreviations; DC = Christian Democracy; PSI = Italian Socialist Party; PCI/ PDS= Italian Communist Party/ Democratic Party of the Left; 5) The PCI split into the PDS and the Communist Refoundation Party (PRC) in 1991.

According to Agnew, it was only during the period 1963 to 1976 that the DC and PCI, the two largest parties in Italy, achieved a significant degree of nationalization in their levels of popular support (1997, 107). Other parties remained limited to particular regions (e.g., the fascist Social Movement for Italy (MSI) in the urban south) or switched regional bases in terms of their highest levels of support (e.g., the core base of support for the Italian Socialist Party (PSI) moved south from its original northwest base) (ibid, 107). Traditionally, one of the most recognised electoral regional cleavages of Italy were these ‘Red and ‘White’ zones. The Red zone has historically been
the area of greatest strength for the main opposition party of the post-war period – the Italian Communist Party – and was comprised of the four regions of Central Italy: Toscana, Umbria and Marche and the North-Eastern region of Emilia-Romagna (see Figure 5.1). The White zone was the historical stronghold of the DC and referred to the regions of the North-East and North West. However during the 1970s the DC became as strong in the South and Insular (Sardinia and Sicily) regions.

While a simplification, the party system that came after 1994 had a similar regional character to the party system under the First Republic. The regional affiliation of political support in the post-1994 period has been characterized as consisting of the ‘three Italies’ (Shin and Agnew, 2008, 125). Beginning with the Northern League undermining the established political affiliations towards the DC in the North before 1992 and the subsequent alliances between Forza Italia and the League; the North become particularly distinctive in its affiliation to the centre right. The South emerged as a region of electoral volatility while the Centre remained, if weakened, largely a region dominated by the Centre-Left (Shin and Agnew, 2008, 127).

While the electoral coalitions that ‘replaced’ the DC were widespread throughout the national territory, the separate parties that comprised these coalitions were regionally clustered. The Northern League in the North-West, Forza Italia in the South and North-East and the National Alliance in the South (see Agnew and Shin, 2007) had regionally circumscribed support bases in comparison to their DC predecessor. This is most obviously the case with the regionalist Northern League (LN) which comprises various regional and local political organizations that emerged mostly during the 1980s – especially the Lombard League and the Venetian League – from the Northern regions. The League uses Northern Italian territorial identities as its main rallying point (referred to as ‘Padania’) shifting between emphasizing social, economic and cultural differences between the prosperous north and south (especially animosity towards the welfare dependence and corruption of the south) to oustight secession of the north (Agnew and Shin, 2007, 291). As Agnew (2002, 167) describes, the emergence of the explicitly regionalist Northern League (LN) – which was during the 1990s the largest party in much of Northern Italy – was a historically novel development in Italian politics:

‘The League, as an explicitly northern-regional party, represents a novel departure from the nationally oriented, if rarely nationally successful, character of the two major postwar Italian political movements, with the ideologically universalistic Communists dominating central Italy and the equally (if distinctively) universalistic Catholics (in the Christian Democratic Party) dominating the Northeast and parts of the South’.
Figure 5.2 Regional vote share of right-wing parties, successive elections.

1994 election

1996 election

2001 election

Notes: (1) own author calculations based on data from the CLEA and GED (2) y-axis represents vote share of each party by PR constituency (n=32) aggregated to regional level with autonomous provinces Trentino-Alto Adige/South Tyrol and Valle D’Aosta omitted.

Regionalist parties were not a dominant feature of the Italian political landscape prior to 1994. In line with our quantitative measures of regionalist parties Table 5.1 documents the national vote share and HHI index of parties, with only the League demonstrating a HHI index of less than the critical value of 0.18, which is the definition of regional concentration we used in Chapter 3. We consider a ‘regional party’ as a party that nominates candidates for elections in a strict subset of the regions of a state (often just one), and explicitly albeit not necessarily primarily appeals to that subset (van Houten, 2007, 557). The definition of regionalist parties according to their level
of regional concentration is useful in that it draws attention to the parties that not only explicitly have a regionalist policy agenda – such as the Northern League – but also those parties that are extremely regionally concentrated and might have incentives to extract distributive resources from central government for their core support areas. One such potential party is this respect is the Italian Liberal Party (PLI) that participated in a number of coalition governments 1972-1993. While the PLI was not an explicitly regionalist or autonomist party, by its later years as part of the ‘Pentapartito’ coalitions (1985-1993) it was entirely concentrated in a few Northern Regions. For the years in which it was a pivotal partner of the Pentapartito coalitions (1982-1993) we consider the PLI a regionalist party also (despite the fact that its electoral support on the HHI index is not above 0.18).

Table 5.1 Average HHI Index Party Vote share across time periods

<table>
<thead>
<tr>
<th>Party</th>
<th>Acronym</th>
<th>HHI Index</th>
<th>Vote Share</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christian Democracy</td>
<td>DC</td>
<td>0.060</td>
<td>32%</td>
<td>1972-1993</td>
</tr>
<tr>
<td>Italian Communist Party</td>
<td>PCI</td>
<td>0.062</td>
<td>28%</td>
<td>1972-1991</td>
</tr>
<tr>
<td>Italian Socialist Party</td>
<td>PSI</td>
<td>0.066</td>
<td>9%</td>
<td>1972-1994</td>
</tr>
<tr>
<td>Italian Democratic Socialist Party</td>
<td>PSDI</td>
<td>0.083</td>
<td>3%</td>
<td>1972-1992</td>
</tr>
<tr>
<td>Italian Liberal Party</td>
<td>PLI</td>
<td>0.130</td>
<td>3%</td>
<td>1972-1992</td>
</tr>
<tr>
<td>Italian Republican Party</td>
<td>PRI</td>
<td>0.067</td>
<td>4%</td>
<td>1972-1992</td>
</tr>
<tr>
<td>Forza Italia</td>
<td>FI</td>
<td>0.072</td>
<td>21%</td>
<td>1994-2005</td>
</tr>
<tr>
<td>National Alliance</td>
<td>AN</td>
<td>0.064</td>
<td>12%</td>
<td>1994-2005</td>
</tr>
<tr>
<td>Democratic Party of the Left /Democrats of the Left</td>
<td>PDS/DS</td>
<td>0.062</td>
<td>18%</td>
<td>1992-2005</td>
</tr>
<tr>
<td>People's Party / Democracy is Freedom</td>
<td>PPI/DL</td>
<td>0.061</td>
<td>10%</td>
<td>1992-2005</td>
</tr>
<tr>
<td>Northern League</td>
<td>LN</td>
<td>0.255</td>
<td>8%</td>
<td>2005</td>
</tr>
</tbody>
</table>

Notes: 1) Vote Share refers to median national vote share across elections to Chamber of deputies; 2) All parties presented (except the PCI) participated in at least one government; 3) HHI is ‘weighted’ by the population size of districts.

Many scholars have called attention to the outsize role that the League has in framing the political debate due to its electoral strength in Northern Regions (particularly its stronghold regions of Veneto, Piedmont, Lombardy and Friuli–Venezia Giulia) and due to its pivotal position in government coalitions, demonstrated by its willingness to pull out of government in 1994, which precipitated the fall of the first Berlusconi government, and its role in the 1996 elections,
when its refusal to join the right wing electoral pact effectively lost the election for the Pole for Freedoms alliance (Bartolini et al, 2004, 4).

The ‘electoral threat’ of the League has also made the ‘Northern Question’ central to Italian politics. As Shin and Agnew (2008, 128) describe, the content of the League’s grievances entailed:

‘alienation of the “the North” more specifically a “profound north”...from Roman government seen as biased in favour of a South ever more dependent on government spending emanating from a productive North ever more lacking in infrastructure and tax incentives to continue its role as the “engine” of the Italian economic growth.’

The critical question from our point of view, which emphasizes the geography of electoral affiliations, is how this Berlusconi was able to create and make workable the centre right coalition beginning in February 1994, extending (on and off) through the years 1995 to 2000 as an electoral pact, and as a coalition government up until the narrow defeat of 2006 (Shin and Agnew, 2008, 65). We argue that he did this by making the League agenda central to the priorities of the government coalition. In particular this involved acceding to the League’s demand to hold a referendum in 2006 on Northern ‘devolution’, but it also entailed diverting regional investment away from the South and Centre regions towards those of the North, which had a profound impact on redistribution between regions.

This regional fragmentation of the right was also mirrored on the left but to a much lesser extent. The two replacement parties for the Communists share much the same proportion of the total vote in central Italy as the Communists held before them, and between them they cover much the same ideological space as did the old PCI, suggesting a continuing match between the new parties and the ‘social-territorial milieu’ of central Italy (Agnew, 2002, 142). Agnew and Shin (2007) test this assertion in a more formal analysis of spatial correlation (Moran’s I), finding that there is a high degree of continuity in left-wing vote share in these regions for parties of the left (i.e., PCI, [P]DS, RC and MRG).

However as Figure 5.3 demonstrates, the main Left Wing parties post-1994 (either separately or as a collective) were not as strong in the Centre regions as the PCI had been in prior decades. Yet their support was more widespread throughout the country. Both the PDS/DL and the PP/DL tended to be more competitive in the Southern regions than the PCI had been in its latter years. While the National Alliance and Forza Italia came to dominate many of the old DC Southern constituencies, many regions in the South emerged as a zone of contention between the Left and Right much more clearly than they had been under the old party system, particularly Basilicata, Calabria and Sardinia.
Figure 5.3 Left-wing party vote share across regions, comparing pre and post-1994

Comparison Left-Wing Parties Vote Across Regions, Pre- and Post- 1994

Notes: 1) Regional Vote share main Left Wing Parties pre and post-1994 comparison; 2) Mean and Standard deviation bars refer to vote share of left-wing parties in the region over all elections during period (excluding Re-founded Communist party); 3) Party abbreviations= PCI= Italian Communist Party; PSI= Italian Socialist Party; PP/DL= Italian People's Party/Democracy is Freedom - The Daisy; PDS/DS = Democratic Party of the Left/Democrats of the Left; 4) Assumption is that the DS was the main successor to the PDS after 1998 and that the DL was the main successor to the PP after 2000 (see Shin and Agnew, 2007).

A more formal measure of this regional dispersion in vote shares of both Left and Right wing parties is given by the weighted Gini coefficient measure. As we can see in Figure 5.4 the overall nationalization of the party system (PSNS) decreased substantially post-1992 with the demise of the DC and its fragmentation into regional alliances. The Party Nationalization of Government (PNG) measure is designed to reflect the inclusion of parties with more circumscribed regional support bases in coalition government. According to this measure both the centre-left and more especially the centre-right coalitions post-1994 were substantially less nationalized than the DC-led governments of the 1980s, due to their inclusion of regionalist parties (the League) and
smaller parties with circumscribed regional support bases. In the next section we describe the implications of these shifts in electoral geography between the old and new party systems.

Figure 5.4 Comparing Government Parties' Nationalization across Time

Gini Coefficient Vote Share Across Regions

Notes: (1) y-axis: Gini coefficient of vote share of parties in general elections to legislative lower house weighted by district vote share as % national total (2) Acronyms: PSNS = Party System Nationalization Score; PNG = Party Nationalization of Government; DC= Christian Democracy; PCI= Italian Communist Party; Fl= Forza Italia; PDS/DS= Democratic Party of the Left/Democrats of the Left; LN= Northern League (3) Party Nationalization of Government is average nationalization of parties composing government weighted by each party’s seat share in the Chamber.

5.5 Research Design

5.5.1 Conceptual Framework

As in the study of Spain, we rely on Dixit and Londregan’s conceptualisation (1996) of two distinct forms of regional redistribution criteria: Tactical and Programmatic (see section 4.5 for a more thorough explanation of these conceptual categories).

In terms of government preferences over Programmatic redistribution between regions we expect that government ideology will be the largest determining factor of programmatic allocation. Right wing parties are expected to prioritize efficiency criteria in investment allocation, while left-wing parties are expected to prioritize equity or income redistribution in investment allocation (Cadot et al., 2006). Efficiency criteria emphasise the impact of investment
on aggregate output rather than ensuring a reasonably equal distribution of infrastructure stock (services) or on using infrastructure investment as part of a regional development or regional adjustment policy aimed at convergence of regional output.

In the case of the pre-1994 period, identifying the ideological ‘centre-of-gravity’ of each government is a more ambiguous undertaking than post-1994, given the ‘catch-all’ nature of the DC party and the role of ideological factions within the party. In line with other literature that generally recognises the left-wing factions within the DC to have been more dominant in the 1970s and the right-wing factions to have been more dominant in the 1980s (Leonardi and Wertman, 1989; Donovan, 1994; Mershon, 2001; Agnew, 2002, Ch.4) we expect that in terms of programmatic considerations the DC governments of the 1970s should be more concerned with equity and income redistribution in regional investment, while the DC led governments of the 1980s and early 1990s were more right-leaning and are expected to place greater priority on efficiency criteria in investment allocation.

For the post-1994 period, we describe and analyse the data by separating the sample into two periods- the years of government control by the left-wing coalition, the Olive Tree Alliance from 1996-2001 and the years of right-wing coalition, the House of Freedoms alliance 2002-2006. In terms of programmatic expectations we expect the Olive Tree government to follow equity criteria, where investment should be prioritised to regions with low per capita income and/or low capital endowment. We expect the House of Freedoms government to prioritize investment towards wealthier regions, possibly with an already large capital endowment, as these are the regions where the marginal productivity of investment is likely to be highest.

We investigate the distribution of infrastructure investment between Regions according to the Programmatic versus Tactical conceptualization. Broadly three research questions (the same as in analysis of the Spanish case) attempt to characterize investment priorities of individual governments:

1. Is infrastructure Investment being directed to the regions with higher project impact thus following an efficiency criterion?
2. Is investment being devoted to regions with low output levels thus following a (equity-based) redistribution criterion?
3. Alternatively, is investment being devoted to regions where the political productivity of investment is highest?

The coefficients of the Efficiency (regional GDP: capital stock endowment ratio) and Equity variables (regional GDP per capita) and structural variables (land area and population density) will tell whether or not two regions, equal on economic terms (e.g. same GDP per capita and
same structural traits), receive the same investment; and if this is not the case, what political factors correlate with some regions receiving higher investment than others (Sole-Olle, 2008, 9).

In terms of redistributive effort during each time period, the GDP: capital stock ratio gives an indication of the productivity of capital stock (input) in producing a unit of GDP (output). It can be considered a measure of the marginal productivity of investment, with higher values for a region in a given year indicating a higher marginal return on investment (Kemmerling and Stephan, 2008, 4). Higher ‘efficiency’ implies that infrastructure spending is higher for those regions where its expected impact on growth will be highest.

In simple terms, regions with a high GDP: capital stock ratio are those which already most productivity use infrastructure services (such as roads or highways) to produce greater economic output. Hence, investment in these regions is expected to have a higher return on investment (in terms of output created) than investment in regions with a low GDP: capital stock ratio. However, often in practice following this criterion implies that greater investment is likely to be allocated to the most productive regions with already high regional GDP (i.e. wealthier regions) which will have negative consequences on inter-regional equity. This dilemma is known as the ‘efficiency/equity’ trade-off in regional investment policy (see Gramlich, 1994; Puga, 2002).

A basic descriptive analysis suggests such an efficiency/equity trade-off (see section 4.4) for the Italian case, where Regions with higher GDP per capita are those where the marginal productivity of investment (according to this measure) is highest. However an important caveat should be observed. In the scatterplot of GDP: capital stock ratios (see Figure 7.3; Appendix 7.4) amongst regions with the similar GDP per capita output there are still substantial differences in GDP: capital stock ratios or in the marginal productivity of investment among regions at similar income levels. In other words, the measure of marginal productivity is not perfectly correlated with wealth levels, suggesting that if governments follow marginal productivity in investment this does not determinatively imply investment should be allocated to the wealthiest regions. This is one reason why (within certain limits) investment can be both redistributive and favour areas with higher marginal productivity of investment.

If neither efficiency or equity criteria nor other ‘economic criteria’ of a region can account for its observed investment allocation we then turn to the ‘tactical criteria’ to see what are the political drivers of infrastructure investment allocations. Evidence of particularistic or pork-barrel spending (tactical redistribution) is where two regions that are economically equal receive different amounts investment if the ‘political profitability’ of the investment is greater in one region than the other.
The ‘political productivity’ of a region is proxied by a number of political variables that are designed to indicate the potential electoral and lobbying influences of a particular region (Schady, 1995; Cadot et al., 2006). The ‘electoral power’ of a region depends upon whether a given level of net transfers sways some voters in favour of the incumbent more easily than others (whether it is a core, swing or opposition region). The ‘lobbying power’ of a region depends on whether its representatives have disproportional influence in government stability. In the case of Italy this means if region elects a regional party supporting the government (the Northern League in the 2002-2006 period) or a party with a highly circumscribed geographical basis of support (e.g. the PDL in the 1983-1993 period). As previously in the Spanish case, estimates of electoral and lobbying influences should be seen as complementary rather than as a test of one hypothesis against the other (Cadot et al., 2006, 1136).

5.5.2 Empirical Expectations

As in the Spanish case, our main contention is that one can derive expectations of regional distribution priorities from the variable regional geography of the political parties that comprise government. We list the main expectations in Table 5.2 based on the degree of nationalization of the parties composing government. As we can see, the PNG score of each government is lowered by the inclusion of parties with more circumscribed geographical coverage post-1994. However this is particularly the case for the Right-Wing governments, 1994-1995 and 2002-2006. As the level of analysis is the regional level (unlike in the Spanish case where it was the electoral district level) we are more limited in the hypotheses relating to political distribution that we can test, due to the reduced variation in political geography we observe. However, one of the main hypotheses we test is whether ‘opposition regions’ – regions that give a plurality of their vote share to the main opposition party at the previous election- are disfavoured in the distribution of regional investment by central government. We also test the hypothesis that ‘swing’ regions are favoured by government investment decisions. A swing region is defined as those where the (absolute) marginal of either ‘victory’ or ‘defeat’ of the government incumbent party (the majority government partner) is more or less than 5%. A stronghold region is considered to be one where one of the main incumbent parties received 5% or more of the regional vote share than the main opposition party. For 1994, 1996 and 2001 elections we consider the PDS/DS the main left-wing incumbent/opposition party. For the right, each party’s aggregate vote is considered individually rather than as a collective. This means, as illustration, that Emilia-Romagna 2001 is an ‘opposition’ region because the PDS received a plurality in comparison to
either Forza Italia or the National Alliance (not both). While this does not make much of a substantive difference, the ambiguity between electoral coalitions and parties is why we choose in the regression models to use an indicator variable for stronghold, marginal and opposition regions, rather than continuous measures of party support, such as incumbent party vote share.

Table 5.2 Expectations of Distribution by Each Government Period

<table>
<thead>
<tr>
<th>Period</th>
<th>Main Govt. Party</th>
<th>Coalition Name</th>
<th>Main Govt. Party Nationaliz. (PNS), period average</th>
<th>Govt. Coal Nationaliz. (PNG), period average</th>
<th>Investment to Core &amp; Marginal Districts</th>
<th>Effect of Pivotal Region Status on Allocated Spending</th>
<th>Expectations of Partisan Ideology: Redistribution Towards Poor Regions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1972-1980</td>
<td>DC</td>
<td>DC</td>
<td>0.86</td>
<td>0.85</td>
<td>+</td>
<td>No Effect</td>
<td>+</td>
</tr>
<tr>
<td>1981-1993</td>
<td>DC/PSI coalition</td>
<td>‘Pentapartito’ coalition</td>
<td>0.82</td>
<td>0.80</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>1994-1995</td>
<td>Forza</td>
<td>Pole of Freedoms/Pole of Good Governance</td>
<td>0.58</td>
<td>0.58</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>1996-2001</td>
<td>PDS</td>
<td>Olive Tree Alliance</td>
<td>0.77</td>
<td>0.75</td>
<td>-</td>
<td>No Effect</td>
<td>+</td>
</tr>
<tr>
<td>2002-2006</td>
<td>Forza</td>
<td>House of Freedoms</td>
<td>0.82</td>
<td>0.62</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
</tbody>
</table>

As we can see (in Table 5.2) the main hypothesis for the DC period (for analysis divided into two time periods, 1972-1981 and 1982-1993) is that the regions where the party received the lowest support (in the Red Zone) should be disproportionately disfavoured in terms of regional investment. In terms of investment in core strongholds, should this be the distributive strategy that the DC pursued (as others have found) we expect the DC to favour the Northern Regions in the 1972-1982 period and the Southern regions in the 1983-1993 period. For the DC period which captures the so-called Pentapartito coalition, we include the stronghold districts of the regionally concentrated PLI in the regression equations to be consistent with our quantitative definition of regional parties.

We divide the post-1994 sample into two periods representing the consecutive control of government by two coalitions- the Olive Tree Alliance 1996-2001 and the House of Freedoms alliance 2002-2006. In general, the 'opposition regions' for the former period are those in the North while for the latter period they are those in the Centre as well as Basilicata in Southern Italy which emerged as a centre-left stronghold after the collapse of the DC.

5.5.3 Case Selection

The empirical strategy is similar to that documented in the study of Spanish infrastructure investment in the previous chapter with some minor adjustments. The main dependent variable
is central government allocation of large roads investment to each administrative region of Italy from 1972-2006. However due to limited data availability and issues of comparability we are forced to omit two of the smaller ‘special status’ regions of Trentino-Alto Adige/Südtirol and the Aosta Valley. This leaves use with a balanced panel with 18 cross sectional (regions) per year for a sample size of 630.

The particular period is chosen due to issues of data availability and reliability. However the study covers a relatively long time series by comparison with similar studies of political distribution to regions in Italy and distinctively extends the study to cover the early 2000s. By contrast, Golden and Picci (2008) cover only the post war 1953-1993, while Kemmerling and Stephan’s (2010) investment series only extends from 1972-1996. One of the empirical contributions is to extend these studies (particularly that of Kemmerling and Stephan (2010) whose study also analyses regional as opposed to provincial level investment allocation).

In conceptual terms we aim to analyse the extent to which regional allocations follow programmatic criteria versus political tactical criteria. In order to test such political distribution hypotheses we require data on government decisions over which the central government (parliament and the cabinet) have a high level of centralized control vis-à-vis other authorities/lower level governments and a high degree of discretion and malleability over geographical allocation of distributive goods during a short time period (e.g. during a term of office). As Golden and Picci (2008, 270) assert, in general distributive policies in post-war Italy were centrally controlled in a unitary political structure as government expenditures and transfers almost all originated at the central level, although they may be disbursed by subnational units, making it reasonable to assume that national legislators had control over the allocation of distributive goods.

Unlike Golden and Picci (who use total infrastructure investment as their dependent variable) we focus exclusively on one item of infrastructure expenditure: direct investment in regional road/highway networks by central government and grants earmarked by central government to regional government for the same purpose. This case selection choice is made to control for the potentially confounding effects of fiscal decentralization to regional governments that occurred during the 1990s and 2000s. Our period of study covers the Constitutional reform 2001 which enhanced the financial and political autonomy of regional and municipal governments. Ambrosanio et al. (2010) find these reforms to have mainly affected ‘ordinary transfers’ from central government to the regions – those earmarked for current expenditure and capital maintenance as opposed to new construction – and even within these categories the reforms do not seem to have greatly altered the transfer dependence of the regions upon the central government.
To summarize the main rationale underpinning our case selection, is that our main dependent variable is highly centralized and highly discretionary. There are also some more practical reasons for restricting the analysis to a single infrastructure investment category. Roads investment is applicable to all regions unlike some other investments, such as Ports and Waterways infrastructure. The Roads investment series are less likely to be skewed by extremely large single projects, as in the case of airport infrastructure. Also roads investment is more continuous than investment in railways for instance, which is largely a taken up in established corridors. In addition for analysing the allocation of, or growth in infrastructure stock value, it is necessary to compute existing infrastructure stocks and to formulate how yearly investment adds to the value of infrastructure stock. This is more straightforward for the case of roads infrastructure, as we do not have to assume a ‘service life’ for roads, as we would for public buildings for instance, but we need only assume an annual depreciation rate for existing capital stock. In the next section we describe the measurement of the dependent and independent variables more precisely.

5.5.4 Dependent Variable

The dependent variable is roads investment allocated by central government to each region yearly as a percentage of existing capital stock \( (\text{year}_t) \) of roads infrastructure. Unlike in the Spanish case, data was less readily available for the Italian case and we had to amalgamate a number of sources to obtain a reliable investment series (all data sources are listed in Appendix 7.4). For the 1972-1995 periods we use the data compiled by Picci and Bonaglia (2000) in ‘The Stock of Capital in the Italian Regions’ (see: Picci, 2000) from investment surveys collected by the Italian National Statistical Institute (ISTAT). Other scholars have used the Picci capital stock estimates for similar studies (most notably Kemmerling and Stephan, 2010; Golden and Picci, 2008; Picci, 2000) and the estimated stock series has been subject to peer scrutiny and review (a discussion of the data series can be found in Golden and Picci, 2005). We received the roads stock series from Kemmerling and Stephan, who used the series in their 2010 paper. We then ‘updated’ the stock series with newly available investment data from the Italian National Statistical Institute (ISTAT) Regional Public Accounts (RPA) for the 1996-2008 period and made available through the Open Spending initiative. To estimate the capital stock for each year, we assumed a 10% annual capital depreciation rate as is standard for Roads infrastructure in the Perpetual Inventory Method used to calculate public stock values by most governments (OECD, 2009). Both series are in euros and measured at 1995 constant prices.
5.5.5 Independent Variables

5.5.5.1 Economic Variables

The net capital stock (Roads) also enters the analysis as a control variable. This variable measures the overall estimated value of existing capital stock of roads in each region less estimated annual depreciation. It enters the analysis as a ratio, where it is the denominator of regional GDP. The ratio of regional GDP to existing infrastructure stock serves as a proxy for the 'productivity' of existing infrastructure in producing a unit of output in each region in a given year. The coefficient on the capital stock will indicate whether a region with a higher endowment of transport infrastructure receives a higher or lower amount of investment (we further explain the logic behind this measure in section 5.5.5 below). If a government follows efficiency criteria (i.e. spending money where it is expected to have the highest impact on economic output) the coefficient of this variable should be positive. The ratio enters into the model with a lag of 1 year, indicating the GDP to Capital Stock ratio available at the end of the previous year (see Kemmerling and Stephen, 2008, 4).

The other economic controls included are: income per capita measured at region level, population density and total land area.

Income per capita is GDP per capita at regional level, expressed as thousands at 1995 euro prices. The income variable captures whether the central government invests in poorer or richer regions. To avoid endogeneity the variable is included at a lag of 1 year.

We lack data on 'functional' needs of each region (e.g. the level of traffic congestion). As in the case of Spain, a central assumption adopted in the empirical analysis is that both the Capital Stock variable and the Income per capita variable can substitute for level of utilization of infrastructure services. We assume that the wealthier a province is the higher its infrastructure utilization rates. Following similar studies that have adopted this approach (Sole-Olle, 2010; de la Fuente et al. 1995) we feel this assumption is reasonable.

Demographic and geographical variables are included to capture variable cost and demand. Population density of each region (measured in thousands) is included as a measure of infrastructure demand. We expect population density should tend decrease to the cost of infrastructure investment per capita as dense, urban areas often have cost-advantages in providing infrastructure services (Estache and Sinha, 1999. Total Area of each region in km² is included as a measure of region size. Larger regions may increase investment in infrastructure. Due to its time invariance this variable also serves as a regional fixed effect potentially capturing the influence of omitted regional specific factors that affect investment allocations.
Table 5.3 Descriptive Statistics of Variables Used in Empirical Analysis

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment% capital stock</td>
<td>2.84</td>
<td>1.88</td>
<td>0.27</td>
<td>16.96</td>
</tr>
<tr>
<td>Investment per capita (euro)</td>
<td>178.94</td>
<td>158.86</td>
<td>12.58</td>
<td>1,540.47</td>
</tr>
<tr>
<td>Regional GDP per capita (euro)</td>
<td>13,645.60</td>
<td>4,374.69</td>
<td>5,858.37</td>
<td>24,274.66</td>
</tr>
<tr>
<td>Capital Stock Value per capita (euro)</td>
<td>6,697.75</td>
<td>3,629.73</td>
<td>2,102.09</td>
<td>17,826.08</td>
</tr>
<tr>
<td>Area (Km-sq.)</td>
<td>15,803.67</td>
<td>7,081.30</td>
<td>4,437.70</td>
<td>25,711.40</td>
</tr>
<tr>
<td>Population Density (Km-sq.)</td>
<td>189.33</td>
<td>100.72</td>
<td>59.13</td>
<td>430.75</td>
</tr>
<tr>
<td>PNG (Gini Coef.)</td>
<td>0.77</td>
<td>0.10</td>
<td>0.59</td>
<td>0.87</td>
</tr>
<tr>
<td>Incumbent District Vote (%)</td>
<td>31.63</td>
<td>10.11</td>
<td>6.90</td>
<td>57.25</td>
</tr>
<tr>
<td>Incumbent District Vote Margin (abs %)</td>
<td>12.46</td>
<td>9.01</td>
<td>0.17</td>
<td>38.32</td>
</tr>
</tbody>
</table>

5.5.5.2 Political Variables

This section describes the measurement of the main political independent variables used in the full sample model as well as the various sub-period models, which attempt to measure the amount of tactical distribution each party engaged in during their term of office.

The main independent variable of interest is the degree of Party Nationalization of the Government Executive (PNG). In the full sample model, this variable is used in an interaction term to discern if governments with low nationalization are more prone to tactical distribution. PNG is interacted in separate models with three variables indicating each regions ‘political affiliation’ at the previous election.

The first variable – ‘Opposition Plurality’ – takes the value of 1 if the main opposition party of the government received a plurality of the regional vote share in the previous election. This is designed to show the responsiveness of investment to opposition strongholds at different levels of party nationalization. It tests the hypothesis that opposition strongholds are less ‘disfavoured’ in terms of investment by governments composed by parties with higher levels of nationalization. The second variable enters a separate model, where PNG is interacted with a dummy variable that indicates whether a region was ‘swing’ or marginal at the last election. A swing region is defined as one where there is less than 5% absolute difference separating the two largest parties. Finally a third variable, also estimated in a separate model, where PNG is interacted with a dummy variable indicating whether a region was a core party stronghold at the
last election, defined as a region that gave 5% or more plurality vote share to the main government incumbent party.

The PNG can only give us an indication whether periods in which the government was occupied by coalition which included parties with low nationalization or regional parties (which by definition have extremely low nationalization) were more prone to delivering funding towards either core or marginal regions. It does not make sense to include this variable in the sub-period models as it does not vary over a party's (parties') period of office.

5.6 Descriptive Statistics

Figure 5.5 depicts the time trend of investment over the period 1970-2008 comparing national aggregate roads investment as a percentage of existing capital stock with the national aggregate roads investment as a percentage of GDP. Roads investment accounted for on average about 3.5% GDP in the 1970s and fell drastically in the 1980s and 1990s to less than 1% GDP in 1994 then rebounding to just above 1% during the late 1990s and 2000s. In terms of overall total spending, transport and communications investment accounted for about 30% in the early 1970s to 20% in the early 1980s and around 25% in the late 1990s and 2000s. Investment in roads infrastructure specifically accounted for on average 53% total transport investment during the 1994-2008 period. Private investment in roads (such as via Public-Private partnerships) never went beyond a few percent of total public investment in any given year (around 1-3%) (Mehrotra and Välikä, 2006, 12)
Figure 5.5 Time Series Investment, Italy 1972-2008

Roads Investment By Central Government, Italy 1970-2008

Notes: (1) author own calculations (2) Red line with cross symbols = roads investment as percentage of GDP (euros, constant 1995 prices); black line triangle symbols = roads investment as percentage of capital stock value (euros, constant 1995 prices).

Figure 5.6 presents an estimated kernel density distribution of investment for poor and rich regions (defined as above and below the yearly median regional income per capita) for the four periods. As we can see in the top two panels representing the DC years of government control, investment was more redistributive towards poorer regions in the 1970s than in the 1980s (as indicated by the placement of the dotted line rightward of the solid line on the x-axis in the top panel) which accords with the observation that in the 1970s the DC did pursue a more (progressive) redistributive agenda. The DC coalitions 1982-1993 by comparison appear to have pursued a less redistributive agenda, with greater levels of investment towards wealthier regions. Significantly, bottom two panels reveal the extent of the shift in the levels of regional redistribution that took place after 1994 with both left and right wing coalitions pursuing greater distribution towards regions with above median per capita income levels. While this analysis is merely descriptive, the redistributive patterns between regions over time that it reveals persist even when we control for other factors. This shift in regional redistribution has been documented in the literature on regional convergence policy in Italy and in large part has been attributed to the ending of the system of ‘Extraordinary Interventions’ to the South in the 1990s (Arbia et al. 2002; Vittorio, 2009).
Due to the persistent and extreme economic disparities that exist between North and South Italy, in general redistributive priorities of governments in terms of per capita investment are often indistinguishable from regional redistributive priorities. The historically underdeveloped Mezzogiorno comprises the 8 regions of South and Insular Italy. It incorporates around 41% of the country's surface area and around 36% of the population but produces less than quarter of Italian GDP; while the majority of Southern regions have a domestic product of approximately half of Lombardy, the wealthiest region. The income gap between the Mezzogiorno and the Northern regions diminished slightly between 1951 and 1975 but have since remained stable at, on average, approximately 60% of Northern GDP per capita (Trigilia, 2012, 138). The income gap between South and North is also evident in the quality of infrastructure and services. In terms of roads infrastructure, for instance, there are only 17km of motorway per 1,000 km² in the South
(and only 13km on the islands), compared with 32km in the North-West of Italy and 23km in the
North-East (Trigilia, 2012, 139).

During the 1990s, regional development policy underwent a profound change. In 1992 the
'Extraordinary Interventions' for the development of the Mezzogiorno ended, which had for over
forty years constituted the framework within which the measures for less developed areas
where implemented (Vittorio, 2009, 319). The 'New Regional Development Policy' in the late
1990s coincided with drastic reductions in territorial cohesion funds towards the Southern
regions. In his analysis of fiscal flows during this 1996-2007 period, Vittorio (2009, 323) finds that
public spending privileged the more developed part of Italy in terms of both current and capital
expenditures.

As Barca notes (2009, 6), the rise of regionalism in the North coincided with the development of
the new regional policy and the 'true' ending (as opposed to de jure ending which took place in
1983) of the system of regional transfers to the South in 1992:

‘the long-repressed uneasiness of the middle classes in the Centre and North about State
intervention in the South came to the surface with the rise of the Northern League and
led to the opportunistic cancellation of the Mezzogiorno issue from the political agendas
of all parties. Since no alternative economic policy was then implemented, public
investments in the Mezzogiorno started dropping even more than in the economy as a
whole: from a top level of 21 billion Euro in 1992 (at 1994 prices), to a minimum level of
15 billion Euro’.

While the New Regional Policy – developed firstly under the Olive Tree coalition and latterly by
the Berlusconi governments of the 2000s – contained explicit commitments to territorial equity
and regional economic convergence, as many scholars note, these commitments were not
backed by requisite levels of investment (Vittorio, 2009; Aiello and Pupo, 2009; Barca, 2001). For
instance, as Cannari et al. (2010, 170) observe about the level of investment directed towards
southern development: ‘additional capital expenditure in the South is in the region of 5 percent
of the total public spending in the area…. it is difficult to imagine that regional policies with 5
percent expenditure, could significantly affect the development of the lagging areas’ (quoted in
Polverari, 2011, 16).

Certainly the poorer regions of Italy tended to fare better under the DC, under whose tenure
regional convergence, in GDP and public services, while slow was progressive in comparison to
administrations post-1994. However, programmatic criteria (per capita income and capital
endowment of a region) do not entirely explain the DC’s regional investment priorities during
the 1970s and 1980s, which is evident in the lack of investment that Centre regions (the so-
called 'red zone') received during these decades.
Despite their low income per capita and comparatively under-developed infrastructure endowment, these regions were under-privileged during the periods of DC dominance in comparison to the wealthier Northern regions as well as the less developed Southern regions, where the DC maintained its highest levels of electoral support. While the DC regional investment policy may have been ‘functional’ from the point of view of regional convergence, the unequal levels of investment allocated to opposition regions suggests that electoral motivations underpinned a good deal of its investment spending (especially towards the South). This pattern – and patterns in subsequent time periods – is evident in the time trend of Investment as a percentage of existing stock, the bottom lines in Figure 5.7. The North has received (and continues to receive) lower levels of per capita investment, however this is what we would expect if regional investment decisions are in any way concerned with development differentials and convergence of lagging areas. Figure 5.7 also shows how investment towards Northern regions shifted around 1992, with the already developed regions receiving investment almost on par with the much less developed South and Centre in the 1990s and 2000s compared to prior decades.

**Figure 5.7 Time Trend Investment to Regions**

Time Series Investment to Macro-Regions, Italy 1970-2008

Notes: (1) Both expenditure series are regional median (2) Investment per capita is measured in 1995 constant prices and logged (3) Corresponding NUTS1 classifications for Macro-Regions: South = ‘South’ and ‘Insular’ regions; Centre = ‘Central’ region; North = ‘North-east’ and ‘North-west’ regions.
In Figure 5.8 we isolate investment towards the regional strongholds of the Northern League. These patterns are only descriptive as they do not contain any other controls that explain investment to a region in a given year. In all three regions, there was a spike in the level of investment as a percentage of existing capital stock in 1994, the year that the Northern League first entered government as part of the first Berlusconi coalition (albeit for a short period of 7 months). In all three regions (especially Lombardy and Piedmont) there appears to be a levelling of investment during the Left-wing coalition of 1996-2001, then an upward trend spike in investment during the second Forza Italia-Northern League government 2001-2006.

Figure 5.8 Time Trend Investment to North League Strongholds

As final descriptive exercise we look at investment towards we calculate a measure of ‘residual capital investment’, as suggested by Diaz-Cayeros et al. (2006) and perform a comparison of mean investment allocation to each region. This central idea behind this measure is that while some capital expenditure can be explained by fundamental economic variables representing investment needs, the ‘excess’ residual that remains unexplained by these economic variables are a good proxy for pork or particularistic spending. While a formal test of our main hypotheses related to regional favouritism are performed using more robust econometric models below, calculating residual capital expenditure is a useful descriptive exercise for gauging which regions...
were privileged in investment allocations above what we would expect given the values of the economic controls. To calculate residual expenditures we estimate a pooled OLS model for different time periods using the following equation:

$$I_{j,t}/K_{j,t-1} = \alpha + \beta_1Y_{j,t-1} + \beta_2K_{j,t-1} + \beta_3Pop_{jt} + \beta_4Area_{jt} + e,$$

(1)

Where $I_{j,t}/K_{j,t-1}$ the dependent variable is the roads investment a region is allocated by central government in a given year as a percentage of existing capital stock of roads infrastructure. The subscripts indicate region, $j$ and year, $t$. The independent variables include only the economic and structural traits of each region that ‘should’ be the best predictors of investment if governments’ decisions are driven by programmatic criteria alone. Here $Y$ is GDP per capita, $K$ is capital stock, $Pop$ is the population density of a region and $Area$ is the size of the region, and $e$ is the model error.

Based on the predicted values of each model estimated on each time period, we estimate the residual capital expenditure that accrues to each region by subtracting the observed expenditure values from the model’s predicted expenditure values. We summarize the results in a bar chart, presenting the residual capital expenditure accruing to each region over each time period. Bars rising above the dotted line (representing zero) indicate higher residual capital expenditures (the proxy for pork) over the period and bars below represent lesser investment than predicted by the economic controls. We group the regions according to whether they are an incumbent party stronghold, a swing/marginal region or an opposition stronghold (as defined above). More than one bar for a region indicates that it switched allegiances at some point during the period.

The results are interesting from a political economy perspective, as we find that in each time period, even when we take account of the economic control variables, opposition strongholds received the least amount of investment by a substantial margin.

For the DC period, in both periods the ‘marginal regions’ received the largest mean investment. This is surprising as the extant literature suggests that during these periods, the DC tended to favour its stronghold regions (and those of its Key Ministers). However it could be explained by reference to the fact that in both periods there is very high variance amongst ‘stronghold’ regions in terms of investment allocated, with some regions receiving substantially higher residual.

In the post-1994 period (bottom graph) both the centre-left Olive Tree coalition government and the centre-right House of Freedoms coalition government disfavoured their opposition regions. The Olive Tree tended to favour marginal regions while the House coalition tended to favour...
Figure 5.9 Comparison of Means: Residual Investment to Regions, different periods
Notes: 1) Residual capital expenditure for each region in each period calculated as Observed Investment per year – Predicted Investment per year based on estimates from OLS model (equation 1 above); 2) Mean= mean residual investment accruing to Stronghold, Marginal and Opposition regions in each period; 3) R-squared presented for each OLS model; 4) House of Freedoms, Plurality signifies a region where either Forza Italia, the Northern League or the National Alliance won a plurality of the regional vote share in the 2001 election.

In the post-1994 period (bottom graph) both the centre-left Olive Tree coalition government and the centre-right House of Freedoms coalition government disfavoured their opposition regions. The Olive Tree tended to favour marginal regions while the House coalition tended to favour core stronghold regions. However while opposition regions were disfavoured during the Olive Tree government, the degree of ‘disfavour’ and favouritism towards core and swing regions is substantially greater during the House of Freedoms government. In particular, favouritism in residual investment towards stronghold regions (in the North) appears to have been particularly acute during the House of Freedoms period. Below we subject these patterns of regional favouritism to greater scrutiny in formal models, in particular taking into account temporal patterns as well as random regional effects in the models.

5.7 Empirical Estimation

We estimate the effect of variation in the nationalization of the parties composing government using two methods. Firstly, using the full sample period (1972-2006) we estimate models employing a Hausman-Taylor estimator, which uses the time varying and time invariant exogenous variables in the model as (internal) instruments to estimate the endogenous variables (the technique is discussed in ch.4). A Hausman test comparing the HT-model with a Fixed (within) Effect model is non-significant, indicating the appropriateness of the exogeneity assumptions for the instruments in the HT model (Baltagi, 2005, 132). Secondly, we estimate a series of GLS models with an AR(1) temporal correction using the four sample periods which we argue cover plausible variation in government party geography and hence preferences over the geographic distribution of expenditures. We omit the period (1994-1995) which includes the terms of the first Berlusconi government in 1994 and the Dini caretaker government of 1995. Firstly we present three models estimated via HT without the interaction term capturing the effect of party nationalization. The first model includes a dummy variable that indicates whether a region gave 5 percent or more to the incumbent party or parties at the previous election. As stated previously for the 1972-1993 period the 'incumbent party of government' is the DC while the main opposition party is the PCI. For 1996-2001, the party is the PDS and with the main opposition being Forza Italia, the Northern League or the National Alliance (but not all three).
This situation reverses for the 2002-2006 period. In the second model the main independent variable is a dummy indicating whether a region is an opposition plurality region, designed to test the corollary hypothesis that regional strongholds are disfavoured in terms of investment. Finally, the last model tests whether 'marginal' regions – those in which the electoral competition between the incumbent party and main opposition was the closest at the last election – receive higher investment. We leave this as a continuous variable - the absolute difference between the two largest parties running in a region – as we do not want to impose an arbitrary 'critical value' of what constitutes a 'swing' region.

We re-estimate each of these models including an interaction term designed to capture the conditional effect of party nationalization on favouritism towards core, opposition and marginal regions. To reiterate, our central hypothesis in this regard is that opposition regions should be less 'disfavoured' by investment by those parties with higher nationalization (e.g. the DC governments in comparison to the post-1994 governments) or by parties in time periods when their vote share is more nationalized across regions (e.g. the DC in the 1970s in comparison to the late 1980s and early 1990s).

Finally, we present sub-period models designed to capture the distributive priorities to regions of each party during their term(s) of office. We divide the sample into four periods. We adopt a different methodology since with shorter time periods the individual unit heterogeneity and exogeneity assumptions required for the shorter panels are less unrealistic. In these models we also need to take into account time dynamics. In these specifications we estimate the models via GLS with random effects and a first order autoregressive disturbance (AR1).

5.8 Empirical Results

5.8.1 Models Estimated by on Full Sample Period 1972-2006

Table 5.4 below presents the results from three models estimated upon the full sample period. The first three models included the political variables indicating the political affiliation of the region with regards government parties during the period (core stronghold, opposition, marginal), while the last three columns present the interaction term of the political variables with the level of nationalization of the parties comprising government.

The results from Column 1 are surprising given our expectations and previous scholars' findings on regional favouritism in Italy. The Core Region dummy representing regions that gave 5% or more plurality of their vote share to the incumbent political party (or one of three parties as in the case of 2002-2006) is not significant at conventional levels. This finding is inconsistent with
the view that incumbent party stronghold regions are favoured in the Italian context. This finding could be to do with the restrictiveness of our definition of a ‘core region’ in the Italian context. It is likely to do with the difficulty in defining a core region for the entire sample period. Alternatively a plausible theoretical interpretation of this finding is that (in line with the hypothesis of Golden and Picci [2008]) it was not the core strongholds of the government parties during the DC that were most favoured with pork barrel spending but those of the most powerful ministers. The period sample models will allow us to scrutinize distribution in this period in more detail.

From the point of view of our hypotheses, the coefficients in column 2 are more interesting. They indicate that across all periods, the opposition regions of the government parties tend to be disfavoured in terms of investment allocations. This observation accords with the descriptive statistics presented in the previous section, suggesting that, on average across periods, opposition regions tended to receive less investment than other regions. Finally, the third column presents results on the effect of regional electoral *marginality* on the amount of investment received in a given year. The effect of vote margin is significant, suggesting the as regional vote share between the two largest parties reduces by 1% a region receives on average 0.012% increased investment. This finding is quite substantial given that the mean level of investment per year is 2.85% (as a percentage of existing stock).

Somewhat surprisingly the Pivotal region variable is significant but shows a negative correlation. This suggests that regionalist party strongholds were not favoured in terms of investment when ‘their’ party was a member of government (this variable indicates the stronghold regions of the PLI and LN). Golden and Picci also find that the strongholds of minor coalition members during the 1970s and 1980s were notfavoured to a significant extent (2008, 278). As the value of this variable for the Northern League strongholds is particularly important for our hypothesis tests we return to this issue below when we present the sub sample models.

Finally a note on the estimates for the two economic variables measuring efficiency and equity/redistributive considerations. As we can see from the positive relationship between GDP per capita and investment, in general investment is not strongly redistributive from wealthier to poorer regions. Governments also tended to favour regions where the marginal productivity of investment was higher (according to our measure) suggesting that efficiency criteria were important in the allocation of investment during the entire period. This finding suggests that infrastructure investment seems to reinforce inequality in infrastructure endowments across regions in Italy as previously argued by Picci (2000) and Kemmerling and Stephan (2010). To the extent that over the long run infrastructure investment contributes to convergence in regional output, these patterns could also reinforce regional inequalities in GDP per capita.
Table 5.4 Models Estimated on Full Sample Period

Regional Allocation of Infrastructure Investment in Italy (1972-2006)

<table>
<thead>
<tr>
<th>Dependent variable: Roads Investment/Capital Stock t-1 (Logged)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) (2) (3) (4) (5) (6)</td>
</tr>
<tr>
<td>Core Region</td>
</tr>
<tr>
<td>-0.001</td>
</tr>
<tr>
<td>(0.067)</td>
</tr>
<tr>
<td>Opposition Region</td>
</tr>
<tr>
<td>-0.400***</td>
</tr>
<tr>
<td>(0.091)</td>
</tr>
<tr>
<td>Vote Margin</td>
</tr>
<tr>
<td>-0.017***</td>
</tr>
<tr>
<td>(0.003)</td>
</tr>
<tr>
<td>PNGw</td>
</tr>
<tr>
<td>1.611***</td>
</tr>
<tr>
<td>(0.431)</td>
</tr>
<tr>
<td>Pivotal Region</td>
</tr>
<tr>
<td>-0.469***</td>
</tr>
<tr>
<td>(0.066)</td>
</tr>
<tr>
<td>(log)GDPpc, t-1</td>
</tr>
<tr>
<td>0.590***</td>
</tr>
<tr>
<td>(0.217)</td>
</tr>
<tr>
<td>(log)GDP:Capital Stock, t-1</td>
</tr>
<tr>
<td>0.505***</td>
</tr>
<tr>
<td>(0.152)</td>
</tr>
<tr>
<td>Pop.Density(log)</td>
</tr>
<tr>
<td>-0.511**</td>
</tr>
<tr>
<td>(0.253)</td>
</tr>
<tr>
<td>Area(log)</td>
</tr>
<tr>
<td>-0.204</td>
</tr>
<tr>
<td>(0.256)</td>
</tr>
<tr>
<td>Core x PNGw</td>
</tr>
<tr>
<td>-0.037</td>
</tr>
<tr>
<td>(0.571)</td>
</tr>
<tr>
<td>Opposition x PNGw</td>
</tr>
<tr>
<td>1.224***</td>
</tr>
<tr>
<td>(0.473)</td>
</tr>
<tr>
<td>margin x PNGw</td>
</tr>
<tr>
<td>0.065***</td>
</tr>
<tr>
<td>(0.025)</td>
</tr>
<tr>
<td>Constant</td>
</tr>
<tr>
<td>2.394</td>
</tr>
<tr>
<td>(2.700)</td>
</tr>
<tr>
<td>F-Statistic</td>
</tr>
<tr>
<td>25.672</td>
</tr>
<tr>
<td>Balanced Panel</td>
</tr>
<tr>
<td>n=18</td>
</tr>
<tr>
<td>T=35</td>
</tr>
<tr>
<td>N=660</td>
</tr>
</tbody>
</table>

Notes: (1) Standard errors in parentheses, ***, **, & * = statistically significant at 99%, 95% and 90% levels; (2) GDP Capital Stock Ratio and GDP per capita logged; Pivotal indicates region stronghold of PLI (1982-1993) or a Northern League (2002-2006); Core=1 for regions where a government party won plurality vote previous election; Opposition= 1 for region where opposition won plurality; regional marginality is a continuous variable= abs(Incumbent’s vote share-Opposition Vote Share); PNGw= (weighted) average party nationalization of government measured by Gini coefficient (weighted by regional vote share); (3) Interaction term Model 4= Core Region Dummy*PNGw; Interaction term Model 5= Opposition Region Dummy * PNGw; Interaction term Model 6 = Marginal* PNGw (4) Method of Estimation: Hausman-Taylor Instrumental Variable Estimator

With regards the effect of parties’ political geography on geographic distribution, the interaction terms in the models are the main variables of interest. The first model interacts the variable indicating core regional strongholds of government parties in each period with the level of nationalization of the party or parties composing government. The model is designed to test the notion that the more highly nationalized parties are less likely to favour their core districts with...
infrastructure spending; while governments with less nationalized parties are more likely to favour their core districts with infrastructure spending. This hypothesis receives very little support in Model 4.

As illustrative in the top panel Figure 5.10, in time periods where the parties in government have high levels of nationalization (Gini coefficient = 0.80 to 0.85); core regions are not favoured to a significant extent as indicated by the flat line relationship in panel 2 and 3 in comparison to panel 1 which indicates that there is a positive association between investment and regional stronghold status of a region at lower levels of party nationalization (Gini coefficient = 0.58 to 0.79). However the confidence bands around these relationships are quite wide, especially at lower levels of party nationalization, and the significance and magnitude of the relationship is uncertain.

Model 5 estimates the effect of the nationalization of government parties on the level of investment towards opposition regions. The main hypothesis is supported, that greater nationalization of government parties reduces the degree of ‘disfavouritism’ in investment to opposition regions. As the bottom panel in Figure 5.10 indicates, at low levels of nationalization opposition regions are significantly and substantially disfavoured by investment. On average, at low levels of nationalization (Gini= 0.58 to 0.79), opposition regions receive approximately 0.7% less investment than incumbent and marginal regions. At intermediate and high levels of government nationalization, opposition regions are still disfavoured but to a much lesser degree, as indicated by the flatter lines in the second and third graphs in the bottom panel.

The final model – estimating the effect of government nationalization on investment towards marginal regions – is also supportive of the general argument. The coefficient on the interaction term between party nationalization and regional marginality indicate that parties with higher levels of nationalization in government are less favourable towards marginal regions than parties with lower levels of nationalization. In the models below – estimated on each party period of office, we subject these hypotheses to finer scrutiny.
Figure 5.10 Interaction Effects: Dummy Variables indicating Regional Political Affiliation and Level of Nationalization of Government
5.8.2 Models Estimated by Terms of Office Sub-Periods

The second formal test of the hypothesis that parties with lower nationalization in government are more likely to engage in pork-barrel distribution is provided by the regression models estimated by individual terms of office for each party. For each term of office we ask: ‘Is Tactical spending more prominent under governments composed of parties that are less nationalized?’ The main hypothesis is that opposition regions are consistently more ‘disfavoured’ in investment under governments with lower nationalization.

In Table 5.5 we present the results estimated on the four sub-periods. The results clarify the geographical Programmatic and Tactical priorities of each party during their consecutive terms of government. The coefficient of GDP per capita gives an indication of the priorities of the parties with regards regional development and redistribution. The GDP: Capital Stock ratio will give us an idea about whether investment was more ‘efficiency’ orientated in particular periods. While the political variables give us an indication the type of regions which are most favoured in geographic distribution due to their political affiliation.

5.8.2.1 Programmatic Distribution in Different Periods

As we can see, across the periods each government became progressively less redistributive over time. Investment allocation under the DC governments of the 1970s was highly redistributive towards poorer regions (as we noted in the descriptive analysis). During the 1970s, on average, poorer regions tended to be allocated substantially higher levels of investment. A 10% decrease in income per capita of a region increased investment to a region by about 0.5%. This was substantial for the poorest regions with mean GDP per capital falling into the 1st national income quantile (about €5000 annual income per capita in constant prices) these regions received about 5.5% greater investment per year. Regions in the 1st quantile received annual mean investment of around 7% while the wealthiest regions (falling in the 4th and 5th quantiles) received on average around 2% annual investment. Given that the mean level of investment was about 4% per year, this is a substantial level of redistribution. By contrast redistribution from wealthy to poorer regions was less extensive during the 1982-1993 period but still quite substantial in comparison to later periods. The poorest regions received an average around 3.5% greater investment than regions in the 4th and 5th income quantiles.

However in the 1990s and 2000s there appears to have been shift away from redistribution in investment between wealthy and poorer regions. While there is no evidence of ‘reverse
redistribution’ where the wealthier regions received greater levels of investment than the poorer regions (regional income is not a significant predictor of investment) during both periods redistribution was clearly not a priority for central government. This finding accords with other studies of infrastructure investment in particular (Kemmerling and Stephan, 2010) and net flows of inter-regional public spending in general (Ambrosanio, et al., 2010).

Another measure of the redistributive effort during each time period is the GDP: Capital Stock ratio, which gives an indication of the productivity of capital stock (input) in producing a unit of GDP (output). It can also be considered a measure of the marginal productivity of investment, with higher values for a region in a given year indicating a higher marginal return on investment.

Table 5.5 Regional Allocation of Infrastructure Investment

<table>
<thead>
<tr>
<th>Regional Allocation of Infrastructure Investment in Italy (1972-2006)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent variable:</strong> Roads Investment/Capital Stock t-1 (Logged)</td>
</tr>
<tr>
<td>(1)</td>
</tr>
<tr>
<td>Opposition Regions</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Lega Nord Regions</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>GDPpc t-1(log)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Capital:GDP ratio(log)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Pop.Density(log)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Area</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Constant</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Akaike Inf. Crit.</td>
</tr>
<tr>
<td>Pseudo-R²</td>
</tr>
</tbody>
</table>
In all other periods, the ratio is a very strong predictor of investment to a region. In the 1996-2001 period for instance (holding everything else constant) the 'least productive' regions received on average 4% less investment per year than the 'most productive', while during the House of Freedoms period investment towards the most productive regions was approximately 6% greater. Obviously, this responsiveness of investment to already productive regions, especially in the 1990s and 2000s, entailed negative redistributive consequences in terms of equalising per capita incomes between regions.

5.8.2.2 Tactical Distribution in Different Periods

As we can see from the coefficients on the Opposition region dummy variable, in all time periods except one — the DC governments of the 1970s — investment allocations tended to significantly disfavour the strongholds of the main opposition party. During the 1982-1993 period DC coalition governments tended to disfavour the opposition strongholds (of the PCI) by about 0.6% per year reducing mean investment from approximately 1.75% to 1.15% per year (as a percentage of existing capital stock).

During the Left-Wing Olive Tree coalition, opposition regions were still relatively disfavoured in terms of investment, however the difference in magnitude (opposition regions received approximately 0.4% less investment per year) was not as great as during the second DC period (1882-1993) or during the House of Freedoms governments (2002-2006). During this latter period, opposition regions were substantially disfavoured in investment terms, with about 0.67% less investment per year reducing the mean investment in these regions from around 3.22% to 2.54%.

Finally we use these models to investigate whether the stronghold regions of the Northern League were significantly privileged with investment allocations, during the period when it was a leading party of government. We run the models again replacing the opposition region dummy variable with a dummy variable that indicates the four regions (Veneto, Lombardia, Piemonte and Friuli Venezia). As we can see in Column 5 (Table 5.5) during this period these regions received approximately 0.55% greater investment, with mean investment of around 3.5% compared to 2.8% for other regions. These regions were also significantly favoured in comparison to other regions during the 1980s, which could also be explained by reference to the rise of the Northern League and affiliated opposition movements.
5.9 **Discussion**

We argue that the empirical analysis is broadly suggestive of two implications. Firstly, that political factors have a strong influence on regional investment in Italy in all periods but the extent to which some regions are ‘disfavoured’ in terms of investment is influenced by the political geography of the governing parties. Secondly, there is strong evidence that the pattern of ‘politically motivated’ investment in Italy in the post-1994 period had an extensive impact in terms of the effect of regional investment on progressive redistribution between regions.

The political affiliation of a region in terms of how it voted for the parties in government has a strong influence upon the level of investment it receives in a given period, even when we control for ‘programmatic’ factors such as efficiency or equity criteria that may ‘legitimately’ be determining investment. Given the aggregate level of analysis at the regional level (in comparison to the Spanish case) we could only observe limited in the variability in parties’ geography, which is greater at the constituency level. Despite this there are clear regional cleavages in Italy, traditionally between the ‘white’ and ‘red’ zones. We hypothesized that a good test of the hypothesis that nationalized parties ‘rein-in’ pork-barrel spending would be to observe how ‘opposition’ regions are treated under governments composed of parties with varying nationalization.

The results indicate that in all periods, opposition regions were underprivileged with investment compared to other regions, however the ‘magnitude’ of this unfavourable treatment was larger under governments that were composed of regionally concentrated parties. In the post-1994 period the centre left Olive Tree alliance, for example, opposition regions in the North and South were less underprivileged in terms of investment than the Centre regions were during the House of Freedoms government, which were the main opposition regions. The ‘mechanism’ driving these differences could be that the latter government was composed of regionally concentrated parties, primarily the Northern League. The results suggest that this regional party was able to secure disproportion levels of investment for its stronghold regions when it was a pivotal partner of the Berlusconi coalition.

The pivotal legislative position of the Northern League could help explain the broader shift in regional redistribution that took place during the 2002-2006 period. This period witnessed substantial reductions in the level of infrastructure investment – a key instrument for the regional development and convergence of poor regions – towards the South and progressively higher levels of investment being devoted to the wealthier Northern regions. Importantly the models suggest that this shift in investment over the period towards the North cannot be explained by programmatic factors alone, such as a general shift in policy away from the
emphasis on redistribution towards poor regions and towards an emphasis on the marginal productivity of investment.

As we noted, regional policy underwent a shift in the post-1994 period with an ending of the policy of 'Extraordinary Interventions' aimed at the regional development and convergence of the Mezzogiorno. In part the ending of this system in the 1990s, was in response to the view that such development expenditures towards the South were an unproductive, wasteful use of development spending which had failed to produce local development. The unproductivity of investment expenditure was usually attributed to the use of such investment funds for clientelism, vote-buying and corruption in the South (Trigilia, 2012, 146).

However, as others have noted, the extent of this shift in investment away from the South (and towards the North) is disproportionate to concerns over the misallocation of public investment. The subsequent absence of inter-regional redistribution in Italy has had severe consequences for the Southern regions ability to converge towards Northern levels of development. For instance, as we noted above, the magnitude of the decline in investment during the House of Freedoms government is beyond what would be expected on the basis of program documents related to Regional Development Policy. To reiterate a finding from Vittorio:

> In a nation in which profound regional development disparities exist, the distribution of financial resources aimed at territorial re-balancing should privilege the areas lagging behind. It does not seem to be the case of Italy, despite the fact that the programming documents and Development plans established that 45% of the public spending total should have gone to the Mezzogiorno area (2009, 323)

As argued in the introduction, shift in the level of regional investment away from the South (and Centre) and towards the North represents a breakdown in the 'implicit fiscal contract', which had characterized regional relations in post-war Italy. In terms of our main theory, such an outcome is difficult to explain without reference to the changing political geography of post-1994 Italy. While the DC may not have necessarily been more concerned with 'programmatic considerations' in regional policy, and did favour its stronghold regions, the fact that it was a nationalized party organization, encompassing both the North and the South, gave it a strong incentive to upkeep the inter-regional fiscal compact which implied progressive redistribution from the North to the South. One could argue that the system of regional distribution was a mechanical effect of the DC geographical scope or coverage across regions. This 'linkage' across regions gave it electoral incentives to maintain a system of regional redistribution which was largely progressive (with the exception of its treatment of the Centre regions).

In the regional coalitions that replaced the territorially integrated DC, some regional interests predominated. Regional interests of wealthier northern regions were favoured due to the pivotal
position of the regionalist League in the government and possibly due to the fact that Forza’s electoral strongholds were also in the wealthier Northern regions.

5.10 Conclusion

This chapter has demonstrated how the electoral geography of political parties – particularly the degree to which they are nationalized – is an important explanation for macro-level shifts in national policy. Due to its level of nationalization across regions, the DC leadership were more able and willing to upkeep the system of regional redistribution in Italy. Although we find evidence that the DC engaged in significant level of politically motivated investment to its electoral strongholds; due to its nationalized representation across regions the ‘equilibrium outcome’ of its pork-barrel provision of infrastructure was progressive redistribution from wealthy Northern regions to the developing Mezzogiorno. By contrast, the regionally fragmented electoral coalitions that replaced the DC also pursued such ‘tactical’ distribution in allocating investment. The influence of a powerful Regional party in conjunction with strength of Forza Italia in the north meant that specific regional interests dominated bargaining over the regional distribution. The equilibrium outcome of this distribution was a shift away from emphasis on regional redistribution to the Mezzogiorno and towards the North, which has negative consequences for the potential for regional development and convergence in the poorer regions of Italy.

Endnotes

1 Italy is divided into 20 administrative regions, five of which are ‘special statue’ regions: Valle d’Aosta, Trentino-Alto Adige, Friuli-Venezia Giulia and the two insular regions, Sardegna and Sicilia; the rest being ‘ordinary’ regions. The practical value of this designation mainly distinguishes regions according to their financial autonomy, with special statute regions having constitutionally protected powers to retain a proportion of their collected revenue.

2 The electoral system introduced in 1993 is more accurately described as an Additional Member System. The only difference with an MMP system is that there are no ‘balance’ seats to compensate if a party gets more constituency seats than its party vote should allow, and so it is, in some cases, not as proportional as MMP. We refer to this system as MMP in order to connect it to the large literature that exists on this electoral system.

3 The Italian electoral law underwent another substantial reform in 2005 with a switch to a ‘Bloc vote’ system for the Chamber of deputies based on party lists for 26 regional constituencies and a national threshold. The first election under this new system was in 2006, which is the reason our study of investment only goes to this date.
Although Italy is a perfectly Bicameral system in which both the Lower and Upper Houses have a legislative function we choose to focus on Chamber elections only to derive our measures for party nationalization and to determine the ‘party affiliation’ of regions (i.e. whether they are party strongholds, swing regions etc.). The reason for this is that including Senate elections would unduly complicate the analysis and given the relatively high level of aggregation we are dealing with (i.e. regional level) the consideration of Senatorial elections would most likely not affect the substantive results. Similar studies also choose to focus exclusively on the Chamber of Deputies (e.g. Golden and Picci, 2008; Kemmerling and Stephan, 2010).

Own author calculations based on estimates from the IMF Government Finance Statistics database. While capital spending in categories Transport and Communications does not capture all infrastructure investment undertaken by the general government, it includes the majority of such investment undertaken by governments in most time periods. Large omissions include Energy and Fuel and Waste and Water Services spending. However, some studies use this singular expenditure category in the GFS as an indicator of total infrastructure investment in cross-country studies (notably, Estache and Sinha, 1999).
Chapter 6

6 Conclusion

6.1 Introduction

In this concluding chapter we summarize the general findings of the project, describing some of its implications for central perspectives in the distributive politics literature. We also detail its direct empirical contribution to the emerging literature investigating the significance of political parties' 'linkages' with the electorate for different types of public policy outcomes.

The chapter is structured as follows. We describe the contributions that the substantive research – as presented in the individual chapters (3-5) – makes to the emerging party nationalization and distributive politics literature. We discuss the contribution of each chapter individually, suggesting some fruitful avenues for future research, specifically for scholars concerned with the potential consequences of party nationalization as well as for more 'dependent-variable focused' scholars concerned with issues of regional favouritism in the allocation of government resources. Finally, we consider the implications of the findings in a more general context, in particular for perspectives in political science on the 'direct' impact of political institutions- particularly electoral and legislative systems- on policy outcomes. Within this context we describe the relation of our results to perspectives in political science and particularly in the distributive politics literature that emphasize the role of political parties as institutions in their own right; a view that has tended to be played down in much of the institutionally focused explanations in distributive politics, which have regarded parties as epiphenomenal to formal political institutions.

6.2 Contribution of Cross-National Study

The cross-national analysis presented in Chapter 3 makes a valuable contribution to the party nationalization literature as well as to the literature on distributive politics. The primary contribution of this chapter is twofold. Firstly, it is one of only a handful of studies (that have only very recently emerged) to empirically investigate a long-held (and intuitive) view from the political science literature, namely that the extent to which parties are organized and receive support throughout all regions in a state has a bearing on their national representativeness and accountability. Secondly, we argue that despite the analysis being largely descriptive it suggests important avenues for future research in this field.
The literature on the nationalization of politics as a historical process (Stokes, 1965; Sundquist, 1973; Caramani, 2004; Chhibber and Kollman, 2004) implies that the extent to which parties are representative of the nation as a whole has an important bearing on the extent to which they pursue programmatic policy. Similarly, studies concerned with contemporary variation in regional political cleavages implies that party linkage across regions is a normative good, producing both government and opposition parties that shun regionally based policy platforms in favour of policies that are responsive to the welfare of the nation as a whole (Jones and Mainwaring, 2003). The underlying logic is that parties with linkage across sub-national jurisdictions have a wider 'effective constituency' to which they are accountable which should lead parties to formulate nationally oriented policies (Franzese et al., 2007). As Crisp et al. characterize this view:

'high levels of party-system nationalization are tied to party voter bonds predicated on national-level factors and, therefore, patterns of spending based on those same national-level factors' (2012, 2).

Despite this prominent understanding of the importance of party nationalization in producing national public goods, this view has only recently been subject to empirical scrutiny. As such, despite the ambiguity of the results of this cross-sectional analysis, both the research exercise and the findings represent an important 'first-step' towards more refined intra-country or sub-regional comparisons.

Since on a practical level the research question being considered is relatively novel and under-studied, therefore the general area is one in which there is a dearth of simple cross-country description of the variance in the main variables of interest and their association. Secondly, due to the time invariant or 'sticky' nature of a lot of the variables, cross-national research is a useful method to overcome the problem of non-variance in the variables of interest at the national level (e.g. the relatively stable cross-regional voting patterns that persist within countries over time).

We also make an important contribution in advancing the theoretical logic by which party nationalization may matter for public goods outcomes. Although scholarly assertions abound on the significance of party nationalization in determining the geographical 'scope' of national policy, such conceptions are rather impressionistic. To subject claims about the effects of party nationalization to empirical scrutiny, we firstly specified in more detail what regionalized outcomes might look like in terms of public policy outcomes. We argued that given their circumscribed regional constituencies, regional or denationalized parties participating in government were likely to attempt to procure favoured or disproportional investment for their regions.
Theoretically, when fiscal policy is ‘fragmented’ whereby it is bargained between parties that represent regionally specific interests this is likely to lead to ‘inefficiently large’ public spending being devoted to items that can be geographically targeted (Bawn and Rosenbluth, 2006). This is because where parties are regional as opposed to national representatives, each benefits from spending directed towards his or her constituency, without their constituents having to incur the full (or proportionate) costs of the expenditures through higher taxation or debt obligations. Due to their coverage across territorial units and wider representative scope, national parties are more likely to internalize the cost of regional log-rolling and pork barrel spending, thus leading to a reduced share of public resources being devoted to ‘excessive’ capital investment.

The cross-country study was descriptive in the sense that it did not try to discriminate between various mechanisms by which regional or denationalized parties might be able to influence government policy. Future research into this area would be interesting to attempt to discriminate between the relative importance of different mechanisms in different contexts.

Much like similar studies to ours that have been undertaken recently, we find that party nationalization is an important variable to consider for public spending priorities (Crisp et al. 2012; Jurado, 2013). For instance, in unitary states, more nationalized parties in government tend to spend substantially less on territorial expenditures on an annual basis. This seems to provide some support for the hypothesis that these parties are programmatically orientated, ‘reining-in’ pork barrel expenditure to politically pivotal constituencies. However as these other studies find, the effects of party nationalization are contingent upon other factors, either political institutions (Castañeda-Angarita, 2013) or electoral demographic variables (Crisp et al., 2012). We find that in federal countries, the nationalization of government parties is positively correlated with our proxy for targeted distribution. This suggests the opposite relationship to that indicated in the theory.

While we shouldn’t read too much into cross-national results such as these, they are suggestive for theory generation and future research. In the case of the finding that governments with more nationalized parties in federal systems spend a larger share of the government budget on items of capital spending, such as infrastructure investment, we suggested that this could be for nation-building purposes. Nationalized parties spend more on ‘pork’ as a means to tying regions into the federation. In terms of why governments with explicitly regional parties participating spend less on capital projects, we proposed that this could be because these parties tend to come from wealthier states within federations. While they may still extract side-payments from the central coffers in return for government support (as found by Castañeda-Angarita, 2013), they also have incentives to renegotiate inter-regional fiscal transfers to orientate them towards being less redistributive. In Belgium this is precisely why the Flemish parties sought greater
decentralization despite their region being an equal beneficiary of central government investment in capital infrastructure, due to the 'regional balancing' inherent in the semi-informal log-rolling system called the 'waffle iron' policy. Yet within this system, Flanders was still a net payer towards central government distribution, and ending the waffle iron via decentralization in 1993 was clearly in their region's economic interest (Jennes, 2014, 20; Blöchliger and Vammalle, 2012, 55).

This result suggests that 'efficiency effects' are not the only likely outcome of distributive bargains that are struck between (or involving) regionally concentrated parties. Previous studies investigating the effect of party nationalism on spending have to date focused upon whether regional political cleavages increase the 'size' of expenditure on geographically 'targeted' policy programs, implying the law of 1/n efficiency logic (Crisp et al. 2012; Castañeda-Angarita, 2013; Jurado, 2013). However, it is equally likely that regional political fragmentation will lead to redistribution of targeted spending between regions, rather than affect the overall size of spending due to the regional log-roll logic. This is especially the case if, for instance, a legislatively pivotal representative is from a wealthy region, which is the type of redistributive effect we observed in the study of regional investment in Italy.

6.3 Contribution of Provincial Infrastructure Investment in Spain Study

In our study of the allocation of central government investment between Provinces in Spain we explore two hypotheses that are central to the party nationalism literature. Firstly, we explore whether relative levels of party nationalism affect the distributive priorities of parties in government. Secondly, we explore the distributive influence of regional parties when they are pivotal to (minority) government formation and endurance. We proposed that the electoral geography of parties comprising government should affect the extent to which they engage in 'tactical' allocations of investment to Provinces, hypothesising that parties with more nationalized representation throughout all regions should allocate investment in accordance with more 'programmatic' criteria.

In this conceptual schema of government allocation decisions, 'tactical distribution' reflected a government responsiveness to or favouritism towards particular geographic constituencies with such investment serving as our proxy for pork barrel or politically motivated allocation. 'Programmatic distribution' on the other hand reflects responsiveness to a broader partisan or 'national' constituency interest in that it is driven by equity or efficiency criteria.
We leveraged two types of political variation in the Spanish case to subject these hypotheses to scrutiny. Firstly variation in the electoral geography between the main parties that has controlled government in the democratic period in Spain (1978-2010). Secondly, we also observed the effect of variation in Regional party support for minority governments during this period on these parties' ability to secure greater investment (side-payments) for their regions. As a reminder, the case selection of central government investment in Roads infrastructure was chosen as it enabled us to control for the potentially confounding effects of fiscal and political decentralization on allocations of investment. We also reasoned that this investment program was likely to be a particularly 'prized local public good' for credit claiming by parties competing in both national and regional elections. The main empirical strategy was to identify differences between governments (when they were controlled by different parties) in their tactical and programmatic distribution.

The findings are strongly suggestive of differences between PSOE and the PP party, in terms of their use of 'tactical' spending to reward either core or marginal electoral districts. We found that the PSOE engaged in significantly less tactical allocation of investment, which we argued is related to the fact that it is more nationalized than the PP, which we observe to have favoured its core and marginal districts to a much greater extent during its terms of office. We also found that regional parties' legislative position was important to explaining investment towards the regions they represent. In general, when these parties were in power, 'their' regions received higher levels of investment than the national average, however when out of power, provinces in these regions received below average investment. When we control for other factors in the regression analysis, we find 'pivotal' regional status is an important predictor of above average investment in a given year.

In terms of their contribution to the emerging literature on policy effects of party nationalization, these general findings suggest that variation in party's electoral geography across regions is important for their programmatic policy output. In the Spanish case, provincial distribution of investment by the more nationalized PSOE was more nationally public good orientated than that of PP which was had less geographical coverage in terms of its electoral support.

On practical (dependent variable focused) level, it suggests that future research in this area should focus upon large-scale distribution between sub-national jurisdictions (such as Provinces or Regions) rather than on the allocation of transfers to individuals in different jurisdictions. If the nationalization of parties matters for the extent to which they internalize the costs of distribution, it is most likely to matter for inter-regional distribution.
6.4 Contribution of Regional Infrastructure Investment in Italy Study

In our case study of the allocation of regional infrastructure investment by central governments in Italy (1972-2006) we pointed to the explanatory importance of variation in parties' political geography to explain ‘macro’ shifts in the level of redistribution among regions. While the extant literature on political distribution in Italy generally attempts to explain observed patterns in pork barrel spending in terms of institutional explanations, we argued that these explanations are insufficient to explain the large-scale changes to the system of inter-regional transfers that we observed after the disintegration of the traditional party system in 1992-1994. Firstly, the ‘personal vote’ logic underpinning such explanations (e.g. Golden and Picci, 2008) was less effective in explaining such large changes in regional distribution, and secondly the central idea—that ‘Key Ministers’ in control of investment portfolios target resources to their areas of core support—is less plausible since the electoral system reform in 1993.

The key implication that could be taken from the study is the ‘functional’ nature of politically motivated regional investment in Italy. The insight is that political factors have a strong influence on regional investment in Italy across all periods studied (1972-2006) but the extent to which some regions are ‘disfavoured’ in terms of investment is influenced by the political geography of the governing parties. In a theoretical sense, while governments controlled by the DC, prior to 1992 were perhaps not more ‘programmatic’ in their allocation of investment – which is most obviously demonstrated by the disfavour in allocations towards the PCI opposition strongholds – its political allocation strategy was characterized by progressive redistribution from the wealthy to the poorer regions. Although the DC was factionalized along regional lines, due to the fact that the party was a ‘nationally integrated’ organization, it served to assimilate these fragmented regional interests into electoral support for the party as a whole. In power, the DC secured electoral support dividing the ‘spoils’ of government vertically via clientelistic transfers to individuals, but also by sharing state resources horizontally (geographically) among regions (e.g. Chubb, 1982; Golden, 2003). This ‘vertical’ political distribution – via a system of regional redistribution that was in place during the post-war period of ‘Extraordinary Interventions’ to the Mezzogiorno – implied a ‘fiscal contract’ between the wealthy and under-developed regions, that as other scholars argue, served to integrate the country in the presence of deep social and economic geographical cleavages and the absence of a strong national identity (Agnew, 1997, 106).

However the pattern of ‘politically motivated’ investment in Italy that emerged in the post-1994 period had a strong impact in terms of the effect of regional investment on progressive
The fragmentation of the party system along regional lines after the demise of DC hegemony prompted a shift in both the ‘electoral power’ and ‘lobbying power’ of Northern Regions. The influence of a powerful Regional party, the Northern League, in conjunction with strength of Forza Italia in the north meant that specific regional interests dominated bargaining over the regional distribution. This is most clearly seen during the period 2001-2006, when the Northern League held a pivotal legislative position in maintaining the Berlusconi led coalition.

The rise of the Northern League electorally (prior to its participation in government) is seen by other scholars as leading to the ‘the opportunistic cancellation of the Mezzogiorno issue from the political agendas of all parties’ (Barca, 2009, 6). The electoral success of the regional movement in the North had profound impact on political rhetoric surrounding issues of inter-regional redistribution and government investment. As Shin and Agnew describe, central to the ‘Northern Question’ is the perceived grievance arising from historical regional redistribution: ‘government seen as biased in favour of a South ever more dependent on government spending emanating from a productive North ever more lacking in infrastructure and tax incentives to continue its role as the “engine” of the Italian economic growth’ (2008, 128). Hence, in addition to its pivotal legislative role in the 2001-2006 period, the League’s importance in mobilizing Northern regional grievances, are essential to any story of regional redistribution in post-1992 period.

6.5 General Contribution

We are amongst the first to study the effects of party nationalization on specific policies using a cross-national design. In addition (as far as we are aware) the within-country case studies are a unique contribution to this emerging literature on the ‘policy effects’ of party nationalization. Several studies have observed effect of regional parties on national-level policy and fiscal outcomes such as fiscal and political decentralization (Brancati, 2009), regional convergence policies (Rodriquez-Pose, 1998) and the allocation of investment between regions (Kemmerling and Stephan, 2010; Sole-Olle, 2010). However we are among the first to explore geographical variation in support for all parties on such fiscal policy outcomes (the allocation of regional investment) between regions by central government.

The results of our cross-country and within country analysis are relevant for a wider theoretical perspective in the political distribution literature. As we noted in chapter 2, studies in the comparative literature on pork-barrel distribution by governments in various contexts have emphasized the institutional determinants of pork. Studies in this vein have made a valuable
contribution on the study of the ‘direct effect’ of electoral institutions on political distribution in various contexts. Generally, pork-barrelling is strongly associated with a presidential system, weak parties and/or a candidate-centred electoral system (Tavits, 2009, 103). Outside of the US context, evidence of systematic individual and partisan pork-barrelling has been documented in Latin American countries such as Argentina (Calvo and Murillo, 2004; Remmer, 2007), Brazil (Ames, 1995a; Samuels, 2002; Alston and Mueller, 2005; Lyne, 2009), Peru (Schady, 2000); all countries with one or more of these institutional features. Similarly studies that have focused on cross-national variation, have documenting the association of electoral rules with differences in patterns of public expenditure (e.g. Milesi-Ferretti et al. 2002) or various types of ‘inefficiency’ in public goods provision (e.g. Hicken and Simmons, 2008).

However, the singular focus on institutional incentives for political distribution in many comparative perspectives on political distribution has often led to a ‘poverty’ of research and theoretical development in this area. This is especially the case of studies that attempt to measure the ‘direct effect’ of electoral institutions on policy outcomes. As Taagepera and Qvortrup argue in their review of the comparative literature on the direct policy effects of electoral laws:

‘There is no visible process by which electoral rules as such could directly affect most [policy] outputs....[researchers] most often resort to pointing out that PR systems tend to have more parties and less durable cabinets. Hence PR systems supposedly face more populist demands and have less policy continuity. Well, if this is so, why not try to relate the policy outputs to the number of parties and to mean cabinet duration, rather than to the grab-bag categories of electoral rules?’ (2012, 253)

As we noted in the introduction, within this literature on the ‘direct effects’ of political institutions, various intervening political variables are central to the causal story told. For instance, much of the literature takes as a point of departure the incentives of political parties to curb the efforts of legislators or regional factions to build regional support bases through pork barrel activities but does not directly examine the ‘intervening’ influence of party organizational characteristics (Perrsson and Tabellini, 2003; Lizzeri and Persico, 2001). Underlying these studies is an implied view that parties’ organizational properties are ‘epiphenomenal’ to incentives generated by electoral and legislative rules. However our study is strongly suggestive that parties’ role as institutions in themselves is central to explaining their role in distributive politics. As we emphasized in the literature review and in chapter 4, one such organizational trait for parties that is important for their role as national public goods providers, is the extent of their geographical ‘linkage’ across districts or regions within a country. However, such organizational coverage is in no way determined by political institutional factors alone. For example, much as the ‘Duvergerian’ logic of ‘First-Past-the-Post’ electoral rules does not automatically lead to a ‘two-party’ system at the national level, the extent of party system nationalization is strongly
influenced by, but is far from being epiphenomenal to political institutions, such as the level of decentralization or electoral and legislative institutions.

This point is more than simply theoretical. As our study demonstrates, the political institutional arguments are insufficient to explaining variation across political actors within the same context in differences in their political distributive strategies. For instance, we showed clear differences between parties in Spain in parties' ‘tactical’ use of investment between Provinces. As such our study suggests that future perspectives in this literature should seek to examine party influence directly and not ‘assume’ parties' strategic incentives or their organizational characteristics based upon theories regarding political institutions alone. As we showed, the extent of parties' organizational coverage and support across regions in a country is one such informal institutional variable that has an important bearing on distributive outcomes and that cannot simply be deduced from the nature of a country's political institutions.

Endnotes

1 As Castañeda-Angarita has recently described this research lacuna: 'This is not, of course, a trivial omission for the study of fiscal politics. In fact, substantial evidence suggests that the degree of homogeneity in the spatial distribution of electoral support will shape politicians’ strategies, ambitions, targets, and the amount of benefits they are willing to distribute (Stokes, 1967; Carey and Shugart, 1995; Jones and Mainwaring, 2003). Consequently, the concept of party system nationalization is relevant for the study of distributinal incentives in electoral politics' (2013, 2).

2 Tavits provides an indicative appraisal of this research focus: 'Even if institutions prove relevant [to explaining distributive outcomes], the almost-exclusive focus of the existing studies on the institutional variables overlooks the possibility that legislators behave rather differently under the same institutional structure' (2009b, 795).

3 Even in contexts where institutional rules make regional parties essentially illegal, for instance the cross regional voting laws in Indonesia, party's territorial coverage are still reflective of deep regional cleavages (for example, see Toha, 2009).
7 Appendices

7.1 Party Nationalization Interpretation and Measurement Issues

7.1.1 Interpretation of the 'electoral' Gini Coefficient

We briefly describe the interpretation of the Gini Coefficient as applied to variability in a party's vote share across districts. We use the Gini coefficient applied to individual parties' district vote shares, as suggested by other scholars (Boschler, 2010; Jones and Mainwaring 2003) to rank party systems according to their degree of territorial variability in the vote shares of all parties as well as scoring individual parties according to the territorial distribution of their vote shares (Party Nationalization Score [PNS]) after successive elections. In case of homogenous distribution (high PSN) every territorial unit will cast a number of votes for party x which is approximately proportional to the unit's size or the party will win a similar vote share in every territorial unit. In case of heterogeneous vote distributions most of the votes are concentrated in a few territorial units.

Figure 7.1 Interpreting Electoral Gini Coefficient

Geometrically explained, the Gini coefficient is the difference between the actual cumulative distribution of votes for each party (in districts i...n) and a diagonal homogeneity line (the 'Lorenz curve') representing a perfectly even share of votes across all districts (Bochsler, 2010, 161).
Territorial units on the x-axis are ranked by support for party x starting with the district where x gets its lowest share of vote. The cumulative function of votes across districts is plotted on the y-axis. At the last unit the y-axis shows the number of votes party x received in the whole country. In the case of low PNS the area between graph and the perfect homogeneity line (connecting the origin with the upper right angle) is large. With higher PNS the graph approximates the perfect homogeneity line and area between becomes smaller. The Gini coefficient is calculated as the area between graph and homogeneity line. When PNS is perfect the Gini equals 0 and when it is extremely unequal it equals 1. The measure is inverted by minus 1, to approach a more intuitive reading, where a lower level of PNS approaches zero, a high level approaches 1. From the standpoint of party systems, the Party System Nationalization Score (PSNS), where the Gini coefficient approaches 1, this means that all parties’ total vote share was derived from an equal proportion of votes in all districts as below. It is calculated as below:

$$\text{PSNS} = 1 - \sum (1 - Gi(P))Pn = 1 - \sum Gi(P)Pn$$

7.1.2 Adjustment for District Size and Variability in the Number of Districts

There are significant difficulties with all measures of geographical variability of party electoral support, including standard measures of party nationalization. As Morgenstern et al. attest: ‘variance in party size, district population, and the number of electoral districts can produce nonsensical static nationalization scores’ (2014, 189). To account for the differences in the size (population) of districts Bochsler (2010) has proposed weighting Jones and Mainwaring’s simple Gini coefficient measure of party nationalization (PNS) by district size. This involves weighting the district level vote of a party by the log of the district population and then applying the Gini coefficient upon this weighted vote share. This puts more weight on a lack of votes in a large district, such as for example, occurs commonly with socialist parties that are concentrated in large municipal districts. We adopt this district-weighting suggestion by Bochsler. However we do not adopt his second suggested modification, which is the correction for differential variability depending on the number of electoral districts upon which the Gini (or any measure of variability) is calculated. With a greater number of districts there is a higher likelihood that there will be greater variability in the Gini coefficient.

To achieve this standardization, Bochsler (2010, 161-162) proposes a logarithmic transformation. The purpose of this transformation is: ‘to indicate an increasing heterogeneity of the vote as the number of districts rises, but with a decreasing marginal effect of the number of districts’ (Morgenstern et al. 2014, 189). However one important problem with this proposed
'standardization' of the PNS is that since the Gini index is curvilinear, the weight has a differential impact on parties depending on their level of static nationalization (ibid). The logarithmic transformation shifts the score more sharply for some parties than others, especially those with relatively low Gini values giving non-intuitive results (for demonstration of this see: Morgenstern et al, 2014, 188). While it is likely misleading to fail to control for the number of districts upon which a measure is estimated, we believe in this case the 'treatment is worse than the disease'. The distortions are not as potentially severe in the unstandardized Gini as in the standardized Gini, which is more likely to lead to large differences in the nationalization scores of parties with heterogeneous variability in their support across district (or regions).

7.2 Chapter 3 Appendix

Table 7.1 Variables and Data Sources Cross-National Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG Capital Expenditure</td>
<td>IMF Government Finance Statistics (GFS)</td>
</tr>
<tr>
<td>Regional Parties</td>
<td>GED (2013) &amp; CLEA(2011)</td>
</tr>
<tr>
<td>Real Interest Rate (%)</td>
<td>IMF GFS &amp; World Bank Development Indicators</td>
</tr>
<tr>
<td>Real GDP per capita (USD Base 2005)</td>
<td>IMF GFS</td>
</tr>
<tr>
<td>Fiscal Decentralization (Regional Level % Own Revenue)</td>
<td>IMF GFS</td>
</tr>
<tr>
<td>Budget Balance</td>
<td>IMF GFS</td>
</tr>
<tr>
<td>Debt % GDP</td>
<td>IMF GFS</td>
</tr>
<tr>
<td>GDP Growth (Base 2005)</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>Population Density(km²)</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>Electoral System</td>
<td>Wallack et al. (2007)</td>
</tr>
<tr>
<td>(Personal Vote Incentives)</td>
<td></td>
</tr>
</tbody>
</table>
### Determinants of Capital Spending Within Countries 1979-2010

**Dependent Variable:** Capital Spending % GDP (logged)

<table>
<thead>
<tr>
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<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
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</thead>
<tbody>
<tr>
<td>Real GDP Growth (log)</td>
<td>-0.009</td>
<td>-0.013</td>
<td>-0.013</td>
</tr>
<tr>
<td></td>
<td>(0.024)</td>
<td>(0.024)</td>
<td>(0.024)</td>
</tr>
<tr>
<td>GDP per capita (log)</td>
<td>0.012</td>
<td>0.008</td>
<td>0.008</td>
</tr>
<tr>
<td></td>
<td>(0.040)</td>
<td>(0.040)</td>
<td>(0.040)</td>
</tr>
<tr>
<td>PSNS</td>
<td>0.502**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.249)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPrvōte</td>
<td></td>
<td>-0.240</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>(0.369)</td>
<td></td>
</tr>
<tr>
<td>PNG</td>
<td></td>
<td></td>
<td>0.492**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.242)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.471</td>
<td>0.763**</td>
<td>0.373</td>
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<tr>
<td></td>
<td>(0.392)</td>
<td>(0.371)</td>
<td>(0.411)</td>
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</tbody>
</table>

| County Fixed Dummy Dummy| Y       | Y       | Y       |
| Unbalanced Panel        | n=27    | T=31    | N=492   |
| Adjusted $R^2$          | 0.530   | 0.526   | 0.528   |
| F Statistic             | 20.101***| 19.661***| 19.939***|
|                         | (df= 29; 463) | (df= 29; 459) | (df= 29; 462) |

**Notes:**
1) Base variable models discussed section 3.6; 2) Standard errors in parentheses, ***, **, * indicate statistical significance at 99%, 95%, 90% levels; 3) All models estimated OLS with Country Fixed Effects.
### 7.3 Chapter 4 Appendix

Table 7.3 Formal Institutional Incentives for Particularistic/ Pork Barrel Provision, Spanish Case

<table>
<thead>
<tr>
<th>Institution Category</th>
<th>Theoretical Mechanism</th>
<th>Spanish Institutional Variant</th>
<th>Empirical Expectation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electoral Rules/ Electoral System Features</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voting System</td>
<td>Proportionality / District Marginality</td>
<td>PR with D' Hondt Formula.</td>
<td>Seats are divided up proportionally in multi-seat constituencies solely on the basis of constituency votes with no regard to national votes (Hopkin, 2005). Unlike in a single-member plurality system – where there are more ‘wasted’ votes in each constituency – parties have incentives to maximize total votes and hence, votes are valuable everywhere with no reason to favour particular districts on the grounds of marginality. One possible exception to this in the Spanish case is the districts with small district magnitude. There are 17 districts with less than 5 seats. These 3 and 4 seat districts have a low proportionality and could plausibly be described as marginal.</td>
</tr>
<tr>
<td>Candidate Selection on Ballot</td>
<td>‘Personal Vote’ / Preference Incentives &amp; Intra-Party Competition</td>
<td>Closed Party Lists ballots</td>
<td>Closed list ballots on their own are unlikely to generate incentives for individual candidates to seek to build a personal clientele/reputation in their district by channelling particularistic funds; since their ‘party reputation’ is usually more important for their placement on the ballot.</td>
</tr>
<tr>
<td>Malapportionment</td>
<td>Increase in voting power or proposal power or both of malapportioned districts/regions (Dragu &amp; Rodden, 2011).</td>
<td>Malapportionment can be significant in Spain due to the historical fixity of the district boundaries and the constitutional imperative of having at least 2 seats per Province (electoral district). Vote to Seats ratio (in year 2000) ranges from 18,000 to 90,873 votes per seat in individual districts.</td>
<td>This could create an incentive for parties to favour these over-represented districts, as an individual seat is ‘cheaper’ (i.e. requires less votes) to ‘buy’ than in under-represented districts (see Figure 4.1). Legislative bargaining models also suggest that over-represented states should be favoured in the distribution of inter-governmental grants regardless of their income level (Dragu &amp; Rodden, 2011).</td>
</tr>
<tr>
<td><strong>Legislative Structure</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legislative-Executive Relations</td>
<td>Decentralized Legislature/ ‘Law of 1/n’ (Primo &amp; Synder, 2008)</td>
<td>Parliamentary system with fused legislature-executive</td>
<td>Unlikely to generate strong pork barrel opportunities due to strong party discipline generated by need for executive survival.</td>
</tr>
<tr>
<td>Size of Legislature/ Legislative Fragmentation</td>
<td>Law of 1/n Fiscal Common Pool Problem (Bradbury and Crain, 2001); fiscal inefficiency in the form of excessive spending increases with the number of legislative districts, number of Spending Ministries/government executive size (Kontopoulos and Perotti [2002]).</td>
<td>Legislature has had 350 seats historically which not especially large. Government ministry portfolios average around 12 for the period, again not an especially large number.</td>
<td>Due to party strength, log-rolling between individual members or as part of a committee system is not of importance. Individual line ministries have considerable power over discretionary spending; however this is not coupled with a personalised electoral incentive, which is central to the ‘key minister’ hypothesis in relation with pork barrel spending in parliamentary systems (see. Golden and Picci, 2008; Suiter, 2010).</td>
</tr>
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</table>
## Levels of Government

<table>
<thead>
<tr>
<th>Multilevel Governance</th>
<th>Partisan alignment between central and regional governments generates 'credit claiming'; where central government has incentives to divert resources towards regions controlled by their party.</th>
<th>Several studies have found partisan alignment to have a significant effect on intergovernmental grants in Spain (Sole-Ole and Sorribas-Navarro, 2008) and elsewhere (e.g. Germany: Kemmerling and Stephan, 2002).</th>
<th>We expect the partisan alignment of the regional government of each province could be a significant factor in influencing the amount of favourable spending a province receives. We test whether such partisan alignment is important for regional allocation in separate models.</th>
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</thead>
<tbody>
<tr>
<td>Level of Fiscal Decentralization</td>
<td>Fiscal vertical imbalance between central and lower level governments is theorised to enhanced the ‘fiscal common pool’ budget problem if there is a tax and spend disconnect between central and regional governments; and if regional governments have a large degree of autonomy over spending decisions which have revenue implications for central governments.</td>
<td>Strong party cohesion across levels of government may rein-in incentives for ‘over-spending’, despite the relatively large fiscal imbalance that exists in Spain in a number of spending portfolios. However, wasteful and excessive spending by autonomous regional governments has been heralded as a large problem in Spain especially in the last decade (e.g. Harter, 2012). The ‘Case Selection’ section describes how we attempt to control for the possibility that spending allocations to each province is driven by ‘over-spending’ initiated by regional government excess and incentivised by fiscal imbalance between revenue and spending autonomy at regional level.</td>
<td></td>
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</table>
Figure 7.2 Model 1 Interaction Term-Relationship between incumbent party vote share of district and amount of investment received in given year

Notes: 1) Presentation of interaction effects for Model 1 presented in Table 4.3, section 4.8.1. 2) Interaction term= Incumbent party vote share in a district * PNG (party nationalization of government) score in each year; 3) Bands indicate 95%
Table 7.4 Regression Models with Vote Margin (term of office sub-periods) - Results for Section 4.8.2

Dependent variable: Log(Roads Investment % Capital Stock)

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<tbody>
<tr>
<td>Term of Office:</td>
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</tr>
<tr>
<td>Vote Margin</td>
<td>-0.001 (0.009)</td>
<td>0.025*** (0.006)</td>
<td>-0.008** (0.004)</td>
<td>-0.001 (0.006)</td>
<td>-0.001 (0.005)</td>
<td>-0.022*** (0.008)</td>
<td>-0.010** (0.007)</td>
<td>0.001 (0.005)</td>
<td>0.013*** (0.006)</td>
<td></td>
</tr>
<tr>
<td>Pivotal</td>
<td>-0.221 (0.343)</td>
<td>0.131 (0.228)</td>
<td>0.294** (0.130)</td>
<td>-0.135 (0.206)</td>
<td>0.192 (0.161)</td>
<td>0.639*** (0.188)</td>
<td>0.291 (0.158)</td>
<td>-0.235 (0.159)</td>
<td>0.031 (0.161)</td>
<td>-0.044 (0.182)</td>
</tr>
<tr>
<td>Capital Stock t-1 (log)</td>
<td>-0.324 (0.232)</td>
<td>-0.845*** (0.168)</td>
<td>-1.005*** -1.184*** -0.932*** -0.885*** -0.191 (0.212)</td>
<td>-0.222 (0.178)</td>
<td>-0.376** -0.223 (0.155)</td>
<td>(0.181)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDPpc t-1 (log)</td>
<td>-0.919** (0.382)</td>
<td>0.797** (0.333)</td>
<td>0.428** 1.393*** -0.111 -1.070*** -0.657*** 0.458** (0.226)</td>
<td>0.057 (0.213)</td>
<td>-0.059 (0.213)</td>
<td>(0.267)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infras. Responsibility</td>
<td>0.860*** (0.431)</td>
<td>0.418 (0.294)</td>
<td>0.241 (0.158)</td>
<td>0.151 (0.249)</td>
<td>0.379** (0.188)</td>
<td>0.135 (0.225)</td>
<td>-0.225 -0.305* -0.219 -0.305 (0.179)</td>
<td>(0.189)</td>
<td>(0.189)</td>
<td></td>
</tr>
<tr>
<td>Vote/Seats Ratio (log)</td>
<td>-1.214** (0.608)</td>
<td>0.827*** (0.312)</td>
<td>-0.378* -0.514 -0.249 -0.633*** -0.409 (0.322)</td>
<td>-0.193 (0.278)</td>
<td>0.140 (0.234)</td>
<td>0.127 (0.194)</td>
<td>0.127 (0.206)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pop. Density (log)</td>
<td>0.147 (0.165)</td>
<td>-0.469*** (0.103)</td>
<td>-0.318*** -0.323*** -0.268*** -0.238*** -0.010 (0.084)</td>
<td>0.020 (0.089)</td>
<td>-0.233*** -0.129 (0.085)</td>
<td>(0.091)</td>
<td>(0.098)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Observations: 100 150 200 150 200 200 200 200 200 100
Pseudo-R²: 0.28 0.31 0.50 0.34 0.35 0.16 0.18 0.14 0.14 0.17

Notes: (1) 95% confidence intervals in parentheses, ***, **, & * indicate statistical significance at 99%, 95%, 90% levels (2) Vote Margin= abs(Incumbent Vote Share−Opposition Vote Share) per district (3) Pseudo-R calculated using Efron’s method (4) All models estimated with GLS random effects and AR(1) disturbance (5) Results described in section 4.8.2
Table 7.5 Regression Models with Incumbent Vote Share as % Total District Vote (term of office sub-periods)-Results for Section 4.8.2

<table>
<thead>
<tr>
<th>Dependent variable: Log(Roads Investment % Capital Stock)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Party:</td>
</tr>
<tr>
<td>UCD 1978: 0.018** (0.011)</td>
</tr>
<tr>
<td>PSOE 1980: -0.091 (0.343)</td>
</tr>
<tr>
<td>PSOE 1983: -0.014*** (0.008)</td>
</tr>
<tr>
<td>PSOE 1987: -0.014 *** (0.009)</td>
</tr>
<tr>
<td>PSOE 1990: -0.005 (0.007)</td>
</tr>
<tr>
<td>PSOE 1994: -0.001 (0.010)</td>
</tr>
<tr>
<td>PP 1997: 0.012* (0.007)</td>
</tr>
<tr>
<td>PP 2001: 0.008 (0.007)</td>
</tr>
<tr>
<td>PSOE 2004: -0.006 (0.009)</td>
</tr>
<tr>
<td>PP 2005: -0.002 (0.010)</td>
</tr>
<tr>
<td>PP 2009:</td>
</tr>
<tr>
<td>Term of Office:</td>
</tr>
<tr>
<td>-79 -82 -86 -93 -96 -00 2001-2005 2009</td>
</tr>
<tr>
<td>(1) (2) (3) (4) (5) (6) (7) (8) (9) (10)</td>
</tr>
<tr>
<td>Incumbent Vote:</td>
</tr>
<tr>
<td>0.018** (0.011)</td>
</tr>
<tr>
<td>0.031*** (0.008)</td>
</tr>
<tr>
<td>-0.014*** (0.005)</td>
</tr>
<tr>
<td>-0.005 (0.009)</td>
</tr>
<tr>
<td>-0.001 (0.007)</td>
</tr>
<tr>
<td>-0.025** (0.010)</td>
</tr>
<tr>
<td>0.012* (0.007)</td>
</tr>
<tr>
<td>-0.008 (0.007)</td>
</tr>
<tr>
<td>-0.006 (0.009)</td>
</tr>
<tr>
<td>-0.002 (0.010)</td>
</tr>
<tr>
<td>Pivotal:</td>
</tr>
<tr>
<td>-0.091 (0.343)</td>
</tr>
<tr>
<td>0.309 (0.237)</td>
</tr>
<tr>
<td>0.163 (0.124)</td>
</tr>
<tr>
<td>-0.167 (0.202)</td>
</tr>
<tr>
<td>0.180 (0.153)</td>
</tr>
<tr>
<td>0.452** (0.193)</td>
</tr>
<tr>
<td>0.566** (0.238)</td>
</tr>
<tr>
<td>-0.303 (0.233)</td>
</tr>
<tr>
<td>0.001 (0.163)</td>
</tr>
<tr>
<td>0.142 (0.169)</td>
</tr>
<tr>
<td>Capital Stock t-1(log):</td>
</tr>
<tr>
<td>-0.275 (0.227)</td>
</tr>
<tr>
<td>-0.778*** (0.166)</td>
</tr>
<tr>
<td>-1.029*** (0.104)</td>
</tr>
<tr>
<td>-1.213*** (0.203)</td>
</tr>
<tr>
<td>-0.933*** (0.163)</td>
</tr>
<tr>
<td>-0.913*** (0.216)</td>
</tr>
<tr>
<td>-0.268 (0.182)</td>
</tr>
<tr>
<td>-0.301* (0.157)</td>
</tr>
<tr>
<td>-0.411*** (0.157)</td>
</tr>
<tr>
<td>-0.326* (0.173)</td>
</tr>
<tr>
<td>GDPpc t-1(log):</td>
</tr>
<tr>
<td>-0.810** (0.369)</td>
</tr>
<tr>
<td>0.716** (0.354)</td>
</tr>
<tr>
<td>0.484*** (0.169)</td>
</tr>
<tr>
<td>1.395*** (0.232)</td>
</tr>
<tr>
<td>-0.111 (0.226)</td>
</tr>
<tr>
<td>-1.144*** (0.314)</td>
</tr>
<tr>
<td>-0.724*** (0.212)</td>
</tr>
<tr>
<td>0.347 (0.218)</td>
</tr>
<tr>
<td>0.035 (0.213)</td>
</tr>
<tr>
<td>0.067 (0.293)</td>
</tr>
<tr>
<td>Infras. Responsibility:</td>
</tr>
<tr>
<td>1.156*** (0.444)</td>
</tr>
<tr>
<td>0.563* (0.313)</td>
</tr>
<tr>
<td>0.151 (0.152)</td>
</tr>
<tr>
<td>0.136 (0.248)</td>
</tr>
<tr>
<td>0.375* (0.192)</td>
</tr>
<tr>
<td>0.147 (0.231)</td>
</tr>
<tr>
<td>-0.019 (0.231)</td>
</tr>
<tr>
<td>-0.218 (0.197)</td>
</tr>
<tr>
<td>-0.265 (0.181)</td>
</tr>
<tr>
<td>-0.306 (0.195)</td>
</tr>
<tr>
<td>Vote/Seats Ratio(log):</td>
</tr>
<tr>
<td>-0.648 (0.565)</td>
</tr>
<tr>
<td>0.737** (0.308)</td>
</tr>
<tr>
<td>-0.282 (0.206)</td>
</tr>
<tr>
<td>-0.476 (0.326)</td>
</tr>
<tr>
<td>-0.246 (0.191)</td>
</tr>
<tr>
<td>-0.305 (0.275)</td>
</tr>
<tr>
<td>-0.216 (0.245)</td>
</tr>
<tr>
<td>-0.211 (0.207)</td>
</tr>
<tr>
<td>0.175 (0.212)</td>
</tr>
<tr>
<td>0.187 (0.232)</td>
</tr>
<tr>
<td>Pop. Density(log):</td>
</tr>
<tr>
<td>0.128 (0.154)</td>
</tr>
<tr>
<td>-0.368*** (0.099)</td>
</tr>
<tr>
<td>-0.336*** (0.065)</td>
</tr>
<tr>
<td>-0.338*** (0.109)</td>
</tr>
<tr>
<td>-0.269*** (0.085)</td>
</tr>
<tr>
<td>-0.330*** (0.106)</td>
</tr>
<tr>
<td>-0.661 (0.092)</td>
</tr>
<tr>
<td>-0.014 (0.087)</td>
</tr>
<tr>
<td>-0.252*** (0.094)</td>
</tr>
<tr>
<td>-0.191* (0.102)</td>
</tr>
<tr>
<td>Constant:</td>
</tr>
<tr>
<td>15.499*** (7.012)</td>
</tr>
<tr>
<td>-6.562 (3.470)</td>
</tr>
<tr>
<td>10.055*** (2.352)</td>
</tr>
<tr>
<td>5.497 (3.714)</td>
</tr>
<tr>
<td>14.243*** (2.354)</td>
</tr>
<tr>
<td>25.287*** (4.737)</td>
</tr>
<tr>
<td>12.955*** (3.840)</td>
</tr>
<tr>
<td>3.738 (3.518)</td>
</tr>
<tr>
<td>4.227 (3.420)</td>
</tr>
<tr>
<td>4.008 (4.542)</td>
</tr>
<tr>
<td>Observations: 100 150 200 150 200 200 200 200 100</td>
</tr>
<tr>
<td>Pseudo-R²: 0.31 0.30 0.52 0.35 0.35 0.14 0.19 0.11 0.15 0.13</td>
</tr>
</tbody>
</table>

Notes: (1) 95% confidence intervals in parentheses, ***, ***, & * indicate statistical significance at 99%, 95%, 90% levels (2) Pseudo-R calculated using Efron's method (3) All models estimated with GLS random effects and AR(1) disturbance. (4) Results described in section 4.8.2
Table 7.6 Regression Models with Partisan Alignment between Regional and Central Government (party sub-periods): Results for section 4.8.2.2.4

**Dependent variable:** Log(Roads Investment % Capital Stock)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Alignment</td>
<td>-0.025 (0.056)</td>
<td>-0.115 (0.093)</td>
<td>-0.041 (0.170)</td>
</tr>
<tr>
<td>Pivotal</td>
<td>-0.006 (0.191)</td>
<td>0.055 (0.132)</td>
<td>-0.216 (0.219)</td>
</tr>
<tr>
<td>Capital Stock t-1(log)</td>
<td>-0.760*** (0.166)</td>
<td>-0.164 (0.202)</td>
<td>-0.468*** (0.182)</td>
</tr>
<tr>
<td>GDPpc t-1(log)</td>
<td>0.626*** (0.143)</td>
<td>0.081 (0.145)</td>
<td>-0.043 (0.142)</td>
</tr>
<tr>
<td>Infras. Responsibility</td>
<td>0.196 (0.326)</td>
<td>-0.318 (0.216)</td>
<td>-0.139 (0.180)</td>
</tr>
<tr>
<td>Vote/Seats Ratio(log)</td>
<td>-0.576 (0.393)</td>
<td>-0.456 (0.397)</td>
<td>0.431 (0.380)</td>
</tr>
<tr>
<td>Pop.Density(log)</td>
<td>-0.500*** (0.152)</td>
<td>-0.009 (0.111)</td>
<td>-0.243** (0.119)</td>
</tr>
<tr>
<td>Constant</td>
<td>2.071 (4.264)</td>
<td>6.473 (4.294)</td>
<td>2.941 (3.778)</td>
</tr>
</tbody>
</table>

Observations
- 238
- 153
- 102

Pseudo-R²
- 0.24
- 0.07
- 0.21

Notes: (1) Models estimated on Regional level data testing effect of partisan alignment on regional investment; (2) All data aggregate to regional level either average weighted by Provincial population size; (3) Method of estimation: GLS with random effects and AR(1); (4) Efron's Pseudo-R²
### Table 7.7 Variables and Data Sources, Italian Infrastructure Investment

<table>
<thead>
<tr>
<th>Variable</th>
<th>Data Source</th>
</tr>
</thead>
</table>
1                                                                 |
2                                                                 |
| Regional GDP Series                           | Eurostat Regional Statistics Database                                                                                                     |
| Price Deflator Series 1960-1996               | CRENos REGIO II                                                                                                                              |
| Regional Area Km²                              | Eurostat Regional Statistics Database                                                                                                     |

1 We are grateful to Prof. Achim Kemmerling for making this data series available
2 English language version available via OpenSpending.org
Figure 7.3 Scatterplot Comparing Regional Income to Regional Marginal Productivity of Investment (GDP: Capital Stock Ratio)

Notes: 1) y-axis= GDP: regional capital stock endowment ratio (both year t-1; x-axis= regional GDP per capita demeaned from yearly mean GDP per capita (year t).
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Calvo, E.

Caramani, D.


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Cox, G,


CRENOS (Centre for North South Economic Research).


De la Fuente, A.

212


Diaz-Cayeros, A.

Dixit, J. Londregan, A.


Eurostat
I


Franzese, R.J.


Golden, M.


Hopkin, J.


INE (Spanish Statistical Office)


IMF


Jones, M.P.


Katz, R.

Keefer, P.
Kemmerling, A. & Stephan, S.


Lyne, M.


Minder, R.


Morgenstern, S.


OECD


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Smith, P.

Sole-Olle, A.


Stokes, D. E.


Tavits, M.


Treisman, D.


van Houten, P.


World Bank


Abstract

This dissertation explores the significance of political parties’ electoral geography for public goods provision in democracies. In particular, it is concerned with the political determinants of regional investment spending by central governments. The main theoretical hypothesis put forth is that the degree of political parties’ nationalization — the extent to which parties are competitive in, and representative of all regions in a country — affects their incentives to provide nationally orientated public goods as opposed to particularistic benefits to favoured regions. It argues that bargaining over the geographic distribution of public expenditure and investment between parties that are representative of specific regional constituencies — as opposed to the nation as a whole — is likely to lead to an under-supply of nationally focused public policies and an over-supply of ‘pork-barrel’ policies resulting from log-rolls across sub-national units, where distributive benefits are concentrated in sub-national units with political ‘clout’. This is because regional parties or parties with regionalized patterns of electoral support have a natural tendency to favour their regional strongholds in geographic distribution.

The main body of research involves both a cross-national study and two country studies of the determinants of regional investment spending by central governments. In the cross-national study, we investigate the extent to which public budgets that are bargained between regionalized political parties, lead to higher levels of ‘regional favouritism’ in public investment spending. We leverage the party system breakdown that occurred in Italy in 1992-1994, to investigate the effects of parties’ electoral geography on differential levels of infrastructure investment to particular regions. Finally in Spain, we leverage variation in regional and regionalized parties’ participation in government, to explore the extent to which favouritism in public investment is shown to particular provinces during different time periods.