

Pork Barrel Politics in Postwar Italy, 1953–1994¹

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March 15, 2006
Version 3

¹Earlier versions of this paper were presented at the 2005 Annual Meeting of the American Political Science Association, September 1–4 and at a meeting on Poverty, Democracy and Clientelism: The Political Economy of Vote Buying, Rockefeller Foundation’s Study and Conference Center, Bellagio, November 28–December 2, 2005. We received additional helpful suggestions from John Agnew, Steven Ansolabahere, Yusaku Horiuchi, Jeffrey Lewis, Jonathan Rodden, and Frances Rosenbluth. For research assistance, we thank Elizabeth Carlson and Jonathan Slapin.

Abstract

This paper analyzes the political determinants of the distribution of infrastructure expenditures by the Italian government to the country's 92 provinces between 1953 and 1992. Extending implications of formal theories of legislative behavior to the context of open-list proportional representation, we examine whether individually powerful legislators and ruling political parties direct spending to core or marginal electoral districts, and the extent to which opposition parties share resources via a norm of universalism. We show that districts characterized by politically more powerful individual deputies from the governing parties received higher amounts of investments. We interpret this result as indicating that legislators with political resources sought to reward their core voters by investing in public works in their districts. The governing parties, by contrast, were not able to discipline their own members of parliament sufficiently to target the parties' areas of core electoral strength. In Italy's weak party system, the political influence of powerful individual legislators trumped the political imperatives of the ruling parties. Finally, we find no evidence that a norm of universalism operated to direct resources to areas where the main opposition party was strong.

1 Introduction

More than three decades of research document that federal monies are distributed in the US not only in response to social welfare or economic efficiency considerations but also on the basis of political and partisan criteria. Advances in data availability now permit extension of this line of research to other countries. Results identify patterns of partisan-political distributive politics in nations as diverse as Albania (Case 2001), Argentina (Calvo and Murillo 2004; Brusco, Nazareno, and Stokes 2005), Australia (Denemark 2000), Brazil (Ames 2001; Rodden and Arretche 2004), Canada (Kneebone and McKenzie 2001), Colombia (Crisp and Ingall 2002; Drazen and Eslava 2005), France (Cadot, Röller, and Stephan 2002), Germany (Stratmann and Baur 2002), India (Rodden and Wilkinson 2004), Japan (Horiuchi 2003; Horiuchi and Saito 2003), Mexico (Bruhn 1996; Diaz-Cayeros, Magaloni, and Weingast 2000), Russia (Treisman 1996), South Korea (Horiuchi and Lee 2004), and Sweden (Dahlberg and Johansson 2002).

In this paper, we extend this line of research to the open-list proportional representation (PR) context of Italy between 1953 and 1994. We examine the geographic distribution of expenditures on infrastructure investments. The theoretical underpinnings of our study draw on formal models of distributive politics. The current state of this literature produces multiple equilibria and indeterminate empirical predictions for settings characterized by open-list proportional representation and weak political parties. We formulate more precise hypotheses than have been developed thus far. In addition, we seek to advance empirical knowledge of distributive politics on the basis of an unusually rich and lengthy time series dataset.

Theoretically, (McGillivray 2004) establishes that legislators in electoral systems with single-member districts (SMD) where political parties are internally cohesive have incentives and capabilities to target local public goods to marginal electoral districts. Their counterparts in similar electoral systems with weak parties target safe districts. Legislators in PR systems with cohesive political parties tend to target government supporters. However, (McGillivray 2004, p. 24) leaves indeterminate outcomes in PR systems, such as those using open-lists, which are characterized by intraparty competition and factional-

ism.¹ We extend her reasoning to PR settings with weak political parties, and hypothesize that in these environments legislators affiliated with governing parties target core voters in their home districts. Their abilities to do so will vary with their access to legislative resources. Like their counterparts in systems using closed lists, governing parties (as opposed to individual legislators) in open-list environments should attempt to target their areas of electoral strength. Their abilities to do so are affected by how cohesive they are in practice, which is a question to be examined empirically.²

Ultimately, we aim at untangling some substantive political puzzles. Governed by a dominant party — Christian Democracy (DC) — for the entire period after World War II until the collapse of the postwar party system in 1993–94, Italy is a country for which the standard expectation is that the DC, having constructed mass political machines in the Italian South in the 1950s, subsequently uses these along with its traditional subcultural networks in the North-East, to distribute benefits solely or principally to its core supporters (Hopkin and Mastropaolo 2001). Given the apparently reasonable expectation that it would continue to rule indefinitely, there is no reason to expect the DC to offer distributive goods beyond the four (or later five) parties of its own governing coalition. More recently, however, some have contended that, despite the appearance of intense partisanship and polarization (Sartori 1976), a form of “consociationalism” in practice arose, in which the country’s major opposition party, the Italian Communist Party (PCI), also shared in the spoils (Pizzorno 1992; Pizzorno 1993). Such a view builds on earlier research documenting that local communist politicians were often very able in extracting resources from central government (Tarrow 1977). This interpretation is consistent with the norm of universalism

¹The weak party/PR case informing McGillivray’s study is Brazil. Brazil is a presidential system, however. Of the world’s democratic regimes that use open-list PR, only two — Brazil and Chile — are presidential, according to the information compiled by (Chang and Golden forthcoming, table A.3). In Brazil, (Ames 2001) documents that local public goods and patronage are distributed by the president. Hence, it is not surprising that it is difficult to predict the types of districts receiving more distributive goods by observing the behavior of legislators. In this paper, we study the less institutionally complex and more commonly observed parliamentary setting.

²(Samuels 1999) documents that parties in open-list PR settings vary in their degree of centralization and cohesion.

that apparently prevailed in the Italian legislature in the passage of pork-barrel bills (Predieri 1963). This debate has yet to be informed by systematic data. To speak to these issues, we specifically investigate the extent to which the main opposition party benefited from distributive policies over the postwar era.

Our work has direct substantive implications for the world’s democratic political systems that use proportional representation with open lists, a fairly common arrangement. We estimate that a third of democratic countries with PR use open lists.³

Our study differs from existing Italian-specific as well as other comparative and US-oriented literature in at least three ways. First, we use infrastructure investment data covering the full forty-odd years of the postwar era (the period known as the “First Republic,” i.e. until the collapse of the postwar party system and the 1993–94 modification of Italy’s electoral system), which is a longer period than any other study of distributive politics of which we are aware. Second, we include, as much as is possible, the entire array of public infrastructure investment spending over this period.⁴ Other studies of which we are aware either use some subset of spending, such as a specific category of federal grants, or they use very broad allocations of spending, such as all federal monies going to electoral districts, making it difficult to distinguish politically manipulatable spending. Finally, because we study an electoral system characterized by districts magnitudes greater than one, we confront the aggregation issue head on. Studies set in single-member district electoral systems do not distinguish the strength of the incumbent political party from the influence of the individual representative holding legislative office, because the two are identical. Characteristics of the individual legislator — such as his tenure in office, his party affiliation, and his committee appointments — are easily incorporated into models of the partisan bases of the distribution of resources. Our study, by contrast, is set in an electoral system with an average district magnitude of 20. We therefore necessarily face the task of aggregating the characteristics of 20 legislators

³Of the world’s 40-odd democratic nations that use proportional representation, the Database of Political Institutions (Beck, Clarke, Groff, Keefer, and Walsh 2001) classifies 14 as having open-lists. For an enumeration, see (Chang and Golden forthcoming, table A.3).

⁴We discuss data limitations in a later section.

— or at least that subset of legislators affiliated with the parties of government — into district-level characteristics.

In what follows, we first review the relevant theoretical literature, and derive testable hypotheses suitable for a context of partisan fragmentation and proportional representation. We then lay out the empirical model we use, and detail key variables and our dataset. Econometric results follow. In our conclusions, we note some ideas for future work.

2 Formal Theories of Distributive Politics

The current literature contains competing formal models of distributive politics, generating different expectations about where politicians will direct local public goods (“pork”) as well as geographically targetable private goods (“patronage”)⁵ (a useful summary is (Drazen 2000, ch. 8)). Cox and McCubbins (1986) study whether politicians will direct goods to their own core support groups, to opposition groups, or to swing groups, and find that risk-averse politicians will invest relatively more in support groups and secondarily in swing groups. They will not invest at all in opposition groups.

An alternative is due to (Lindbeck and Weibull 1987) and also (Dixit and Londregan 1996), (subsequently extended in (Dixit and Londregan 1998)), who contend that under many circumstances, vote-maximizing redistribution will target two classes of voters: those who are ideologically indifferent between the two parties (“swing voters”) and, in the latter set of models, low-income voters. The underlying rationale is the same for both types of voter. In each case, these are groups who are likely to be more responsive to distributive benefits than others, the former because they care less about ideology relative to material benefits compared to other groups of voters, and the latter because their income level makes them cheaper to attract.

⁵For purposes of the present analysis, we make no special theoretical distinction between these two classes of goods. We occasionally refer to them as quasi-public goods, since access may be limited by geographic proximity.

These two sets of models lay out competing expectations about distributive politics. The Cox-McCubbins model predicts that we should see distributive benefits going first and foremost to government's core supporters, whereas the Lindbeck-Weibull/Dixit-Londregan model predicts that we should see benefits going disproportionately to swing voters. Given the theoretical controversy in the existing literature, it is perhaps not surprising that the relevant empirical literature has generated a confusing array of findings. Some US studies support the Lindbeck-Weibull/Dixit-Londregan thesis that material benefits are disproportionately directed to "swing" voters (Wright 1974; Stein and Bickers 1994; Bickers and Stein 1996; Herron and Theodos 2004). Some research in other national settings also finds that legislators direct resources to electorally pivotal or marginal areas (Bruhn 1996; Denmark 2000; Case 2001; Dahlberg and Johansson 2002). The Cox-McCubbins hypothesis that expenditures are instead concentrated in majority party strongholds, thereby benefiting core voters, has received empirical support in some US studies (Ansolabehere and Snyder 2003; Levitt and Snyder 1995; Balla, Lawrence, Maltzman, and Sigelman 2002), as well as a number of those conducted elsewhere (Diaz-Cayeros, Magaloni, and Weingast 2000; Horiuchi and Lee 2004; Crisp and Ingall 2002).

Recent work by (McGillivray 2004) reconciles these two competing models with a theory in which two variables are used to capture the incentives facing politicians deciding the allocation of distributive goods: the type of electoral system and the cohesiveness or strength of national political parties.⁶ The electoral rule generates expectations about the types of votes those seeking national public office will cultivate. In an SMD system, winning a legislative seat requires a plurality of votes in an electoral district, so votes in contested districts matter more to politicians than votes in safe districts. If parties are strong, they will therefore target marginal districts with local public goods, confirming the logic of the Lindbeck-Weibull/Dixit-Londregan model. In PR systems, all votes matter equally regardless of district location, because every vote contributes to the allocation of legislative seats among parties. Therefore,

⁶We simplify McGillivray's model, omitting, among other things, any discussion of voters.

nationally disciplined parties staffed by risk-averse legislators will target their strongholds in order to hold core voters and prevent the emergence of new parties, corroborating Cox-McCubbins. All else equal, the theory generates the expectation that politicians will target resources to marginal districts under SMD and to party strongholds under PR.

Building on earlier work on party strength by (Levitt and Snyder 1995), McGillivray next complicates this formulation by varying party strength, conceptualized as the degree of personalism in electoral contests. In SMD settings, weak parties cannot discipline their legislators successfully in voting on policy. This compromises central control over targeting goods to specific electoral districts. Because party discipline is low, many coalitions can be formed in the legislature, allowing idiosyncratic rules and procedures of the legislative body to thereby affect coalition formation. In the United States, for instance — McGillivray’s example of a SMD system with weak parties, and certainly the most extensively studied case in the literature — pork barrel projects are typically incorporated into omnibus legislation, receiving unanimous support from both sides of the aisle (Weingast 1979; Shepsle and Weingast 1981; Weingast, Shepsle, and Johnsen 1981); see the earlier studies by (Ferejohn 1974; Mayhew 1974). Such legislation reflects informal agreements among elected representatives in their quest to direct expenditures to their home districts. Unanimity is driven by chronic uncertainty surrounding the composition of minimum winning coalitions (Collie 1988a). This model of universalism in legislative policy-making suggests that government and opposition both share in the distribution of public goods and therefore that distributive politics are not ideologically or programmatically divisive politics although in some settings they may underpin the formation of programmatic coalitions (Evans 2004). Corroborating this, universalism in the twentieth century US has been found to be inversely related to partisan conflict in Congress (Collie 1988b). The importance of agenda-setting also means that legislators with greater seniority, greater influence in their party, and appropriate committee appointments are typically more successfully in targeting their

home districts with higher levels of expenditures.⁷ Hence, McGillivray hypothesizes that in weak-party majoritarian systems, redistributive policy is targeted to safe districts, because these districts by definition elect more senior and more powerful legislators.

McGillivray’s study does not extend to the fourth logically possible case, that of weak parties in PR settings. We observe weak parties under PR where open lists are used; that is, where candidate selection is in effect not under central party control. We extend to that setting in the next section, where we spell out the incentives underlying the vote-getting behavior of legislators and parties in open-list PR. We build on these assumptions to derive testable hypotheses about where parties and legislators direct quasi-public goods.

3 Distributive Politics under Open-List PR

A macro-level comparative literature argues that proportional representation and majoritarian electoral systems offer different incentives to parties regarding redistribution. Systems operating under PR tend to distribute benefits via large scale transfers whereas majoritarian systems tend to distribute goods that are geographically targetable, i.e. “pork-barrel” projects (Milesi-Ferretti, Perotti, and Rostagno 2002; Lizzeri and Persico 2001; Persson and Tabellini 1999; Persson, Roland, and Tabellini 2003). By implication, not only is the overall level of geographically-targetable projects relatively low in a PR context, but pork barrel projects and patronage are relatively unimportant politically because the individual identities of legislators are unimportant where they are elected off party lists (Cain, Ferejohn, and Fiorina 1987; Carey and Shugart 1995).

Open-list PR, however, is similar to a majoritarian electoral system in that it pits contenders from the same party against each other in the search for individual votes. In the case of SMD, these contests occur

⁷Committee assignments have also been shown to be important for distributive expenditures for those representatives elected out of single-member districts in Germany’s mixed SMD/PR electoral system (e.g. (Stratmann and Baur 2002).

as primaries, whereas in open-list PR, they occur among candidates on the party list. This is because candidates are seated in function of the number of preference votes received. So, if party list votes are sufficient for party A to win three seats in multimember district y , the winning candidates are the three on that party's list receiving the most individual preference votes.⁸ In a closed-list setting, by contrast, they are the three candidates the party leadership places at the top of its list.

Open-list PR reduces party control over candidate selection and generates factionalism and intraparty competition in the search for preference votes (Katz 1986; Pasquino 1972). Despite district magnitudes greater than 1, individual candidates must seek personal identities in their campaigns, and incumbents must routinely “credit-claim” for district-specific policy outputs.⁹ The incentives facing individual legislators are thus distinct from those facing the political parties with which they are affiliated. Individual legislators seek reelection, and therefore cultivate votes in their home districts, whereas parties seek more votes (because these translate directly into more seats), and therefore cultivate their areas of core support.¹⁰ We assume they do this because in these areas, for reasons discussed in what follows, it will be less expensive to attract the marginal supporter. Party and legislator strongholds may not be the same in open-list PR settings.

Consider first the incentives facing individual legislators, who seek to maximize votes in their home districts. To secure reelection, incumbents seek preference votes from the districts they represent. As (Myerson 1993) shows in a model of redistribution in various electoral environments, in open-list PR, candidates “will make highly unequal offers to voters and ... each will concentrate attention on a small

⁸In the standard open-list PR setting, such as the Italian in the period we study, electors may select individual candidates only off the list of the party they vote for; i.e. split ticket voting is not possible.

⁹Even in a multimember setting, credit can be assigned to the individual representative. (Tarrow 1967, p. 331) gives the example of ministerial telegrams routinely publicizing the contributions of specific deputies in securing public works projects in the Italian South. For a contrary view, see (Kunicovà and Rose-Ackerman 2005).

¹⁰“Party” in this context is an abstract unitary actor, distinct from the individually powerful politicians who make leadership decisions. The lack of alignment between the incentives facing “parties” and the political leaders who run them is characteristic of weak party/PR settings.

minority of the voters who support the party” (p. 867). Individual legislators build personal bailiwicks to distinguish themselves from competitors within their own party. Pork-barrel and patronage politics are likely to be important components to personalized vote seeking because distributive goods provide tangible evidence to voters of the competence of the elected official.¹¹ Incumbent legislators thus seek to direct goods to the districts that elected them.

The more able the individual incumbent in wresting resources within the legislative arena, the more he successfully targets goods to his home district and the more likely he is to win reelection. As in the United States, the specific rules and procedures of the law-making institution determine which individual legislators are more powerful. In a parliamentary as opposed to a presidential system, legislators affiliated with the parties of government are more likely to see their legislation adopted than are opposition legislators, and the specific party that controls the relevant ministry — Ministry of Public Works, Ministry of Transportation, Ministry of the Interior — has greater access to those types of goods (Laver and Shepsle 1994; Laver and Shepsle 1996). The greater legislative experience that comes with seniority may well matter in addition, because experience entails practice with coalition politics and log-rolling within the legislature. Finally, in a weak-party PR setting, in contrast to a strong-party PR environment, committee assignments may be important, especially since committee deliberations are usually less public than deliberations on the floor. The politics of coalition building in the legislative arena should therefore be similar to that found in weak party environments in plurality electoral systems.

Although the ability of parties to discipline their incumbents is by definition low for weak parties, the incentives facing them under PR should be the same as those facing strong parties. In a PR environment, parties seek to maximize the number of votes they receive regardless of the electoral district in which votes are located, precisely because PR allows no vote to go unused in calculating the distribution of

¹¹Why voters respond to distributive goods is puzzling. (Stokes 2005) constructs an iterated model in which parties are able to discern the voter’s type and his vote in order to understand how parties “buy” votes with goods.

legislative seats. Hence, parties will target their areas of core electoral strength, since more voters who are weakly predisposed (rather than opposed) towards the party should be located here.¹² However, the abilities of weak parties to direct goods to these areas will be less than the abilities of strong parties to do so. Strong parties can discipline their legislators, whereas weak parties cannot. The bailiwicks of individually powerful legislators may or may not be located in the same areas of the country in which governing parties are strong.¹³ The extent to which parties win in the struggle with their own legislators in directing separable public goods and patronage to geographic areas is an empirical question that is suitably studied in a multiple regression framework.

In Figure 1, we summarize our theory of how electoral systems and party systems combine to produce different patterns in the distribution of geographically targetable goods. The typology identifies our expectations of how institutional conditions structure the incentives facing political actors whose decisions allocate these goods. In the next section, we details the hypotheses that follow.

Figure 1 about here

4 Hypotheses to be Tested

Although it is commonplace to read in the country-specific Italian literature that many material benefits were distributed geographically over the course of the postwar era by the governing parties in efforts to win votes, distributive politics have rarely been investigated in the Italian context using systematic methods of analysis. Two important exceptions are (Marzotto and Schachter 1983) and (Sapienza 2004). Using a modified random sample of 534 southern Italian communes, Marzotto and Schachter study

¹²This rests on some assumptions, not studied here, about geographic proximity and political preferences.

¹³In postwar Italy, core areas of Christian Democratic strength were in the Northeast, whereas the core areas of the most individually powerful DC politicians were in the South. This discrepancy allows us to assess party strength separately from the influence of individually powerful Christian Democratic legislators. For details, see below.

whether electoral competition between the DC and Italy's main opposition party, the PCI, influenced the distribution of investments by the Cassa per il Mezzogiorno between 1950 and 1970.¹⁴ In an argument close to the one explored here, Marzotto and Schachter also investigate “the widely held belief that DC strongholds (cities returning over 50% of the vote to the DC) also received token funds — more as political payoffs to party notables than for their economic potential” (p. 69n4). They contend that their data does not corroborate the “party stronghold” hypothesis, and interpret this as supporting the view, which resurfaces in more recent literature (Stokes 2005), that “there is no political reason to waste scarce resources on cities where the party in power is clearly and undeniably in command” (p. 72). However, Marzotto and Schachter's analysis relies on a series of bilateral correlations rather than multiple regression analysis. In addition, their data is considerably less complete than that used here.

Using thoroughly modern statistical methods, (Sapienza 2004) studies the loans made by state-owned banks in Italy. She finds that banks offer lower interest rates to firms in the areas where the political party controlling the bank is strong. Her study, in contrast with that by (Marzotto and Schachter 1983), finds that parties use their control over public banks to direct resources to party strongholds.

The discussion thus far naturally generates the following two core hypotheses:

1. Individual legislators who have greater institutional influence in the parliamentary arena will direct higher levels of expenditures or more benefits to their home districts;
2. Governing parties will direct higher levels of expenditures or more benefits to areas of greater electoral strength for the party(-ies).

Accordingly, we expect two possible influences on the dependent variable, one coming from individually powerful deputies and a second from the strength of political parties. The former is likely to be more

¹⁴During this period, the Cassa was the national government's main instrument for directing investments to the South, with the purported aim of promoting industrial development and economic growth in the historically less developed areas there.

important in a weak party context, the latter where parties are powerful and able to discipline their legislators. A way to represent this is:

$$INV_{it} = f(INFL_{it}, GOV_{it}, PROV_{it}) \quad (1)$$

where

INV is the amount of money spent on new public works construction in millions of *lire* at constant 1990 prices;

INFL is a composite measure (detailed shortly) of the political influence exercised by individual deputies;

GOV is the strength of the governing party[-ies];

PROV are socio-economic characteristics of the province;

i is a geographic (electoral district or provincial) subscript;

and

t is a temporal (annual or legislative period) subscript.

Public works expenditures have been studied in various other contexts, including the US (e.g. (Fer-john 1974; Hird 1991; Crain and Oakley 1995)) and comparatively (Keefer 2005). Several variables potentially capture the political influence exercised by individual legislative representatives over such expenditures:

PREF is the deputy's national rank within his party in the number of preference votes received, where the deputy with the most preference votes receives a rank of 1;

SEN is a measure of seniority, or the number of previous terms in the Chamber of Deputies the deputy has held;

EDUC is a measure of education, or a dummy variable for whether the deputy has completed higher education;

SEX is a dummy variable coding whether the deputy is male or female;

PARTYOFF is a measure of influence within the party hierarchy, or a dummy variable coding whether the deputy has ever held a higher office within his party;

and

MINUNDER is a dummy variable coding whether the deputy serves in government as a minister or undersecretary.¹⁵

We expect all of these measures of individual political influence to contribute to a deputy's ability to steer resources to his home district.

In each Italian electoral district there are a variable number of elected members of the Chamber of Deputies, running from a minimum of one to a maximum of 54 in the period we study. It is the collective action of these deputies that has an impact on the allocation of public investments across districts, since bills allocating investments require majority votes (either in committee or on the floor). Theoretically, we thus expect that deputies will necessarily coordinate on legislation allocating goods to districts, and we study the characteristics of deputies that make them more or less successful in securing such goods for their home districts. We necessarily aggregate the characteristics of deputies to the electoral district level, in order to examine the influence of deputies on spending where the spending is observed only geographically.¹⁶

¹⁵Formally, members of government need not be drawn from parliament, but in practice, most were. Only in the Eleventh Legislature did the government comprise a large number of non-political persons (so-called "technical" experts). Of the 1,397 ministerial positions filled during the ten legislatures that we study, 35 were filled by persons drawn from outside parliament and 404 by members of the Senate. Hence, 69 percent were filled by members of the Chamber of Deputies.

¹⁶If legislative votes in Italy were not secret, we would be able to study how individual deputies voted on specific laws allocating goods to districts. We do not observe these votes in Italy, however. Most

Our electoral district aggregation procedures are as follows:

PREF is a weighted average of the national preference vote rankings of deputies belonging to the governing coalition, where the weights are equal to the relative importance, at the national level, of their party within the governing coalition. The intuition behind this measure is that nationally more powerful politicians within each party — where power is assessed by the relative number of preference votes received in the most recent election — will be more able to secure resources for their districts.

SEN is the average seniority of governing party deputies in the district, where seniority is defined as the number of prior terms (Operational details of each variable are provided in Table 2.) in the Chamber.

We use ratios to aggregate the dummy variables (EDUC, SEX, PARTYOFF, MPPROF, and MIN-UNDER) to the level of electoral districts.¹⁷ For instance, the measure of SEX that we use is the ratio of male to female deputies in the parties of government in the district in each legislature. Likewise, the measure of MPPROF that we construct is the ratio of deputies in the parties of government in each district in each legislature who are professional politicians out of the total number of deputies in the parties of government in each district and each legislative period.

We use the prefix AGG to indicate that a given characteristic is aggregated to the level of electoral districts rather than for individual deputies.

Our measures of the strength of the governing party(-ies) in a given legislature and district uses the following indicators:

GOVDEPS is the number of governing parties' deputies in an electoral district;

and

SHARE is the vote share received in the electoral district by all parties of government in the most postwar bills were voted using secret ballots, and we only observe policy output; i.e. the amounts of monies actually disbursed to provinces.

¹⁷In fact, given that dummies are coded as either zeros or ones, computing ratios is equivalent to computing means. Ratios have a more natural interpretation.

recent legislative election.

Here, as for all variables that we construct, we confront the issue of how to operationalize the concept of “governing party.” In parliamentary systems, multiple government coalitions may be formed during a single legislative session without new elections being called. In Italy, the average life of a coalition over the ten legislative periods that we study was 10 months. We could define legislators as belonging to the governing coalition if their party were a coalition partner at any point during the life of the legislature. But some parties held portfolios for only very short periods — a few months, for instance. It seems unlikely that access to government power for only a few months would significantly improve the ability of that party’s deputies to secure resources for their districts. We have therefore chosen to define governing parties as parties in government at least half of the life of the legislative period.¹⁸ Note that because Italy’s electoral system was pure PR, vote and seat shares are almost identical.

Finally, we control for various socioeconomic characteristics of the provinces in which the investments are made. For reasons that will become clear once the estimating strategy is laid out, it is convenient to draw a distinction between characteristics of districts that change in time and those that remain constant.

Characteristics that change in time are:

GDP is a measure of per capita provincial wealth;

and

POP is a measure of the number of provincial residents.

Characteristics that do not change in time are:

AREA is the geographic size (measured in square kilometers) of the electoral district;

¹⁸A reasonable alternative would be to weight the characteristics of deputies by the number of days their party was in power in each legislative period.

SUBCULT is a measure of strength of the Catholic subculture in the district, as expressed by the electoral results in the first postwar election, held in 1948;

and

KPUBSTART is a measure of provincial public capital stock at the beginning of the sample period, which is likely to influence subsequent investment decisions.

As will be clear later on, our estimating technique of choice, fixed effects panel data estimation, effectively eliminates (or controls for) any geographic characteristics that are fixed in time. This removes the need to specify explicitly such variables. As a result, measures of these variables are not included in our regression models.

5 Background to the Italian Context

There are some contextual factors potentially important for understanding the spatial distribution of targetable goods in Italy. We now turn to these especially for readers less familiar with the Italian context.

Italy is a unitary, not a federal, political structure.¹⁹ Government expenditures and transfers almost all originate at the central level, although they may be disbursed by subnational units. Despite the obscure and vexing nature of Italy's budgetary process (see (Morcaldo 1993; Alesina, Marè, and Perotti 1998; Vassallo 2000)), it is reasonable to assume that the allocation of distributive benefits is under the control of national legislators and members of government.

Excellent empirical research on law-making in Italy's lower house, the Chamber of Deputies, has been carried out over many decades (Predieri 1963; Di Palma 1977; Capano and Giuliani 2001). For the period under consideration, most votes in the Chamber of Deputies were secret, making it impossible to

¹⁹Since 1970, regions have enjoyed limited fiscal autonomy.

undertake direct analysis of the partisan bases of legislative decisions. The literature reports that most distributive policy was passed in committee in Italy, a country unique among the world's democracies for permitting final votes on legislation to occur in committee rather than on the floor. Bills involving distributive benefits (*"leggine"*) are normally voted in committee, where they frequently receive universal endorsement (Predieri 1963; Di Palma 1977), just as in the United States. This provides *prima facie* evidence corroborating the importance of institutional rules in the Italian legislative context.

An extensive literature studies the patronage and clientelistic orientation of the postwar DC, especially after the mid-1950s (in English, see (Graziano 1977; Cagiagli and Mattina 1979; Chubb 1982)). This literature is buttressed by electoral studies that distinguish voting orientations in Italy along the following lines: (a) votes of exchange, that is, patronage-induced votes; (b) votes of opinion, or policy and programmatically oriented votes; and (c) votes of belonging, or votes based on subcultural affiliation, which in the Italian context refers to the red (communist and socialist) and the white (Catholic) subcultures (Parisi and Pasquino 1980). This typology is more complex than the distinction between programmatic and materially-oriented voters that underlies most models of distributive politics, because it classes ideological voters into two types, one of which is not observed in the US and indeed is relatively uncommon in developed societies generally: the subcultural voter (see (Schorske 1970)). In the present context, the subcultural (ideological) voter should be thought of as a type of "core" voter, but a voter oriented towards the party not the individual political representative. In Italy the areas of major subcultural strength are, for the DC, the North-East, whereas the major areas of DC patronage and clientelism are in the South. Figure 2 presents maps of Italian electoral districts showing results of the legislative elections of 1958 (to the Third Legislature) and of 1987 (to the Tenth Legislature), the latter the last general election in which the DC's share of the vote remained over 30 percent. The maps are shaded from dark to light to show the share of the vote received by the DC. We have also indicated the percentile ranking of the highest-ranking Christian Democrat in each electoral district.

Figure 2 about here

Three features of the maps deserve comment. First, there is obvious evidence of a substantial decline of the vote shares won by the DC in 1987 compared with thirty years earlier, as indicated by the smaller number of districts that are very darkly shaded in the Tenth compared with the Third Legislature. Second, in both periods, the core areas of party strength are in the North-East and districts south of Rome. Third, there is a substantial discrepancy between areas of core party strength and districts with very powerful individual DC deputies. Those deputies who received the most preference votes overall, as indicated by the largest circles, showing percentile rankings 1 through 33, are all in southern electoral districts in both legislatures. DC party strength and the strength of individually powerful legislators do not fully coincide: none of the most powerful deputies are elected from the core (subcultural) districts of the North-East in either legislature. Because Italian electoral behavior changes very little from one election to the next, the two maps are broadly representative of the trends and of the continuities present over the entire forty year period we study. The maps graphically illustrate the data that allows our statistical analysis to untangle the effects of party from the effects of individually powerful politicians on the allocation of resources to electoral districts. For simplicity, we depict only Christian Democracy in these maps, but because of its role as a dominant party over the entire period, the discrepancy we identify for that party holds more generally across parties of government.

Finally, students of the Italian party system have long stressed the factional nature of DC party organization, and the extent to which resources are distributed internally according to factional strength (Zuckerman 1979; Mershon 2001). Ministerial positions were apparently allocated to Christian Democrats in function of their strength within the party's ruling executive body. Factions, in turn, drew strength from preference votes. This gave DC legislators incentives to cultivate personal votes. We should therefore observe DC legislators amassing unusually large numbers of preference votes, many more than those amassed by deputies affiliated with other parties (even relatively speaking). Moreover, preference votes

may prove particularly powerful weapons in resource allocation.

In short, the established literature tells us that postwar Italian politics provides a rich, interesting and theoretically appropriate environment in which to examine the determinants of distributive politics.

6 Data, Measures and Descriptive Statistics

During the period considered, Italy’s Chamber of Deputies was elected on the basis of 32 electoral districts, with an average district magnitude of 20.²⁰ Between 1948 and 1994, eleven legislatures were elected, most of which seated 630 deputies.²¹

For most of the period under consideration, Italy had 92 provinces.²² A list of provinces and their corresponding electoral districts is reported in Table 8.

We gain the largest number of observations by arranging the data according to province-year where possible because the data for our dependent variable — public infrastructure investments — are available at this level. To match data available only at larger levels of aggregation, we propagate the values of variables available in larger units (legislative periods, for instance, or electoral districts) across the smaller subunits. For instance, we propagate the characteristics of deputies, whom we observe only at the level of the electoral districts that elected them, across the provinces that form the districts. This preserves maximum information.

²⁰Val d’Aosta elected only a single representative, hence effectively using a plurality electoral rule. For this reason, and also because other types of data are often unavailable for it, it drops out of the analysis. Trieste, which was only created with the Third Legislature, is likewise excluded. This leaves us with 30 districts, corresponding to 90 provinces.

²¹Legislatures I, II and III each elected slightly fewer deputies. Deaths and resignations during the life of the legislature were handled by seating the party’s candidate from the district who received the most preference votes in the prior election but remained unelected. Because of variable numbers of such substitutes, the overall n for each legislature is slightly different.

²²An additional three provinces were created in 1968 and another five in 1995, so that currently Italy has 103 provinces. For this study, data are aggregated to the original 92 provinces that form the bulk of the sample, since we cannot accurately disaggregate data prior to 1968 for those provinces that were later carved into multiple provinces.

Our dependent variable is public works expenditures, which are classic instances of geographically-targetable and divisible goods. We work with computerized files of official data collected by Italy's national statistics office, the Istituto Nazionale di Statistica (ISTAT), on flows of monies to capital investments by province and year, which have been made publicly available for 1954 to 1998 by Lucio Picci (Picci 2005). (Note that because this series begins in 1954, we lose information on the First Legislature, which sat from 1948 to 1953.) The data refer to capital improvements only, such as new construction in roads, airports, ports, and public buildings, and exclude ordinary maintenance expenses. ISTAT disaggregates expenditures into nine types of goods: land reclamation and irrigation (*bonifiche*); telecommunications (*comunicazione*); public buildings (*edilizia pubblica*); railways (*ferrovie*); water and electricity (*idriche*); public health (*igienico-sanitario*); rivers and ports (*marittime*); roads and airports (*strade*); and other (*altri*). Below, we examine aggregate expenditures and also roads and airports, because the latter is especially susceptible to politicization.

The data are collected using quarterly questionnaires sent by ISTAT's central offices to all government offices responsible for disbursing investment funds. The information in the returns is aggregated annually and to provincial units (ISTAT, various years). These data, which are necessarily incomplete because of unanswered questionnaires sent to subnational government officials asking them to report infrastructure disbursements carried out under their auspices, are then apportioned among the different provinces and categories of goods on the basis of aggregate totals generated out of Italy's national accounts; for a detailed description of the procedures used, see (Bonaglia and Picci 2000) and, in English, (Golden and Picci 2005, Appendix B). Figure 3 shows (logged) public investments at constant prices, aggregated to electoral districts to improve readability, during the legislative periods we study.

Figure 3 about here

Our main independent variables involve elected members to the Chamber of Deputies. The standard source of data on the members of the Italian lower house during the first eleven legislative periods (1948–

94) is known as the Verzichelli-Cotta dataset, after the original compilation of the first nine legislatures (reported in (Cotta 1979)) and subsequently extended (for English-language analyses using the latter, see (Cotta, Mastropaolo, and Verzichelli 2000; Recchi 1996; Recchi and Verzichelli 2003; Verzichelli 1998)). The Verzichelli-Cotta dataset includes information on the sex, educational attainments, and party and professional backgrounds of deputies. Luca Verzichelli provided the dataset, and we merged it with a dataset compiled by (Golden 2004a) containing the number of preference votes received by deputies in the first eleven postwar legislatures. We have also coded and merged data on all ministerial and undersecretarial positions held by deputies, using information from *La Navicella*.²³ The resulting dataset contains approximately 7,000 records of seated deputies (11 legislatures \times 32 electoral districts \times 20 deputies per district (average district magnitude)).

Figures 4 about here

Figures 4 shows boxplots of our independent variables by electoral district. Most variables show significant variation in time, as the large size of the boxes indicates. An exception is AGGSEX: all districts had mostly male deputies in the governing parties over all periods. As Table 8 documents, lower numbered districts (one the left in each box plot) are in the North and higher numbered are in the South. Note that the variable measuring the percentile rankings of deputies in Figure 4 exhibits lower average values for southern districts. This indicates that governing party deputies who were elected from southern districts tended to receive more preference votes than the national average, giving them higher rankings (i.e. lower order numbers) within their party. This corresponds to the well-known fact that voters in the South were substantially more likely to cast preference votes than northern electors. We also depict the variation of the ratio of ministerial positions (ministers and undersecretaries) to ordinary parliamentarians in the governing parties within each district. Electoral districts in the South of the country were on average allocated more ministries and undersecretaries than elsewhere, again with

²³We have therefore excluded ministers and undersecretaries drawn from the Senate or outside parliament. See fn.15.

substantial variations across districts. A final variable that exhibits a noticeable North-South difference is education. The ratio educated to less educated deputies is higher in the South.

The economics literature finds that infrastructure investments have significant and large effects on output (Aschauer 1989b; Aschauer 1989a); a useful review is (Gramlich 1994). Hence, demand for infrastructure is arguably greater where output is higher. For this and other reasons, we control for the preexisting level of output. We use a reconstructed series developed by Prometeia, a private forecasting company headquartered in Bologna, of provincial level per capita value added at factor cost. The Prometeia series draws mainly on the standard data source, produced by the Istituto Guglielmo Tagliacarne, whose own provincial level data are unavailable for the whole period.

Table 1 illustrates pairwise correlations between variables. Each reported value summarizes a set of ten correlations — one for each legislature — and has been computed as follows. For each of the ten legislatures, pairwise correlations have been computed. Each value in the table reports the median of those correlations. If a value is positive, it means that more than half the correlations were positive. Moreover, if the number is starred, at least nine correlations had the same sign.

Table 1 about here

Table 1 is instructive in several ways. We see that AGGPREF is negatively correlated with AGGMINUNDER, indicating that districts with deputies who had received more preference votes were likely to have more ministerial positions. We interpret this to mean that elevation to government office hinges on the display of a large clientele. This is widely reported in the literature, and provides one obvious incentive for deputies to make an effort to amass as many preference votes as possible. Note too that districts with more senior deputies are also those with deputies who are more educated, have held high party office, send more deputies into government as ministers and undersecretaries, and elect deputies who receive more preference votes compared with others in their party.

7 The Estimation Strategy

The data form a panel comprising 90 of Italy’s province (excluding the provinces that make up the electoral districts of the Val d’Aosta and of Trieste) and 10 legislative periods (excluding, that is, the First Legislature, for which investment data are not available). Hence, we work with 900 observations.

Panels of data are characterized by a richness of information when compared to simple time series or cross-sectional data. Such richness offers more than one potential estimation strategy, given that the parameters of interest can be identified using the variability of the data in the time series dimension, in the cross-sectional dimension, or both. A fixed effects estimator, based on variation in the data “within” each statistical unit (in this context, provinces), is based entirely on the time-series variation of the data. On the other hand, several estimators are available to exploit the cross-sectional variation of the data, from separate regressions on cross-sections to the “between” estimator. The latter can be interpreted as a weighted average of separate cross-sectional estimates. A random effects estimator, finally, captures variation of the data on both dimensions, and is a weighted average of the “within” and “between” estimators (Baltagi 2005).

We use a fixed effect estimator, which has the advantage of effectively capturing (or controlling for) all relevant variables that are idiosyncratic to the statistical units (in this context, electoral districts) that are fixed in time (Baltagi 2005). We do not use estimators that exploit the cross-sectional variation of the data, such as the “between” estimator or OLS on the individual cross-sections, because of the difficulty of correctly identifying and measuring some factors that are fixed in time. For such an analysis, we would need a measure of the infrastructure stock at the beginning of the period — KPUBSTART — since we would expect public investment decisions to be influenced by the preexisting level of capital stock. Unfortunately, such a measure of public capital stock is not available. Note that the data, as depicted in Figures 3 and 4, exhibit enough variation in the temporal dimension to employ a “within” estimator.

If we call x_{it}^j the j th regressor in the model, then the equation to be estimated is:

$$INV_{it} = \beta_0 + \sum_{j=1}^k \beta_j x_{it}^j + \varepsilon_{it} \quad (2)$$

where the error term is equal to a provincial fixed effect plus a truly idiosyncratic term:

$$\varepsilon_{it} = \mu_i + \omega_{it} \quad (3)$$

The fixed effect μ_i absorbs all variables that are fixed in time, such as AREA, SUBCULT and KPUB-START, plus any other fixed-in-time factors that may be relevant and that we have not explicitly considered. The present model also naturally incorporates time-specific effects that may represent common shocks that are national in character. These might occur due to changes in the international economy or changes in the overall political environment.

The estimation technique easily allows for testing. In particular, an F test can be used to test the joint significance of the fixed effects, or of the idiosyncratic time effects. If the null hypothesis that the fixed effects are irrelevant is not rejected, then, while the fixed effect estimator retains consistency, a simple pooled OLS estimator would be more efficient. The same applies to the time fixed effects, when these are included among the regressors.²⁴

The nature of our data makes it likely that they possess spatial dependence. The presence of spatial dependence does not affect the consistency of the fixed effects estimator. However, spatial correlation of the errors may yield inconsistent estimates of the standard errors of the parameters. This problem is particularly serious because positive correlations of external shocks across temporal units results in an underestimation of the standard errors, and this may lead to the erroneous conclusion that the coefficients that they refer to are significantly different from zero. In other words, if our data are characterized by

²⁴For details see (Baltagi 2005), who refers to models with both fixed and time effects as “two-way models.”

spatial correlation, we may end up with results that appear to be statistically “significant”, when in fact they are not.

We address the problem using the method introduced by (Driscoll and Kraay 1998), who provide a simple non-parametric estimator for the variance-covariance matrix. Such a method has several advantages. First, its usefulness is documented by Monte Carlo simulations provided by the authors; second, it exhibits computational ease, and finally, since it is non-parametric, it bypasses the curse of dimensionality that is intrinsic in parametric variance-covariance estimates and that was also addressed, albeit in a slightly different context, by (Beck and Katz 1995). In the results below, we report both ordinary fixed effects and Driscoll-Kraay standard errors for our estimates.

8 Results

We first present results of two fixed effects regressions, the first with annual average infrastructure investments (in 1990 prices) over each legislative period as the dependent variable and the second with average spending only on roads and airports over each legislative period as the dependent variable. Because they are more discretionary than, say, railroads or ports — ports, after all, cannot be distributed to landlocked provinces, and railway infrastructure is largely complete by the second half of the twentieth century — roads and airports are likely to be especially susceptible to politicization. The data analyzed run from Legislature II to XI (spanning election years starting in 1953 and ending in 1992), with fixed effects for provinces and legislative periods included in the regressions, the latter meant to capture any shocks that affect all provinces similarly. (The coefficients for these are not reported, but most are significant.) The first legislature is omitted due to lack of data on the dependent variable. The dependent variables have been transformed by natural logarithms and are at constant prices.

The main independent variables of theoretical interest are those measuring the aggregate political influence of deputies affiliated with the governing parties in each district — AGGPREF, AGGSEX,

AGGEDUC, AGGPARTYEXP, AGGPROF, and AGGMIN — and the measures of the strength of the governing coalition in the district, GOVDEPS and SHARE.

As control variables, we include a measure of per capita value added at factor costs and at constant prices in the province lagged to the previous electoral period (we use the final year of the previous legislative period), LGDP, and a similarly lagged measure of provincial population, LPOP. (Measures of per capita income and population have been transformed by natural logarithms.)

Because of how the variable was formed, we expect the sign on the coefficient measuring the ability of government deputies to amass preference votes to be negative.²⁵ We expect the signs on the other variables measuring the influence of individual deputies to be positive: the abilities of deputies to steer investments to their districts should rise with education, seniority, a history of holding higher office in the party, ministerial position, and professionalism. We expect the sign on the size of the legislative coalition of deputies from parties of government (GOVDEPS) to be positive, since more representatives should be able to extract more resources. Our theory leads us to expect, finally, that the sign on the coefficient measuring the vote share received by the governing parties (SHARE) should be negative, indicating that the parties of government are less able than their powerful incumbents to steer resources to their core electoral strongholds in a weak party system. These expectations are summarized in Table 2, where we also report details about how we calculate each variable.

Tables 2 about here

Before turning to our results, two remarks are in order. First, fixed effect estimates only use the variation of the data “within” — in the time series dimension — making no use of variation “between” — in the cross-section. As a result, variation over time within each province drives our results. Second, as noted, we report two sets of estimated standard errors below each estimated coefficient. Within brackets, we report OLS estimated standard error, which are standard errors traditionally estimated in fixed effects

²⁵The politician receiving the most preference votes nationally receives a ranking of 1; hence, lower numbers indicate more influence in party headquarters in Rome.

panel data models. In parentheses, we also report the Driscoll-Kraay non-parametric standard errors, which are robust to spatial errors. Systematic differences between the two sets of estimates would indicate the relevance of spatial correlation in the errors. With very few exceptions, our estimates do not exhibit important differences between the OLS and the Driscoll-Kraay standard errors, in the sense that they do not lead to different interpretations of the coefficients. For this reason, while we also report the Driscoll-Kraay standard errors, we interpret the ordinary, OLS, standard errors in the text. Significance levels are indicated in the tables for the estimated OLS standard errors. We explicitly mention instances where the two alternative estimates of the standard errors lead to different interpretations of estimated coefficients.

Results appear as Models 1 and Models 2 in Table 3, with logged total public investments and logged public investments in roads and airports as the dependent variables of the two models. Results show that positive variations in lagged income and population result in more infrastructure investments overall, although roads and airports are affected negatively by lagged income. Results of both models corroborate that districts receive more investments when governing party deputies are on average more senior, have held higher party office. In Model 1, districts receive more investments when governing party deputies are more frequently male (although AGGSEX is not significant according to the Driscoll-Kraay standard errors), while in Model 2 a similar effect is not present. Provinces receive greater investments when their electoral districts elect deputies who are appointed as government ministers and undersecretaries. Finally, when districts elect more deputies to the governing parties, they also receive more investments overall, although this is not true for roads and airports considered separately.

Tables 3 about here

Results are somewhat unexpected for two variables in the models we estimate. First, we find that deputies in the governing parties who are not professional politicians — that is, who held other jobs prior to entering parliament — are more successful on average in securing benefits for their districts. This is shown by the negative coefficient on the variable AGGPROF. Second, the rankings of districts

in preference votes of deputies affiliated with the governing parties does not significantly affect public investments, and is also incorrectly signed (we expect a negative sign on AGGPREF, since higher rankings are indicated with lower numbers).

However, note that the variable AGGMINUNDER (representing the number of ministerial positions in a district) enters significantly in Model 1. AGGMINUNDER is negatively and significantly correlated with AGGPREF, as we have seen in Table 1: a good way to improve one's chances of obtaining a ministerial position is by amassing preference votes. There is a clear multicollinearity between the two variables, underlying which is a well known causal relation. While AGGMINUNDER is not statistically significant in Model 2, results that we report below in Table 6 indicate that if we purge undersecretaries from the measure of ministerial influence, roads and airports also result in being significantly influenced by deputies holding government office.

Finally, both models confirm that when a district receives a lower vote share to the governing parties, it receives more goods. Investments are not directed to those districts where the DC and its allies receive more votes. In both Model 1 and Model 2, the variable SHARE is negatively signed and statistically significant.

8.1 Robustness Analysis

The results that have been reported could hinge on the choice of proxy variables substituting for the theoretical variables discussed in Section 4. In this section, we specifically consider the measure of individual preference votes (PREF) and the measure of ministerial position (MINUNDER).

The aggregation to the electoral district level of the measure PREF depends in part on a collective decision problem. The chosen variable, AGGPREF, indicates a weighted average of the national ranking of deputies from governing parties within a district. However, aggregating individual deputies' rankings by averaging them is just one strategy. It might be the case that not all deputies matter equally and

that the political influence of an electoral district is better captured by the national rankings of its most prominent deputies. Moreover, AGGPREF is computed as a weighted average of the corresponding average rankings of the parties that, in a given legislature, are in power for at least half of the period. The weights obviously give paramount importance to Christian Democracy, given its sheer size and the fact that it participated in every government during the entire period studied. Nonetheless, it is possible that only Christian Democracy really mattered for the allocation of resources, and that minor coalition partners were ineffective in steering investments to districts they represented.

As alternative measures, we consider an aggregate index equal, for each district, to the (weighted) national rankings of the single deputy receiving the most preference votes in each electoral district. The weights represent the vote shares of each party within the governing coalition. We also consider the possibility that Christian Democracy is the only party that matters for allocating resources.

The resulting measures are MAXAGGPREF (a weighted index of each district's top ranking deputy), AGGPCDC (the average ranking of only DC deputies within electoral districts), and MAXPCDC (the national ranking of the DC deputy with the most preference votes within an electoral district). With respect to the measure of ministerial position, we also consider ministerial and undersecretarial positions separately, as AGGMIN and AGGUNDER respectively, in place of the combined variable used in Models 1 and 2.

Table 4 shows the medians of the pairwise correlations, by district, of the various proxies. Our interpretation of this table is identical to that of Table 1. Correlations of AGGPREF with its alternatives is close to 1. Ministerial and undersecretarial positions are slightly negatively correlated, meaning that when a district is allocated many ministries it does not necessarily obtain many undersecretaries as well.

Table 4 here

We report results using the alternative measures of preference votes in Models 3, 4 and 5 in Table 5 and using the decomposed ministerial measures in Models 6 and 7 in Table 6. Results using the

alternative measures of preference votes are very stable, indicating that the choice of proxy does not affect the interpretation of the data. Districts with deputies who receive large numbers of preference votes, however measured, are not allocated significantly more investments.

Tables 5 and 6 about here

When we break down government portfolios into ministerial positions and undersecretaries, we find that overall investments are directed to districts with more ministers. Undersecretarial posts, by contrast, do not appear advantageous for electoral districts, and may even harm the ability of districts to secure infrastructure investments, as suggested by the negative (but statistically insignificant) sign on the coefficient.

9 Universalism and Consociationalism

We now consider the role of the opposition in securing resources for infrastructure investments. Our strategy for doing so is simple. We add to the model a measure of the total number of legislative seats in the district (SEATSTOT). Our theoretical rationale is twofold. First, the overall size of the legislative delegation — that is, the number of deputies elected from the district, or what is often called district magnitude — has been found to be a significant predictor of the resources going to electoral districts in the US. If deputies of government and opposition are working together to secure resources, thanks to a norm of universalism, we would expect that as there are more deputies, the district’s delegation successfully extracts more resources from Rome. Second, by including both SEATSTOT and GOVDEPS in the same model, we effectively estimate the impact of the opposition on the delivery of investments to the district. The difference between the total number of seats in the district and the number of deputies affiliated with the governing parties is, of course, the number of deputies affiliated with opposition parties. By adding district magnitude to our initial model, we thus capture the legislative influence of the opposition. We report results for both total investments and for roads and airports alone in Models 8, 9, 10 and 11 in

Table 7.

Table 7 about here

Results fail to corroborate the hypothesis that a norm of universalism prevailed in the Italian legislature as regards infrastructure investments. The size of the legislative delegation fails to achieve conventionally accepted levels of statistical significance, and even exhibits a negative sign in some cases, meaning that more representatives actually secure fewer resources. At the same time, in the models that also include GOVDEPS, the number of deputies affiliated with the governing parties is positively and, in the case of overall investments, significantly associated with total investments. This suggests that, if anything, the opposition was punished by governing parties in the amounts of overall investments directed at districts in which the opposition parties are strongest. These results fail to support the argument that the Italian Communist Party successfully extracted resources to its areas of core strength, or that a “consociational” political solution prevailed in the postwar Italian regime.

10 Conclusions

We have studied the geographic distribution of resources to electoral districts in Italy over a forty year period. Our results document that individually powerful politicians associated with the parties of government were more successful than other deputies in securing infrastructure investments to their districts, where individual influence is measured by seniority, ministerial position, age, a history of having held higher office in the party, and being male. Perhaps surprisingly, receiving more preference votes than others in ones party did not result in significantly affecting ones ability to steer investments to ones home district. The parties of government were not more successful in securing resources for the districts where they received the largest vote shares. Finally, where the opposition parties were stronger, they were less successful in securing resources. The first result documents that in the open-list electoral environment that prevailed in postwar Italy, individually powerful deputies secured resources at the expense of the

governing parties themselves. Eventually, voters in the core DC districts were precisely those who rebelled by defecting to new opposition parties in the early 1990s (Golden 2004b). The second result documents that, rather than sharing in the spoils, the PCI was punished in the allocation of investments. This result fails to corroborate the hypothesis that a genuine norm of universalism prevailed in the Italian legislature. Even if it is true, as the literature reports, that communist deputies voted with the parties of government on most bills allocating geographically-targeted goods, the aggregate outcome was to punish Communist electoral strongholds.

Our findings introduce a series of new questions that our data do not permit us to answer. First, how general are these findings? Only studies that assemble parallel data on other countries using open-list proportional representation can answer this. Second, why did the Italian Communist Party apparently fail to secure significant investments in its strongholds, despite the apparent norm of universalism that prevailed in voting the relevant bills? More generally, how do legislatures in countries other than the US allocate resources across parties and geographic entities? These questions beg for additional research by teams of scholars.

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Table 1: Medians of Correlations between Variables, by Legislature

	linvtotp90	lgdp	lpop	aggpref	aggsex	aggeduc	aggseior	aggpartyexp	aggprof	aggminunder	govdeps	share
linvtotp90	1*											
lgdp	.605*	1*										
lpop	.748*	.933*	1*									
aggpref	-.214*	.151*	-.160*	1*								
aggsex	.013	-.192*	-.105	-.137	1*							
aggeduc	.178	-.177*	-.041	-.490*	.196	1*						
aggseior	.066	-.215*	-.128*	-.094	-.030	.085	1*					
aggpartyexp	.141	-.191*	-.130*	-.180	.087	.226	.503*	1*				
aggprof	-.048	.0520	.020	.101	.021	-.232*	.236	.109	1*			
aggminunder	.180*	-.0623	.047	-.241*	.106	.128	.286	.321	-.058	1*		
govdeps	.238*	.356*	.437*	-.456*	-.150	.044	-.207*	-.252*	.132	.146	1*	
share	-.005	-.045*	.065*	-.281*	-.054	.164	-.114	-.220	-.166	-.046	.315*	1*

Notes: Medians of pairwise correlations over legislatures. If at least nine out of the ten correlations (one for each of the Second to the Eleventh Legislatures) have the same sign, the median of the pairwise correlations is starred.

Table 2: Abbreviations and Definitions of Independent Variables, and Expected Sign of Estimated Coefficients

variable label	variable name	expected sign
lgdp	gross domestic product, final year of previous leg., constant prices, logged	+
lpop	resident population, final year of previous leg., logged	+
aggpref	average percentile rankings of preference votes	-
aggsex	ratio male to female	+
aggeduc	ratio more to less educated	+
aggseior	average seniority	+
aggpartyexp	ratio experienced in higher party office to inexperienced	+
aggprof	ratio professional politicians to others	+
aggminunder	ratio ministers/undersecretaries to backbenchers	+
govdeps	number of deputies	+
share	vote share	+

Notes: All variables refer to deputies or parties affiliated with parties in government for at least half of the life of the legislature.

Table 3: Panel Data Estimations (Fixed Effects) of Investements

	(Model 1)	(Model 2)
	total invests.	roads and airports
lgdp	0.3863***	-0.2109***
	[0.0503] (0.0379)	[0.0766] (0.0753)
lpop	0.5772***	0.5445*
	[0.1963] (0.3043)	[0.2989] (0.4506)
aggpref	0.0203	0.0915
	[0.1543] (0.1531)	[0.2350] (0.2074)
aggsex	0.3799*	-0.0030
	[0.2195] (0.2564)	[0.3343] (0.3068)
aggeduc	-0.0283	0.0928
	[0.1044] (0.0931)	[0.1591] (0.1901)
aggseior	0.0664**	0.0988**
	[0.0282] (0.0327)	[0.0429] (0.0462)
aggpartyexp	0.2084**	0.1010
	[0.0986] (0.1088)	[0.1501] (0.1916)
aggprof	-0.2194*	-0.6480***
	[0.1285] (0.1068)	[0.1957] (0.1509)
aggminunder	0.1908**	0.2327
	[0.0967] (0.0971)	[0.1472] (0.2041)
govdeps	0.0183**	-0.0081
	[0.0090] (0.003)	[0.0138] (0.0149)
share	-0.0201***	-0.0143**
	[0.0037] (0.0033)	[0.0057] (0.0045)
Observations	900	900
Number of provinces	90	90
R-squared	0.37	0.44

Notes: Standard errors in brackets; Driscoll-Kraay standard errors in parentheses.
 significant at 10%, OLS estimate; ** significant at 5%, OLS estimate; *** significant at 1%, OLS estimate

Table 4: Robustness Analysis I. Correlation Analysis of Alternative Measures of Ranks of Deputies and of Ministerial Influence

	aggpref	maxpref	rankpcdc	maxrankpcdc	aggmin	aggunder	aggminunder
aggpref	1*						
maxpref	.8944455*	1*					
rankpcdc	.9650583*	.8431578*	1*				
maxrankpcdc	.8863583*	.9544927*	.8916076*	1*			
aggmin	-.1392743*	-.0459287	-.1820012	-.0132596	1*		
aggunder	-.1395801*	-.217684*	-.1635586*	-.2213133*	-.0849414	1*	
aggminunder	-.2410783*	-.1840985*	-.2739611*	-.2086694*	.4783141*	.83726549*	1*

Notes: Medians of pairwise correlations over legislatures. If at least nine out of the ten correlations (one for each of the Second to the Eleventh Legislatures) have the same sign, the median of the pairwise correlations is starred.

Table 5: Robustness Analysis I. Panel Estimation (Fixed Effects) of Investments using Alternative Measures of Ranks of Deputies

	(Model 3)	(Model 4)	(Model 5)
	total invests.	total invests.	total invests.
lgdp	0.3781***	0.3869***	0.3781***
	[0.0503] (0.0391)	[0.0501] (0.0373)	[0.0503] (0.0380)
lpop	0.5913***	0.5747***	0.5871***
	[0.1947] (0.2983)	[0.1953] (0.3028)	[0.1945] (0.2999)
aggsex	0.3852*	0.3792*	0.3929*
	[0.2190] (0.2451)	[0.2199] (0.2546)	[0.2192] (0.2410)
aggeduc	-0.0327	-0.0293	-0.0373
	[0.1038] (0.0950)	[0.1043] (0.0959)	[0.1039] (0.1005)
aggseior	0.0702**	0.0661**	0.0693**
	[0.0282] (0.0315)	[0.0281] (0.0331)	[0.0281] (0.0314)
aggpartyexp	0.2102**	0.2071**	0.2032**
	[0.0977] (0.1109)	[0.0980] (0.1117)	[0.0977] (0.1122)
aggprof	-0.2229*	-0.2192*	-0.2167*
	[0.1284] (0.1107)	[0.1289] (0.1072)	[0.1284] (0.1097)
aggminunder	0.1970**	0.1903*	0.1989**
	[0.0963] (0.0951)	[0.0971] (0.0988)	[0.0964] (0.0959)
govdeps	0.0161*	0.0184**	0.0174*
	[0.0092] (0.0073)	[0.0090] (0.0074)	[0.0090] (0.0070)
share	-0.0198***	-0.0201***	-0.0199***
	[0.0037] (0.0035)	[0.0037] (0.0033)	[0.0037] (0.0035)
maxpref	0.1778		
	[0.1272] (0.1915)		
rankpcdc		0.0072	
		[0.1496] (0.1400)	
maxrankpcdc			0.1657
			[0.1213] (0.1971)
Observations	900	900	900
Number of provinces	90	90	90
R-squared	0.37	0.37	0.37

Notes: Standard errors in brackets; Driscoll-Kraay standard errors in parentheses. significant at 10%, OLS estimate; ** significant at 5%, OLS estimate; *** significant at 1%, OLS estimate.

Table 6: Robustness Analysis II. Panel Estimation (Fixed Effects) of Investments using Alternative Measures of Ministerial Influence

	(Model 6)	(Model 7)	(Model 8)	(Model 9)
	total invests.	total invests.	roads and airports	roads and airports
lgdp	0.3858***	0.3595***	-0.1966***	-0.2567***
	[0.0488] (0.0343)	[0.0497] (0.0358)	[0.0740]v(0.0674)	[0.0756] (0.0756)
lpop	0.6359***	0.6168***	0.6304**	0.6247**
	[0.1943] (0.3182)	[0.1973] (0.2984)	[0.2945] (0.4969)	[0.2999] (0.4420)
aggpref	0.0571	-0.0080	0.1758	0.0513
	[0.1537] (0.1421)	[0.1541] (0.1448)	[0.2329] (0.2011)	[0.2343] (0.1981)
aggsex	0.3531	0.3790*	-0.0522	-0.0105
	[0.2182] (0.2450)	[0.2201] (0.2686)	[0.3307] (0.2764)	[0.3346] (0.3073)
aggeduc	-0.0809	-0.0436	0.0042	0.0552
	[0.1041] (0.0886)	[0.1054] (0.0979)	[0.1578] (0.1800)	[0.1602] (0.1951)
aggseior	0.0575**	0.0683**	0.0812*	0.1000**
	[0.0282] (0.0321)	[0.0283] (0.0352)	[0.0427] (0.0468)	[0.0430] (0.0518)
aggpartyexp	0.1875*	0.2373**	0.0458	0.1458
	[0.0978] (0.1218)	[0.0980] (0.1135)	[0.1482] (0.2010)	[0.1491] (0.1894)
aggprof	-0.1975	-0.2390*	-0.5963***	-0.6765***
	[0.1278] (0.0962)	[0.1285] (0.1153)	[0.1937] (0.1658)	[0.1954] (0.1533)
aggmin	0.6161***		1.1284***	
	[0.1650] (0.1233)		[0.2501] (0.2529)	
govdeps	0.0142	0.0187**	-0.0160	-0.0084
	[0.0091] (0.0070)	[0.0091] (0.0080)	[0.0137] (0.0152)	[0.0138] (0.0152)
share	-0.0198***	-0.0208***	-0.0133**	-0.0153***
	[0.0037] (0.0032)	[0.0037] (0.0034)	[0.0056] (0.0043)	[0.0057] (0.0046)
aggunder		-0.0204		-0.1696
		[0.1032] (0.113)		[0.1568] (0.1590)
Observations	900	900	900	900
Number of provinces	90	90	90	90
R-squared	0.37	0.36	0.45	0.44

Notes: Standard errors in brackets; Driscoll-Kraay standard errors in parentheses. significant at 10%, OLS estimate; ** significant at 5%, OLS estimate; *** significant at 1%, OLS estimate

Table 7: Panel Estimation (Fixed Effects) of Effects of Opposition Parties on Investments

	(Model 10)	(Model 11)	(Model 12)	(Model 13)
	total invests.	roads and airports	total invests.	roads and airports
lgdp	0.3859***	-0.2116***	0.3889***	-0.2107***
	[0.0503] (0.0387)	[0.0766] (0.0767)	[0.0504] (0.0388)	[0.0765] (0.0764)
lpop	0.6291***	0.6327**	0.6547***	0.6407**
	[0.2018] (0.3056)	[0.3072] (0.4394)	[0.2020] (0.3118)	[0.3066] (0.4387)
aggpref	-0.0150	0.0315	0.0538	0.0529
	[0.1576] (0.1618)	[0.2399] (0.2062)	[0.1548] (0.1489)	[0.2351] (0.1938)
aggsex	0.3704*	-0.0192	0.3998*	-0.0101
	[0.2196] (0.2624)	[0.3344] (0.2992)	[0.2198] (0.2517)	[0.3336] (0.3013)
aggeduc	-0.0320	0.0866	-0.0159	0.0916
	[0.1045] (0.0929)	[0.1591] (0.1933)	[0.1045] (0.0940)	[0.1586] (0.1916)
aggseior	0.0673**	0.1002**	0.0662**	0.0999**
	[0.0282] (0.0337)	[0.0429] (0.0467)	[0.0283] (0.0321)	[0.0429] (0.0465)
aggpartyexp	0.2054**	0.0959	0.2013**	0.0946
	[0.0986] (0.1108)	[0.1501] (0.1943)	[0.0988] (0.1106)	[0.1500] (0.1956)
aggprof	-0.2321*	-0.6695***	-0.2409*	-0.6723***
	[0.1290] (0.1032)	[0.1964] (0.1521)	[0.1293] (0.1027)	[0.1962] (0.1526)
aggminunder	0.1790*	0.2127	0.1996**	0.2191
	[0.0972] (0.1028)	[0.1481] (0.2087)	[0.0970] (0.1009)	[0.1473] (0.2062)
govdeps	0.0282**	0.0088		
	[0.0128] (0.0145)	[0.0194] (0.0095)		
share	-0.0225***	-0.0184***	-0.0155***	-0.0163***
	[0.0043] (0.0035)	[0.0066] (0.0026)	[0.0030] (0.0037)	[0.0045] (0.0028)
seatstot	-0.0120	-0.0204	0.0050	-0.0152
	[0.0109] (0.0144)	[0.0166] (0.0193)	[0.0077] (0.0087)	[0.0117] (0.0165)
Observations	900	900	900	900
Number of provinces	90	90	90	90
R-squared	0.37	0.44	0.36	0.44

Notes: Standard errors in brackets; Driscoll-Kraay standard errors in parentheses. significant at 10%, OLS estimate; ** significant at 5%, OLS estimate; *** significant at 1%, OLS estimate

Figure 1: Predictions of Types of Electoral Districts Likely to Receive Most Resources under Alternative Institutional Arrangements

		Party Strength	
		strong	weak
Electoral System	SMD	marginal districts	safe districts
	PR	party strongholds	party leader strongholds

Figure 2: Maps of Share of Vote to DC and Percentile Rankings of DC Deputies by Electoral District (Legs. III and X)

Third Legislature

Tenth Legislature

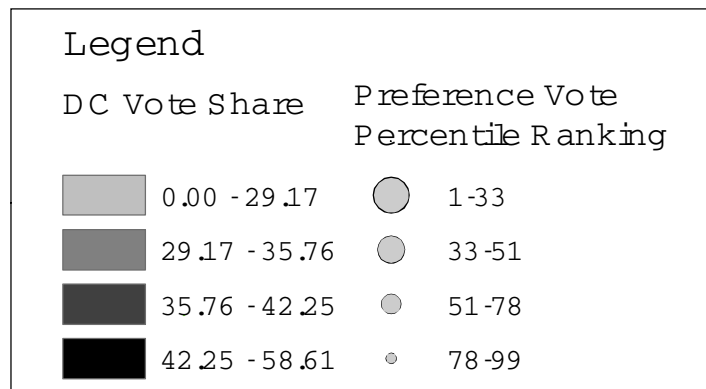
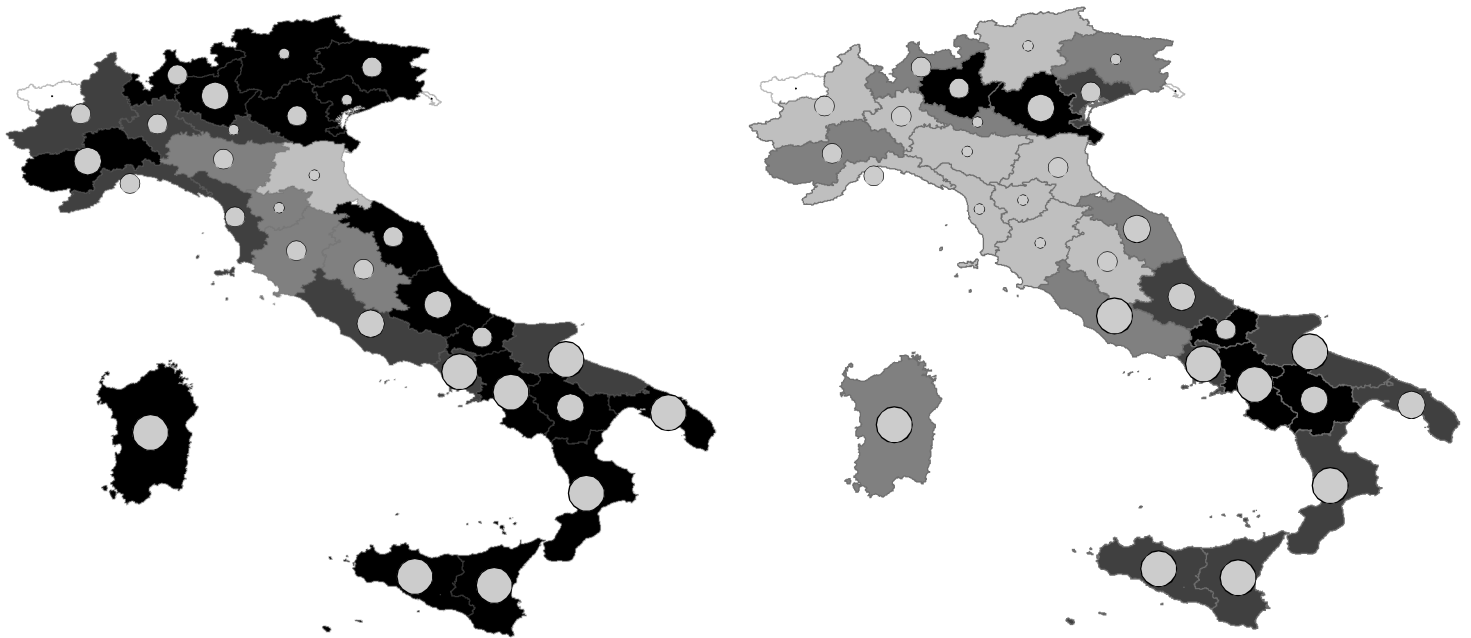


Figure 3: Public Investments (logged) in Legislature Periods, by Electoral District (Legs. II-XI)



Figure 4: Boxplots of Independent Variables, by Electoral District

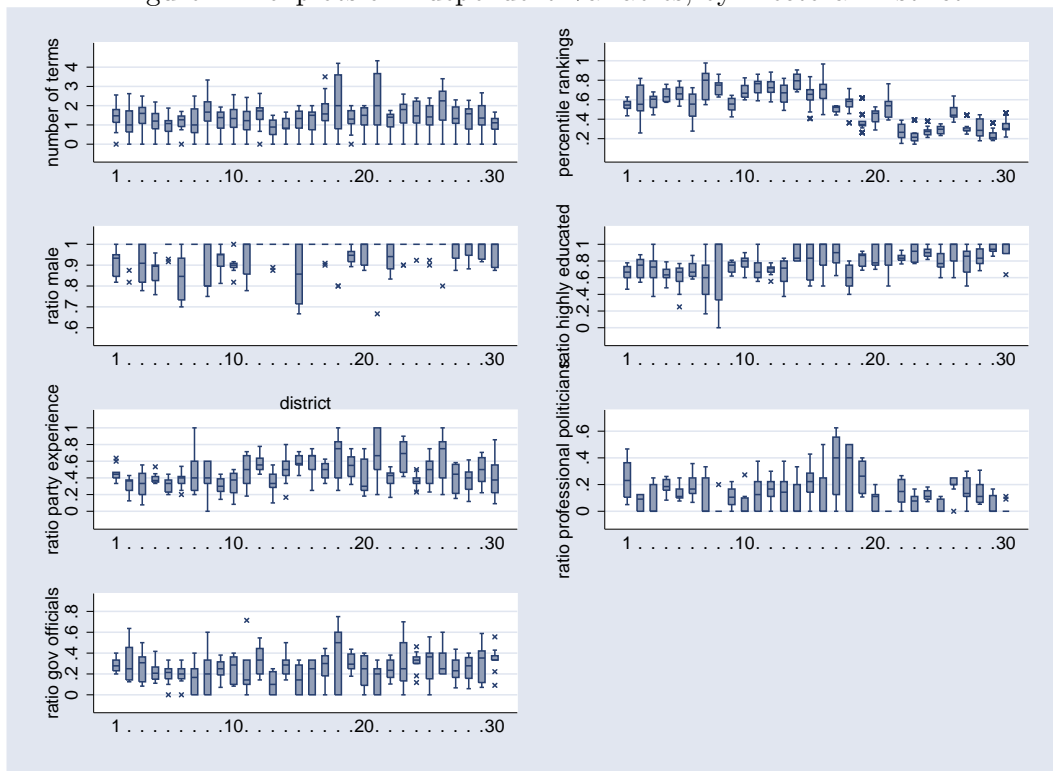


Table 8: Appendix: Italian Electoral Districts, Regions, and Provinces

provid	province	electoral district	regione	provid	province	electoral district	regione
1	Torino	1	PI	41	Pesaro-Urbino	17	MA
2	Vercelli	1	PI	42	Ancona	17	MA
3	Novara	1	PI	43	Macerata	17	MA
4	Cuneo	2	PI	44	Ascoli Piceno	17	MA
5	Asti	2	PI	54	Perugia	18	UM
6	Alessandria	2	PI	55	Terni	18	UM
8	Imperia	3	LI	57	Rieti	18	LA
9	Savona	3	LI	56	Viterbo	19	LA
10	Genova	3	LI	58	Roma	19	LA
11	La Spezia	3	LI	59	Latina	19	LA
15	Milano	4	LO	60	Frosinone	19	LA
18	Pavia	4	LO	66	L'Aquila	20	AB
12	Varese	5	LO	67	Teramo	20	AB
13	Como	5	LO	68	Pescara	20	AB
14	Sondrio	5	LO	69	Chieti	20	AB
16	Bergamo	6	LO	70	Campobasso	21	MO
17	Brescia	6	LO	94	Isernia	21	MO
19	Cremona	7	LO	61	Caserta	22	CM
20	Mantova	7	LO	63	Napoli	22	CM
21	Bolzano	8	TR	62	Benevento	23	CM
22	Trento	8	TR	64	Avellino	23	CM
23	Verona	9	VE	65	Salerno	23	CM
24	Vicenza	9	VE	71	Foggia	24	PU
28	Padova	9	VE	72	Bari	24	PU
29	Rovigo	9	VE	73	Taranto	25	PU
26	Treviso	10	VE	74	Brindisi	25	PU
27	Venezia	10	VE	75	Lecce	25	PU
25	Belluno	11	VE	76	Potenza	26	BA
30	Udine	11	FR	77	Matera	26	BA
31	Gorizia	11	FR	78	Cosenza	27	CL
93	Pordenone	11	FR	79	Catanzaro	27	CL
37	Bologna	12	EM	80	Reggio Calabria	27	CL
38	Ferrara	12	EM	83	Messina	28	SI
39	Ravenna	12	EM	86	Enna	28	SI
40	Forli	12	EM	87	Catania	28	SI
33	Piacenza	13	EM	88	Ragusa	28	SI
34	Parma	13	EM	89	Siracusa	28	SI
35	Reggio Emilia	13	EM	81	Trapan	29	SI
36	Modena	13	EM	82	Palermo	29	SI
47	Pistoia	14	TO	84	Agrigento	29	SI
48	Firenze	14	TO	85	Caltanissetta	29	SI
45	Massa-Carrara	15	TO	90	Sassari	30	SA
46	Lucca	15	TO	91	Nuoro	30	SA
49	Livorno	15	TO	92	Cagliari	30	SA
50	Pisa	15	TO	95	Oristano	30	SA
51	Arezzo	16	TO	7	Aosta	31	VA